Pennsylvania Department of Environmental Protection

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0026743**
Facility Type	**Municipal**	APS ID	**321149**
Major / Minor	**Major**	Authorization ID	**1060169**

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**City of Lancaster**	Facility Name	**City of Lancaster AWWTP**
Applicant Address	120 N Duke Street	Facility Address	1220 New Danville Pike
	Lancaster, PA 17602-2825		Lancaster, PA 17603-9603
Applicant Contact	Christine Volkay-Hilditch	Facility Contact	Christine Volkay-Hilditch
Applicant Phone	(717) 293-5531	Facility Phone	(717) 293-5531
Client ID	117554	Site ID	453237
Ch 94 Load Status	Not Overloaded	Municipality	Lancaster Township
Connection Status	No Limitations	County	Lancaster
Date Application Received	January 30, 2015	EPA Waived?	No
Date Application Accepted	February 4, 2015	If No, Reason	Major Facility, Pretreatment, Significant CB Discharge
Purpose of Application	NPDES Renewal.		

Summary of Review

A draft NPDES permit was issued on May 17, 2024, and was published in the PA Bulletin on June 1, 2024. Comments were received from PADEP Central Office on May 22, 2024, from EPA on June 13, 2024, and from City of Lancaster on July 12, 2024 and July 16, 2024. The comment letters are attached to the end of this fact sheet.

A comment was received from Zachary Steckler, PADEP, on May 17, 2024 regarding the TN offset EDUs in Part A of the NPDES permit. The offset lbs/yr was correct, but the number of EDUs was incorrectly listed as 87 when it should have been listed as 139 to reflect the offsets that were previously included in the Cap Load. Additionally, 2 more offsets were added in 2024, so the total is now 141 EDUs, for 3,525 lbs/yr TN offsets. This change has been made to the NPDES permit Part A I. C on Pg.6, and in the Fact Sheet on Pg. 27.

EPA Region III provided comments on June 13, 2024. Their comments numbered 1-2 and responses are listed below:

1. "As discussed during our June 11, 2024, call, Outfall 100 is a CSO-related bypass and the submitted draft permit has it categorized as a CSO Outfall. In the CSO Policy, a CSO-related bypass can be authorized in a permit if it is part of the LTCP development and if it meets a minimum level of treatment, including primary clarification and solids and floatables removal and disposal, and disinfection where necessary to meet water quality standards (WQS)/protect designated uses (including removal of disinfection chemical residuals where necessary). Any discharge from a CSO-related bypass is subject to applicable WQS as well as any site-specific TBELs the permitting authority requires. If the discharge from Outfall 100 is comingled prior to the sample location of the primary sewage effluent outfall, Outfall 001, separate specific Outfall 100 limitations and monitoring requirements may not be required. However, separate limitations and monitoring requirements are required if the bypass discharge is comingled after the sampling point at Outfall 001. Revisions to the permit and fact sheet are necessary to address this discrepancy including, requirements in Part C.II, Combined Sewer Outfalls and Part A, Limitations. EPA would like clarification on the determined sampling location and manner in which Outfall 100 will need to be permitted."

Approve	Deny	Signatures	Date
X		Benjamin R. Lockwood Benjamin R. Lockwood / Environmental Engineering Specialist	November 19, 2024
X		Maria D. Bebenek for Daniel W. Martin, P.E. / Environmental Engineer Manager	December 3, 2024

Summary of Review

The CSO-related bypass language has been reincorporated into Part C.II Pg.26 of the NPDES permit. As the sampling location for Outfall 001 is prior to commingling with Outfall 100, effluent limitations and monitoring requirements have been incorporated into Part A of the NPDES permit. The effluent requirements in Part A for Outfall 100 reflect the existing NPDES monitoring requirements in Part C V.B.1.i(2) to monitor for $CBOD_5$, TSS, NH_3, and Fecal Coliforms. Additionally, a TRC limit has been added to the Outfall 100 effluent limitations to ensure protection of the receiving water quality and the attainment of water quality standards. These parameters will have a requirement of daily when discharging. All parameters shall be sampled after primary clarification, except for Fecal Coliforms and E. Coli, which shall be sampled after disinfection and mixing with Outfall 001.

2. "EPA makes a minor note that the last four digits of EPA's zip code is incorrect for the Pretreatment address in Section C.III.H of the permit. 19103-2029 should be changed to 19103-2852.
The zip code for EPA's Pretreatment address was revised in the NPDES permit on Pg. 33.

City of Lancaster provided comments on July 12, 2024 and July 16, 2024. Their fact sheet comments numbered 1-15, NPDES comments numbered 1-7, and responses are listed below:

Fact Sheet Comments 7/12/24

1. "Page 1, Applicant and Facility Information; Applicant Address: Without PO Box, zip code is 17602. PO Box is 1599."
The applicant address has been updated in the fact sheet on Pg.1.
2. "Page 1; Applicant and Facility Information; Facility Address: Change "1120" to "1220"."
The facility address has been updated in the fact sheet on Pg.1.
3. "Page 1; Applicant and Facility Information; Municipality: Chage "Lancaster City" to "Lancaster Township"."
The municipality has been revised in the fact sheet on Pg. 1 to Lancaster Township.
4. "Page 1; Summary and Review; 2nd Paragraph: Leola Sewer Authority has changed its name to Upper Leacock Township Municipal Authority (ULTMA) since application submission."
The revised name for ULTMA has been included in the fact sheet on Pg. 4.
5. "Page 1; Summary and Review; 2nd Paragraph: Since application submission, Manor Township's system was acquired by the Lancaster Area Sewer Authority."
Manor Township has been removed from the list of contributing systems to City of Lancaster in the fact sheet on Pg. 4.
6. "Page 4; Discharge, Receiving Waters and Water Supply Information: Noting CSO 100 receives preliminary treatment, primary treatment, and chlorination."
On page 9 of the revised fact sheet, the wastewater description for Outfall 100 has been revised to state that the wastewater receives preliminary treatment, primary treatment, and disinfection.
7. "Page 5; Discharge, Receiving Waters and Water Supply Information: Why is Mill Creek listed as the receiving water? Discharge is directly to the Conestoga River."
For the stormwater outfalls 007,008,009, Mill Creek was incorrectly listed as the receiving water. It has been corrected to the Conestoga River in the revised fact sheet on Pg. 8.
8. "Page 6; Treatment Facility Summary; Second Paragraph: There are four (4) North activated sludge trains."
The fact sheet on Pg. 10 has been revised to reflect that there are 4 North activated sludge trains.
9. "Page 14; Development of Effluent Limitation; CBOD5: Why is the CBOD5 value that was calculated at 11.88mg/L being rounded down to 11 mg/L? Considering the safety factors, 12 mg/L is appropriate. Please set the limit at 12 mg/L."
The more stringent limit for $CBOD_5$ was rounded down in accordance with DEP's Guidance No. 362-0400-001. After a review of the existing limits, this methodology was not utilized for rounding for any of the other parameters, so to be consistent with the permit, the $CBOD_5$ average monthly limit has been revised to 12 mg/l. The weekly average limit has been revised to 18 mg/l, and the IMAX limit has been revised to 24 mg/l.
10. "Page 15; Toxins: As discussed, the City has conducted seven (7) additional Free Cyanide sampling events. Please consider these results in changing the draft permit's limit requirements to monitoring only. The certified lab reports are attached and summarized below:"

Date Sampled	Result (µg/L)
06/05/24	2.7
06/06/24	1.93
06/09/24	1.55
06/10/24	1.55
06/16/24	2.35
06/17/24	1.39
06/24/24	1.34

Summary of Review

An updated toxics analysis was performed using the previous Free Cyanide sampling data and the additional sampling data from 7/12/24. The Toxics Management Spreadsheet now recommends that a monitor only requirement be added to the NPDES permit. The fact sheet and Part A.I.A. Pg.3 of the NPDES permit have been updated to reflect this change.

11. "Page 21; Proposed Effluent Limitations and Monitoring Requirements: What is the basis for a fecal coliform instantaneous maximum limit? Fecal compliance is based on a geometric mean and an instantaneous limit is now based on an arithmetic multiplication."
    The fecal coliform IMAX limits are required from PADEP's Regulation § 92a.47.(4) and § 92a.47.(5). The regulation states "(4) From May through September, a monthly average discharge limitation for fecal coliform of 200/100 mL as a geometric mean and an instantaneous maximum effluent limitation not greater than 1,000/100 mL.
    (5) From October through April, a monthly average discharge limitation for fecal coliform of 2,000/100 mL as a geometric mean and an instantaneous maximum effluent limitation not greater than 10,000/100 mL."
12. "Page 21; Proposed Effluent Limitations and Monitoring Requirements: Please clarify when the Instantaneous Maximum limit applies. The current permit has a footnote that reads "Except for TRC, the instantaneous maximums are for compliance use by DEP only. Do not report instantaneous maximums on DMRs or supplemental DMRs unless specifically required on the forms to do so". Please provide a footnote or paragraph in permit with clear directions as to what is reportable to the PADEP and what is PADEP sampling only. Clear direction on what is a reportable violation is necessary considering the City's Consent Decree violation reporting requirements."
    Footnote 3 was added on Pg. 4 of the NPDES permit to clarify when IMAX reporting is required. Parameters with the grab sample type with IMAX limits (pH, TRC, Fecal Coliform) will need to be reported on the DMR. Parameters with the 24-Hr Composite sample type with IMAX limits ($CBOD_5$, TSS, Ammonia-Nitrogen, Total Phosphorus) are for compliance use by DEP only. Footnote 4 was also added to the permit, which was included in the previous NPDES permit and unintentionally omitted in the draft.
13. "Page 21; Proposed Effluent Limitations and Monitoring Requirements: Why call the column of weekly average limitations "Daily Maximum"? Can the column be renamed to better represent sampling?"
    The effluent limitations referenced on Pg. 21 and 22 are all part of the same table, which includes several weekly average parameters as well as 9 parameters that require daily maximum reporting. As there is a mix of reporting types in this column, the header will remain as daily maximum.
14. "Page 21; Proposed Effluent Limitations and Monitoring Requirements: Repeat of comment No.9 above."
    See response to comment 13.
15. "Page 22: Proposed Effluent Limitations and Monitoring Requirements: Repeat of No.10 above."
    See response to comment 13.

NPDES Permit Comments 7/12/24

1. "Page 1: City of Lancaster AWWTP is located in Lancaster Township. Please change Lancaster City to Lancaster Township."
   The NPDES Permit Page 1 has been revised to state Lancaster Township for the location municipality.
2. "Page 2; Part A – Effluent Limitations, Monitoring, Recordkeeping and Reporting Requirements: See Fact Sheet comments No.9-15 above."
   These comments were addressed as discussed above.
3. "Page 4; Part A – Effluent Limitations, Monitoring, Recordkeeping and Reporting Requirements; Additional Requirements; Paragraph 4: Please clarify this does not apply to CSO 100, South Train CSO Related Bypass."
   As Part A.I.B of the NPDES permit now includes effluent limitations and monitoring requirements for Outfall 100, this requirement does apply to Outfall 100.
4. "Page 16; Paragraph 4: Please provide examples of what type of events require notification under 4.a.i. Would an SSO or Unauthorized release warrant notification under this section?"
   The unanticipated noncompliance section would include incidents such as SSOs or unauthorized releases.
5. "Page 25; Combined Sewer Overflows: Where is the language concerning CSO-related Bypass (Outfall 100) that is currently in Section V.B.1.d of existing permit. This section describes when Outfall 100 can be utilized and the sampling requirements. This language needs to be reinstated as clear direction and use of Outfall 100 and the required sampling must be provided."
   The language concerning the CSO-related bypass has been included in the NPDES permit as discussed above.
6. "Page 27; Paragraph C.3: Please define PCCM Plan."
   The EPA CSO Control Policy states that "The selected CSO controls should include a post-construction water quality monitoring program adequate to verify compliance with water quality standards and protection of designated uses as well as to ascertain the effectiveness of CSO controls. This water quality compliance monitoring program should include a plan to be approved by the NPDES authority that details the monitoring

Summary of Review

protocols to be followed, including the necessary effluent and ambient monitoring and, where appropriate, other monitoring protocols such as biological assessments, whole effluent toxicity testing, and sediment sampling."

7. "Page 33; Whole Effluent Toxicity; Paragraph B: Why is this required annually throughout the permit term? The current permit only required one WET test during the first year of the permit."
   The language in the NPDES Permit Part C. VI. regarding WET testing is obtained from DEP's SOP No. BPNPSM-PMT-031 – Whole Effluent Toxicity, finalized November 9, 2012 and most recently revised May 13, 2014. This SOP in turn is based on EPA's 2010 Guidance National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document. The annual testing requirement is consistent with the guidances.

City of Lancaster Comments 7/16/24

1. "Item No.5 addresses the fact that the draft permit doesn't contain the CSO-related Bypass (Outfall 100) utilization and sampling standards contained in the current permit. We also wanted to expand this comment to request that sampling for fecal coliform only be required when Outfall 100 is utilized during 1st shift working hours Monday-Friday. This is requested as sampling for fecal coliforms after hours when rainstorms pop up and a CSO event can occur is difficult considering certified Lab Tech availability, allowable hold time after the sample is collected (6 hours), and scheduling of the post reaction read within the necessary 18-21 hour window. CBOD5, TSS, and NH3 will always be sampled and monitored as the hold times are a lot longer making analysis feasible. Clarification on the event sampling is also requested. If use of Outfall 100 would span two days (11PM day one to 1AM day two), please clarify this is only considered one bypass and only one round of sampling is required and not two."
   See response to EPA comment 1 and NPDES comment 3.

