

Application Type

Renewal

Facility Type

Non-Municipal

Major / Minor

Minor

Application No.

**PA0222801**

APS ID

**1110514**

Authorization ID

**1478765**

**NPDES PERMIT FACT SHEET  
INDIVIDUAL SEWAGE**

**Applicant and Facility Information**

Applicant Name	<b>Sarah Heinz House Association</b>	Facility Name	<b>Sarah Heinz House Camp</b>
Applicant Address	1 Heinz Street	Facility Address	2534 Heinz Camp Road
	Pittsburgh, PA 15212-5920		Ellwood City, PA 16117-7054
Applicant Contact	Christopher Kuzma <a href="mailto:kuzma@sarahheinzhouse.com">kuzma@sarahheinzhouse.com</a>	Facility Contact	Christopher Kuzma <a href="mailto:kuzma@sarahheinzhouse.com">kuzma@sarahheinzhouse.com</a>
Applicant Phone	(412) 231-2377	Facility Phone	(412) 231-2377
Client ID	39492	Site ID	257495
Ch 94 Load Status	Not Overloaded	Municipality	Wayne Township
Connection Status	No Limitations	County	Lawrence
Date Application Received	March 2, 2024	EPA Waived?	Yes
Date Application Accepted	April 1, 2024	If No, Reason	-
Purpose of Application	Renewal of NPDES Permit for an existing discharge of treated sanitary wastewater.		

**Summary of Review**

Act 14 - Proof of Notification was submitted and received.

A Part II Water Quality Management permit is not required at this time.

The applicant should be able to meet the limits of this permit, which will protect the uses of the receiving stream.

**I. OTHER REQUIREMENTS:**

- A. Stormwater into sewers
- B. Right of way
- C. Solids handling
- D. Public Sewerage Availability
- E. Effluent Chlorine Optimization and Minimization

**SPECIAL CONDITIONS:**

- II. Solids Management

There are no open violations in efacts associated with the subject Client ID (39492) as of 3/5/2025.

Approve	Deny	Signatures	Date
X		Stephen A. McCauley Stephen A. McCauley, E.I.T. / Project Manager	3/5/2025
		Adam Olesnanik, P.E. / Environmental Engineer Manager	Okay to Draft JCD 3/17/2025

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	001	Design Flow (MGD)	0.006
Latitude	40° 54' 26.00"	Longitude	-80° 13' 4.00"
Quad Name	-	Quad Code	-
Wastewater Description:	Sewage Effluent		
Receiving Waters	Slippery Rock Creek (CWF)	Stream Code	34032
NHD Com ID	126216847	RMI	6.89
Drainage Area	394	Yield (cfs/mi <sup>2</sup> )	0.1
Q <sub>7-10</sub> Flow (cfs)	39.4	Q <sub>7-10</sub> Basis	Calculated
Elevation (ft)	940	Slope (ft/ft)	0.0212
Watershed No.	20-C	Chapter 93 Class.	CWF
Existing Use	-	Existing Use Qualifier	-
Exceptions to Use	-	Exceptions to Criteria	-
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment	-		
Source(s) of Impairment	-		
TMDL Status	-	Name	-
Background/Ambient Data		Data Source	
pH (SU)	-	-	
Temperature (°F)	-	-	
Hardness (mg/L)	-	-	
Other:	-	-	
Nearest Downstream Public Water Supply Intake		Pennsylvania American Water Company - Ellwood City	
PWS Waters	Slippery Rock Creek	Flow at Intake (cfs)	53.1
PWS RMI	0.1	Distance from Outfall (mi)	5.0

Sludge use and disposal description and location(s): All sludge is hauled by the Dalton's Service Company, LLC to the Mahoning Township WWTP, where it ultimately is disposed of at an approved landfill.

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.

**Narrative:** This Fact Sheet details the determination of draft NPDES permit limits for an existing discharge of 0.006 MGD of treated sewage from an existing discharge in Wayne Township, Lawrence County. This facility is a seasonal camp that operates from June to August.

