

Application Type Renewal
Facility Type Industrial
Major / Minor Minor

**NPDES PERMIT FACT SHEET
INDIVIDUAL INDUSTRIAL WASTE (IW)
AND IW STORMWATER**

Application No. PA0216712
APS ID 712479
Authorization ID 1239610

Applicant and Facility Information

Applicant Name	<u>Municipal Authority of the City of New Kensington</u>	Facility Name	<u>New Kensington WTP (H Burns Smith Water Treatment Plant)</u>
Applicant Address	<u>920 Barnes Street PO Box 577 New Kensington, PA 15068-0577</u>	Facility Address	<u>2200 Block Constitution Blvd New Kensington, PA 15068</u>
Applicant Contact	<u>James Matta</u>	Facility Contact	<u>Ed Pavilonis</u>
Applicant Phone	<u>(724) 337-3577</u>	Facility Phone	<u>(724)335-8599</u>
Client ID	<u>64343</u>	Site ID	<u>250450</u>
SIC Code	<u>4941</u>	Municipality	<u>New Kensington City</u>
SIC Description	<u>Trans. & Utilities - Water Supply</u>	County	<u>Westmoreland</u>
Date Application Received	<u>August 3, 2018</u>	EPA Waived?	<u>Yes</u>
Date Application Accepted	<u>May 6, 2019</u>	If No, Reason	<u></u>
Purpose of Application	<u>Renewal NPDES permit coverage</u>		

Summary of Review

The Department received a timely renewal NPDES permit application from Municipal Authority of the City of New Kensington. for their H Burns Smith Water Treatment Plant located in New Kensington City of Westmoreland County on August 3, 2018. The facility is a potable public water treatment plant with an SIC code of 4941.

The plant purifies water withdrawn from the Allegheny River for potable public consumption. Solids from sedimentation basins and filter backwash are sent to a sedimentation pond for setting. The supernatant from the sedimentation pond is discharged via Outfall 001 to the Allegheny River, designated in the 25 PA Code Chapter 93 as a Warm Water Fishery.



The site has four additional stormwater outfalls, outfall 002, 003, 005, and 006. Outfalls 002 and 003 discharge to the Allegheny River. Outfalls 005 and 006 discharge to the city of New Kensington storm server line, and ultimately the Allegheny River.

The permittee has no open violations.

The site was last inspected on March 16, 2021, one violation was noted but has since been resolved.

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

Approve	Deny	Signatures	Date
X		 Angela Rohrer / Environmental Engineering Specialist	July 14, 2022
X		 Michael E. Fifth, P.E. / Environmental Engineer Manager	July 29, 2020

Summary of Review

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.	<u>001</u>	Design Flow (MGD)	<u>0.288</u>
Latitude	<u>40° 35' 17"</u>	Longitude	<u>-79° 46' 00"</u>
Quad Name	<u>New Kensington West</u>	Quad Code	<u>1407</u>
Wastewater Description: <u>IW Process Effluent without ELG</u>			
Receiving Waters	<u>Allegheny River (WWF)</u>	Stream Code	<u>42122</u>
NHD Com ID	<u>123972859</u>	RMI	<u>21.05</u>
Drainage Area	<u>11500</u>	Yield (cfs/mi ²)	<u>0.208</u>
Q ₇₋₁₀ Flow (cfs)	<u>2,390</u>	Q ₇₋₁₀ Basis	<u>U.S. Army Corp of Engineers</u>
Elevation (ft)	<u>740 ft</u>	Slope (ft/ft)	<u>0.001</u>
Watershed No.	<u>18-A</u>	Chapter 93 Class.	<u>WWF</u>
Existing Use	<u></u>	Existing Use Qualifier	<u></u>
Exceptions to Use	<u></u>	Exceptions to Criteria	<u></u>
Assessment Status	<u>Not Assessed</u>		
Cause(s) of Impairment	<u></u>		
Source(s) of Impairment	<u></u>		
TMDL Status	<u></u>	Name	<u></u>
Nearest Downstream Public Water Supply Intake	<u>Oakmont Water Authority (9.2 MGD)</u>		
PWS Waters	<u>Allegheny River</u>	Flow at Intake (cfs)	<u>2,390</u>
PWS RMI	<u>13.47</u>	Distance from Outfall (mi)	<u>7.58</u>

Discharge, Receiving Waters and Water Supply Information

Outfall No.	<u>002</u>	Design Flow (MGD)	<u>0</u>
Latitude	<u>40° 35' 17"</u>	Longitude	<u>-79° 46' 00"</u>
Quad Name	<u>New Kensington West</u>	Quad Code	<u>1407</u>
Wastewater Description: <u>Stormwater</u>			
Receiving Waters	<u>Allegheny River (WWF)</u>	Stream Code	<u>42122</u>
NHD Com ID	<u>123972859</u>	RMI	<u>21.05</u>
Watershed No.	<u>18-A</u>	Chapter 93 Class.	<u>WWF</u>
Existing Use	<u></u>	Existing Use Qualifier	<u></u>
Exceptions to Use	<u></u>	Exceptions to Criteria	<u></u>
Assessment Status	<u>Not Assessed</u>		
Cause(s) of Impairment	<u></u>		
Source(s) of Impairment	<u></u>		
TMDL Status	<u></u>	Name	<u></u>