The AWWTP receives 51% of its flow from the City of Lancaster (City and portions of Lancaster TWP, Manheim TWP, Manor TWP, East Hempfield TWP), 20% of its flow from LASA (portions of Manheim TWP), 3% of its flow from Upper Leacock Township Municipal Authority (portions of Upper Leacock TWP and West Earl TWP), 10% of its flow from Suburban Lancaster Sewer Authority (portions of West Lampeter TWP, Pequea TWP, and Lancaster TWP), 14% of its flow from East Lampeter Sewer Authority (portions of East Lampeter TWP), and 1.5% of its flow from Strasburg Borough Authority (portions of Strasburg Borough and Strasburg TWP). Of the City of Lancaster portion, 41% is separate, and 59% is combined.

The permitted outfalls are: Outfall 001 (AWWTP sewage effluent), Outfall 002, 003, 004, 005, 006, (combined sewer overflows), Outfall 100 (CSO related bypass) and Outfall 007, 008, 009 (stormwater). All outfalls discharge to the Conestoga River.

Sludge use and disposal description and location(s): Sludge is dewatered using a belt filter press, then is lime stabilized prior to beneficial reuse or disposal. Biosolids are land applied and used for site reclamation, and sewage sludge is disposed of at landfills.

Supplemental information is attached to the end of this fact sheet.

Public Participation

DEP will publish notice of the receipt of the NPDES permit application and a tentative decision to issue the individual NPDES permit in the *Pennsylvania Bulletin* in accordance with 25 Pa. Code § 92a.82. Upon publication in the *Pennsylvania Bulletin*, DEP will accept written comments from interested persons for a 30-day period (which may be extended for one additional 15-day period at DEP's discretion), which will be considered in making a final decision on the application. Any person may request or petition for a public hearing with respect to the application. A public hearing may be held if DEP determines that there is significant public interest in holding a hearing. If a hearing is held, notice of the hearing will be published in the *Pennsylvania Bulletin* at least 30 days prior to the hearing and in at least one newspaper of general circulation within the geographical area of the discharge.

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	32.08
Latitude	40º 1' 0.4"	Longitude	76º 18' 20.3"
Quad Name		Quad Code	
Wastewater Description:	Sewage Effluent		
Receiving Waters	Conestoga River (WWF)	Stream Code	7548
NHD Com ID	57465055	RMI	16.3
Drainage Area	331 mi^2	Yield (cfs/mi^2)	0.12
Q_{7-10} Flow (cfs)	39.72	Q_{7-10} Basis	USGS Gage #01576500
Elevation (ft)	227.3	Slope (ft/ft)	
Watershed No.	7-J	Chapter 93 Class.	WWF
Existing Use	N/A	Existing Use Qualifier	N/A
Exceptions to Use	N/A	Exceptions to Criteria	N/A
Assessment Status	Impaired		
Cause(s) of Impairment	Pathogens		
Source(s) of Impairment	Agriculture, Urban Runoff/Storm Sewers		
TMDL Status	N/A	Name	N/A
Nearest Downstream Public Water Supply Intake	Holtwood Power Plant		
PWS Waters	Susquehanna River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	22

Changes Since Last Permit Issuance: A drainage area of 331 mi^2 and a Q_{7-10} flow of 39.72 cubic feet per second (cfs) were determined by establishing a correlation to the yield of USGS Gage Station #01576500 on the Conestoga River. The Q_{7-10} and drainage area at the gage are 38.6 cfs and 324 mi^2, respectively. These values are taken from the USGS document "Selected Streamflow Statistics for Streamgage Locations in and near Pennsylvania". The Q_{7-10} runoff rate at the gage station was calculated as follows:

Yield = (38.6 cfs)/ 324 mi^2 = 0.12 cfs/mi^2

The drainage area at the discharge point, taken from USGS PA StreamStats = 331 mi^2

The Q_{7-10} at the discharge point = 331 mi^2 x 0.12 cfs/mi^2 = 39.72 cfs

Other Comments: None

Discharge, Receiving Waters and Water Supply Information

Outfall No.	002, 003, 005	Design Flow (MGD)	0
Latitude	40º 1' 22" (002) 40º 1' 42" (003) 40º 2' 57" (005)	Longitude	76º 18' 20" (002) 76º 17' 52" (003) 76º 17' 15" (005)
Quad Name		Quad Code	
Wastewater Description:	Untreated Combined Sewer Overflow		
Receiving Waters	Conestoga River (WWF)	Stream Code	
NHD Com ID	57465061	RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	7-J	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Pathogens		
Source(s) of Impairment	Agriculture, Urban Runoff/Storm Sewers		
TMDL Status	N/A	Name	N/A
Nearest Downstream Public Water Supply Intake			
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance: None

Other Comments: None

Discharge, Receiving Waters and Water Supply Information

Outfall No.	004, 006	Design Flow (MGD)	0
Latitude	40º 1' 52" (004) 40º 1' 42" (006)	Longitude	76º 17' 15" (004) 76º 17' 17" (006)
Quad Name		Quad Code	
Wastewater Description:	Screened Combined Sewer Overflow		
Receiving Waters	Conestoga River (WWF)	Stream Code	
NHD Com ID	57465061	RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	7-J	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Pathogens		
Source(s) of Impairment	Agriculture, Urban Runoff/Storm Sewers		
TMDL Status	N/A	Name	N/A
Nearest Downstream Public Water Supply Intake			
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance: None

Other Comments: None

Discharge, Receiving Waters and Water Supply Information

Outfall No.	007, 008, 009	Design Flow (MGD)	Variable (stormwater)
Latitude	40º 01' 00" (007) 40º 01' 0.4" (008) 40º 01' 10" (009)	Longitude	76º 18' 20" (007) 76º 18' 20.3" (008) 76º 18' 21" (009)
Quad Name		Quad Code	
Wastewater Description:	Stormwater		
Receiving Waters	Conestoga River (WWF)	Stream Code	
NHD Com ID	57465055	RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	7-J	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Pathogens		
Source(s) of Impairment	Agriculture, Urban Runoff/Storm Sewers		
TMDL Status	N/A	Name	N/A
Nearest Downstream Public Water Supply Intake			
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance: None

Other Comments: None

Discharge, Receiving Waters and Water Supply Information

Outfall No.	100	Design Flow (MGD)	0
Latitude	40º 1' 0.4"	Longitude	76º 18' 18"
Quad Name		Quad Code	
Wastewater Description:	STP Combined Sewer Overflow Related Bypass with Preliminary Treatment, Primary Treatment and Disinfection		
Receiving Waters	Conestoga River (WWF)	Stream Code	
NHD Com ID	57465055	RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	7-J	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	**Pathogens**		
Source(s) of Impairment	Agriculture, Urban Runoff/Storm Sewers		
TMDL Status		Name	
Nearest Downstream Public Water Supply Intake			
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance: None

Other Comments: None

Treatment Facility Summary				
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Tertiary	A/O OASES Activated Sludge Process	Liquid Chlorine	32.08
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
32.08	76756	Not Overloaded	Dewatering	Landfill

Changes Since Last Permit Issuance: A Water Quality Management (WQM) Permit (3683415 A-6) was issued on June 22, 2016. The City of Lancaster modified the existing treatment process by converting existing oxic stages to anoxic to provide for more denitrification. Additionally, oxygen transfer piping and return activated sludge (RAS) piping were extended to bypass the anoxic zone, the existing froth spray system was demolished, deteriorating equipment was replaced, structural repairs were made of the process tanks, and a new dissolved oxygen (DO) control system was installed. WQM Permit 3683415 A-7 was issued on February 20, 2024, for the installation of a new secondary clarifier at the North Plant, a flow diversion chamber, and a new sludge pump control building.

Other Comments: This treatment process consists of: A North treatment plant with screening and grit removal, 2 primary clarifiers, 4 activated sludge tanks using the A/O OASES activated sludge process, and 3 final clarifiers; a South treatment plant with screening and grit removal, 4 primary clarifiers, 3 activated sludge tanks using the A/O OASES activated sludge process, and 2 final clarifiers; then a combined 4 chlorine contact tanks, dechlorination, and Outfall 001 to the Conestoga River. Liquid chlorine is used for disinfection, sodium bisulfite is used for dechlorination, quick lime is used for lime stabilization, alum and poly aluminum chloride are used for sedimentation aid, and dry cationic polymer is used for sludge dewatering. The sewage sludge is dewatered via belt filter press, and lime stabilized prior to beneficial reuse or disposal.

Compliance History	
Summary of DMRs:	A summary of the past 12-month DMR effluent data is present on the next page of this fact sheet.
Summary of Inspections:	2/10/2016: A routine inspection was conducted. It was reported that the current projects at the facility were the upgrade of the North Pump Station, BNR upgrade, and the upgrade of the North & South secondary clarifiers. 6/1/2016: A Notice of Violation (NOV) was issued to the City of Lancaster. Lancaster failed to monitor the CSO-related bypass at Outfall 100 during 2014 and 2015; specifically, Lancaster failed to take two grab samples of the CSO-related bypass during months with two or more bypasses during for a number of months in 2014 and 2015. 2/28/2017: A routine partial inspection was conducted. The City of Lancaster reported high effluent TSS results to DEP the previous week, and DEP received a call that the effluent to the Conestoga River appeared turbid. The return activated sludge (RAS) was reduced on 2/23 and there was an attempt to feed chlorine to the RAS to control filamentous bacteria, but the chlorine ended up being fed to the effluent. The final clarifiers for the south train were observed; they were clear with some surface scum and pin floc but were producing a clear effluent. The north train clarifiers also had a clear effluent with pin floc. The 4 chlorine contact tanks were all online and had a clear appearance with a little scum. The final effluent appeared to have a slight yellow tint with white puffy foam. A grab sample was collected, and results were within permitted limits. The effluent appeared clear. 4/7/2018: A routine inspection was conducted. Lancaster City was in the process of a BNR upgrade; mixer and DO controls were being added, and the final clarifiers were being upgraded. Lancaster had received a significant amount of rain the day before, and one of the north train final clarifiers was losing solids over the weir. The South Internal Bypass was open the day before due to high flows. It was closed during the inspection. The effluent from the facility was turbid. 9/7/2018: A routine inspection was conducted. The CSO outfalls were inspected. Outfall 002 did not have a discharge, and the general area of the outfall had no visible solids in the receiving stream. The Outfall 003 weir was not observed. The outfall appeared clear with groundwater discharging. Solids were not visible at the outfall or in the receiving stream. Outfall 006 weir was observed. No flow or debris were present on or over the weir. The outfall was observed and no groundwater discharge was visible. No solids were visible at the outfall or in the receiving stream. The CSO notification sign had fallen off. Outfall 004 was observed and was not discharging upon inspection. Debris was not present at the outfall or in the receiving stream. The sign at the outfall needed to be cleaned and a call number sign was not posted. Outfall 005 had no solids or debris in the structure or receiving stream. Outfall 001 was observed, and had white foam due to the high velocity of the discharge, which began to dissipate in the receiving stream. Outfall 002 had water discharging from a pipe on the second floor of the old Streets Building. The source of water was the building's sprinkler system water bell, and the water was turned off. 11/14/2018: An incident inspection was conducted. This was done in response to a clarifier leak that occurred on 11/5/18 due to high rainfall. Two pinhole leaks became evident in the combined trough which receives effluent from Clarifier #3 and #4. It was estimated that approximately 250-500 gallons were released. On 11/6/18, grout was injected into the seam. 8/30/2019: A routine inspection was conducted. The CSO outfalls were inspected. Outfall 002 had no deposits in the debris pits, and there was no flow at the time of inspection. The overflow weir was free of debris upon inspection. A new CSO sign was present. A discharge of clear groundwater from the outfall was visible. Outfall 003 appeared clear with groundwater discharging. Solids were not visible at the outfall or in the receiving stream. Outfall 006 did not have flow or debris present on or over the weir. The outfall was observed and no groundwater discharge was visible. No solids were present at the outfall or in the receiving stream. Outfall 004 was not discharging upon inspection. Debris was not present at the outfall or in the receiving

	stream. No solids or debris were noted in the structure or receiving stream at Outfall 005. The current CSO sign is not visible from the stream's edge. 9/4/2019: A routine inspection was conducted. The chlorine contact tank appeared mostly clear. Field samples were taken, and were within permitted limits. The effluent appeared clear with fine suspended solids. 12/17/2019: An incident inspection was conducted. City of Lancaster reported a leak in the effluent line from primary Clarifier #6. The leak was reported as infiltrating the ground surface adjacent to the clarifier. Wastewater was visible flowing over the ground surface and infiltrating approximately 4 feet from the clarifier. The stormwater outfall near the facility's northeastern corner had evidence of flowing water. Flowing water at this location was also infiltrating the ground. No discharge was noted from the downstream section of the stormwater conveyance. At the time of inspection, Clarifier #6 was offline, and the remaining solids were being pumped to the sludge storage tank, and liquid was being directed to the South train influent. Sample results collected indicated the primary clarifier effluent was entering the stormwater conveyance and infiltrating into the ground. The leak ceased on 12/18/19, and the volume of the release was not accurately determined. 4/15/2020: An administrative inspection was conducted. On 4/13 City of Lancaster reported an overflow. The Maple Grove influent line maxed out during a heavy rain event. The overflow travelled down a 12 ft. embankment and entered a catch basin which discharges toThe overflow underwent disinfection for Outfall 100. The overflow was believed to last about 5-10 minutes, and had an estimated volume of 10,000-20,000 gallons. It was recommended that hydrated lime be applied to the impacted ground. The operator said there were no visible solids and he would apply the lime. 6/17/2020: An administrative inspection was conducted. All treatment units were operable, and there were no outstanding issues at the time. 7/7/2020: An incident inspection was conducted. A sanitary sewer overflow occurred the previous night from the south train's primary clarifiers. Surface runoff had caused a landslide leading from the primary clarifiers downhill to the Main Pump Station. The WWTP received approximately 2.36 inches of rain over 24 hours. The landslide occurred approximately 18 feet northeast of the south train's primary clarifiers, adjacent to the stairs leading to the Main Pump Station. The landslide was approximately 8 feet wide and extended about 20 feet down embankment. The operator stated that city personnel planned to flush and vac the sediment near the pump station and along the road. The primary clarifiers were observed. The stormwater drain on the northwestern corner of clarifiers had evidence of solids surrounding the catch basin and on top of the grate. Debris/solids were visible on the concrete surface surrounding the influent channel. The grassy area south of clarifiers had evidence of solids and debris. The scum pit east of the clarifiers had grit and debris surrounding the edge of the pit. The northwestern corner of the northern most primary clarifier had solids/debris on the concrete tank edge. 8/19/2021: A routine inspection was conducted. Outfall 002 had no flow, and the overflow weir was free of debris upon inspection. The stream water at the outfall appeared brown and turbid. The grit chambers upstream of the pump station were covered with litter and debris due to heavy rainfall the day prior. The screen house dumpster was filled. Outfall 003 had a meter display of 0.01 MGD. The wastewater flow was visible below the weir level. The outfall level was below the stream level. Outfall 006 had no flow or debris present on or over the weir. The outfall was not visible due to high water level. Outfall 004 was not viewed during the inspection due to high water level. Outfall 005 was partially visible due to high water. 8/16/2023: A routine inspection was conducted. The final clarifiers at the North and South WWTP appeared mostly clear with some algae accumulation on the effluent weirs and trough. The WWTP effluent appeared clear. Field test results were within permitted limits.