Treatment under Water Quality Management Permit No. 3799403 consists of: A 3,500 gallon equalization tank, a comminutor with manual bypass screen, a 4,900 gallon aeration tank in series with a 2,600 gallon aeration tank, a 2,600 gallon settling tank, alum addition for phosphorus control, a 1,512 gallon sludge settling tank, tablet chlorine disinfection with a 340 gallon chlorine contact tank, a 340 gallon dosing tank, and two 275 square foot intermittent sand filters.

## 1. Streamflow:

### Slippery Rock Creek @ Outfall 001:

Drainage Area: 394 sq. mi.  
Q<sub>7-10</sub>: 39.4 cfs  
Yieldrate: 0.1 cfs/m (calculated)

## 2. Wasteflow:

Maximum discharge: 0.006 MGD = 0.009 cfs  
Runoff flow period: 24 hours Basis: STP with flow equalization

In accordance with the SOP, since there is greater than 3 parts stream flow (Q7-10) to 1 part effluent (design flow), the treatment requirements in document number 391-2000-014, titled, "Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers", dated April 12, 2008, were not evaluated.

Flow will be required to be monitored as authorized under Chapter 92a.61, and as recommended in the SOP.

## 3. Parameters:

The following parameters were evaluated: pH, Total Suspended Solids, Fecal Coliform, E. Coli, Total Phosphorus, Total Nitrogen, NH<sub>3</sub>-N, CBOD<sub>5</sub>, Dissolved Oxygen, and Disinfection.

### a. pH

Between 6.0 and 9.0 at all times

Basis: Application of Chapter 93.7 technology-based limits.

The measurement frequency was previously set to 3/week, which will be retained, due to this site being a campground with flows being less than 10,000 GPD.

### b. Total Suspended Solids

Limits are 30.0 mg/l as a monthly average and 60.0 as an instantaneous maximum.

Basis: Application of Chapter 92a47 technology-based limits.

### c. Fecal Coliform

05/01 - 09/30: 200 No./100ml (monthly average)  
1,000 No./100ml (instantaneous maximum)

10/01 - 04/30: 2,000 No./100ml (monthly average)  
10,000 No./100ml (instantaneous maximum)

Basis: Application of Chapter 92a47 technology-based limits

d. E. Coli

Monitoring was added for E. Coli at a frequency of 1/year.

Basis: Application of Chapter 92a.61 as recommended by the SOP for flows between 0.002 MGD and 0.05 MGD.

e. Total Phosphorus

Chapter 96.5 does not apply. However, the previous monitoring for Total Phosphorus will be retained in accordance with the SOP, based on Chapter 92a.61.

f. Total Nitrogen

The previous monitoring for Total Nitrogen will be retained in accordance with the SOP, based on Chapter 92a.61.

g. Ammonia-Nitrogen (NH<sub>3</sub>-N)

Median discharge pH to be used: 7.2 Standard Units (S.U.)

Basis: From DMR summary

Discharge temperature: 25°C (Default value used for modeling purposes)

Median stream pH to be used: 7.0 Standard Units (S.U.)

Basis: Default value used for modeling purposes

Stream Temperature: 20°C (Default value used for CWF modeling purposes)

Background NH<sub>3</sub>-N concentration: 0.1 mg/l

Basis: Default value used for modeling purposes

NH<sub>3</sub>-N Summer limits: 25.0 mg/l (monthly average)

50.0 mg/l (instantaneous maximum)

NH<sub>3</sub>-N Winter limits: 25.0 mg/l (monthly average)

50.0 mg/l (instantaneous maximum)

Result: WQ modeling resulted in the summer limits calculated above (see Attachment 1), which are the same as the previous permit. The winter limits are set as three times the summer limits, but since the technology-based limits are more protective, they will be used. As with the previous permit, in accordance with the SOP, the summer limits for NH<sub>3</sub>-N will be added and the winter NH<sub>3</sub>-N will be set as monitoring only.

h. CBOD<sub>5</sub>

Median discharge pH to be used: 7.2 Standard Units (S.U.)