Discharge, Receiving Waters and Water Supply Information

Outfall No.	<u>003</u>	Design Flow (MGD)	<u>0</u>
Latitude	<u>40° 35' 16"</u>	Longitude	<u>-79° 46' 02"</u>
Quad Name	<u>New Kensington West</u>	Quad Code	<u>1407</u>
Wastewater Description: <u>Stormwater</u>			
Receiving Waters	<u>Allegheny River (WWF)</u>	Stream Code	<u>42122</u>
NHD Com ID	<u>123972859</u>	RMI	<u>21.05</u>
Watershed No.	<u>18-A</u>	Chapter 93 Class.	<u>WWF</u>
Existing Use	<u></u>	Existing Use Qualifier	<u></u>
Exceptions to Use	<u></u>	Exceptions to Criteria	<u></u>
Assessment Status	<u>Not Assessed</u>		
Cause(s) of Impairment	<u></u>		
Source(s) of Impairment	<u></u>		
TMDL Status	<u></u>	Name	<u></u>

Discharge, Receiving Waters and Water Supply Information

Outfall No.	<u>005</u>	Design Flow (MGD)	<u>0</u>
Latitude	<u>40° 35' 16"</u>	Longitude	<u>-79° 46' 01"</u>
Quad Name	<u>New Kensington West</u>	Quad Code	<u>1407</u>
Wastewater Description: <u>Stormwater</u>			
Receiving Waters	<u>Allegheny River (WWF)</u>	Stream Code	<u>42122</u>
NHD Com ID	<u>123972859</u>	RMI	<u>21.05</u>
Watershed No.	<u>18-A</u>	Chapter 93 Class.	<u>WWF</u>
Existing Use	<u></u>	Existing Use Qualifier	<u></u>
Exceptions to Use	<u></u>	Exceptions to Criteria	<u></u>
Assessment Status	<u>Not Assessed</u>		
Cause(s) of Impairment	<u></u>		
Source(s) of Impairment	<u></u>		
TMDL Status	<u></u>	Name	<u></u>

Discharge, Receiving Waters and Water Supply Information

Outfall No.	<u>006</u>	Design Flow (MGD)	<u>0</u>
Latitude	<u>40° 35' 16"</u>	Longitude	<u>-79° 46' 01"</u>
Quad Name	<u>New Kensington West</u>	Quad Code	<u>1407</u>
Wastewater Description: <u>Stormwater</u>			
Receiving Waters	<u>Allegheny River (WWF)</u>	Stream Code	<u>42122</u>
NHD Com ID	<u>123972859</u>	RMI	<u>21.05</u>
Watershed No.	<u>18-A</u>	Chapter 93 Class.	<u>WWF</u>
Existing Use	<u></u>	Existing Use Qualifier	<u></u>
Exceptions to Use	<u></u>	Exceptions to Criteria	<u></u>
Assessment Status	<u>Not Assessed</u>		
Cause(s) of Impairment	<u></u>		
Source(s) of Impairment	<u></u>		
TMDL Status	<u></u>	Name	<u></u>

Development of Effluent Limitations

Outfall No.	001	Design Flow (MGD)	.0288
Latitude	40° 35' 17.00"	Longitude	-79° 46' 00"
Wastewater Description: IW Process Effluent without ELG			

Technology-Based Effluent limitations:

Regulatory Effluent Standards and Monitoring Requirements

Flow monitoring is required pursuant to 25 Pa. Code § 92a.61(d)(1) which is displayed in Table 1 below.

Effluent standards for pH are also imposed on industrial wastes by 25 Pa. Code §§ 95.2(1) which is displayed in Table 1 below.

Pennsylvania regulations at 25 Pa. Code § 92a.48(b) require the imposition of technology-based TRC limits for facilities that use chlorination and that are not already subject to TRC limits based on applicable federal ELGs or a facility-specific BPJ evaluation which is displayed in Table 1 below.

Table 1. Regulatory Effluent Standards

Parameter	Monthly Avg	Daily Max	IMAX
Flow	Monitor	Monitor	----
pH	6-9 at all times		----
TRC	0.5 mg/l	----	1.6 mg/l

Best Practicable Control Technology Currently Achievable (BPT)

BPT for wastewater from treatment of WTP sludges and filter backwash is found in DEPs Technology-Based Control Requirements for Water Treatment Plant Wastes Document which falls under Best Professional Judgement under 40 CFR § 125.3 and the limits imposed are displayed in Table 2 below.

