pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0216763**
Facility Type	**Industrial**	APS ID	**1108551**
Major / Minor	**Minor**	Authorization ID	**1475132**

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

Applicant and Facility Information

Applicant Name	**Somerset Borough Municipal Authority Somerset County**	Facility Name	**Somerset Borough Municipal Water System**
Applicant Address	347 W Union Street PO Box 71	Facility Address	3518 Coxes Creek Road
	Somerset, PA 15501-1543		Somerset, PA 15501
Applicant Contact	Jessica Sizemore	Facility Contact	Bradley
Applicant Phone	(814) 443-2661	Facility Phone	Lorence
Client ID	64334	Site ID	3805
SIC Code	4941	Municipality	Somerset Township
SIC Description	Trans. & Utilities - Water Supply	County	Somerset
Date Application Received	February 29, 2024	EPA Waived?	Yes
Date Application Accepted	April 11, 2024	If No, Reason	

Purpose of Application: Renewal of NPDES Industrial Waste Permit without an ELG.

Summary of Review

The Department received a late NPDES permit renewal application from the Municipal Authority of the Borough of Somerset for the Coxes Creek Water Treatment Plant located in Somerset Township of Somerset County on February 29, 2024. The facility is a potable public WTP with a SIC Code of 4941. The facility's existing permitted industrial waste discharge consists of treated filter backwash water, filter bed water and filter-to-waste water. The filter backwash is conveyed to the lagoon, and then ultimately discharged to Trib 39004 to West Branch Coxes Creek via Outfall 001. Outfall 002 discharges lagoon underdrain groundwater to Trib 39004 to West Branch Coxes Creek.

The Coxes Creek WTP (plant pumping capacity rated at 0.864 MGD) purifies water obtained from three (3) ground water wells (Well #7, #8 and #9). The Coxes Creek WTP is used to supplement the water supply from the Authority's other WTPs. If the water supply from the other WTPs is adequate, then the Coxes Creek WTP is offline. The NPDES permit renewal application provides average and peak flow information that reflected the historic limited use of the plant. Recently, the operation of the plant has shifted to seven (7) days per week.

The raw water has chemicals added (Potassium Permanganate, Hydrofluoric Acid, Chlorine, Ortho Polyphosphate, Sodium Sulfate and the plant has the ability to pre-chlorinate) then goes through an in-line mixer prior to entering the mixing tank. The water is then treated by one (1) of two (2) filter beds. The filtered water then entering the clearwell. From the clearwell the treated water has Ortho Polyphosphate added prior to entering the distribution system. Finished water from the clearwell is used to backwash the filters. Once the backwash process is completed, each filter goes through a "filter-to-waste" period that ends once turbidity reaches acceptable levels. While the turbidity remains above the acceptable levels, the water is classified as filter-to-waste water and is directed to the lagoon.

Approve	Deny	Signatures	Date
X		Curtis Holes, P.E. / Environmental Engineer	April 17, 2024
X		Michael E. Fifth, P.E. / Environmental Engineer Manager	April 22, 2024

Summary of Review

Accumulated lagoon solids are manually transferred to the sand drying beds as required, then the dried solids are disposed of at a permitted landfill. The liquids from the sand drying beds are conveyed back to the lagoon. Often the lagoon water is recycled back to the head of the plant. Wastewaters generated at the facility are filter backwash water, sand bed filter water and filter-to-waste water. The wastewaters are conveyed to the lagoon, which allows the solids to settle out prior to being discharge to the Trib 39004 to West Branch Coxes Creek.

Residual waste disposal must meet solid waste regulations.

Part C language in the draft permit provides controls on floating solids, chemical additives, residual solids, Total Residual Chlorine and Sedimentation Basin Cleaning.

The client ID has no open violations.

It is recommended that a draft permit be published for public comment in response to this application.

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.

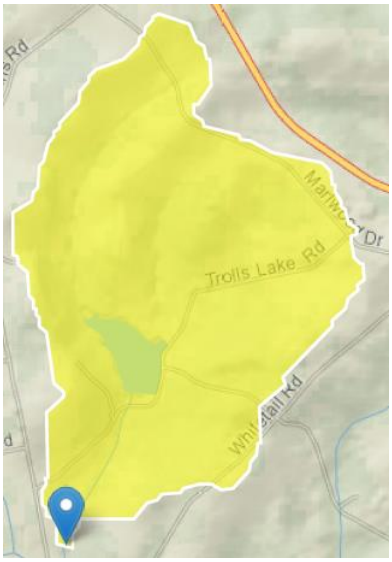
Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.022
Latitude	40º 01' 31.15"	Longitude	-79º 07' 58.28"
Quad Name	Bakersville	Quad Code	1812
Wastewater Description:	Treated filter backwash water, sand filter bed water and filter-to-waste water.		
Receiving Waters	UNT to West Branch Coxes Creek	Stream Code	39004
NHD Com ID	69915989	RMI	0.14
Drainage Area	1.07	Yield (cfs/mi^2)	0.0192
Q_{7-10} Flow (cfs)	0.0206	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	2010	Slope (ft/ft)	
Watershed No.	19-F	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use	None	Exceptions to Criteria	None
Assessment Status	Impaired		
Cause(s) of Impairment	Siltation		
Source(s) of Impairment	Agriculture		
TMDL Status	Final February 23, 2009	Name	Coxes Creek Watershed
Nearest Downstream Public Water Supply Intake	Indian Creek Valley Water Authority		
PWS Waters	Youghiogheny River	Flow at Intake (cfs)	64.7
PWS RMI	Approximately 62.5	Distance from Outfall (mi)	>40 miles