Basis: From DMR summary

Discharge temperature: 25°C (Default value used for modeling purposes)

Median stream pH to be used: 7.0 Standard Units (S.U.)

Basis: Default value used for modeling purposes

Stream Temperature: 20°C (Default value used for CWF modeling)

Background CBOD<sub>5</sub> concentration: 2.0 mg/l

Basis: Default value used for modeling purposes

Calculated CBOD<sub>5</sub> limits: 25.0 mg/l (monthly average)

50.0 mg/l (instantaneous maximum)

Result: WQ modeling resulted in the calculated CBOD5 limits above (see Attachment 1), which are the same as the previous NPDES Permit.

i. Dissolved Oxygen (DO)

The Dissolved Oxygen technology-based minimum of 4.0 mg/l will be retained as recommended by the WQ Model (see Attachment 1) and the SOP based on Chapter 93.7, under the authority of Chapter 92a.61.

The measurement frequency was previously set to 3/week, which will be retained, due to this site being a campground with flows being less than 10,000 GPD.

j. Disinfection

Ultraviolet (UV) light monitoring

Total Residual Chlorine (TRC) limits: 0.5 mg/l (monthly average)  
1.6 mg/l (instantaneous maximum)

Basis: The TRC limits above are technology-based using the TRC\_Calc Spreadsheet (see Attachment 2). The instantaneous maximum limit was previously set as 1.2 mg/l. Since the Permittee is meeting the more restrictive limit, it will be retained.

The measurement frequency was previously set to 3/week, which will be retained, due to this site being a campground with flows being less than 10,000 GPD.

**4. Reasonable Potential Analysis for Receiving Stream:**

A Reasonable Potential Analysis was not performed in accordance with State practices for Outfall 001 using the Department's Toxics Management Spreadsheet since no sampling other than sewage-related parameters was performed for this facility with the renewal application.

**5. Reasonable Potential for Downstream Public Water Supply (PWS):**

The Department's Toxics Management Spreadsheet does not calculate limits for parameters that are based on PWS criteria (TDS, Chloride, Bromide, and Sulfate). Since no relevant sampling was provided, mass-balance calculations were not performed.

Nearest Downstream potable water supply (PWS): Pennsylvania American Water Company - Ellwood City

Distance downstream from the point of discharge: 5.0 miles (approximate)

**6. Anti-Backsliding:**

Since all the permit limits in this renewal are the same or more restrictive than the previous NPDES Permit, anti-backsliding is not applicable.

**7. Attachment List:**

Attachment 1 - WQ Modeling Printouts

Attachment 2 - TRC\_Calc Spreadsheet

(The Attachments above can be found at the end of this document)

**Compliance History**

**DMR Data for Outfall 001 (from May 1, 2018 to April 30, 2019 and from July 1, 2021 to August 31, 2021)**

**(This is the only data available - no discharges reported for all other reports)**

Parameter	AUG-21	JUL-21	AUG-18	JUL-18
Flow (MGD) Average Monthly	0.001	0.0005	0.0050	0.0450
Flow (MGD) Daily Maximum	0.001	0.0005	0.0039	0.0039
pH (S.U.) Minimum	7.0	7.0	7.4	6.88
pH (S.U.) Maximum	7.1	7.2	7.4	7.5
DO (mg/L) Minimum	5.14	4.66	7.54	3.25
Ammonia-Nitrogen (mg/L) Average Monthly	3.42	3.82	-	-
Ammonia-Nitrogen (mg/L) Instantaneous Maximum	5.86	4.0	-	-
TRC (mg/L) Average Monthly	0.24	0.35	0.22	0.056
TRC (mg/L) Instantaneous Maximum	0.33	0.44	0.40	0.100
CBOD5 (mg/L) Average Monthly	4.1	2.2	17	43.05
CBOD5 (mg/L) Instantaneous Maximum	6.12	2.4	17	< 60
TSS (mg/L) Average Monthly	4.25	25.75	28.0	46.25
TSS (mg/L) Instantaneous Maximum	6.0	49.0	28.0	72
Fecal Coliform (CFU/100 ml) Geometric Mean	211	1	> 2400	709.92
Fecal Coliform (CFU/100 ml) Instantaneous Maximum	2419	1	> 2400	> 2400
Total Nitrogen (mg/L) Average Monthly	E	9.01	1.70	4.065
Total Phosphorus (mg/L) Average Monthly	E	4.04	2.92	0.0000036