Table 2. BPT Limits for WTP sludge and filter backwash wastewater

Parameter	Monthly Avg (mg/l)	Daily Max (mg/l)
Suspended solids	30.0	60.0
Iron (total)	2.0	4.0
Aluminum (total)	4.0	8.0
Manganese (total)	1.0	2.0
Flow	Monitor	----
pH	6-9 at all times	
Total Residual Chlorine	0.5	1.0

Water Quality-Based Effluent limitations:

Toxics Management Spread Sheet

The Department of Environmental Protection (DEP) has developed the DEP Toxics Management Spreadsheet (“TMS”) to facilitate calculations necessary for completing a reasonable potential (RP) analysis and determining water quality-based effluent limitations for discharges of toxic pollutants. The Toxics Management Spreadsheet is a macro-enabled Excel binary file that combines the functions of the PENTOXSD model and the Toxics Screening Analysis spreadsheet to evaluate the reasonable potential for discharges to cause excursions above water quality standards and to determine WQBELs. The Toxics Management Spread Sheet is a single discharge, mass-balance water quality calculation spread sheet that includes consideration for mixing, first-order decay and other factors to determine recommended WQBELs for toxic substances and several non-toxic substances. Required input data including stream code, river mile index, elevation, drainage area, discharge name, NPDES permit number, discharge flow rate and the discharge concentrations for parameters in the permit

application or in DMRs, which are entered into the spread sheet to establish site-specific discharge conditions. Other data such as low flow yield, reach dimensions and partial mix factors may also be entered to further characterize the conditions of the discharge and receiving water. Discharge concentrations for the parameters are chosen to represent the "worst case" quality of the discharge (i.e., maximum reported discharge concentrations). The spread sheet then evaluates each parameter by computing a Waste Load Allocation for each applicable criterion, determining a recommended maximum WQBEL and comparing that recommended WQBEL with the input discharge concentration to determine which is more stringent. Based on this evaluation, the Toxics Management Spread sheet recommends average monthly and maximum daily WQBELs.

Reasonable Potential Analysis and WQBEL Development for Outfall 001

Discharges from Outfall 001 are evaluated based on concentrations reported on the application and on DMRs; data from those sources are entered into the Toxics Management Spread Sheet. The maximum reported value of the parameters from the application form or from previous DMRs is used as the input concentration in the Toxics Management Spread Sheet. All toxic pollutants whose maximum concentrations, as reported in the permit application or on DMRs, are greater than the most stringent applicable water quality criterion are considered to be pollutants of concern. [This includes pollutants reported as "Not Detectable" or as "<MDL" where the method detection limit for the analytical method used by the applicant is greater than the most stringent water quality criterion]. The Toxics Management Spread Sheet is run with the discharge and receiving stream characteristics shown in Table 3. For IW discharges, the design flow used in modeling is the average flow during production or operation taken from the permit application. Pollutants for which water quality standards have not been promulgated (e.g., TSS, oil and grease) are excluded from the analysis. All the parameters are evaluated using the model to determine the water quality-based effluent limits applicable to the discharge and the receiving stream. The spreadsheet then compares the reported discharge concentrations to the calculated water quality-based effluent limitations to determine if a reasonable potential exists to exceed the calculated WQBELs. Effluent limitations are established in the draft permit where a pollutant's maximum reported discharge concentration equals or exceeds 50% of the WQBEL. For non-conservative pollutants, monitoring requirements are established where the maximum reported concentration is between 25% - 50% of the WQBEL. For conservative pollutants, monitoring requirements are established where the maximum reported concentration is between 10% - 50% of the WQBEL. The information described above including the maximum reported discharge concentrations, the most stringent water quality criteria, the pollutant-of-concern (reasonable potential) determinations, the calculated WQBELs, and the WQBEL/monitoring recommendations are displayed in the Toxics Management Spread Sheet in Attachment C of this Fact Sheet. The Toxics Management Spread Sheet did not recommend any WQBELs for Outfall 001.

Table 3: TMS Inputs for Outfall 001

Parameter	Value
River Mile Index	21.05
Discharge Flow (MGD)	0.051
Basin/Stream Characteristics	
Parameter	Value
Area in Square Miles	11500
Q ₇₋₁₀ (cfs)	2390
Low-flow yield (cfs/mi ²)	0.208
Elevation (ft)	740
Slope	0.001

Total Residual Chlorine

To determine if WQBELs are required for discharges containing total residual chlorine (TRC), a discharge evaluation is performed using a DEP program called TRC_CALC created with Microsoft Excel for Windows. TRC_CALC calculates TRC Waste Load Allocations (WLAs) through the application of a mass balance model which considers TRC losses due to stream and discharge chlorine demands and first-order chlorine decay. Input values for the program include flow rates and chlorine demands for the receiving stream and the discharge, the number of samples taken per month, coefficients of TRC variability, partial mix factors, and an optional factor of safety. The mass balance model calculates WLAs for acute and chronic criteria that are then converted to long term averages using calculated multipliers. The multipliers are functions of the number of samples taken per month and the TRC variability coefficients (normally kept at default values unless site specific information is available). The most stringent limitation between the acute and chronic long-term averages is converted to an average monthly limit for comparison to the BAT average monthly limit of 0.5 mg/l from 25 Pa. Code § 92a.48(b)(2). The more stringent of these average monthly TRC limitations is imposed in the permit. The results of the modeling, included in Attachment D, indicate that no WQBELs are required for TRC.