Changes Since Last Permit Issuance:

Other Comments:

Figure 1: Basin Delineation for Outfall 001



Discharge, Receiving Waters and Water Supply Information

Outfall No.	002	Design Flow (MGD)	0.001*
Latitude	40º 01' 28"	Longitude	-79º 07' 58"
Quad Name	Bakersville	Quad Code	
Wastewater Description:	Lagoon underdrain groundwater.		
Receiving Waters	UNT to West Branch Coxes Creek	Stream Code	39004
NHD Com ID	69915989	RMI	0.08
Drainage Area	1.11	Yield (cfs/mi^2)	0.0112
Q_{7-10} Flow (cfs)	0.0129	Q_{7-10} Basis	USGS StreamStats
Elevation (ft)	2004	Slope (ft/ft)	
Watershed No.	19-F	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use	None	Exceptions to Criteria	None
Assessment Status	Impaired		
Cause(s) of Impairment	Siltation		
Source(s) of Impairment	Agriculture		
TMDL Status	Final	Name	Coxes Creek Watershed
Nearest Downstream Public Water Supply Intake	Indian Creek Valley Water Authority		
PWS Waters	Youghiogheny River	Flow at Intake (cfs)	64.7
PWS RMI	Approximately 62.5	Distance from Outfall (mi)	>40 miles

Changes Since Last Permit Issuance:

Other Comments: *Outfall 002 discharges groundwater from an underdrain. Application states that the flow varies, 0.001 MGD is used during effluent limit development.

Figure 2: Basin Delineation for Outfall 001

Compliance History	
Summary of DMRs:	No exceedances.
Summary of Inspections:	The last inspection conducted by the Department was on August 22, 2023 by Lisa Milsop and no violations noted.

Other Comments:

Compliance History

DMR Data for Outfall 001 (from April 1, 2023 to February 29, 2024)

Parameter	Limit	FEB-24	JAN-24	DEC-23	NOV-23	OCT-23	SEP-23	AUG-23	JUL-23	JUN-23	MAY-23	APR-23
Flow (MGD) Average Monthly	**Report**	0.0010	0.0007	0.00126	0.0004	0.00013	0.00076	0.00116	0.00097	0.00287	0.00776	0.00006
Flow (MGD) Daily Maximum	**Report**	0.0013	0.0019	0.00152	0.0010	0.0038	0.00009	0.00570	0.00570	0.01711	0.05420	0.00427
pH (S.U.) IMIN	**6.0**	7.67	8.04	7.88	7.98	7.98	8.25	7.88	8.11	7.68	8.14	8.07
pH (S.U.) IMAX	**9.0**	7.92	8.08	7.87	7.83	8.10	8.32	8.31	8.18	7.97	8.36	8.33
TRC (mg/L) Average Monthly	**0.080**	0.07	0.03	0.01	0.04	0.08	0.03	0.070	0.040	0.040	0.055	0.050
TRC (mg/L) Daily Maximum	**0.188**	0.03	0.03	0.05	0.07	0.04	0.04	0.070	0.050	0.050	0.060	0.060
TSS (mg/L) Average Monthly	**30.0**	4.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.00	< 2.0	< 2.00	< 2.00	< 2.00	< 2.00
TSS (mg/L) Daily Maximum	**60.0**	< 2.0	2.0	< 2.0	2.0	3.0	4.00	< 2.0	< 2.00	< 2.00	< 2.00	< 2.00
Total Aluminum (mg/L) Average Monthly	**1.3**	< 0.10	< 0.10	< 0.10	< 0.1	< 0.10	< 0.1	< 0.100	< 0.100	< 0.100	< 1.00	< 0.100
Total Aluminum (mg/L) Daily Maximum	**2.6**	< 0.10	< 0.10	< 0.10	< 0.1	< 0.10	< 0.1	< 0.100	< 0.100	< 0.100	< 1.00	< 0.100
Fluoride (mg/L) Average Monthly		0.4	0.30	0.70	1.10	0.30	0.3	0.25	0.20	0.250	0.15	0.20
Fluoride (mg/L) Daily Maximum		0.4	0.20	0.40	0.6	0.30	0.9	0.30	0.20	0.300	0.20	0.20
Total Iron (mg/L) Average Monthly	**2.0**	0.35	0.07	0.07	0.07	0.190	0.06	0.055	0.055	< 0.165	< 0.080	< 0.060
Total Iron (mg/L) Daily Maximum	**4.0**	0.06	0.16	0.13	0.16	0.160	0.05	0.080	0.060	< 0.280	< 0.110	< 0.070
Total Manganese (mg/L) Average Monthly	**1.0**	0.18	0.04	0.04	0.06	0.160	0.08	0.035	0.045	0.100	< 0.035	0.045
Total Manganese (mg/L) Daily Maximum	**2.0**	0.02	0.08	0.07	0.10	0.160	0.04	0.070	0.050	0.190	< 0.060	0.060
Total Zinc (mg/L) Average Monthly		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Total Zinc (mg/L) Daily Maximum		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010

DMR Data for Outfall 002 (from April 1, 2023 to February 29, 2024)