Other Comments: There are no open violations for this Applicant.

Compliance History

DMR Data for Outfall 001 (from October 1, 2023 to September 30, 2024)

Parameter	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24	APR-24	MAR-24	FEB-24	JAN-24	DEC-23	NOV-23	OCT-23
Flow (MGD) Average Monthly	15.065	17.277	14.667	16.271	19.807	27.328	24.658	22.699	26.781	22.442	14.757	16.019
Flow (MGD) Daily Maximum	20.298	25.202	19.124	21.025	27.679	44.051	33.718	29.722	38.911	44.339	23.051	25.451
pH (S.U.) Minimum	6.7	6.8	6.7	6.8	6.7	6.8	6.9	7.0	6.6	6.6	6.6	6.4
pH (S.U.) Instantaneous Maximum	7.3	7.4	7.2	7.1	7.3	7.2	7.4	7.4	7.3	7.2	7.4	7.2
DO (mg/L) Minimum	6.9	6.7	6.6	6.9	7.0	7.7	8.0	7.6	8.0	7.1	6.9	6.80
TRC (mg/L) Average Monthly	< 0.02	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.04	< 0.03	< 0.04	< 0.04	< 0.03	< 0.03
TRC (mg/L) Instantaneous Maximum	0.06	0.12	0.08	0.12	0.12	0.29	0.27	0.16	0.37	0.32	0.08	0.12
CBOD5 (lbs/day) Average Monthly	409	531	454	568	779	945	782	< 733	< 931	1651	654	< 282
CBOD5 (lbs/day) Weekly Average	499	838	560	669	819	1563	982	885	< 1447	3531	956	< 341
CBOD5 (mg/L) Average Monthly	3	4	4	4	5	4	4	< 4	< 4	8	5	< 2
CBOD5 (mg/L) Weekly Average	4.0	6.0	4.0	4.0	5.0	5	4	5	< 5	15	7	< 2.0
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	24463	25024	25116	26645	28405	27056	27161	29064	26700	24132	24072	25923
BOD5 (mg/L) Raw Sewage Influent Average Monthly	195	177	206	196	175	126	135	156	121	133	198	201
TSS (lbs/day) Average Monthly	575	< 951	< 724	< 621	< 1152	< 1371	< 1135	< 1251	3640	< 3325	< 1083	< 527

TSS (lbs/day) Raw Sewage Influent Average Monthly	25672	29739	30956	31298	45065	39615	48448	47741	41954	37045	42531	35955
TSS (lbs/day) Weekly Average	785	1314	860	< 853	< 1412	2398	< 1620	1735	10770	8686	2019	620
TSS (mg/L) Average Monthly	5	< 7	< 6	< 5	< 7	< 6	< 6	< 7	14	< 16	< 8	< 4
TSS (mg/L) Raw Sewage Influent Average Monthly	208	206	253	231	273	181	241	260	191	205	348	283
TSS (mg/L) Weekly Average	6.0	8	7	< 7	< 8	8	< 8	9	39	39	14	5
Fecal Coliform (CFU/100 ml) Geometric Mean	< 7	< 11	< 14	< 18	< 13	< 17	< 11	44	< 28	44	21	< 13
Nitrate-Nitrite (mg/L) Average Monthly	7.7	7.86	7.63	5.06	3.98	3.45	3.94	5.01	4.38	4.31	6.26	5.93
Nitrate-Nitrite (lbs) Total Monthly	29129	34274	28686	20468	20007	22602	24585	27131	29946	25750	22696	23611
Total Nitrogen (mg/L) Average Monthly	< 9.1	< 9.81	9.35	< 6.67	< 5.44	4.84	5.6	7	7.3	8.21	8.85	< 7.9
Total Nitrogen (lbs) Effluent Net Total Monthly	< 34519	< 42983	35197	< 26979	< 27339	32123	35112	37930	51862	51766	32653	< 31542
Total Nitrogen (lbs) Total Monthly	< 34519	< 42983	35197	< 26979	< 27339	32123	35112	37930	51862	51766	32653	< 31542
Ammonia (lbs/day) Average Monthly	44	< 64	60	< 21	< 30	< 43	< 47	68	< 48	< 51	114	45
Ammonia (mg/L) Average Monthly	0.333	< 0.43	0.487	< 0.149	< 0.182	< 0.202	< 0.233	0.366	< 0.216	< 0.252	0.865	0.353
Ammonia (lbs) Total Monthly	1317	< 1981	1862	< 622	< 920	< 1281	< 1444	1967	< 1486	< 1585	3415	1402
TKN (mg/L) Average Monthly	< 1.4	< 2	1.7	< 1.6	< 1.5	1.4	1.7	2	2.9	3.9	2.6	< 2
TKN (lbs) Total Monthly	< 5389	< 8709	6511	< 6511	< 7331	9521	10527	10799	21916	26015	9958	< 7931
Total Phosphorus (lbs/day) Average Monthly	57	< 123	109	145	40	111	118	121	183	190	72	58
Total Phosphorus (mg/L) Average Monthly	0.458	< 0.859	0.884	1.098	0.25	0.481	0.567	0.658	0.723	0.918	0.578	0.451

Total Phosphorus (lbs) Effluent Net Total Monthly	1720	< 3802	3365	4340	1249	3330	3648	3522	5677	5885	2170	1794
Total Phosphorus (lbs) Total Monthly	1720	< 3802	3365	4340	1249	3330	3648	3522	5677	5885	2170	1794

Existing Effluent Limitations and Monitoring Requirements

Outfall 001

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (3) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum(2)		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/shift	Grab
Dissolved Oxygen	XXX	XXX	5.0	XXX	XXX	XXX	1/shift	Grab
Total Residual Chlorine	XXX	XXX	XXX	0.13	XXX	0.42	1/shift	Grab
$CBOD_5$ May 1 - Oct 31	4,013	6,020	XXX	15	22.5	30	5/week	24-Hr Composite
$CBOD_5$ Nov 1 - Apr 30	6,689	10,702	XXX	25	40	50	5/week	24-Hr Composite
BOD_5 Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	5/week	24-Hr Composite
Total Suspended Solids Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	5/week	24-Hr Composite
Total Suspended Solids	8,026	12,040	XXX	30	45	60	5/week	24-Hr Composite

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (3) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum(2)		
Fecal Coliform (CFU/100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	XXX	3/week	Grab
Fecal Coliform (CFU/100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	XXX	3/week	Grab
Ammonia-Nitrogen May 1 - Oct 31	669	XXX	XXX	2.5	XXX	5.0	5/week	24-Hr Composite
Ammonia-Nitrogen Nov 1 - Apr 30	2,007	XXX	XXX	7.5	XXX	15	5/week	24-Hr Composite
Total Phosphorus	535	XXX	XXX	2.0	XXX	4.0	5/week	24-Hr Composite

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): at discharge from facility

Parameter (1)	Effluent Limitations					Monitoring Requirements	
	Mass Units (lbs)		Concentrations (mg/L)			Minimum (2) Measurement Frequency	Required Sample Type
	Monthly	Annual	Minimum	Monthly Average	Maximum		
Ammonia---N	Report	Report	XXX	Report	XXX	5/week	24-Hr Composite
Kjeldahl---N	Report	XXX	XXX	Report	XXX	1/week	24-Hr Composite
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	1/week	24-Hr Composite
Total Nitrogen	Report	Report	XXX	Report	XXX	1/month	Calculation
Total Phosphorus	Report	Report	XXX	Report	XXX	5/week	24-Hr Comp
Net Total Nitrogen	Report	620,348	XXX	XXX	XXX	1/month	Calculation
Net Total Phosphorus	Report	77,381	XXX	XXX	XXX	1/month	Calculation

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): at discharge from facility.

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 32.08
Latitude 40º 1' 0.4" **Longitude** 76º 18' 20.3"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

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

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

Water Quality-Based Limitations

$CBOD_5$ & NH_3-N.

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

WQM 7.0 ver. 1.1b is a water quality model designed to assist DEP in determining appropriate water quality based effluent limits (WQBELs) for carbonaceous biochemical oxygen demand ($CBOD_5$), ammonia (NH_3-N) and dissolved oxygen (D.O.). DEP's Technical Guidance No. 391-2000-007 provides the technical methods contained in WQM 7.0 for determining wasteload allocations and for determining recommended NPDES effluent limits for point source discharges. The model was utilized for this permit renewal. The model output indicated a $CBOD_5$ average monthly limit of 11.88 mg/l, an NH_3-N average monthly limit of 2.53 mg/l, and a D.O. minimum limit of 5.0 mg/l were protective of water quality. Discharge temperature and pH values were taken from the NPDES application. Stream temperature and pH data used in the modeling was acquired from the National Water Quality Monitoring Council website. Data was analyzed from the Water Quality Network Station ID 274 on the Conestoga River from December 2014 to March 2022 for pH and December 2014 to January 2022 for Temperature. DEP's Standard Operating Procedure (SOP) No. BCW-PMT-033 (Establishing Effluent Limitations for Individual Sewage Permits) recommends using the 90th percentile of long-term data for background and discharge characteristics when using WQM 7.0. A 90th percentile analysis was performed on the data, which resulted in a stream pH of 8.3 and a stream temperature of 23.89°C. The $CBOD_5$ limit is more stringent than the existing limit of 15 mg/l, therefore an average monthly limit of 12 mg/l will be added to the NPDES permit. The weekly average and instantaneous maximum (IMAX) limits for $CBOD_5$ will be revised based on a multiplier of 1.5 for the weekly limit, and 2.0 for the IMAX limit. The mass limits for $CBOD_5$ were revised using the formula: Conc x 8.34 x 32.08 MGD. The wintertime $CBOD_5$ limits will remain unchanged. Based on a review of the past year of DMR data, the facility will be capable of meeting the revised limits. The existing NH_3-N limit is more stringent and will remain in the permit.

Toxics

Effluent sample results for toxic pollutants reported on the renewal application were entered into DEP's Toxics Management Spreadsheet Version 1.3 to develop appropriate permit requirements for toxic pollutants of concern. The Toxics Management Spreadsheet combines the functions of PENTOXSD and DEP's Toxics Screening Analysis. Stream hardness inputs were taken from the renewal application. Based on effluent sample results reported on the application, and supplemental sampling provided on March 19, 2024, the Toxics Management Spreadsheet recommended monitoring for Total Aluminum, Total Copper, Chloroform, and Dibromochloromethane. The TMS recommended a limit for Free Cyanide, with an average monthly limit of 7.2 µg/l, a daily maximum limit of 11.2 µg/l, and an IMAX limit of 18 µg/l. Additional free cyanide sampling data was provided on July 12, 2024. Free cyanide was re-analyzed using this additional data; the TMS revised the recommendation to monitor and report for Free Cyanide. The updated TMS is provided at the end of the fact sheet. These monitoring requirements will be included in the permit. Per Table 6-3 of DEP's Guidance No. 362-0400-001, a monitoring frequency of 1/week will be used for the toxic parameters.

This data was analyzed based on the guidelines found in DEP's Water Quality Toxics Management Strategy (Document No. 361-0100-003) and DEP's SOP No. BPNPSM-PMT-033. The results are attached to this fact sheet. The Toxics Management Spreadsheet uses the following logic:

a. Establish average monthly and instantaneous maximum (IMAX) limits in the draft permit where the maximum reported concentration exceeds 50% of the WQBEL.
b. For non-conservative pollutants, establish monitoring requirements where the maximum reported concentration is between 25% - 50% of the WQBEL.
c. For conservative pollutants, establish monitoring requirements where the maximum reported concentration is between 10%-50% of the WQBEL.

Additional Considerations

Dissolved Oxygen

A minimum D.O. limit of 5.0 mg/L is a D.O. water quality criterion found in 25 Pa. Code § 93.7(a). This is the existing permit limit, and it is recommended that it remain in the permit to ensure that the facility continues to achieve compliance with water quality standards.

Total Phosphorus

Historically, a Total Phosphorus (TP) effluent limit of 2.0 mg/l was established in the permit when it was determined that the facility was expected to contribute 0.25% or more of the total point source phosphorus loading at the point of discharge. This determination was based on the Department's *Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams* (Guidance No. 391-2000-018). DEP previously determined that the City of Lancaster met this criteria, and phosphorus limitations were required in the permit. The TP average monthly limit of 2.0 mg/l and IMAX limit of 4.0 mg/l will remain in the permit to protect the local watershed. From the previous fact sheet, the following logic was used: Total phosphorus loading from this discharge would be 8.34 x 10 mg/l x 32.08 MGD or 2,675 lbs/day. Using the equation that was documented in EPA's Chesapeake Bay Management Report, Total P @ Y = Total P x 0.99^{Y}, where Y = stream miles to PA-MD line, the actual loading to the critical part of the Susquehanna River would be 1,959 lbs/day at an estimated distance of 31 miles. This loading represents 1,959 lbs/day / 3,814 lbs/day or 51 percent of the total phosphorus loading of all discharges in the Lower Susquehanna River Basin. According to the above phosphorus guidance, phosphorus removal will be required if this percentage is > 0.25 percent.