Anti-Backsliding

Previous limits can be used pursuant to EPA's anti-backsliding regulation, 40 CFR 122.44(l). The previous limitations for Outfall 001 are displayed below in Table 4.

Table 4: Current Effluent Limitation at Outfall 001

Parameters	Mass (lb/day)		Concentration (mg/L)				Monitoring Requirements	
	Average Monthly	Daily Maximum	Instant. Minimum	Average Monthly	Daily Maximum	Instant. Maximum	Frequency	Sample Type
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	2/Month	Measured
Total Suspended Solids	XXX	XXX	XXX	30.0	XXX	60.0	2/Month	Grab
Total Residual Chlorine	XXX	XXX	XXX	0.5	XXX	1.0	2/Month	Grab
Total Aluminum	XXX	XXX	XXX	4.0	XXX	8.0	2/Month	Grab
Total Iron	XXX	XXX	XXX	2.0	XXX	4.0	2/Month	Grab
Total Manganese	XXX	XXX	XXX	1.0	XXX	2.0	2/Month	Grab
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	2/Month	Grab

Final Effluent Limitations

The proposed effluent limitations and monitoring requirements for Outfall 001 are shown below in Table 5. The limits are the most stringent values from the above limitation analysis. Note that some values were incorrectly labeled as IMAX values in the previous permit when they should have been label as Daily Max, this has been changed to reflect existing permitting practices.

Table 5: Proposed Effluent Limitation at Outfall 001

Parameters	Mass (lb/day)		Concentration (mg/L)				Monitoring Requirements	
	Average Monthly	Daily Maximum	Instant. Minimum	Average Monthly	Daily Maximum	Instant. Maximum	Frequency	Sample Type
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	2/Month	Measured
Total Suspended Solids	XXX	XXX	XXX	30.0	60.0	XXX	2/Month	Grab
Total Residual Chlorine	XXX	XXX	XXX	0.5	1.0	1.6	2/Month	Grab
Total Aluminum	XXX	XXX	XXX	4.0	8.0	XXX	2/Month	Grab
Total Iron	XXX	XXX	XXX	2.0	4.0	XXX	2/Month	Grab
Total Manganese	XXX	XXX	XXX	1.0	2.0	XXX	2/Month	Grab
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	2/Month	Grab

Development of Effluent Limitations

Outfall No.	002	Design Flow (MGD)	0
Latitude	40° 35' 17.00"	Longitude	-79° 46' 0.00"
Outfall No.	003	Design Flow (MGD)	0
Latitude	40° 35' 16.00"	Longitude	-79° 46' 2.00"
Outfall No.	005	Design Flow (MGD)	0
Latitude	40° 35' 16.00"	Longitude	-79° 46' 1.00"
Outfall No.	006	Design Flow (MGD)	0
Latitude	40° 35' 16.00"	Longitude	-79° 46' 1.00"

Wastewater Description: Stormwater

Technology-Based Limitations

Stormwater Technology Limits

Outfalls 002, 003, 005 and 006 were considered uncontaminated stormwater outfalls in the current permit. However, no analytical data was submitted for these outfalls, so it is uncertain that these outfalls are uncontaminated. So, these outfalls will receive the PAG-03 General Stormwater Permit conditions as a minimum requirement. The SIC code for the site is 4941 and the corresponding appendix of the PAG-03 that would apply to the facility is Appendix J and the reporting requirements are in Table 6 below.

Table 6: PAG-03 Appendix (J) Monitoring Requirements

Parameter	Max Daily Concentration	Measurement Frequency	Sample Type
Total Suspended Solids (TSS)	Monitor and Report	1/6 Months	Grab
Oil and Grease	Monitor and Report	1/6 Months	Grab

Water Quality-Based Limitations

Stormwater WQBELs

Water quality analyses are typically performed under low-flow (Q7-10) conditions. Stormwater discharges occur at variable rates and frequencies but not however during Q7-10 conditions. Since the discharges from Outfalls 002, 003, 005 and 006 are composed entirely of stormwater, a formal water quality analysis cannot be accurately conducted. Accordingly, water quality-based effluent limitations based on water quality analyses are not proposed.

Anti-Backsliding

Previous limits at Outfall 002, 003, 005 and 006 can be used pursuant to EPA's anti-backsliding regulation, 40 CFR 122.44(l); however, these outfalls did not have any limitations in the current permit.