Parameter	Limits	FEB-24	JAN-24	DEC-23	NOV-23	OCT-23	SEP-23	AUG-23	JUL-23	JUN-23	MAY-23	APR-23
Flow (MGD) Average Quarterly	**Report**			0.00110			0.00118			0.00003		
Flow (MGD) Daily Maximum	**Report**			0.00114			0.00095			0.00148		
pH (S.U.) IMIN	**6.0**			6.87			6.75			6.89		
pH (S.U.) IMAX	**9.0**			7.03			6.72			6.93		
TRC (mg/L) Average Quarterly	**Report**			0.01			0.03			0.025		
TRC (mg/L) Daily Maximum	**1.17**			0.03			0.07			0.050		
TSS (mg/L) Average Quarterly	**Report**			< 2.0			< 2.00			< 2.00		
TSS (mg/L) Daily Maximum	**60.0**			< 2.0			< 2.00			< 2.00		
Total Aluminum (mg/L) Average Quarterly	**Report**			< 0.10			< 0.10			< 1.050		
Total Aluminum (mg/L) Daily Maximum	**2.6**			< 0.10			< 0.10			< 2.000		
Fluoride (mg/L) Average Quarterly				< 0.10			< 0.10			< 0.100		
Fluoride (mg/L) Daily Maximum				< 0.10			< 0.10			< 0.100		
Total Iron (mg/L) Average Quarterly	**Report**			< 0.05			< 0.05			< 0.065		
Total Iron (mg/L) Daily Maximum	**4.0**			< 0.05			< 0.05			< 0.080		
Total Manganese (mg/L) Average Quarterly	**Report**			< 0.01			< 0.010			< 0.010		
Total Manganese (mg/L) Daily Maximum	**2.0**			< 0.01			< 0.010			< 0.010		
Total Zinc (mg/L) Average Quarterly				< 0.01			< 0.01			< 0.010		
Total Zinc (mg/L) Daily Maximum				< 0.01			< 0.01			< 0.010		

Development of Effluent Limitations

Outfall No.	001	**Design Flow (MGD)**	.04
Latitude	40º 01' 31"	**Longitude**	-79º 07' 58"

Wastewater Description: Treated filter backwash water, sand filter bed water and filter-to-waste water.

Technology-Based Limitations

The Coxes Creek WTP is not subject to Federal Effluent Limitation Guidelines (ELGs) as the SIC code is not listed under 40 CFR parts 405 through 471.

Regulatory Effluent Standards and Monitoring Requirements

The pH effluent range for all Industrial waste process and non-process discharges pursuant of 25 Pa. Code § 92a.48(a)(2) and 25 Pa. Code § 95.2 is indicated in Table 1 below.

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

Pursuant to 25 Pa. Code § 95.2(4) effluent standards for industrial wastes may not contain more than 7 mg/L of dissolved iron as indicated in Table 1 below.

The Department has recently commenced a new monitoring program targeting per and polyfluoroalkyl substances (PFAS), which is a multipronged strategy to better characterize and control PFAS in permitted discharges to surface waters by implementing monitoring and other requirements in National Pollutant Discharge Elimination System (NPDES) permits.

The PFAS Policy incorporates monitoring for PFAS parameters, PFOA, PFOS, HFPO-DA and PFBS, as a part of the screening analysis for all NPDES Individual Permit Facilities. ATI's renewed permit will include the following footnote: The permittee may discontinue monitoring for PFOA, PFOS, HFPO-DA, and PFBS if the results of 4 consecutive monitoring periods indicate non-detect results at or below Quantitation Limits of 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. When monitoring is discontinued, permittees must enter a No Discharge Indicator (NODI) Code of "GG" on DMRs.

Pursuant to 25 Pa. Code § 92a.48(b) the imposition of technology-based Total Residual Chlorine (TRC) limits for facilities that use chlorination and that are not already subject to TRC limits based on applicable federal ELG's or a facility specific BPJ evaluation as indicated in Table 1 below.

Table 1. Regulatory Effluent Standards

Parameter	Monthly Avg.	Daily Max	IMAX
PFOA	----	----	Report
PFOS	----	----	Report
HFPO-DA	----	----	Report
PFBS	----	----	Report
Flow (MGD)	Monitor	Monitor	----
Iron, Dissolved	----	----	7.0 mg/L
pH (S.U.)	6-9 at all times		
TRC	0.5 mg/L	----	1.6 mg/L

Total Dissolved Solids (TDS)

Integral to the implementation of 25 Pa. Code § 95.10 is the principle that existing, authorized mass loadings of TDS are exempt from any treatment requirements under these provisions. Existing mass loadings of TDS up to and including the maximum daily discharge loading for any existing discharge, provided that the loading was authorized prior to August 21, 2010 are exempt. Discharge loadings of TDS authorized by the Department are typically exempt from the treatment requirements of Chapter 95.10 until the net TDS loading is increased, an existing discharge proposes a hydraulic expansion or a change in the waste stream. If there are existing mass or production-based TDS effluent limits, then these are used as the basis for the existing mass loading. The facility is not new or expanding waste loading of TDS, therefore, the facility is exempt from 25 Pa. Code § 95.10 treatment requirements.

Best Practicable Control Technology Currently Achievable (BPT)

The Department's reference document *Technology-Based Control Requirements for Water Treatment Plant Wastes* (DEP-ID 362-2183-003) established BPT for discharges of WTPs wastewater, which are illustrated in Table 2 below.

Table 2. BPT Limits for WTP Filter Backwash Wastewater

Parameter	Monthly Avg. (mg/L)	Daily Max (mg/L)
Total Suspended solids (TSS)	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 (S.U.)	6-9 at all times	
TRC	0.5	1.0

Water Quality-Based Limitations

Total Maximum Daily Load for Streams Impaired by Abandoned Mine Drainage in the Coxes Creek Watershed

On February 23, 2009, EPA approved the Coxes Creek Total Maximum Daily Load (TMDL) to address metals, suspended solids, and in some areas depressed pH, associated with abandoned mine drainage in the Coxes Creek watershed in southwestern Pennsylvania. The TMDL was established in accordance with Section 303(d)(1)(c) of the Clean Water Act to address impairments of water quality as identified on Pennsylvania's Section 303(d) lists. The TMDL addresses the three primary metals associated with abandoned mine drainage (iron, manganese, aluminum) and pH.