Chesapeake Bay Total Maximum Daily Load (TMDL)

DEP developed a strategy to comply with the EPA and Chesapeake Bay Foundation requirements by reducing point source loadings of Total Nitrogen (TN) and Total Phosphorus (TP). This strategy can be located in the *Pennsylvania Chesapeake Watershed Implementation Plan* (WIP), dated January 11, 2011. Subsequently, an update to the WIP was published as the Phase 2 WIP. As part of the Phase 2 WIP, a *Phase 2 Watershed Implementation Plan Wastewater Supplement* (Phase 2 Supplement) was developed, providing an update on TMDL implementation for point sources and DEP's current implementation strategy for wastewater. A new update to the WIP was published as the Phase 3 WIP in August 2019. As part of the Phase 3 WIP, a *Phase 3 Watershed Implementation Plan Wastewater Supplement* (Phase 3 Supplement) was developed, and was most recently revised on July 29, 2022, and is the basis for the development of any Chesapeake Bay

related permit parameters. Sewage discharges have been prioritized based on their design flow to the Bay. The highest priority (Phases 1, 2, and 3) dischargers will receive annual Cap Loads based on their design flow on August 29, 2005 and concentrations of 6 mg/l TN and 0.8 mg/l TP. These limits may be achieved through a combination of treatment technology, credits, or offsets. For Phase 4 and 5 facilities, Cap Loads are not currently being implemented for renewed or amended permits for facilities that do not increase design flow. For new Phase 4 and 5 sewage dischargers, in general DEP will issue new permits containing Cap Loads of "0" and new facilities will be expected to purchase credits and/or apply offsets to achieve compliance.

The City of Lancaster AWWTP is a Phase 1 significant discharger. The facility's waste load allocation (WLA) is tracked under an individual WLA as a significant discharger in the Phase 3 Supplement. The following Cap Loads specified in the current Phase 3 Supplement will be included in the draft permit:

NPDES Permit No.	Phase	Facility	Latest Permit Issuance Date	Permit Expiration Date	Cap Load Compliance Start Date	TN Cap Load (lbs/yr)	TN Offsets Included in Cap Load (lbs/yr)	TP Cap Load (lbs/yr)	TN Delivery Ratio	TP Delivery Ratio
PA0026743	1	Lancaster City	6/18/2012	7/31/2015	10/1/2007	620,348	1,300	77,381	0.663	0.609

The Cap Loads are unchanged from the existing permit. The Phase 3 Supplement states that "the minimum monitoring frequency for TN species and TP in new or renewed NPDES permits for significant sewage dischargers will be 2/week." Therefore, the monitoring frequencies for TKN and Nitrate-Nitrite will be increased to 2/week, and ammonia and Total Phosphorus will have a monitoring frequency of 5/week. DEP no longer offers any tools to calculate monthly loads for Net TN and Net TP, and it is no longer needed since offsets and credits are applied annually. Therefore, this reporting requirement is no longer needed and will be removed from the permit.

The existing NPDES permit included an allocation for 52 on-lot disposal systems (OLDs) which were permitted/installed prior to January 1, 2003 and were retired by connection to the collection system after January 1, 2003. Based on the Chesapeake Bay Strategy, the offset load was calculated at 25 lbs/year, for a total of 1,300 lbs TN/yr. In the existing permit, the 1,300 lbs/yr offset was included in the Net Total Nitrogen Cap Load. The Chesapeake Bay Strategy allocated a TN Cap Load of 619,048 lbs/yr; adjusted for the 1,300 lbs/yr TN offset, the Net Total Nitrogen Cap Load included in the permit was 620,348 lbs/yr. Since the renewal permit was issued, the City of Lancaster has been updating the list of offsets annually. Since 2010, 89 OLDs (2,175 lbs/yr) have been connected that were not included in the existing permit Cap Load, for a total TN offset of 3,525 lbs TN/yr. The Phase 3 Supplement states that from this point forward, permits will be issued with the wasteload allocations (WLAs) as Cap Loads and will identify offsets separately to facilitate nutrient trading activities and compliance with the TMDL. Consequently, the proposed effluent limits will contain a Net Total Nitrogen Cap Load of 619,048 lbs/yr, to reflect the Cap Load requirement of the WIP Supplement. The TN offset of 3,525 lbs/yr will be listed separately on the effluent page of Part A of the NPDES permit as a foot note. The approved offsets are only for compliance purposes and are not available for trading or selling.

Total Suspended Solids

40 CFR 133.102b(1) and 25 PA § 92a.47(a)(1) define a minimum level of effluent quality attainable by secondary treatment for TSS, with a monthly average not to exceed 30 mg/l, and a weekly average not to exceed 45 mg/l. This is consistent with the existing permit requirements, and these limits and associated mass limits will remain in the renewal.

Fecal Coliform

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

Total Residual Chlorine

The computer printout utilizes the equations and calculations as presented in the Department's May 1, 2003 Implementation Guidance for Total Residual Chlorine (TRC) (ID No. 391-2000-015) for developing chlorine limitations. The Guidance references Chapter 92, Section 92.2d (3) which establishes a standard BAT limit of 0.5 mg/l unless a facility-specific BAT

has been developed. The printout indicates that a water quality limit of 0.12 mg/l would be needed to prevent toxicity concerns. This is slightly more stringent than the existing average monthly limit of 0.13 mg/l. The renewal permit will contain an average monthly TRC limit of 0.12 mg/l, and an IMAX limit of 0.41 mg/l. A review of the past year of DMR data indicates the facility will be capable of meeting this limit.

E. Coli

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

Stormwater

The application listed outfalls 007, 008, 009 as stormwater outfalls receiving stormwater runoff from the AWWTP site. To comply with the stormwater requirements of 40CFR 122.26(b)(14)(ix), part C of the permit will require the permittee to comply with the standard requirements applicable to stormwater outfalls with BMP conditions.

Combined Sewer Overflows

There are are six (6) permitted CSO outfalls in the collection system for the AWWTP: Outfall 002, 003, 004, 005, 006, and 100. CSO Outfall 100 is a CSO-related bypass. The City of Lancaster is currently undertaking measures required by the Consent Decree Case 5:17-cv-05684-JLS dated February 22, 2018. The obligations in the Consent Decree have the objective of causing Lancaster to achieve and maintain full compliance with the terms and conditions of its NPDES Permits, the Clean Water Act, the Clean Streams Law, and to meet the objectives of EPA's April 1994 "Combined Sewer Overflow (CSO) Control Policy." The Consent Decree contains a number of requirements to amend and implement the Long Term Control Plan and Nine Minimum Controls. Part C language has been included in the NPDES Permit to require the implementation of the LTCP, as well as requiring the submittal of a revised LTCP. The NPDES Permit will require that the City of Lancaster submit an application for a major permit amendment within 30 days of LTCP approval.

Industrial Users

The City of Lancaster AWWTP receives wastewater from a number of industrial users throughout its service area. The industrial users and a brief description are as follows:

Industrial Users	Discharge Rate (GPD)					Significant Industrial User?
	Process	**NCCW**	**Sanitary**	**Other**	***Total***	
Armstrong World Industries	450	7,414	17,471	20	25,355	Yes
Dart Container	60,000	-	-	10,000	70,000	Yes
Flex-Cell Inc	10 Evaporated	-	-	-	10 Evaporated	Yes
Lancaster General Hospital	35,638	-	106,914	15,543	193,733	Yes
RR Donnelley & Sons LMD West	10,325	-	9,500	14,230	34,055	Yes
Sauder Foods	30,000	-	500	2,000	32,500	Yes
MAC-IT	330	-	255	-	585	Yes
RR Donnelleys & Son LMD East	6,500	-	15,000	66,550	88,050	Yes
Lancaster Metals Science	17,551	-	285	100	17,936	Yes
Lancaster Oil Company	20,000	-	-	-	20,000	Yes
Kunzler & Company	60,000	51,000	4,700	4,300	120,000	Yes
Lancaster Metal Manufacturing	889	3,938	2,000	-	6,827	Yes
McNeil Pharmaceuticals	39,000	1,000	2,000	2,000	44,000	Yes
K & L Plating	4,850	50	50	50	5,000	Yes
Dental EZ	6,720	-	1,755	-	8,475	Yes
Image First Uniform Rental Service	130,000	500	500	6,000	137,000	Yes

The AWWTP is implementing an approved pretreatment program which is expected to address any negative impact from these industrial users.

Pretreatment Requirements

The design annual average flow of the treatment plant is 32.08 MGD and the facility receives flow from many significant industrial users as presented in the previous section. EPA requires development and implementation of pretreatment program for this facility. The City of Lancaster currently maintains and operates EPA-approved pretreatment program for the AWWTP. Consequently, the Department will continue to include permit conditions that dictate the operation and implementation of a pretreatment program in Part C.III of the permit.

PFAS-Related Compounds

DEP's NPDES renewal application for Major Sewage Facilities now requires effluent testing for PFAS related compounds as part of Pollutant Group 1: Perfluorooctanoic acid (PFOA), Perfluorooctanesulfonic acid (PFOS), Perfluorobutanesulfonic acid (PFBS), and Hexafluoropropylene oxide dimer acid (HFPO-DA). Per DEP's SOP BCW-PMT-033, If sampling that is completed as part of the permit renewal application reveals a detection for any of these compounds, a quarterly monitoring requirement for all compounds will be established in the permit. If sampling that is completed as part of the permit renewal application demonstrates non-detect values at or below the Target QLs for these compounds in a minimum of 3 samples, an annual monitoring requirement for all compounds will be established in the permit. As the PFAS compounds were not sampled as part of this application, quarterly monitoring requirements will be established for all compounds in this renewal permit. Monitoring for PFOA, PFOS, HFPO-DA, and PFBS may be discontinued if the results in 4 consecutive monitoring periods indicate non-detect results at or below the Target QLs o 4.0 ng/l for PFOA, 3.7 ng/l for PFOS, 3.5 ng/l for PFBS, and 6.4 ng/l for HFPO-DA. The NPDES permit will include this monitoring language as a footnote in Part A of the permit.

Sampling Frequency & Sample Type

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

Flow Monitoring

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

Influent BOD_5 and TSS Monitoring

As a result of negotiation with US EPA, influent monitoring of TSS and BOD_5 are required for any publicly owned treatment works (POTWs); therefore, influent sampling of BOD_5 and TSS will be included in the permit. A 24-hr composite sample type will be required to be consistent with the proposed sampling frequency for effluent TSS and $CBOD_5$.

Mass Loading Limitation

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

Anti-Degradation

The effluent limits for this discharge have been developed to ensure that existing instream water uses and the level of water quality necessary to protect the existing uses are maintained and protected. No High Quality Waters are impacted by this discharge. No Exceptional Value Waters are impacted by this discharge.

303(d) Listed Streams

The discharge is located on a stream segment that is designated on the 303(d) list as impaired. There is an impairment for pathogens due to agriculture and urban runoff/storm sewers.

Class A Wild Trout Fisheries

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

Whole Effluent Toxicity (WET)

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

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

The dilution series used for the tests was: 100%, 78%, 56%, 28%, and 14%. The Target Instream Waste Concentration (TIWC) to be used for analysis of the results is: 56.

Summary of Four Most Recent Test Results

(NOTE – Enter results into one table, depending on which data analysis method was used).

NOEC/LC50 Data Analysis

Test Date	*Ceriodaphnia* Results (% Effluent)			*Pimephales* Results (% Effluent)			Pass? *
	NOEC Survival	NOEC Reproduction	LC50	NOEC Survival	NOEC Growth	LC50	
4/21/2014	100	56	100	100	100	100	Yes
7/14/2014	100	56	100	78	78	100	Yes
9/15/2014	100	100	100	100	100	100	Yes
12/8/2014	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? (*NOTE – In general, reasonable potential is determined anytime there is at least one test failure in the previous four tests).*

☐ **YES** ☒ **NO**

Comments: None

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

Acute Partial Mix Factor (PMFa): **0.261** Chronic Partial Mix Factor (PMFc): **1**

1. Determine IWC – Acute (IWCa):

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

[(32.08 MGD x 1.547) / ((39.72 cfs x 0.261) + (32.08 MGD x 1.547))] x 100 = **82.7%**

Is IWCa < 1%? ☐ **YES** ☒ **NO (YES - Acute Tests Required OR NO - Chronic Tests Required)**

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

2a. Determine Target IWCa (If Acute Tests Required)

TIWCa = 82.7 / 0.3 = N/A

2b. Determine Target IWCc (If Chronic Tests Required)

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

[(32.08 MGD x 1.547) / ((39.72 cfs x 1) + (32.08 MGD x 1.547))] x 100 = **55.5%**

3. Determine Dilution Series

(NOTE – check Attachment C of WET SOP for dilution series based on TIWCa or TIWCc, whichever applies).

Dilution Series = 100%, 78%, 56%, 28%, and 14%.

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).

N/A

If WET limits will not be established, but reasonable potential was determined, indicate the rationale for not establishing WET limits:

N/A

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" (386-0400-001), SOPs and/or BPJ.