Proposed Effluent Monitoring Requirements

The proposed effluent requirements for Outfall 002, 003, 005 and 006 are displayed in Table 7 below. A Part C condition is included in the Draft permit requiring submission of Corrective Action Plan when there are two consecutive exceedances of the benchmark values. The benchmark values are displayed below in Table 7, and also included in the Part C condition. These values are from EPA's Multisector General Permit document. These values are not effluent limitations, and exceedance of the benchmark values is not a violation. As describe above, if there are two consecutive exceedances of the benchmark value, a Corrective Action Plan must be conducted to evaluate site stormwater controls and BMPs. Benchmark monitoring is a feedback tool, along with routine inspections and visual assessments, for assessing the effectiveness of

stormwater controls and BMPs. An exceedance of the benchmark provides permittees with an indication that the facility's controls may not be sufficiently controlling pollutants in stormwater.

Table 7. Proposed Effluent Monitoring Requirements

Parameter	Max Daily Concentration	Benchmark Values (mg/L)	Measurement Frequency	Sample Type
Total Suspended Solids (TSS)	Monitor and Report	100	1/6 Months	Grab
Oil and Grease	Monitor and Report	30.0	1/6 Months	Grab

Tools and References Used to Develop Permit	
<input type="checkbox"/>	WQM for Windows Model (see Attachment [redacted])
<input checked="" type="checkbox"/>	Toxics Management Spreadsheet (see Attachment C)
<input checked="" type="checkbox"/>	TRC Model Spreadsheet (see Attachment D)
<input type="checkbox"/>	Temperature Model Spreadsheet (see Attachment [redacted])
<input type="checkbox"/>	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
<input type="checkbox"/>	Technical Guidance for the Development and Specification of Effluent Limitations, 362-0400-001, 10/97.
<input type="checkbox"/>	Policy for Permitting Surface Water Diversions, 362-2000-003, 3/98.
<input type="checkbox"/>	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 362-2000-008, 11/96.
<input type="checkbox"/>	Technology-Based Control Requirements for Water Treatment Plant Wastes, 362-2183-003, 10/97.
<input type="checkbox"/>	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 362-2183-004, 12/97.
<input type="checkbox"/>	Pennsylvania CSO Policy, 385-2000-011, 9/08.
<input type="checkbox"/>	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
<input type="checkbox"/>	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 391-2000-002, 4/97.
<input type="checkbox"/>	Determining Water Quality-Based Effluent Limits, 391-2000-003, 12/97.
<input type="checkbox"/>	Implementation Guidance Design Conditions, 391-2000-006, 9/97.
<input type="checkbox"/>	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 391-2000-007, 6/2004.
<input type="checkbox"/>	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 391-2000-008, 10/1997.
<input type="checkbox"/>	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 391-2000-010, 3/99.
<input type="checkbox"/>	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 391-2000-011, 5/2004.
<input type="checkbox"/>	Implementation Guidance for Section 93.7 Ammonia Criteria, 391-2000-013, 11/97.
<input type="checkbox"/>	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 391-2000-014, 4/2008.
<input type="checkbox"/>	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 391-2000-015, 11/1994.
<input type="checkbox"/>	Implementation Guidance for Temperature Criteria, 391-2000-017, 4/09.
<input type="checkbox"/>	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 391-2000-018, 10/97.
<input type="checkbox"/>	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, 391-2000-019, 10/97.
<input type="checkbox"/>	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 391-2000-021, 3/99.
<input type="checkbox"/>	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, 391-2000-022, 3/1999.
<input type="checkbox"/>	Design Stream Flows, 391-2000-023, 9/98.
<input type="checkbox"/>	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 391-2000-024, 10/98.
<input type="checkbox"/>	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 391-3200-013, 6/97.
<input type="checkbox"/>	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
<input type="checkbox"/>	SOP: [redacted]
<input type="checkbox"/>	Other: [redacted]