Section 303(d) of the Clean Water Act and the U.S. Environmental Protection Agency's (EPA) Water Quality Planning and Management Regulations (codified at Title 40 of the Code of Federal Regulations Part 130) require states to develop Total Maximum Daily Loads (TMDLs) for impaired water bodies. A TMDL establishes the amount of a pollutant that a water body can assimilate without exceeding its water quality standard for that pollutant. TMDLs provide the scientific basis for a state to establish water quality-based controls to reduce pollution from both point and nonpoint sources to restore and maintain the quality of the state's water resources (USEPA 1991a).

Somerset Borough Coxes Creek Water Treatment Plant was assigned wasteload allocations ("WLAs") from the Coxes Creek TMDL for iron, aluminum, and manganese at its outfall. The TMDL allocated loads and concentrations for Outfall 001 are shown in Table 3.

Table 3. TMDL WLAs for Outfalls.

Pollutant	Allocated Load (lbs/yr.)	Allocated Concentration (mg/L)
Outfall 001		
Aluminum	0.28	1.3
Iron	0.43	2.0
Manganese	0.22	1.0
Outfalls 002 & 003		
Aluminum	1.17	1.3
Iron	1.80	2.0
Manganese	0.90	1.0
Outfall 005		
Aluminum	0.0033	1.3
Iron	0.0050	2.0
Manganese	0.0025	1.0

The facility has removed Outfalls 003 and 005 by conveying those discharges to the lagoon, which discharges via Outfall 001. The TMDL allocated concentrations will be applied to the permit monitoring requirements.

Toxics Management Analysis

The Department's Toxics Management Spreadsheet (TMS) was utilized to facilitate calculations necessary for completing a reasonable potential analysis and determine Water Quality-Based Effluent Limitations (WQBELs) for discharges containing toxic pollutant concentrations. TMS combines the functionality of two (2) of the Department's analysis tools, Toxics Screening Analysis Spreadsheet and PENTOXSD water quality model.

DEP's procedures for evaluating reasonable potential are as follows:

1. For IW discharges, the design flow to use in modeling is the average flow during production or operation and may be taken form the permit application.

2. Perform a Toxics Screening Analysis to identify toxic pollutants of concern. All toxic pollutants, as reported in the permit application or on DMRs, are modeled by the TMS to determine the parameters 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].

    - Establish limits in the draft permit where the maximum reported concentration equals or exceeds 50% of the WQBEL. Use the average monthly and maximum daily limits for the permit as recommended by TMS. Establish an IMAX limit at 2.5 times the average monthly limit.

    - For non-conservative pollutants, establish monitoring requirements where the maximum reported concentration is between 25% - 50% of the WQBEL.

    - For conservative pollutants, establish monitoring requirements where the maximum reported concentration is between 10% - 50% of the WQBEL.

Discharges from Outfall 001 are evaluated based on concentrations reported on the application and contained in the DMRs; data from those sources are used as inputs into the TMS. A summary of TMS Inputs is contained in Table 4 below.

Table 4: TMS Inputs

Parameter	Value
Discharge Inputs	
Facility	Coxes Creek WTP
Evaluation Type	Industrial
NPDES Permit No.	PA0216763
Wastewater Description	Industrial Wastewater and Stormwater
Outfall ID	001
Design Flow (MGD)	0.14
Hardness ($^{mg}/_{L}$)	100
pH (S.U.)	7.0
Partial Mix Factors	Unknown – Calculated by TMS
Complete Mix Times	
Q_{7-10} (min)	0.0206
Q_h (min)	
Stream Inputs	
Receiving Surface Water	Coxes Creek
Number of Reaches to Model	1
Stream Code	39004
RMI	0.0
Elevation (ft)	2010/2005*
Drainage Area (mi^2)	1.07
Slope (ft/ft)	
PWS Withdrawal (MGD)	
Apply Fish Criteria	Yes
Low Flow Yield (cfs/mi^2)	
Flows	
Stream (cfs)	0.0206/0.0206*****
Tributary (cfs)	N/A
Width (ft)	10/10*****
Stream Hardness ($^{mg}/_{L}$)	100
Stream pH (S.U.)	7

***** Denotes discharge location/downstream location values.

Based on the recommendations of the TMS, monitor and report Total Aluminum, Dissolved Iron, Total Iron and Total Manganese at Outfall 001. Analysis Report from the TMS run is included in Attachment A.

WQM 7.0 Model

In general, WQM 7.0 Model is run if the maximum BOD_5/$CBOD_5$ concentrations exceeds 30/25 mg/L respectively in the permit application or the DMRs. The permit application reports BOD_5/$CBOD_5$ concentrations of 2 mg/L, therefore, WQM 7.0 Model is not required to be run.

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 discharge chlorine demands for the receiving stream, 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 then proposed. The results of the modeling, included in Attachment B, indicate that AFC limits are required for TRC (average monthly limit of 0.136 mg/L and daily maximum limit of 1.72 mg/L). The previously imposed TRC effluent limitations will be maintained, average monthly limit of 0.080 mg/L and daily maximum limit of 0.188 mg/L.