**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) <sup>(1)</sup>		Concentrations (mg/L)				Minimum <sup>(2)</sup> Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	1/week	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	3/week	Grab
DO	XXX	XXX	4.0 Inst Min	XXX	XXX	XXX	3/week	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.2	3/week	Grab
CBOD <sub>5</sub>	XXX	XXX	XXX	25.0	XXX	50.0	2/month	Grab
TSS	XXX	XXX	XXX	30.0	XXX	60.0	2/month	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	1000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	2000	2/month	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
Total Nitrogen	XXX	XXX	XXX	Report	XXX	XXX	2/month	Grab
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	Report	XXX	Report	2/month	Grab
Ammonia May 1 - Oct 31	XXX	XXX	XXX	25.0	XXX	50.0	2/month	Grab
Total Phosphorus	XXX	XXX	XXX	Report	XXX	XXX	2/month	Grab

Compliance Sampling Location: at Outfall 001, after disinfection.

Flow is monitor only. The limits for pH are technology-based on Chapter 93.7. The Total Residual Chlorine (TRC) limits are technology-based on Chapter 92a.48. The limits for CBOD<sub>5</sub>, Total Suspended Solids, Dissolved Oxygen, and Fecal Coliform are technology based on Chapter 92a.47. The summer limits for Ammonia-Nitrogen are technology-based on Chapter 93.7. Monitoring for E. Coli, Total Nitrogen, Total Phosphorus, and winter Ammonia-Nitrogen is based on Chapter 92a.61.

Attachment 1

**WQM 7.0 Effluent Limits**

<u>SWP Basin</u>		<u>Stream Code</u>	<u>Stream Name</u>				
20C		34032	SLIPPERY ROCK CREEK				
RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
6.890	Saraah Heinz	PA0222801	0.006	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			4

**WQM 7.0 D.O.Simulation**

<u>SWP Basin</u>	<u>Stream Code</u>	<u>Stream Name</u>		
20C	34032	SLIPPERY ROCK CREEK		
<u>RMI</u> 6.890	<u>Total Discharge Flow (mgd)</u> 0.006	<u>Analysis Temperature (°C)</u> 20.001	<u>Analysis pH</u> 7.000	
<u>Reach Width (ft)</u> 72.112	<u>Reach Depth (ft)</u> 1.098	<u>Reach WDRatio</u> 65.700	<u>Reach Velocity (fps)</u> 0.498	
<u>Reach CBOD5 (mg/L)</u> 2.01	<u>Reach Kc (1/days)</u> 0.004	<u>Reach NH3-N (mg/L)</u> 0.01	<u>Reach Kn (1/days)</u> 0.700	
<u>Reach DO (mg/L)</u> 8.242	<u>Reach Kr (1/days)</u> 49.425	<u>Kr Equation</u> Tsivoglou	<u>Reach DO Goal (mg/L)</u> 6	
<u>Reach Travel Time (days)</u> 0.109	<u>Subreach Results</u>			
	TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
	0.011	2.01	0.01	8.24
	0.022	2.01	0.01	8.24
	0.033	2.01	0.01	8.24
	0.044	2.01	0.01	8.24
	0.055	2.00	0.01	8.24
	0.066	2.00	0.01	8.24
	0.076	2.00	0.01	8.24
	0.087	2.00	0.01	8.24
	0.098	2.00	0.01	8.24
	0.109	2.00	0.01	8.24

### WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	<input checked="" type="checkbox"/>
WLA Method	EMPR	Use Inputted W/D Ratio	<input type="checkbox"/>
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	<input type="checkbox"/>
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	<input checked="" type="checkbox"/>
D.O. Saturation	90.00%	Use Balanced Technology	<input checked="" type="checkbox"/>
D.O. Goal	6		

**Input Data WQM 7.0**

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
20C	34032	SLIPPERY ROCK CREEK	6.890	940.00	394.00	0.00000	0.00	<input checked="" type="checkbox"/>

**Stream Data**

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

**Discharge Data**

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Saraah Heinz	PA0222801	0.0060	0.0000	0.0000	0.000	25.00	7.20
<b>Parameter Data</b>							
Parameter Name		Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)		

CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	4.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

**Input Data WQM 7.0**

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
20C	34032	SLIPPERY ROCK CREEK	6.000	840.00	398.00	0.00000	0.00	<input checked="" type="checkbox"/>

**Stream Data**

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

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

**WQM 7.0 Hydrodynamic Outputs**

<u>SWP Basin</u>			<u>Stream Code</u>			<u>Stream Name</u>						
20C			34032			SLIPPERY ROCK CREEK						
RMI	Stream Flow	PWS With	Net Stream Flow	Disc Analysis Flow	Reach Slope	Depth	Width	W/D Ratio	Velocity	Reach Trav Time	Analysis Temp	Analysis pH
	(cfs)	(cfs)	(cfs)	(cfs)	(ft/ft)	(ft)	(ft)		(fps)	(days)	(°C)	
<b>Q7-10 Flow</b>												
6.890	39.40	0.00	39.40	.0093	0.02128	1.098	72.11	65.7	0.50	0.109	20.00	7.00
<b>Q1-10 Flow</b>												
6.890	25.22	0.00	25.22	.0093	0.02128	NA	NA	NA	0.39	0.140	20.00	7.00
<b>Q30-10 Flow</b>												
6.890	53.58	0.00	53.58	.0093	0.02128	NA	NA	NA	0.59	0.092	20.00	7.00

**WQM 7.0 Wasteload Allocations**

<u>SWP Basin</u>		<u>Stream Code</u>	<u>Stream Name</u>									
20C	34032	SLIPPERY ROCK CREEK										
<b>NH3-N Acute Allocations</b>												
<hr/>												
RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction					
6.890	Saraah Heinz	16.76	50	16.76	50	0	0					
<b>NH3-N Chronic Allocations</b>												
<hr/>												
RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction					
6.890	Saraah Heinz	1.89	25	1.89	25	0	0					
<b>Dissolved Oxygen Allocations</b>												
<hr/>												
RMI	Discharge Name	<u>CBOD5</u>		<u>NH3-N</u>		<u>Dissolved Oxygen</u>						
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)					
6.89	Saraah Heinz	25	25	25	25	4	4					
						0	0					