Attachments

Attachment A: Site Line Diagram

Attachment B: StreamStats Report

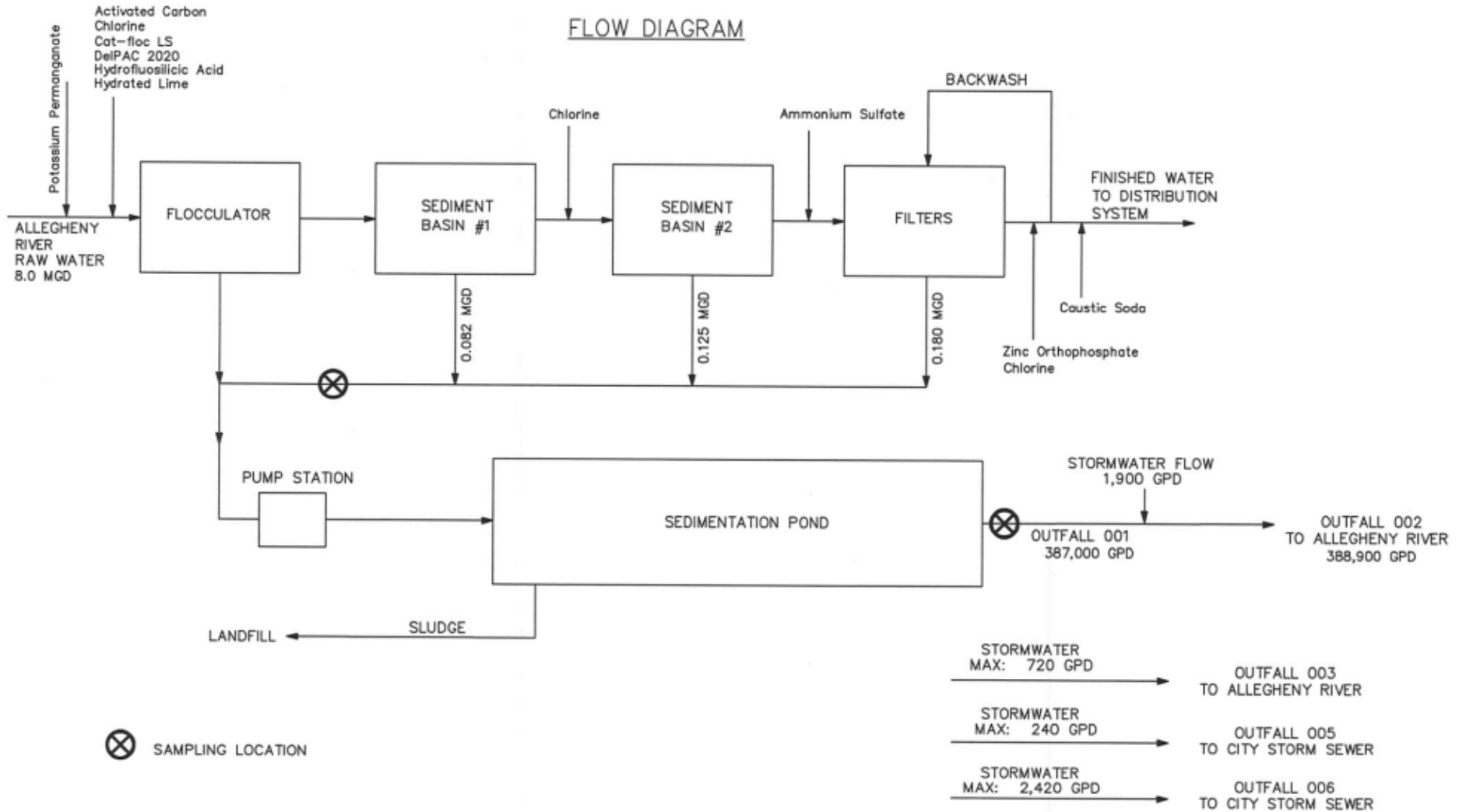
Attachment C: Toxic Management Spreadsheet for Outfall 001

Attachment D: TRC Modeling Results for Outfall 001

ATTACHMENT A:
Site Line Diagram

MUNICIPAL AUTHORITY OF THE CITY OF NEW KENSINGTON
H. BURNS SMITH WATER TREATMENT PLANT

FLOW DIAGRAM



ATTACHMENT B:
StreamStats Report

StreamStats Report

Region ID: PA

Workspace ID: PA20220713151739111000

Clicked Point (Latitude, Longitude): 40.58890, -79.76782

Time: 2022-07-13 11:18:08 -0400



➤ Base Flow Statistics

Base Flow Statistics Parameters [100.0 Percent (11500 square miles) Statewide Mean and Base Flow]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	11500	square miles	2.26	1720
PRECIP	Mean Annual Precipitation	44	inches	33.1	50.4
CARBON	Percent Carbonate	0	percent	0	99
FOREST	Percent Forest	73.9293	percent	5.1	100
URBAN	Percent Urban	2.314	percent	0	89

Base Flow Statistics Disclaimers [100.0 Percent (11500 square miles) Statewide Mean and Base Flow]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