Anti-Backsliding

Section 402(o) of the Clean Water Act (CWA), enacted in the Water Quality Act of 1987, establishes anti-backsliding rules governing two situations. The first situation occurs when a permittee seeks to revise a Technology-Based effluent limitation based on BPJ to reflect a subsequently promulgated effluent guideline which is less stringent. The second situation addressed by Section 402(o) arises when a permittee seeks relaxation of an effluent limitation which is based upon a State treatment standard of water quality standard.

Previous limits can be used pursuant to EPA's anti-backsliding regulation 40 CFR 122.44 (l) *Reissued permits.*

> *(1) Except as provided in paragraph (l)(2) of this section when a permit is renewed or reissued. Interim effluent limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit (unless the circumstances on which the previous permit was based have materially and substantially changed since the time the permit was issued and would constitute cause for permit modification or revocation and reissuance under §122.62).*
>
> *(2) In the case of effluent limitations established on the basis of Section 402(a)(1)(B) of the CWA, a permit may not be renewed, reissued, or modified on the basis of effluent guidelines promulgated under section 304(b) subsequent to the original issuance of such permit, to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit.*
>
> > *(i) Exceptions – A permit with respect to which paragraph (l)(2) of this section applies may be renewed, reissued, or modified to contain a less stringent effluent limitation applicable to a pollutant, if –*
> >
> > > *(A) Material and substantial alterations or additions to the permitted facility occurred after permit issuance which justify the application of the less stringent effluent limitation;*
> > >
> > > *(B)(1) Information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified to application of a less stringent effluent limitation at the time of permit issuance; or*
> > >
> > > *(2) The Administrator determines that technical mistakes or mistaken interpretations of law were made in issuing the permit under section 402(a)(1)(b)*

The facility is not seeking to revise the previously permitted effluent limits.

Effluent Limitations and Monitoring Requirements for Outfall 001

The final effluent limits applicable at Outfall 001 are the more stringent of TBELs, WQBELs, regulatory effluent standards, and monitoring requirements as summarized in Table 4. The applicable limits and monitoring requirements provided below are based on those in Tables 1 and 2 of this Fact Sheet.

Table 4. Final Effluent limits and monitoring requirements for Outfall 001

Parameter	Mass (pounds)		Concentration (mg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
PFOA	—	—	—	Report	—	25 Pa. Code § 952.a.61(b)
PFOS	—	—	—	Report	—	25 Pa. Code § 952.a.61(b)
HFPO-DA	—	—	—	Report	—	25 Pa. Code § 952.a.61(b)
PFBS	—	—	—	Report	—	25 Pa. Code § 952.a.61(b)
Flow (MGD)	Report	Report	—	—	—	25 Pa. Code § 92a.61(d)(1)
Total Residual Chlorine	—	—	0.080	0.188	—	25 Pa. Code § 92a.48(b)
Total Suspended Solids	—	—	30.0	60.0	—	40 CFR § 122.144
Iron (total)	—	—	2.0	4.0	—	TMDL
Aluminum (total)	—	—	1.3	2.6	—	TMDL
Manganese (total)	—	—	1.0	2.0	—	TMDL
Dissolved Iron	—	—	Report	Report	—	40 CFR § 122.144
pH (S.U.)	Within the range of 6.0 to 9.0					25 Pa. Code § 95.2

Monitoring Frequency for Outfall 001

Monitoring requirements for both interim and final effluent monitoring periods are based on the previous permits monitoring requirements for the facility are displayed in Table 5 below.

Table 5. Monitoring Requirements for Outfall 001

Parameter	Sample Type	Minimum Sample Frequency
PFOA	Grab	1/year
PFOS	Grab	1/year
HFPO-DA	Grab	1/year
PFBS	Grab	1/year
Flow (MGD)	Meter	2/Month
TRC	Grab	2/Month
TSS	Grab	2/Month
Iron (total)	Grab	2/Month
Aluminum (total)	Grab	2/Month
Manganese (total)	Grab	2/Month
Dissolved Iron	Grab	2/Month
pH (S.U.)	Grab	2/Month

Development of Effluent Limitations

Outfall No.	002	**Design Flow (MGD)**	0.001
Latitude	40º 01' 28"	**Longitude**	-79º 07' 58"

Wastewater Description: Lagoon underdrain groundwater.

Technology-Based Limitations

The Coxes Creek Water Treatment Plant Outfall 002 is not subject to Federal Effluent Limitation Guidelines (ELGs) as the SIC code is not listed under 40 CFR parts 405 through 471.

This Outfall is an underdrain outfall to prevent groundwater from building up under the lagoon liner. If the lagoon would develop an integrity issue, Outfall 002 monitoring data would reflect elevated parameters that would be expected from the discharge of Outfall 001. Outfall 002 helps to give separation of the groundwater and the lagoon liner, but also functions as a leak detection zone, therefore, the monitoring limits from Outfall 001 will be applied to Outfall 002.

Anti-Backsliding

Section 402(o) of the Clean Water Act (CWA), enacted in the Water Quality Act of 1987, establishes anti-backsliding rules governing two situations. The first situation occurs when a permittee seeks to revise a Technology-Based effluent limitation based on BPJ to reflect a subsequently promulgated effluent guideline which is less stringent. The second situation addressed by Section 402(o) arises when a permittee seeks relaxation of an effluent limitation which is based upon a State treatment standard of water quality standard.