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/shift	Grab
DO	XXX	XXX	5.0 Inst Min	XXX	XXX	XXX	1/shift	Grab
TRC	XXX	XXX	XXX	0.12	XXX	0.41	1/shift	Grab
CBOD5 Nov 1 - Apr 30	6689	10702	XXX	25	40 Wkly Avg	50	5/week	24-Hr Composite
CBOD5 May 1 - Oct 31	3211	4816	XXX	12	18 Wkly Avg	24	5/week	24-Hr Composite
BOD5 Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	5/week	24-Hr Composite
TSS	8026	12040	XXX	30	45 Wkly Avg	60	5/week	24-Hr Composite
TSS Raw Sewage Influent	Report	XXX	XXX	Report	XXX	XXX	5/week	24-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10,000	3/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	3/week	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/month	Grab
Ammonia Nov 1 - Apr 30	2007	XXX	XXX	7.5	XXX	15	5/week	24-Hr Composite

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Ammonia May 1 - Oct 31	669	XXX	XXX	2.5	XXX	5.0	5/week	24-Hr Composite
Total Phosphorus	535	XXX	XXX	2.0	XXX	4.0	5/week	24-Hr Composite
Free Cyanide	XXX	XXX	XXX	XXX	Report	XXX	1/week	24-Hr Composite
Total Aluminum	XXX	XXX	XXX	XXX	Report	XXX	1/week	24-Hr Composite
Total Copper	XXX	XXX	XXX	XXX	Report	XXX	1/week	24-Hr Composite
Chloroform	XXX	XXX	XXX	XXX	Report	XXX	1/week	24-Hr Composite
Dibromochloromethane	XXX	XXX	XXX	XXX	Report	XXX	1/week	24-Hr Composite
PFOA (ng/L)	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab
PFOS (ng/L)	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab
PFBS (ng/L)	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab
HFPO-DA (ng/L)	XXX	XXX	XXX	XXX	Report	XXX	1/quarter	Grab

Compliance Sampling Location: At discharge from facility

Other Comments: None

Outfall 100 Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Daily when Discharging	Metered
Total Residual Chlorine (TRC)	XXX	XXX	XXX	0.12	XXX	0.41	Daily when Discharging	Grab
Carbonaceous Biochemical Oxygen Demand (CBOD5)	Report	Report	XXX	Report	Report	XXX	Daily when Discharging	Grab
Total Suspended Solids	Report	Report	XXX	Report	Report	XXX	Daily when Discharging	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	Daily when Discharging	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	Daily when Discharging	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	Daily when Discharging	Grab
Ammonia-Nitrogen	Report	XXX	XXX	Report	XXX	XXX	Daily when Discharging	Grab

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

All parameters shall be sampled after primary clarification, with the exception of Fecal Coliforms and E. Coli, which shall be sampled after disinfection and mixing with Outfall 001.

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, to comply with Pennsylvania's Chesapeake Bay Tributary Strategy.

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Monthly	Annual	Monthly	Monthly Average	Maximum	Instant. Maximum		
Ammonia---N	Report	Report	XXX	Report	XXX	XXX	5/week	24-Hr Composite
Kjeldahl---N	Report	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Nitrate-Nitrite as N	Report	XXX	XXX	Report	XXX	XXX	2/week	24-Hr Composite
Total Nitrogen	Report	Report	XXX	Report	XXX	XXX	1/month	Calculation
Total Phosphorus	Report	Report	XXX	Report	XXX	XXX	5/week	24-Hr Comp
Net Total Nitrogen	XXX	619,048	XXX	XXX	XXX	XXX	1/month	Calculation
Net Total Phosphorus	XXX	77,381	XXX	XXX	XXX	XXX	1/month	Calculation

Compliance Sampling Location: At discharge from facility

Other Comments: On-lot disposal system offsets for TN are 3,525 lbs/year based on 141 EDUs. Any additional offsets claimed during the permit term must be reported as outlined in Part C of this permit.

Tools and References Used to Develop Permit	
☒	WQM for Windows Model (see Attachment)
☒	Toxics Management Spreadsheet (see Attachment)
☒	TRC Model Spreadsheet (see Attachment)
☐	Temperature Model Spreadsheet (see Attachment)
☒	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☒	Technical Guidance for the Development and Specification of Effluent Limitations, 386-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 386-2000-019, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 386-2000-018, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 386-2183-001, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 386-2183-002, 12/97.
☐	Pennsylvania CSO Policy, 386-2000-002, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 386-2000-008, 4/97.
☒	Determining Water Quality-Based Effluent Limits, 386-2000-004, 12/97.
☐	Implementation Guidance Design Conditions, 386-2000-007, 9/97.
☒	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 386-2000-016, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 386-2000-012, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 386-2000-009, 3/99.
☒	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 386-2000-015, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 386-2000-022, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 386-2000-013, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 386-2000-011, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 386-2000-001, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 386-2000-021, 10/97.
☐	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 386-2000-020, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 386-2000-005, 3/99.
☐	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 386-2000-010, 3/1999.
☐	Design Stream Flows, 386-2000-003, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 386-2000-006, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 386-3200-001, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☒	SOP: BCW-PMT-002, BCW-PMT-031, BCW-PMT-033, BCW-PMT-037
☐	Other:

Lockwood, Benjamin

From: Steckler, Zachary
Sent: Wednesday, May 22, 2024 7:56 AM
To: Lockwood, Benjamin
Cc: Martin, Daniel
Subject: RE: PA DEP NPDES Permit Document Transmission Notice for EPA Review

Follow Up Flag: Follow up
Flag Status: Completed

Ben,

I have a question about the Lancaster draft permit. For TN offsets under Part A, it lists "3,475 lbs/year based on 87 EDUs". The 3,475 lbs/year looks correct to me, but I think the EDUs should be 139 (87+52) to reflect offsets that were previously included in their Cap load. Please let me know if you have any questions, or if I'm missing something.

Zach

Zachary Steckler, E.I.T. ***(he/him)*** | Project Manager
Department of Environmental Protection | RCSOB
Bureau of Clean Water | NPDES Permitting Division
P.O. Box 8774 | Harrisburg, PA 17105-8774
Phone: 717.787.4003 | Fax: 717.772.5156
www.dep.pa.gov

From: eFACTS_Mailer@state.pa.us <eFACTS_Mailer@state.pa.us>
Sent: Saturday, May 18, 2024 3:00 AM
To: R3_WD_PA_Permits@epa.gov
Cc: Lockwood, Benjamin <blockwood@pa.gov>; Martin, Daniel <daniemarti@pa.gov>; Furjanic, Sean <sefurjanic@pa.gov>
Subject: PA DEP NPDES Permit Document Transmission Notice for EPA Review

The following permit documents have been successfully transferred from PADEP's Water Management System (WMS) to the PADEP FTP Site for review by EPA:

Permit Number	Auth Id	Facility Name	No. of Documents	Status	Reason Sent to EPA	Region
PA0026743	1060169	LANCASTER CITY STP	4	Draft	Major Facility, Significant CB Discharge, Pretreatment	SCRO
PA0081949	1445130	BROWNSTOWN WWTP	4	Draft	Significant CB Discharge	SCRO

Lockwood, Benjamin

From: Fulton, Jennifer <Fulton.Jennifer@epa.gov>
Sent: Thursday, June 13, 2024 3:57 PM
To: Lockwood, Benjamin
Cc: Martin, Daniel; Bebenek, Maria; Furjanic, Sean; Schumack, Maria; Moncavage, Carissa (she/her/hers); Hales, Dana; Shuart, Ryan
Subject: [External] Lancaster City STP (PA0026743)
Attachments: CSO_LETTER_TO_EPA_09June2020_.pdf; 4 15 POLICY WP Memo to Begin Rulemaking Chapter 92a.pdf

Follow Up Flag: Follow up
Flag Status: Completed

ATTENTION: *This email message is from an external sender. Do not open links or attachments from unknown senders. To report suspicious email, use the Report Phishing button in Outlook.*

Benjamin,

According to our Memorandum of Agreement, the Environmental Protection Agency (EPA) Region III has received the draft National Pollutant Discharge Elimination System (NPDES) permit for:

Lancaster City STP
NPDES Number: PA0026743
EPA Received: 5/21/2024
30-day response date: 6/20/2024

This is a major permit that discharges to Conestoga River and Mill Creek and is affected by the Chesapeake Bay TMDL. EPA has chosen to perform a limited review based on the following: combined sewer overflow (CSO) requirements, Pretreatment, requirements of the Chesapeake Bay TMDL, and whole effluent toxicity. EPA has completed its review and offers the following comments:

Regarding the CSO Provisions in the Fact Sheet and Permit:

1. We would like to note that EPA's review of the CSO portion of this permit reflects the recent understanding between the EPA Region III Water Director and PADEP Deputy Secretary for Water Programs regarding how to proceed with reissuance of permits with CSOs and LTCPs consistent with Section 402(q) of the CWA and EPA's 1994 CSO Policy. As you know, consistent with that understanding, PADEP has committed to making changes to its CSO program as noted in its June 9, 2020 letter to EPA and its April 15, 2020 memo (see attached). PADEP's memo documents its commitment to initiate the regulatory revisions process for modifying its compliance schedule regulations at 25 Pa. Code § 92a.51(a), so that schedules for LTCP implementation can be placed in an NPDES permit. PADEP will draft CSO permits using the template language agreed upon by PADEP and EPA. EPA notes that once PADEP's compliance schedule regulations are revised and final, the template language will need to be modified to incorporate a CSO compliance schedule that meets the requirements of 40 CFR 122.47 and includes the final compliance date for LTCP implementation. EPA's Phase 2 e-Reporting rule requires electronic reporting of Sewer Overflow/Bypass Events, and PADEP will need to make modifications to this template that will be necessary to address the requirements of the e-Reporting rule that is effective at the time that the permit is issued.

In addition, consistent with the understanding between EPA and PADEP, since PADEP's proposed seasonal E. coli became effective in March 2021, PADEP will begin to incorporate E. coli monitoring in subsequently reissued NPDES permits and ensure it is included in CSO post-construction compliance monitoring (PCCM) plans to verify compliance with water quality standards and designated uses. Consistent with the CSO Policy, EPA notes that there will also need to be a requirement added to implement a PCCM plan with an established schedule in NPDES permits once a facility begins to implement its approved plan.

EPA offers the following CSO comments based on the requirements of the CSO-Related Bypass, Outfall 100:

As discussed during our June 11, 2024, call, Outfall 100 is a CSO-related bypass and the submitted draft permit has it categorized as a CSO Outfall. In the CSO Policy, a CSO-related bypass can be authorized in a permit if it is part of the LTCP development and if it meets a minimum level of treatment, including primary clarification and solids and floatables removal and disposal, and disinfection where necessary to meet water quality standards (WQS)/protect designated uses (including removal of disinfection chemical residuals where necessary). Any discharge from a CSO-related bypass is subject to applicable WQS as well as any site-specific TBELs the permitting authority requires. If the discharge from Outfall 100 is comingled prior to the sample location of the primary sewage effluent outfall, Outfall 001, separate specific Outfall 100 limitations and monitoring requirements may not be required. However, separate limitations and monitoring requirements are required if the bypass discharge is comingled after the sampling point at Outfall 001. Revisions to the permit and fact sheet are necessary to address this discrepancy including, requirements in Part C.II, Combined Sewer Outfalls and Part A, Limitations. EPA would like clarification on the determined sampling location and manner in which Outfall 100 will need to be permitted.

Regarding Pretreatment:

2. EPA makes a minor note that the last four digits of EPA's zip code is incorrect for the Pretreatment address in Section C.III.H of the permit. 19103-2029 should be changed to 19103-2852.

Should you have any questions, please feel free to reach out to Ryan Shuart, copied on this email. If there are any additional changes to the permit documents, please be sure to reach out to EPA as additional review may be necessary.

Thank you,
Jen Fulton

Jennifer Fulton (she/her)
Acting Chief, Clean Water Branch
US EPA Mid-Atlantic Region
Phone 304-234-0248
Email fulton.jennifer@epa.gov

Lockwood, Benjamin

From: Volkay_Hilditch, Christine M <CHilditch@cityoflancasterpa.gov>
Sent: Friday, July 12, 2024 12:57 PM
To: Lockwood, Benjamin
Cc: Stawiarski, Summer; EP, NPDES Permits; R3_WD_PA_Permits@epa.gov; Harner, Bryan; Runk, Zachary; Zechman, Allison; Handwerger, Barry; Andes, Fredric; Martin, Daniel; Bebenek, Maria; Bransteitter Davis, Angela
Subject: Re: [External] Re: City of Lancaster PA0026743 Draft NPDES Permit
Attachments: CIty of Lancaster PA0026743 Fact Sheet _070324.pdf

Importance: High

Follow Up Flag: Follow up
Flag Status: Completed

Ben

Please find attached the mark-up of the fact sheet.

Thanks

Christine Volkay-Hilditch, P.E., BCEE, LO | Deputy Director of Public Works
Utilities Division
Department of Public Works
1220 New Danville Pike, Lancaster, PA 17603
Office (717) 293-5531 | Mobile (717) 989-3707 | Fax (717) 293-5545
childitch@cityoflancasterpa.gov | cityoflancasterpa.gov

Please note that our website and email domain have changed to .gov.

From: Lockwood, Benjamin <blockwood@pa.gov>
Sent: Friday, June 14, 2024 3:53 PM
To: Volkay_Hilditch, Christine M <CHilditch@cityoflancasterpa.gov>

Cc: Stawiarski, Summer <sustawiars@pa.gov>; EP, NPDES Permits <RA-EPNPDES_PERMITS@pa.gov>; R3_WD_PA_Permits@epa.gov <R3_WD_PA_Permits@epa.gov>; Harner, Bryan <BHarner@cityoflancasterpa.gov>; Runk, Zachary <ZRunk@cityoflancasterpa.gov>; Zechman, Allison <AZechman@cityoflancasterpa.gov>; Handwerger, Barry <BHandwerger@cityoflancasterpa.gov>; Andes, Fredric <Fredric.Andes@btlaw.com>; Martin, Daniel <daniemarti@pa.gov>; Bebenek, Maria <mbebenek@pa.gov>; Bransteitter Davis, Angela <anbranstei@pa.gov>
Subject: RE: [External] Re: City of Lancaster PA0026743 Draft NPDES Permit

Christine,

DEP's regulations allow for an extension of the comment period for one 15-day period. The draft NPDES was published on 6/1/24, with the comment period ending 7/1/24. The comment period will be extended until 7/16/24. You do not have to have the free cyanide sampling completed before the comment period end date. You can submit your comments, noting that you would like to perform additional sampling before you agree to the effluent limitation. Once you have the sampling results you can contact us and let us know how you would like to proceed. Please let me know if you have any additional questions.