ATTACHMENT C:
Toxics Management Spreadsheet for Outfall 001



Discharge Information

Instructions Discharge Stream

Facility: New kensington WTP

NPDES Permit No.: PA0216712

Outfall No.: 001

Evaluation Type: Major Sewage / Industrial Waste

Wastewater Description: WTP Filter backwash

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
0.051	100	7.3						

Discharge Pollutant	Units	Max Discharge Conc	0 if left blank		0.5 if left blank		0 if left blank			1 if left blank	
			Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L	166								
	Chloride (PWS)	mg/L	28.6								
	Bromide	mg/L	0.204								
	Sulfate (PWS)	mg/L	62								
	Fluoride (PWS)	mg/L	0.79								
Group 2	Total Aluminum	µg/L	1750								
	Total Antimony	µg/L	0.66								
	Total Arsenic	µg/L	1								
	Total Barium	µg/L	50								
	Total Beryllium	µg/L	< 0.3								
	Total Boron	µg/L	< 92								
	Total Cadmium	µg/L	< 0.33								
	Total Chromium (III)	µg/L	7								
	Hexavalent Chromium	µg/L	< 5								
	Total Cobalt	µg/L	8								
	Total Copper	µg/L	2								
	Free Cyanide	µg/L									
	Total Cyanide	µg/L	3								
	Dissolved Iron	µg/L	46								
	Total Iron	µg/L	360								
	Total Lead	µg/L	< 0.66								
	Total Manganese	µg/L	1100								
	Total Mercury	µg/L	< 0.4								
	Total Nickel	µg/L	3								
	Total Phenols (Phenolics) (PWS)	µg/L	< 5								
	Total Selenium	µg/L	< 1.61								
	Total Silver	µg/L	< 0.66								
Total Thallium	µg/L	< 0.33									
Total Zinc	µg/L	12									
Total Molybdenum	µg/L	< 2									
Acrolein	µg/L	<									
Acrylamide	µg/L	<									
Acrylonitrile	µg/L	<									
Benzene	µg/L	<									
Bromoform	µg/L	<									



Stream / Surface Water Information

New kensington WTP, NPDES Permit No. PA0216712, Outfall 001

Instructions Discharge **Stream**

Receiving Surface Water Name: Allegheny 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	042122	21.05	740	11500	0.001		Yes
End of Reach 1	042122	13.47	728	11501	0.001	9.2	Yes

Q₇₋₁₀

Location	RMI	LFY (cfs/mi ²)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	21.05	0.1	2390			1203	15					100	7		
End of Reach 1	13.47	0.1	2390			1400	15								

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	21.05														
End of Reach 1	13.47														



Model Results

New kensington WTP, NPDES Permit No. PA0216712, Outfall 001

Instructions

Results

RETURN TO INPUTS

SAVE AS PDF

PRINT

All Inputs Results Limits

Hydrodynamics

Wasteload Allocations

AFC

CCT (min):

PMF:

Analysis Hardness (mg/l):

Analysis pH:

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	2,678,670	
Total Antimony	0	0		0	1,100	1,100	3,928,717	
Total Arsenic	0	0		0	340	340	1,214,331	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	75,002,771	
Total Boron	0	0		0	8,100	8,100	28,929,640	
Total Cadmium	0	0		0	2.014	2.13	7,619	Chem Translator of 0.944 applied
Total Chromium (III)	0	0		0	569.763	1,803	6,439,698	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	58,192	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	339,298	
Total Copper	0	0		0	13.439	14.0	49,999	Chem Translator of 0.96 applied
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	64.581	81.6	291,600	Chem Translator of 0.791 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	5,883	Chem Translator of 0.85 applied
Total Nickel	0	0		0	468.236	469	1,675,684	Chem Translator of 0.998 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	Chem Translator of 0.922 applied
Total Silver	0	0		0	3.217	3.78	13,516	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	232,151	
Total Zinc	0	0		0	117.180	120	427,932	Chem Translator of 0.978 applied

NPDES Permit Fact Sheet
New Kensington WTP

NPDES Permit No. PA0216712

CFC

CCT (min):

PMF:

Analysis Hardness (mg/l):

Analysis pH:

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (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	5,442,485	
Total Arsenic	0	0		0	150	150	3,710,785	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	#####	
Total Boron	0	0		0	1,600	1,600	39,581,710	
Total Cadmium	0	0		0	0.246	0.27	6,695	Chem Translator of 0.909 applied
Total Chromium (III)	0	0		0	74.115	86.2	2,131,962	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	257,158	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	470,033	
Total Copper	0	0		0	8.956	9.33	230,784	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	45,440,490	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2.517	3.18	78,708	Chem Translator of 0.791 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	22,410	Chem Translator of 0.85 applied
Total Nickel	0	0		0	52.007	52.2	1,290,439	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	123,425	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	321,601	
Total Zinc	0	0		0	118.139	120	2,964,087	Chem Translator of 0.986 applied

THH

CCT (min):

THH PMF:

Analysis Hardness (mg/l):

Analysis pH:

PWS PMF:

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	#####	WQC applied at RMI 13.47 with a design stream flow of 2390 cfs
Chloride (PWS)	0	0		0	250,000	250,000	#####	WQC applied at RMI 13.47 with a design stream flow of 2390 cfs
Sulfate (PWS)	0	0		0	250,000	250,000	#####	WQC applied at RMI 13.47 with a design stream flow of 2390 cfs
Fluoride (PWS)	0	0		0	2,000	2,000	60,587,320	WQC applied at RMI 13.47 with a design stream flow of 2390 cfs
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	138,536	
Total Arsenic	0	0		0	10	10.0	247,386	
Total Barium	0	0		0	2,400	2,400	59,372,565	
Total Boron	0	0		0	3,100	3,100	76,689,563	
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	
Dissolved Iron	0	0		0	300	300	7,421,571	
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	24,738,569	
Total Mercury	0	0		0	0.050	0.05	1,237	
Total Nickel	0	0		0	610	610	15,090,527	
Total Phenols (Phenolics) (PWS)	0	0		0	5	5.0	151,468	WQC applied at RMI 13.47 with a design stream flow of 2390 cfs
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	5,937	
Total Zinc	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	
Fluoride (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	
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	