Previous limits can be used pursuant to EPA's anti-backsliding regulation 40 CFR 122.44 **(l) Reissued permits. (1) Except as provided in paragraph (l)(2) of this section when a permit is renewed or reissued. Interim effluent limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit (unless the circumstances on which the previous permit was based have materially and substantially changed since the time the permit was issued and would constitute cause for permit modification or revocation and reissuance under §122.62). (2) In the case of effluent limitations established on the basis of Section 402(a)(1)(B) of the CWA, a permit may not be renewed, reissued, or modified on the basis of effluent guidelines promulgated under section 304(b) subsequent to the original issuance of such permit, to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit.**

The facility is not seeking to revise the previously permitted effluent limits.

Effluent Limitations and Monitoring Requirements for Outfall 002

Effluent limits applicable at Outfall 002 are mirror from Outfall 001. The final effluent limits and monitoring requirements as summarized in Table 7. The applicable limits and monitoring requirements provided below are based on those in Tables 1 and 2 of this Fact Sheet.

Table 7. Final Effluent limits and monitoring requirements for Outfall 002

Parameter	Mass (pounds)		Concentration (mg/L)			Basis
	Average Monthly	Daily Maximum	Average Monthly	Daily Maximum	Instant Maximum	
PFOA	—	—	—	Report	—	25 Pa. Code § 952.a.61(b)
PFOS	—	—	—	Report	—	25 Pa. Code § 952.a.61(b)
HFPO-DA	—	—	—	Report	—	25 Pa. Code § 952.a.61(b)
PFBS	—	—	—	Report	—	25 Pa. Code § 952.a.61(b)
Flow (MGD)	Report	Report	—	—	—	25 Pa. Code § 92a.61(d)(1)
Total Residual Chlorine	—	—	—	0.188	—	25 Pa. Code § 92a.48(b)
Total Suspended Solids	—	—	—	60.0	—	40 CFR § 122.144
Iron (total)	—	—	—	4.0	—	TMDL
Aluminum (total)	—	—	—	2.6	—	TMDL
Manganese (total)	—	—	—	2.0	—	TMDL
Dissolved Iron	—	—	Report	Report	—	40 CFR § 122.144
pH (S.U.)	Within the range of 6.0 to 9.0					25 Pa. Code § 95.2

Monitoring Frequency for Outfall 002

Monitoring requirements are based on the previous permits monitoring requirements for the facility are displayed in Table 8 below.

Table 8. Monitoring Requirements for Outfall 002

Parameter	Sample Type	Minimum Sample Frequency
PFOA	Grab	1/year
PFOS	Grab	1/year
HFPO-DA	Grab	1/year
PFBS	Grab	1/year
Flow (MGD)	Meter	2/Quarter
TRC	Grab	2/Quarter
TSS	Grab	2/Quarter
Iron (total)	Grab	2/Quarter
Aluminum (total)	Grab	2/Quarter
Manganese (total)	Grab	2/Quarter
Dissolved Iron	Grab	2/Month
pH (S.U.)	Grab	2/Quarter

Tools and References Used to Develop Permit	
☐	WQM for Windows Model (see Attachment)
☒	Toxics Management Spreadsheet (see Attachment **B**)
☒	TRC Model Spreadsheet (see Attachment **C**)
☐	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:
☐	Other:

ATTACHMENTS

ATTACHMENT A: STREAMSTATS DATA

ATTACHMENT B: TOXICS SCREENING ANALYSIS SPREADSHEET

ATTACHMENT C: TOTAL RESIDUAL CHLORINE EVALUATION

ATTACHMENT A

STREAMSTATS DATA

StreamStats Report Coxes Creek WTP Outfall 001

Region ID:	PA
Workspace ID:	PA20190221170011899000
Clicked Point (Latitude, Longitude):	40.02526, -79.13280
Time:	2019-02-21 12:00:27 -0500

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	1.07	square miles
ELEV	Mean Basin Elevation	2143.2	feet
CARBON	Percentage of area of carbonate rock	0	percent
PRECIP	Mean Annual Precipitation	43	inches
FOREST	Percentage of area covered by forest	41	percent
URBAN	Percentage of basin with urban development	1	percent

Low-Flow Statistics Parameters [100 Percent (1.06 square miles) Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.07	square miles	2.26	1400
ELEV	Mean Basin Elevation	2143.2	feet	1050	2580

Low-Flow Statistics Disclaimers [100 Percent (1.06 square miles) Low Flow Region 4]

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

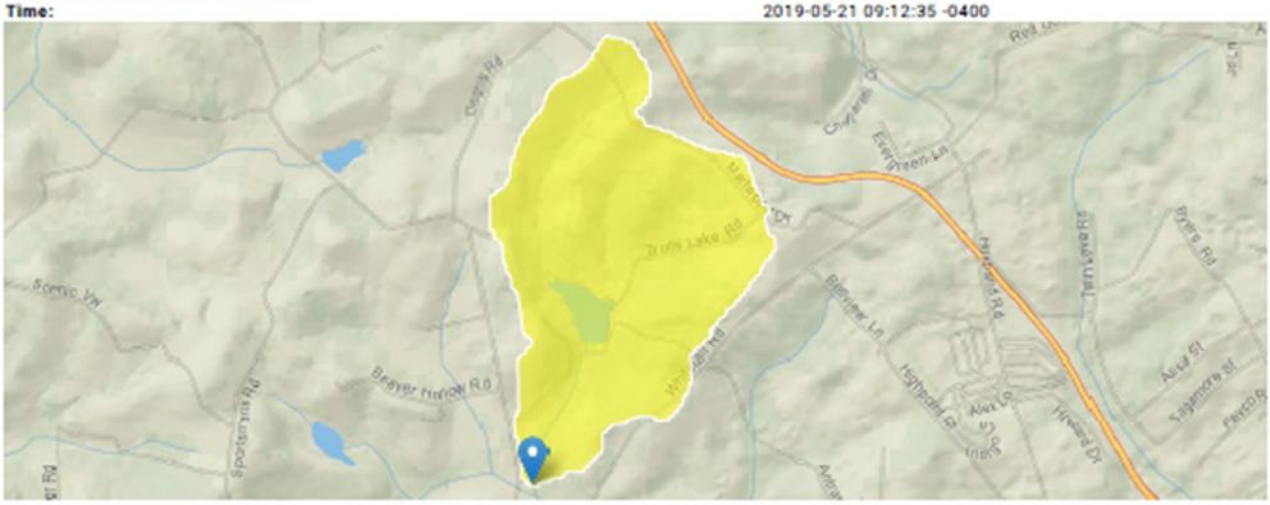
Low-Flow Statistics Flow Report [100 Percent (1.06 square miles) Low Flow Region 4]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.0492	ft^3/s
30 Day 2 Year Low Flow	0.0979	ft^3/s
7 Day 10 Year Low Flow	0.0124	ft^3/s
30 Day 10 Year Low Flow	0.0278	ft^3/s
90 Day 10 Year Low Flow	0.0647	ft^3/s