Attachment 2

TRC EVALUATION																																																																															
Input appropriate values in A3:A9 and D3:D9																																																																															
<table border="1"> <tr> <td>39.4</td><td>= Q stream (cfs)</td><td>0.5</td><td>= CV Daily</td></tr> <tr> <td>0.006</td><td>= Q discharge (MGD)</td><td>0.5</td><td>= CV Hourly</td></tr> <tr> <td>30</td><td>= no. samples</td><td>1</td><td>= AFC_Partial Mix Factor</td></tr> <tr> <td>0.3</td><td>= Chlorine Demand of Stream</td><td>1</td><td>= CFC_Partial Mix Factor</td></tr> <tr> <td>0</td><td>= Chlorine Demand of Discharge</td><td>15</td><td>= AFC_Criteria Compliance Time (min)</td></tr> <tr> <td>0.5</td><td>= BAT/BPJ Value</td><td>720</td><td>= CFC_Criteria Compliance Time (min)</td></tr> <tr> <td>0</td><td>= % Factor of Safety (FOS)</td><td>0</td><td>= Decay Coefficient (K)</td></tr> </table>				39.4	= Q stream (cfs)	0.5	= CV Daily	0.006	= Q discharge (MGD)	0.5	= CV Hourly	30	= no. samples	1	= AFC_Partial Mix Factor	0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor	0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)	0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)	0	= % Factor of Safety (FOS)	0	= Decay Coefficient (K)																																																
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Source		Reference		AFC Calculations		Reference	CFC Calculations																																																																								
TRC		<b>1.3.2.iii</b>		WLA_afc = 1354.102		<b>1.3.2.iii</b>	WLA_cfc = 1320.136																																																																								
PENTOXSD TRG		<b>5.1a</b>		LTAMULT_afc = 0.373		<b>5.1c</b>	LTAMULT_cfc = 0.581																																																																								
PENTOXSD TRG		<b>5.1b</b>		LTA_afc = 504.571		<b>5.1d</b>	LTA_cfc = 767.465																																																																								
Effluent Limit Calculations																																																																															
PENTOXSD TRG		<b>5.1f</b>		AML MULT = 1.231																																																																											
PENTOXSD TRG		<b>5.1g</b>		AVG MON LIMIT (mg/l) = 0.500		BAT/BPJ																																																																									
				INST MAX LIMIT (mg/l) = 1.635																																																																											
<table border="1"> <tr> <td>WLA_afc</td> <td colspan="7">(.019/e(-k*AFC_tc)) + [(AFC_Yc*Qs*.019/Qd*e(-k*AFC_tc))... ...+ Xd + (AFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)</td> </tr> <tr> <td>LTAMULT_afc</td> <td colspan="7">EXP((0.5*LN(cvh^2+1))-2.326*LN(cvh^2+1)^0.5)</td> </tr> <tr> <td>LTA_afc</td> <td colspan="7">wla_afc*LTAMULT_afc</td> </tr> <tr> <td>WLA_cfc</td> <td colspan="7">(.011/e(-k*CFC_tc)) + [(CFC_Yc*Qs*.011/Qd*e(-k*CFC_tc))... ...+ Xd + (CFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)</td> </tr> <tr> <td>LTAMULT_cfc</td> <td colspan="7">EXP((0.5*LN(cvd^2/no_samples+1))-2.326*LN(cvd^2/no_samples+1)^0.5)</td> </tr> <tr> <td>LTA_cfc</td> <td colspan="7">wla_cfc*LTAMULT_cfc</td> </tr> <tr> <td>AML_MULT</td> <td colspan="7">EXP(2.326*LN((cvd^2/no_samples+1)^0.5)-0.5*LN(cvd^2/no_samples+1))</td> </tr> <tr> <td>AVG_MON_LIMIT</td> <td colspan="7">MIN(BAT_BPJ,MIN(LTA_afc,LTA_cfc)*AML_MULT)</td> </tr> <tr> <td>INST_MAX_LIMIT</td> <td colspan="7">1.5*((av_mon_limit/AML_MULT)/LTAMULT_afc)</td> </tr> </table>								WLA_afc	(.019/e(-k*AFC_tc)) + [(AFC_Yc*Qs*.019/Qd*e(-k*AFC_tc))... ...+ Xd + (AFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)							LTAMULT_afc	EXP((0.5*LN(cvh^2+1))-2.326*LN(cvh^2+1)^0.5)							LTA_afc	wla_afc*LTAMULT_afc							WLA_cfc	(.011/e(-k*CFC_tc)) + [(CFC_Yc*Qs*.011/Qd*e(-k*CFC_tc))... ...+ Xd + (CFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)							LTAMULT_cfc	EXP((0.5*LN(cvd^2/no_samples+1))-2.326*LN(cvd^2/no_samples+1)^0.5)							LTA_cfc	wla_cfc*LTAMULT_cfc							AML_MULT	EXP(2.326*LN((cvd^2/no_samples+1)^0.5)-0.5*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)						
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