Thanks,
Ben

Benjamin Lockwood | Environmental Engineering Specialist
Department of Environmental Protection
Southcentral Regional Office
909 Elmerton Avenue | Hbg, PA 17110
Phone: 717.705.4782 | Fax: 717.705.4760
www.depweb.state.pa.us
24-hour toll free Emergency Response number for SCRO: 1-800-541-2050.

From: Volkay_Hilditch, Christine M <CHilditch@cityoflancasterpa.gov>
Sent: Thursday, June 13, 2024 1:34 PM
To: Lockwood, Benjamin <blockwood@pa.gov>
Cc: Stawiarski, Summer <sustawiars@pa.gov>; EP, NPDES Permits <RA-EPNPDES_PERMITS@pa.gov>; R3_WD_PA_Permits@epa.gov; Harner, Bryan <BHarner@cityoflancasterpa.gov>; Runk, Zachary <ZRunk@cityoflancasterpa.gov>; Zechman, Allison <AZechman@cityoflancasterpa.gov>; Handwerger, Barry <BHandwerger@cityoflancasterpa.gov>; Andes, Fredric <Fredric.Andes@btlaw.com>
Subject: [External] Re: City of Lancaster PA0026743 Draft NPDES Permit
Importance: High

ATTENTION: *This email message is from an external sender. Do not open links or attachments from unknown senders. To report suspicious email, use the Report Phishing button in Outlook.*
Hi Ben

I am checking in on the NPDES permit comments. Following your discussion with Bryan, Zach implemented the additional testing for free cyanide. Testing is continuing., taking two samples per week.

Lancaster will need an additional 30 days to comment on the permit, pending these results. Please let us know if our legal counsel has to file an appeal or if this email will suffice to extend the comment period an additional 30 days. City solicitor Barry Handwerger and environmental counsel Fred Andes are copied on this email too.

Thanks for your help!

Christine Volkay-Hilditch, P.E., BCEE, LO | Deputy Director of Public Works
Utilities Division
Department of Public Works
1220 New Danville Pike, Lancaster, PA 17603
Office (717) 293-5531 | Mobile (717) 989-3707 | Fax (717) 293-5545
childitch@cityoflancasterpa.gov | cityoflancasterpa.gov

Please note that our website and email domain have changed to .gov.

From: Lockwood, Benjamin <blockwood@pa.gov>
Sent: Friday, May 17, 2024 3:42 PM
To: Volkay_Hilditch, Christine M <CHilditch@cityoflancasterpa.gov>
Cc: Stawiarski, Summer <sustawiars@pa.gov>; EP, NPDES Permits <RA-EPNPDES_PERMITS@pa.gov>; R3_WD_PA_Permits@epa.gov <R3_WD_PA_Permits@epa.gov>
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Ms. Volkay-Hilditch,

In response to the receipt of your NPDES permit application, the Department of Environmental Protection (DEP) has made a tentative decision to issue the permit. Attached to this email is the draft NPDES permit document, a fact sheet explaining the basis for DEP's tentative decision, a public notice for posting, and a cover letter to accompany the draft permit. DEP will take comments on this proposed action for 30 days following publication of the draft permit in the PA Bulletin. Please contact me at this email address or at the number below to confirm your receipt of the draft permit.

Sincerely,
Benjamin Lockwood

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Lockwood, Benjamin

From: Volkay_Hilditch, Christine M <CHilditch@cityoflancasterpa.gov>
Sent: Friday, July 12, 2024 12:56 PM
To: Lockwood, Benjamin
Cc: Stawiarski, Summer; EP, NPDES Permits; R3_WD_PA_Permits@epa.gov; Harner, Bryan; Runk, Zachary; Zechman, Allison; Handwerger, Barry; Andes, Fredric; Martin, Daniel; Bebenek, Maria; Bransteitter Davis, Angela
Subject: Re: [External] Re: City of Lancaster PA0026743 Draft NPDES Permit
Attachments: COL_PA0026743_Additional Free Cyanide Testing.pdf; City of Lancaster PA0026743 NPDES Permit Draft_070324.pdf; Lancaster Draft Permit Review_071124.pdf

Importance: High

Follow Up Flag: Follow up
Flag Status: Completed

Good Afternoon Ben

Please find attached the City's comments on the draft NPDES permit.

Please contact Bryan Harner or me if you need additional information.

This email also contains the permit mark-up and the cyanide results attachments reference in the letter A second email will contain the fact sheet mark-up.

Thank you for your attention.

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CITY OF LANCASTER

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Lockwood, Benjamin

From: Harner, Bryan <BHarner@cityoflancasterpa.gov>
Sent: Tuesday, July 16, 2024 1:34 PM
To: Lockwood, Benjamin
Cc: Volkay_Hilditch, Christine M; Stawiarski, Summer; EP, NPDES Permits; R3 _WD_PA_Permits@epa.gov; Runk, Zachary; Zechman, Allison; Handwerger, Barry; Andes, Fredric; Martin, Daniel; Bebenek, Maria; Bransteitter Davis, Angela
Subject: Re: [External] Re: City of Lancaster PA0026743 Draft NPDES Permit
Attachments: Lancaster Draft Permit Review_071124.pdf

Follow Up Flag: Follow up
Flag Status: Completed

Ben,

With today being the last day for comment, we did want to expand our comments related to NPDES Permit PA0026743; Item No.5, contained in our attached July 11th letter.

Item No.5 addresses the fact that the draft permit doesn't contain the CSO-related Bypass (Outfall 100) utilization and sampling standards contained in the current permit. We also wanted to expand this comment to request that sampling for fecal coliform only be required when Outfall 100 is utilized during 1st shift working hours Monday-Friday. This is requested as sampling for fecal coliforms after hours when rainstorms pop up and a CSO event can occur is difficult considering certified Lab Tech availability, allowable hold time after the sample is collected (6 hours), and scheduling of the post reaction read within the necessary 18-21 hour window. CBOD5, TSS, and NH3 will always be sampled and monitored as the hold times are a lot longer making analysis feasible.

Clarification on the event sampling is also requested. If use of Outfall 100 would span two days (11PM day one to 1AM day two), please clarify this is only considered one bypass and only one round of sampling is required and not two.

If a call is needed to further describe and review the request, please reach out.

Thanks,
Bryan

Bryan Harner
Utility Project Manager
Public Works Department
1220 New Danville Pike
Lancaster, PA 17603
(717) 989-3638
bharner@cityoflancasterpa.gov | cityoflancasterpa.gov

CITY OF LANCASTER

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: **City of Lancaster WWTP** NPDES Permit No.: **PA0026743** Outfall No.: **001**

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

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
32.08	284	7.5						

					0 if left blank		*0.5 if left blank*		*0 if left blank*			*1 if left blank*	
	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		831									
	Chloride (PWS)	mg/L		207									
	Bromide	mg/L	<	0.5									
	Sulfate (PWS)	mg/L		72.9									
	Fluoride (PWS)	mg/L											
Group 2	Total Aluminum	µg/L		230									
	Total Antimony	µg/L	<	1									
	Total Arsenic	µg/L	<	1.6									
	Total Barium	µg/L		27									
	Total Beryllium	µg/L	<	0.5									
	Total Boron	µg/L		183									
	Total Cadmium	µg/L	<	0.00016									
	Total Chromium (III)	µg/L	<	1									
	Hexavalent Chromium	µg/L		0.19									
	Total Cobalt	µg/L	<	2.5									
	Total Copper	µg/L		11.4									
	Free Cyanide	µg/L		2.08									
	Total Cyanide	µg/L	<	5									
	Dissolved Iron	µg/L		30									
	Total Iron	µg/L		80									
	Total Lead	µg/L	<	1									
	Total Manganese	µg/L		28									
	Total Mercury	µg/L		0.0055									
	Total Nickel	µg/L		3.8									
	Total Phenols (Phenolics) (PWS)	µg/L	<	220									
	Total Selenium	µg/L	<	2									
	Total Silver	µg/L	<	1									
	Total Thallium	µg/L	<	0.5									
	Total Zinc	µg/L		26.7									
	Total Molybdenum	µg/L		8.7									
	Acrolein	µg/L	<	0.73									
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<	0.37									
	Benzene	µg/L	<	0.1									
	Bromoform	µg/L	<	0.16									

Group 3	Carbon Tetrachloride	µg/L	<	0.1									
	Chlorobenzene	µg/L	<	0.13									
	Chlorodibromomethane	µg/L		0.68									
	Chloroethane	µg/L	<	0.15									
	2-Chloroethyl Vinyl Ether	µg/L	<	0.64									
	Chloroform	µg/L		4.5									
	Dichlorobromomethane	µg/L		1.3									
	1,1-Dichloroethane	µg/L	<	0.1									
	1,2-Dichloroethane	µg/L	<	0.18									
	1,1-Dichloroethylene	µg/L	<	0.22									
	1,2-Dichloropropane	µg/L	<	0.15									
	1,3-Dichloropropylene	µg/L	<	0.14									
	1,4-Dioxane	µg/L		0.44									
	Ethylbenzene	µg/L	<	0.19									
	Methyl Bromide	µg/L	<	0.12									
	Methyl Chloride	µg/L	<	0.16									
	Methylene Chloride	µg/L		1.3									
	1,1,2,2-Tetrachloroethane	µg/L	<	0.23									
	Tetrachloroethylene	µg/L	<	0.2									
	Toluene	µg/L		0.19									
	1,2-trans-Dichloroethylene	µg/L	<	0.15									
	1,1,1-Trichloroethane	µg/L	<	0.13									
	1,1,2-Trichloroethane	µg/L	<	0.12									
	Trichloroethylene	µg/L	<	0.15									
	Vinyl Chloride	µg/L	<	0.14									
Group 4	2-Chlorophenol	µg/L	<	0.58									
	2,4-Dichlorophenol	µg/L	<	0.45									
	2,4-Dimethylphenol	µg/L	<	2.9									
	4,6-Dinitro-o-Cresol	µg/L	<	1.3									
	2,4-Dinitrophenol	µg/L	<	2.3									
	2-Nitrophenol	µg/L	<	0.48									
	4-Nitrophenol	µg/L	<	1.6									
	p-Chloro-m-Cresol	µg/L	<	0.44									
	Pentachlorophenol	µg/L	<	1.8									
	Phenol	µg/L	<	0.22									
	2,4,6-Trichlorophenol	µg/L	<	0.35									
Group 5	Acenaphthene	µg/L	<	0.32									
	Acenaphthylene	µg/L	<	0.33									
	Anthracene	µg/L	<	0.33									
	Benzidine	µg/L	<	22.2									
	Benzo(a)Anthracene	µg/L	<	0.3									
	Benzo(a)Pyrene	µg/L	<	0.35									
	3,4-Benzofluoranthene	µg/L	<	0.41									
	Benzo(ghi)Perylene	µg/L	<	0.36									
	Benzo(k)Fluoranthene	µg/L	<	0.37									
	Bis(2-Chloroethoxy)Methane	µg/L	<	0.52									
	Bis(2-Chloroethyl)Ether	µg/L	<	0.34									
	Bis(2-Chloroisopropyl)Ether	µg/L	<	0.49									
	Bis(2-Ethylhexyl)Phthalate	µg/L	<	0.8									
	4-Bromophenyl Phenyl Ether	µg/L	<	0.38									
	Butyl Benzyl Phthalate	µg/L	<	0.32									
	2-Chloronaphthalene	µg/L	<	0.33									
	4-Chlorophenyl Phenyl Ether	µg/L	<	0.34									
	Chrysene	µg/L	<	0.34									
	Dibenzo(a,h)Anthrancene	µg/L	<	0.29									
	1,2-Dichlorobenzene	µg/L	<	0.1									
	1,3-Dichlorobenzene	µg/L	<	0.1									
	1,4-Dichlorobenzene	µg/L	<	0.15									
	3,3-Dichlorobenzidine	µg/L	<	2.8									
	Diethyl Phthalate	µg/L	<	0.3									
	Dimethyl Phthalate	µg/L	<	0.37									
	Di-n-Butyl Phthalate	µg/L	<	0.31									
	2,4-Dinitrotoluene	µg/L	<	0.37									