Low-Flow Statistics Citations

StreamStats Report Coxes Creek WTP Outfall 002

Region ID:	PA
Workspace ID:	PA20190521131218320000
Clicked Point (Latitude, Longitude):	40.02421, -79.13278
Time:	2019-05-21 09:12:35 -0400



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	1.11	square miles
ELEV	Mean Basin Elevation	2139.8	feet

Low-Flow Statistics Parameters [Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.11	square miles	2.26	1400
ELEV	Mean Basin Elevation	2139.8	feet	1050	2580

Low-Flow Statistics Disclaimers [Low Flow Region 4]

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

Low-Flow Statistics Flow Report [Low Flow Region 4]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.0512	ft^3/s
30 Day 2 Year Low Flow	0.102	ft^3/s
7 Day 10 Year Low Flow	0.0129	ft^3/s
30 Day 10 Year Low Flow	0.029	ft^3/s
90 Day 10 Year Low Flow	0.0673	ft^3/s

Low-Flow Statistics Citations

Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (http://pubs.usgs.gov/sir/2006/5130/)

USGS Data Disclaimer: Unless otherwise stated, all data, metadata and related materials are considered to satisfy the quality standards relative to the purpose for which the data were collected. Although these data and associated metadata have been reviewed for accuracy and completeness and approved for release by the U.S. Geological Survey (USGS), no warranty expressed or implied is made regarding the display or utility of the data for other purposes, nor on all computer systems, nor shall the act of distribution constitute any such warranty.

ATTACHMENT B

TOXICS SCREENING ANALYSIS SPREADSHEET

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Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: **Coxes Creek** NPDES Permit No.: **PA0216763** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **Treated filter backwash water**

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
0.022	119	8.72						

					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		238									
	Chloride (PWS)	mg/L		35									
	Bromide	mg/L	<	0.2									
	Sulfate (PWS)	mg/L		25									
	Fluoride (PWS)	mg/L		2									
Group 2	Total Aluminum	µg/L	<	200									
	Total Antimony	µg/L	<	1									
	Total Arsenic	µg/L	<	1									
	Total Barium	µg/L		267									
	Total Beryllium	µg/L	<	1									
	Total Boron	µg/L	<	50									
	Total Cadmium	µg/L	<	0.2									
	Total Chromium (III)	µg/L	<	1									
	Hexavalent Chromium	µg/L		1.3									
	Total Cobalt	µg/L	<	0.5									
	Total Copper	mg/L		0.0014									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L	<	20									
	Dissolved Iron	µg/L		70									
	Total Iron	µg/L		1020									
	Total Lead	µg/L	<	1									
	Total Manganese	µg/L		500									
	Total Mercury	µg/L	<	0.2									
	Total Nickel	µg/L	<	0.5									
	Total Phenols (Phenolics) (PWS)	µg/L	<	20									
	Total Selenium	µg/L	<	1									
	Total Silver	µg/L	<	0.2									
	Total Thallium	µg/L	<	0.2									
	Total Zinc	mg/L	<	0.01									
	Total Molybdenum	µg/L	<	1									
	Acrolein	µg/L	<										
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<										
	Benzene	µg/L	<										
	Bromoform	µg/L											

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

	2,6-Dinitrotoluene	µg/L	<											
	Di-n-Octyl Phthalate	µg/L	<											
	1,2-Diphenylhydrazine	µg/L	<											
	Fluoranthene	µg/L	<											
	Fluorene	µg/L												
	Hexachlorobenzene	µg/L	<											
	Hexachlorobutadiene	µg/L	<											
	Hexachlorocyclopentadiene	µg/L	<											
	Hexachloroethane	µg/L	<											
	Indeno(1,2,3-cd)Pyrene	µg/L	<											
	Isophorone	µg/L	<											
	Naphthalene	µg/L	<											
	Nitrobenzene	µg/L	<											
	n-Nitrosodimethylamine	µg/L	<											
	n-Nitrosodi-n-Propylamine	µg/L	<											
	n-Nitrosodiphenylamine	µg/L	<											
	Phenanthrene	µg/L	<											
	Pyrene	µg/L	<											
	1,2,4-Trichlorobenzene	µg/L	<											
Group 6	Aldrin	µg/L	<											
	alpha-BHC	µg/L	<											
	beta-BHC	µg/L	<											
	gamma-BHC	µg/L	<											
	delta BHC	µg/L	<											
	Chlordane	µg/L	<											
	4,4-DDT	µg/L	<											
	4,4-DDE	µg/L	<											
	4,4-DDD	µg/L	<											
	Dieldrin	µg/L	<											
	alpha-Endosulfan	µg/L	<											
	beta-Endosulfan	µg/L	<											
	Endosulfan Sulfate	µg/L	<											
	Endrin	µg/L	<											
	Endrin Aldehyde	µg/L	<											
	Heptachlor	µg/L	<											
	Heptachlor Epoxide	µg/L	<											
	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	<											
	2,3,7,8-TCDD	ng/L	<											
Group 7	Gross Alpha	pCi/L												
	Total Beta	pCi/L	<											
	Radium 226/228	pCi/L	<											
	Total Strontium	µg/L	<											
	Total Uranium	µg/L	<											
	Osmotic Pressure	mOs/kg												