Recommended WQBELs & Monitoring Requirements

No. Samples/Month: **4**

Pollutants	Mass Limits		Concentration Limits				Governing WQBEL	WQBEL Basis	Comments
	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units			

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)	15,146,830	mg/L	Discharge Conc ≤ 10% WQBEL
Chloride (PWS)	7,573,415	mg/L	Discharge Conc ≤ 10% WQBEL
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	7,573,415	mg/L	Discharge Conc ≤ 10% WQBEL
Fluoride (PWS)	60,587	mg/L	Discharge Conc ≤ 10% WQBEL
Total Aluminum	1,716,920	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	138,536	µg/L	Discharge Conc ≤ 10% WQBEL
Total Arsenic	247,386	µg/L	Discharge Conc ≤ 10% WQBEL
Total Barium	48,073,748	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	18,542,731	µg/L	Discharge Conc < TQL
Total Cadmium	4,883	µg/L	Discharge Conc ≤ 10% WQBEL
Total Chromium (III)	2,131,962	µg/L	Discharge Conc ≤ 10% WQBEL
Hexavalent Chromium	37,299	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cobalt	217,476	µg/L	Discharge Conc ≤ 10% WQBEL
Total Copper	32,047	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	7,421,571	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	45,440,490	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	78,708	µg/L	Discharge Conc < TQL
Total Manganese	24,738,569	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	1,237	µg/L	Discharge Conc ≤ 10% WQBEL
Total Nickel	1,074,046	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)	151,468	µg/L	Discharge Conc < TQL
Total Selenium	123,425	µg/L	Discharge Conc < TQL
Total Silver	8,663	µg/L	Discharge Conc ≤ 10% WQBEL
Total Thallium	5,937	µg/L	Discharge Conc < TQL
Total Zinc	274,287	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS

ATTACHMENT D:
TRC Modeling Results for Outfall 001

TRC EVALUATION

2390	= Q stream (cfs)	0.5	= CV Daily
0.051	= Q discharge (MGD)	0.5	= CV Hourly
4	= no. samples	0.25	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	0.25	= CFC_Partial Mix Factor
0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)
	= %Factor of Safety (FOS)		=Decay Coefficient (K)
Source		Reference	
AFC Calculations		CFC Calculations	
TRC	1.3.2.iii	WLA_afc = 2415.859	1.3.2.iii
PENTOXSD TRG	5.1a	LTAMULT_afc = 0.373	5.1c
PENTOXSD TRG	5.1b	LTA_afc= 900.207	5.1d
		WLA_cfc = 2355.265	
		LTAMULT_cfc = 0.581	
		LTA_cfc = 1369.241	
Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML_MULT = 1.720	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.500	BAT/BPJ
		INST MAX LIMIT (mg/l) = 1.170	
WLA_afc	$(.019/e^{-k \cdot AFC_tc}) + [(AFC_Yc \cdot Qs \cdot 0.019 / Qd \cdot e^{-k \cdot AFC_tc}) \dots + Xd + (AFC_Yc \cdot Qs \cdot Xs / Qd)] \cdot (1 - FOS / 100)$		
LTAMULT_afc	$EXP((0.5 \cdot LN(cvh^2 + 1)) - 2.326 \cdot LN(cvh^2 + 1)^{0.5})$		
LTA_afc	wla_afc * LTAMULT_afc		
WLA_cfc	$(.011/e^{-k \cdot CFC_tc}) + [(CFC_Yc \cdot Qs \cdot 0.011 / Qd \cdot e^{-k \cdot CFC_tc}) \dots + Xd + (CFC_Yc \cdot Qs \cdot Xs / Qd)] \cdot (1 - FOS / 100)$		
LTAMULT_cfc	$EXP((0.5 \cdot LN(cvd^2 / no_samples + 1)) - 2.326 \cdot LN(cvd^2 / no_samples + 1)^{0.5})$		
LTA_cfc	wla_cfc * LTAMULT_cfc		
AML_MULT	$EXP(2.326 \cdot LN((cvd^2 / no_samples + 1)^{0.5}) - 0.5 \cdot LN(cvd^2 / no_samples + 1))$		
AVG MON LIMIT	MIN(BAT_BPJ, MIN(LTA_afc, LTA_cfc) * AML_MULT)		
INST MAX LIMIT	1.5 * ((av_mon_limit / AML_MULT) / LTAMULT_afc)		