	2,6-Dinitrotoluene	µg/L	<	0.43									
	Di-n-Octyl Phthalate	µg/L	<	0.3									
	1,2-Diphenylhydrazine	µg/L	<	0.31									
	Fluoranthene	µg/L	<	0.25									
	Fluorene	µg/L	<	0.36									
	Hexachlorobenzene	µg/L	<	0.3									
	Hexachlorobutadiene	µg/L	<	0.29									
	Hexachlorocyclopentadiene	µg/L	<	1									
	Hexachloroethane	µg/L	<	0.31									
	Indeno(1,2,3-cd)Pyrene	µg/L	<	0.29									
	Isophorone	µg/L	<	0.38									
	Naphthalene	µg/L	<	0.32									
	Nitrobenzene	µg/L	<	0.6									
	n-Nitrosodimethylamine	µg/L	<	0.44									
	n-Nitrosodi-n-Propylamine	µg/L	<	0.53									
	n-Nitrosodiphenylamine	µg/L	<	1									
	Phenanthrene	µg/L	<	0.33									
	Pyrene	µg/L	<	0.34									
	1,2,4-Trichlorobenzene	µg/L	<	0.26									
Group 6	Aldrin	µg/L	<	0.0082									
	alpha-BHC	µg/L	<	0.011									
	beta-BHC	µg/L	<	0.011									
	gamma-BHC	µg/L	<	0.016									
	delta BHC	µg/L	<	0.012									
	Chlordane	µg/L	<	0.083									
	4,4-DDT	µg/L	<	0.011									
	4,4-DDE	µg/L	<	0.01									
	4,4-DDD	µg/L	<	0.011									
	Dieldrin	µg/L	<	0.011									
	alpha-Endosulfan	µg/L	<	0.01									
	beta-Endosulfan	µg/L	<	0.014									
	Endosulfan Sulfate	µg/L	<	0.011									
	Endrin	µg/L	<	0.011									
	Endrin Aldehyde	µg/L	<	0.013									
	Heptachlor	µg/L	<	0.015									
	Heptachlor Epoxide	µg/L	<	0.011									
	PCB-1016	µg/L	<										
	PCB-1221	µg/L	<										
	PCB-1232	µg/L	<										
	PCB-1242	µg/L	<										
	PCB-1248	µg/L	<										
	PCB-1254	µg/L	<										
	PCB-1260	µg/L	<										
	PCBs, Total	µg/L	<										
	Toxaphene	µg/L	<	0.093									
	2,3,7,8-TCDD	ng/L	<	0.005									
Group 7	Gross Alpha	pCi/L											
	Total Beta	pCi/L	<										
	Radium 226/228	pCi/L	<										
	Total Strontium	µg/L	<										
	Total Uranium	µg/L	<										
	Osmotic Pressure	mOs/kg											

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Stream / Surface Water Information

City of Lancaster WWTP, NPDES Permit No. PA0026743, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Conestoga River**

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	007548	16.3	227.3	331			Yes
End of Reach 1	007548	9.02	205	393			Yes

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

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	16.3	0.12	39.72									272.5	8.3		
End of Reach 1	9.02	0.12	47.16									272.5	8.3		

Q_h

Location	RMI	LFY (cfs/mi^2)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	16.3														
End of Reach 1	9.02														

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Model Results

City of Lancaster WWTP, NPDES Permit No. PA0026743, Outfall 001

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

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.261 Analysis Hardness (mg/l): 282.01 Analysis pH: 7.57

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	907	
Total Antimony	0	0		0	1,100	1,100	1,330	
Total Arsenic	0	0		0	340	340	411	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	25,383	
Total Boron	0	0		0	8,100	8,100	9,790	
Total Cadmium	0	0		0	5.512	6.12	7.4	Chem Translator of 0.901 applied
Total Chromium (III)	0	0		0	1331.885	4,215	5,094	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	19.7	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	115	
Total Copper	0	0		0	35.696	37.2	44.9	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	22	22.0	26.6	
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	195.550	306	369	Chem Translator of 0.64 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	1.99	Chem Translator of 0.85 applied
Total Nickel	0	0		0	1125.626	1,128	1,363	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	19.137	22.5	27.2	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	78.6	
Total Zinc	0	0		0	282.079	288	349	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	3.63	

Acrylonitrile	0	0		0	650	650	786	
Benzene	0	0		0	640	640	774	
Bromoform	0	0		0	1,800	1,800	2,176	
Carbon Tetrachloride	0	0		0	2,800	2,800	3,384	
Chlorobenzene	0	0		0	1,200	1,200	1,450	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	21,756	
Chloroform	0	0		0	1,900	1,900	2,297	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	15,000	15,000	18,130	
1,1-Dichloroethylene	0	0		0	7,500	7,500	9,065	
1,2-Dichloropropane	0	0		0	11,000	11,000	13,296	
1,3-Dichloropropylene	0	0		0	310	310	375	
Ethylbenzene	0	0		0	2,900	2,900	3,505	
Methyl Bromide	0	0		0	550	550	665	
Methyl Chloride	0	0		0	28,000	28,000	33,843	
Methylene Chloride	0	0		0	12,000	12,000	14,504	
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	1,209	
Tetrachloroethylene	0	0		0	700	700	846	
Toluene	0	0		0	1,700	1,700	2,055	
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	8,219	
1,1,1-Trichloroethane	0	0		0	3,000	3,000	3,626	
1,1,2-Trichloroethane	0	0		0	3,400	3,400	4,110	
Trichloroethylene	0	0		0	2,300	2,300	2,780	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	560	560	677	
2,4-Dichlorophenol	0	0		0	1,700	1,700	2,055	
2,4-Dimethylphenol	0	0		0	660	660	798	
4,6-Dinitro-o-Cresol	0	0		0	80	80.0	96.7	
2,4-Dinitrophenol	0	0		0	660	660	798	
2-Nitrophenol	0	0		0	8,000	8,000	9,670	
4-Nitrophenol	0	0		0	2,300	2,300	2,780	
p-Chloro-m-Cresol	0	0		0	160	160	193	
Pentachlorophenol	0	0		0	15.441	15.4	18.7	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	460	460	556	
Acenaphthene	0	0		0	83	83.0	100	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	300	300	363	
Benzo(a)Anthracene	0	0		0	0.5	0.5	0.6	
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	36,261	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	5,439	
4-Bromophenyl Phenyl Ether	0	0		0	270	270	326	
Butyl Benzyl Phthalate	0	0		0	140	140	169	

2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	820	820	991	
1,3-Dichlorobenzene	0	0		0	350	350	423	
1,4-Dichlorobenzene	0	0		0	730	730	882	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	4,000	4,000	4,835	
Dimethyl Phthalate	0	0		0	2,500	2,500	3,022	
Di-n-Butyl Phthalate	0	0		0	110	110	133	
2,4-Dinitrotoluene	0	0		0	1,600	1,600	1,934	
2,6-Dinitrotoluene	0	0		0	990	990	1,197	
1,2-Diphenylhydrazine	0	0		0	15	15.0	18.1	
Fluoranthene	0	0		0	200	200	242	
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	12.1	
Hexachlorocyclopentadiene	0	0		0	5	5.0	6.04	
Hexachloroethane	0	0		0	60	60.0	72.5	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	10,000	10,000	12,087	
Naphthalene	0	0		0	140	140	169	
Nitrobenzene	0	0		0	4,000	4,000	4,835	
n-Nitrosodimethylamine	0	0		0	17,000	17,000	20,548	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	300	300	363	
Phenanthrene	0	0		0	5	5.0	6.04	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	130	130	157	
Aldrin	0	0		0	3	3.0	3.63	
alpha-BHC	0	0		0	N/A	N/A	N/A	
beta-BHC	0	0		0	N/A	N/A	N/A	
gamma-BHC	0	0		0	0.95	0.95	1.15	
Chlordane	0	0		0	2.4	2.4	2.9	
4,4-DDT	0	0		0	1.1	1.1	1.33	
4,4-DDE	0	0		0	1.1	1.1	1.33	
4,4-DDD	0	0		0	1.1	1.1	1.33	
Dieldrin	0	0		0	0.24	0.24	0.29	
alpha-Endosulfan	0	0		0	0.22	0.22	0.27	
beta-Endosulfan	0	0		0	0.22	0.22	0.27	
Endosulfan Sulfate	0	0		0	N/A	N/A	N/A	
Endrin	0	0		0	0.086	0.086	0.1	
Endrin Aldehyde	0	0		0	N/A	N/A	N/A	
Heptachlor	0	0		0	0.52	0.52	0.63	
Heptachlor Epoxide	0	0		0	0.5	0.5	0.6	
Toxaphene	0	0		0	0.73	0.73	0.88	
2,3,7,8-TCDD	0	0		0	N/A	N/A	N/A	

☑ ***CFC*** CCT (min): ###### PMF: 1 Analysis Hardness (mg/l): 278.89 Analysis pH: 7.70

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	220	220	396	
Total Arsenic	0	0		0	150	150	270	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	7,381	
Total Boron	0	0		0	1,600	1,600	2,881	
Total Cadmium	0	0		0	0.501	0.58	1.04	Chem Translator of 0.866 applied
Total Chromium (III)	0	0		0	171.676	200	359	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	18.7	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	34.2	
Total Copper	0	0		0	21.514	22.4	40.3	Chem Translator of 0.96 applied
Free Cyanide	0	0		0	5.2	5.2	9.36	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	2,701	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	7.532	11.7	21.1	Chem Translator of 0.642 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	1.63	Chem Translator of 0.85 applied
Total Nickel	0	0		0	123.849	124	224	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	8.98	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	23.4	
Total Zinc	0	0		0	281.712	286	514	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	5.4	
Acrylonitrile	0	0		0	130	130	234	
Benzene	0	0		0	130	130	234	
Bromoform	0	0		0	370	370	666	
Carbon Tetrachloride	0	0		0	560	560	1,008	
Chlorobenzene	0	0		0	240	240	432	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	6,301	
Chloroform	0	0		0	390	390	702	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	5,581	
1,1-Dichloroethylene	0	0		0	1,500	1,500	2,701	
1,2-Dichloropropane	0	0		0	2,200	2,200	3,961	
1,3-Dichloropropylene	0	0		0	61	61.0	110	
Ethylbenzene	0	0		0	580	580	1,044	
Methyl Bromide	0	0		0	110	110	198	

Methyl Chloride	0	0		0	5,500	5,500	9,902	
Methylene Chloride	0	0		0	2,400	2,400	4,321	
1,1,2,2-Tetrachloroethane	0	0		0	210	210	378	
Tetrachloroethylene	0	0		0	140	140	252	
Toluene	0	0		0	330	330	594	
1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	2,521	
1,1,1-Trichloroethane	0	0		0	610	610	1,098	
1,1,2-Trichloroethane	0	0		0	680	680	1,224	
Trichloroethylene	0	0		0	450	450	810	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	110	110	198	
2,4-Dichlorophenol	0	0		0	340	340	612	
2,4-Dimethylphenol	0	0		0	130	130	234	
4,6-Dinitro-o-Cresol	0	0		0	16	16.0	28.8	
2,4-Dinitrophenol	0	0		0	130	130	234	
2-Nitrophenol	0	0		0	1,600	1,600	2,881	
4-Nitrophenol	0	0		0	470	470	846	
p-Chloro-m-Cresol	0	0		0	500	500	900	
Pentachlorophenol	0	0		0	11.846	11.8	21.3	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	91	91.0	164	
Acenaphthene	0	0		0	17	17.0	30.6	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	59	59.0	106	
Benzo(a)Anthracene	0	0		0	0.1	0.1	0.18	
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	10,802	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	910	910	1,638	
4-Bromophenyl Phenyl Ether	0	0		0	54	54.0	97.2	
Butyl Benzyl Phthalate	0	0		0	35	35.0	63.0	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	160	160	288	
1,3-Dichlorobenzene	0	0		0	69	69.0	124	
1,4-Dichlorobenzene	0	0		0	150	150	270	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	800	800	1,440	
Dimethyl Phthalate	0	0		0	500	500	900	
Di-n-Butyl Phthalate	0	0		0	21	21.0	37.8	
2,4-Dinitrotoluene	0	0		0	320	320	576	
2,6-Dinitrotoluene	0	0		0	200	200	360	

1,2-Diphenylhydrazine	0	0		0	3	3.0	5.4	
Fluoranthene	0	0		0	40	40.0	72.0	
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	3.6	
Hexachlorocyclopentadiene	0	0		0	1	1.0	1.8	
Hexachloroethane	0	0		0	12	12.0	21.6	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	2,100	2,100	3,781	
Naphthalene	0	0		0	43	43.0	77.4	
Nitrobenzene	0	0		0	810	810	1,458	
n-Nitrosodimethylamine	0	0		0	3,400	3,400	6,121	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	59	59.0	106	
Phenanthrene	0	0		0	1	1.0	1.8	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	26	26.0	46.8	
Aldrin	0	0		0	0.1	0.1	0.18	
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	0.008	
4,4-DDT	0	0		0	0.001	0.001	0.002	
4,4-DDE	0	0		0	0.001	0.001	0.002	
4,4-DDD	0	0		0	0.001	0.001	0.002	
Dieldrin	0	0		0	0.056	0.056	0.1	
alpha-Endosulfan	0	0		0	0.056	0.056	0.1	
beta-Endosulfan	0	0		0	0.056	0.056	0.1	
Endosulfan Sulfate	0	0		0	N/A	N/A	N/A	
Endrin	0	0		0	0.036	0.036	0.065	
Endrin Aldehyde	0	0		0	N/A	N/A	N/A	
Heptachlor	0	0		0	0.0038	0.004	0.007	
Heptachlor Epoxide	0	0		0	0.0038	0.004	0.007	
Toxaphene	0	0		0	0.0002	0.0002	0.0004	
2,3,7,8-TCDD	0	0		0	N/A	N/A	N/A	

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

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	500,000	500,000	N/A	
Chloride (PWS)	0	0		0	250,000	250,000	N/A	
Sulfate (PWS)	0	0		0	250,000	250,000	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	10.1	

Total Arsenic	0	0		0	10	10.0	18.0	
Total Barium	0	0		0	2,400	2,400	4,321	
Total Boron	0	0		0	3,100	3,100	5,581	
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	7.2	
Dissolved Iron	0	0		0	300	300	540	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	1,000	1,000	1,800	
Total Mercury	0	0		0	0.050	0.05	0.09	
Total Nickel	0	0		0	610	610	1,098	
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	0.43	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	3	3.0	5.4	
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	180	
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	10.3	
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	59.4	
1,2-Dichloropropane	0	0		0	N/A	N/A	N/A	
1,3-Dichloropropylene	0	0		0	N/A	N/A	N/A	
Ethylbenzene	0	0		0	68	68.0	122	
Methyl Bromide	0	0		0	100	100.0	180	
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	103	
1,2-trans-Dichloroethylene	0	0		0	100	100.0	180	
1,1,1-Trichloroethane	0	0		0	10,000	10,000	18,004	
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	54.0	
2,4-Dichlorophenol	0	0		0	10	10.0	18.0	
2,4-Dimethylphenol	0	0		0	100	100.0	180	
4,6-Dinitro-o-Cresol	0	0		0	2	2.0	3.6	
2,4-Dinitrophenol	0	0		0	10	10.0	18.0	
2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	N/A	N/A	N/A	
Phenol	0	0		0	4,000	4,000	7,201	
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A	
Acenaphthene	0	0		0	70	70.0	126	
Anthracene	0	0		0	300	300	540	
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	360	
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	0.18	
2-Chloronaphthalene	0	0		0	800	800	1,440	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	1,000	1,000	1,800	
1,3-Dichlorobenzene	0	0		0	7	7.0	12.6	
1,4-Dichlorobenzene	0	0		0	300	300	540	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	600	600	1,080	
Dimethyl Phthalate	0	0		0	2,000	2,000	3,601	
Di-n-Butyl Phthalate	0	0		0	20	20.0	36.0	
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	36.0	
Fluorene	0	0		0	50	50.0	90.0	
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	7.2	
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	61.2	

Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	10	10.0	18.0	
n-Nitrosodimethylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	N/A	N/A	N/A	
Phenanthrene	0	0		0	N/A	N/A	N/A	
Pyrene	0	0		0	20	20.0	36.0	
1,2,4-Trichlorobenzene	0	0		0	0.07	0.07	0.13	
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	7.56	
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	36.0	
beta-Endosulfan	0	0		0	20	20.0	36.0	
Endosulfan Sulfate	0	0		0	20	20.0	36.0	
Endrin	0	0		0	0.03	0.03	0.054	
Endrin Aldehyde	0	0		0	1	1.0	1.8	
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	
2,3,7,8-TCDD	0	0		0	N/A	N/A	N/A	

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

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	N/A	N/A	N/A	
Total Arsenic	0	0		0	N/A	N/A	N/A	
Total Barium	0	0		0	N/A	N/A	N/A	
Total Boron	0	0		0	N/A	N/A	N/A	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Free Cyanide	0	0		0	N/A	N/A	N/A	

Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	N/A	N/A	N/A	
Total Nickel	0	0		0	N/A	N/A	N/A	
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	0.06	0.06	0.28	
Benzene	0	0		0	0.58	0.58	2.75	
Bromoform	0	0		0	7	7.0	33.2	
Carbon Tetrachloride	0	0		0	0.4	0.4	1.9	
Chlorobenzene	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	0	0		0	0.8	0.8	3.79	
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	4.5	
1,2-Dichloroethane	0	0		0	9.9	9.9	46.9	
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,2-Dichloropropane	0	0		0	0.9	0.9	4.27	
1,3-Dichloropropylene	0	0		0	0.27	0.27	1.28	
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	94.8	
1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	0.95	
Tetrachloroethylene	0	0		0	10	10.0	47.4	
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	2.61	
Trichloroethylene	0	0		0	0.6	0.6	2.84	
Vinyl Chloride	0	0		0	0.02	0.02	0.095	
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	0.14	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	1.5	1.5	7.11	
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	0.0005	
Benzo(a)Anthracene	0	0		0	0.001	0.001	0.005	
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	0.0005	
3,4-Benzofluoranthene	0	0		0	0.001	0.001	0.005	
Benzo(k)Fluoranthene	0	0		0	0.01	0.01	0.047	
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	0.14	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	1.52	
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A	
Butyl Benzyl Phthalate	0	0		0	N/A	N/A	N/A	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	0.12	0.12	0.57	
Dibenzo(a,h)Anthrancene	0	0		0	0.0001	0.0001	0.0005	
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	0.24	
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	0.24	
2,6-Dinitrotoluene	0	0		0	0.05	0.05	0.24	
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	0.14	
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	0.0004	
Hexachlorobutadiene	0	0		0	0.01	0.01	0.047	
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A	
Hexachloroethane	0	0		0	0.1	0.1	0.47	
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	0.005	
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	0.003	
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	0.024	
n-Nitrosodiphenylamine	0	0		0	3.3	3.3	15.6	
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	0.000004	

alpha-BHC	0	0		0	0.0004	0.0004	0.002	
beta-BHC	0	0		0	0.008	0.008	0.038	
gamma-BHC	0	0		0	N/A	N/A	N/A	
Chlordane	0	0		0	0.0003	0.0003	0.001	
4,4-DDT	0	0		0	0.00003	0.00003	0.0001	
4,4-DDE	0	0		0	0.00002	0.00002	0.00009	
4,4-DDD	0	0		0	0.0001	0.0001	0.0005	
Dieldrin	0	0		0	0.000001	0.000001	0.000005	
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	0.00003	
Heptachlor Epoxide	0	0		0	0.00003	0.00003	0.0001	
Toxaphene	0	0		0	0.0007	0.0007	0.003	
2,3,7,8-TCDD	0	0		0	5E-09	5.00E-09	2.37E-08	

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

No. Samples/Month: 4

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Total Aluminum	Report	Report	Report	Report	Report	µg/L	750	AFC	Discharge Conc > 10% WQBEL (no RP)
Total Copper	Report	Report	Report	Report	Report	µg/L	37.2	AFC	Discharge Conc > 10% WQBEL (no RP)
Free Cyanide	Report	Report	Report	Report	Report	µg/L	7.2	THH	Discharge Conc > 25% WQBEL (no RP)
Chloroform	Report	Report	Report	Report	Report	µg/L	10.3	THH	Discharge Conc > 25% WQBEL (no RP)
Dichlorobromomethane	Report	Report	Report	Report	Report	µg/L	4.5	CRL	Discharge Conc > 25% WQBEL (no RP)

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

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

Pollutants	Governing WQBEL	Units	Comments
Total Dissolved Solids (PWS)	N/A	N/A	PWS Not Applicable

Chloride (PWS)	N/A	N/A	PWS Not Applicable
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Total Antimony	N/A	N/A	Discharge Conc < TQL
Total Arsenic	N/A	N/A	Discharge Conc < TQL
Total Barium	4,321	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	2,881	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cadmium	1.04	µg/L	Discharge Conc < TQL
Total Chromium (III)	359	µg/L	Discharge Conc < TQL
Hexavalent Chromium	16.3	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cobalt	34.2	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	540	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	2,701	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	21.1	µg/L	Discharge Conc < TQL
Total Manganese	1,800	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	0.09	µg/L	Discharge Conc ≤ 10% WQBEL
Total Nickel	224	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	PWS Not Applicable
Total Selenium	8.98	µg/L	Discharge Conc < TQL
Total Silver	22.5	µg/L	Discharge Conc ≤ 10% WQBEL
Total Thallium	0.43	µg/L	Discharge Conc < TQL
Total Zinc	288	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS
Acrolein	3.0	µg/L	Discharge Conc < TQL
Acrylonitrile	0.28	µg/L	Discharge Conc < TQL
Benzene	2.75	µg/L	Discharge Conc < TQL
Bromoform	33.2	µg/L	Discharge Conc < TQL
Carbon Tetrachloride	1.9	µg/L	Discharge Conc < TQL
Chlorobenzene	180	µg/L	Discharge Conc < TQL
Chlorodibromomethane	3.79	µg/L	Discharge Conc ≤ 25% WQBEL
Chloroethane	N/A	N/A	No WQS
2-Chloroethyl Vinyl Ether	6,301	µg/L	Discharge Conc < TQL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	46.9	µg/L	Discharge Conc < TQL
1,1-Dichloroethylene	59.4	µg/L	Discharge Conc < TQL
1,2-Dichloropropane	4.27	µg/L	Discharge Conc < TQL
1,3-Dichloropropylene	1.28	µg/L	Discharge Conc < TQL
1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	122	µg/L	Discharge Conc < TQL
Methyl Bromide	180	µg/L	Discharge Conc < TQL
Methyl Chloride	9,902	µg/L	Discharge Conc < TQL
Methylene Chloride	94.8	µg/L	Discharge Conc ≤ 25% WQBEL
1,1,2,2-Tetrachloroethane	0.95	µg/L	Discharge Conc < TQL

Tetrachloroethylene	47.4	µg/L	Discharge Conc < TQL
Toluene	103	µg/L	Discharge Conc ≤ 25% WQBEL
1,2-trans-Dichloroethylene	180	µg/L	Discharge Conc < TQL
1,1,1-Trichloroethane	1,098	µg/L	Discharge Conc < TQL
1,1,2-Trichloroethane	2.61	µg/L	Discharge Conc < TQL
Trichloroethylene	2.84	µg/L	Discharge Conc < TQL
Vinyl Chloride	0.095	µg/L	Discharge Conc < TQL
2-Chlorophenol	54.0	µg/L	Discharge Conc < TQL
2,4-Dichlorophenol	18.0	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	180	µg/L	Discharge Conc < TQL
4,6-Dinitro-o-Cresol	3.6	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	18.0	µg/L	Discharge Conc < TQL
2-Nitrophenol	2,881	µg/L	Discharge Conc < TQL
4-Nitrophenol	846	µg/L	Discharge Conc < TQL
p-Chloro-m-Cresol	160	µg/L	Discharge Conc < TQL
Pentachlorophenol	0.14	µg/L	Discharge Conc < TQL
Phenol	7,201	µg/L	Discharge Conc < TQL
2,4,6-Trichlorophenol	7.11	µg/L	Discharge Conc < TQL
Acenaphthene	30.6	µg/L	Discharge Conc < TQL
Acenaphthylene	N/A	N/A	No WQS
Anthracene	540	µg/L	Discharge Conc < TQL
Benzidine	0.0005	µg/L	Discharge Conc < TQL
Benzo(a)Anthracene	0.005	µg/L	Discharge Conc < TQL
Benzo(a)Pyrene	0.0005	µg/L	Discharge Conc < TQL
3,4-Benzofluoranthene	0.005	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Benzo(k)Fluoranthene	0.047	µg/L	Discharge Conc < TQL
Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS
Bis(2-Chloroethyl)Ether	0.14	µg/L	Discharge Conc < TQL
Bis(2-Chloroisopropyl)Ether	360	µg/L	Discharge Conc < TQL
Bis(2-Ethylhexyl)Phthalate	1.52	µg/L	Discharge Conc < TQL
4-Bromophenyl Phenyl Ether	97.2	µg/L	Discharge Conc < TQL
Butyl Benzyl Phthalate	0.18	µg/L	Discharge Conc < TQL
2-Chloronaphthalene	1,440	µg/L	Discharge Conc < TQL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS
Chrysene	0.57	µg/L	Discharge Conc < TQL
Dibenzo(a,h)Anthrancene	0.0005	µg/L	Discharge Conc < TQL
1,2-Dichlorobenzene	288	µg/L	Discharge Conc < TQL
1,3-Dichlorobenzene	12.6	µg/L	Discharge Conc < TQL
1,4-Dichlorobenzene	270	µg/L	Discharge Conc < TQL
3,3-Dichlorobenzidine	0.24	µg/L	Discharge Conc < TQL
Diethyl Phthalate	1,080	µg/L	Discharge Conc < TQL
Dimethyl Phthalate	900	µg/L	Discharge Conc < TQL
Di-n-Butyl Phthalate	36.0	µg/L	Discharge Conc < TQL
2,4-Dinitrotoluene	0.24	µg/L	Discharge Conc < TQL

2,6-Dinitrotoluene	0.24	µg/L	Discharge Conc < TQL
Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	0.14	µg/L	Discharge Conc < TQL
Fluoranthene	36.0	µg/L	Discharge Conc < TQL
Fluorene	90.0	µg/L	Discharge Conc < TQL
Hexachlorobenzene	0.0004	µg/L	Discharge Conc < TQL
Hexachlorobutadiene	0.047	µg/L	Discharge Conc < TQL
Hexachlorocyclopentadiene	1.8	µg/L	Discharge Conc < TQL
Hexachloroethane	0.47	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	0.005	µg/L	Discharge Conc < TQL
Isophorone	61.2	µg/L	Discharge Conc < TQL
Naphthalene	77.4	µg/L	Discharge Conc < TQL
Nitrobenzene	18.0	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	0.003	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	0.024	µg/L	Discharge Conc < TQL
n-Nitrosodiphenylamine	15.6	µg/L	Discharge Conc < TQL
Phenanthrene	1.8	µg/L	Discharge Conc < TQL
Pyrene	36.0	µg/L	Discharge Conc < TQL
1,2,4-Trichlorobenzene	0.13	µg/L	Discharge Conc < TQL
Aldrin	0.000004	µg/L	Discharge Conc < TQL
alpha-BHC	0.002	µg/L	Discharge Conc < TQL
beta-BHC	0.038	µg/L	Discharge Conc < TQL
gamma-BHC	0.95	µg/L	Discharge Conc < TQL
delta BHC	N/A	N/A	No WQS
Chlordane	0.001	µg/L	Discharge Conc < TQL
4,4-DDT	0.0001	µg/L	Discharge Conc < TQL
4,4-DDE	0.00009	µg/L	Discharge Conc < TQL
4,4-DDD	0.0005	µg/L	Discharge Conc < TQL
Dieldrin	0.000005	µg/L	Discharge Conc < TQL
alpha-Endosulfan	0.1	µg/L	Discharge Conc < TQL
beta-Endosulfan	0.1	µg/L	Discharge Conc < TQL
Endosulfan Sulfate	36.0	µg/L	Discharge Conc < TQL
Endrin	0.054	µg/L	Discharge Conc < TQL
Endrin Aldehyde	1.8	µg/L	Discharge Conc < TQL
Heptachlor	0.00003	µg/L	Discharge Conc < TQL
Heptachlor Epoxide	0.0001	µg/L	Discharge Conc < TQL
Toxaphene	0.0004	µg/L	Discharge Conc < TQL
2,3,7,8-TCDD	0.00002	ng/L	Discharge Conc < TQL