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Toxics Management Spreadsheet
Version 1.4, May 2023

Stream / Surface Water Information

Coxes Creek, NPDES Permit No. PA0216763, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Blairsville Reservoir**

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	039004	0.14	2010	1.07			Yes
End of Reach 1	039004	0	2005	1.09			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	0.14	0.1	0.0206									100	7		
End of Reach 1	0	0.1													

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	0.14														
End of Reach 1	0														

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Toxics Management Spreadsheet
Version 1.4, May 2023

Model Results

Coxes Creek, NPDES Permit No. PA0216763, Outfall 001

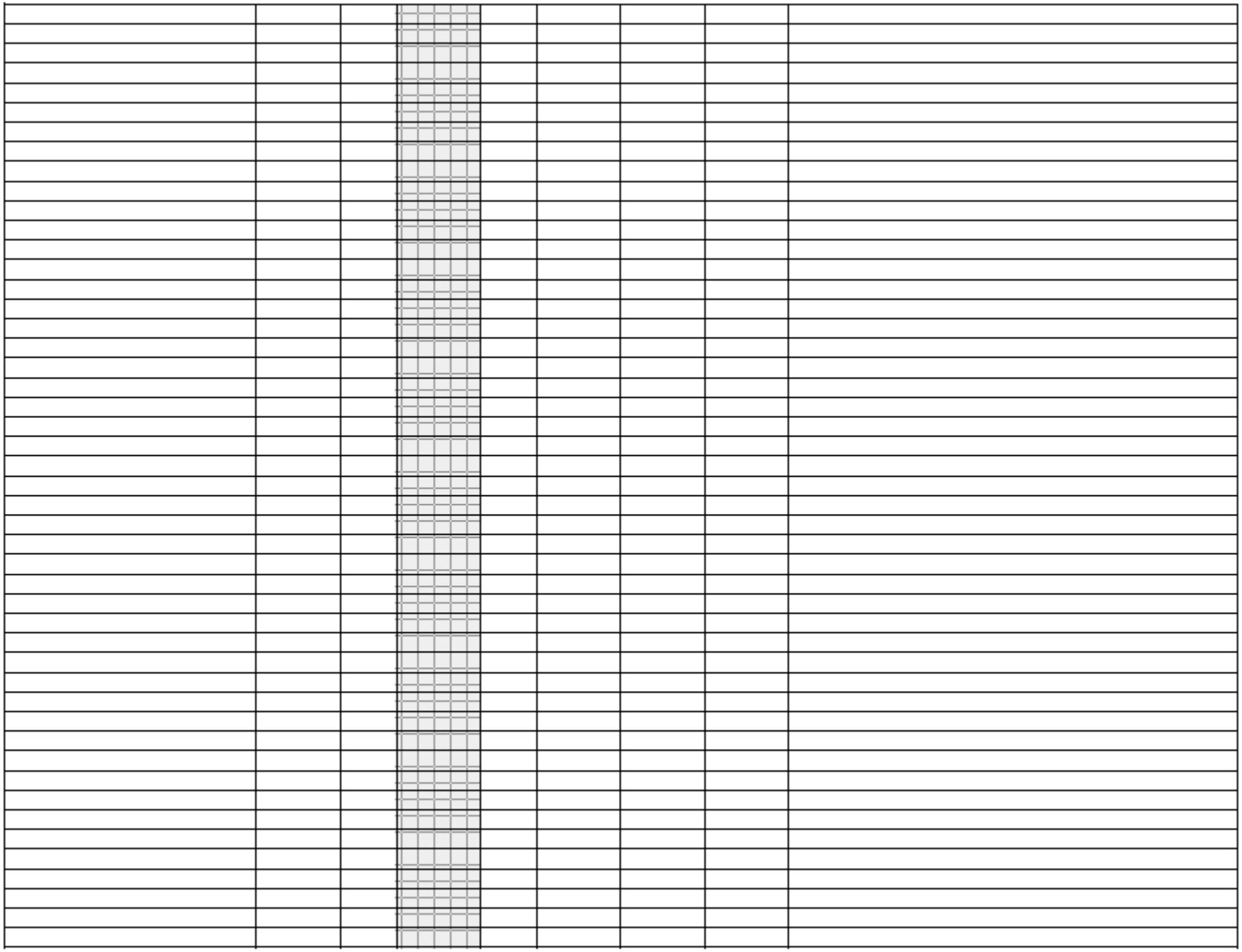
Instructions | Results | RETURN TO INPUTS | SAVE AS PDF | PRINT | ◉ All ○ Inputs ○ Results ○ Limits

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 0.225 PMF: 1 Analysis Hardness (mg/l): 111.84 Analysis pH: 7.41

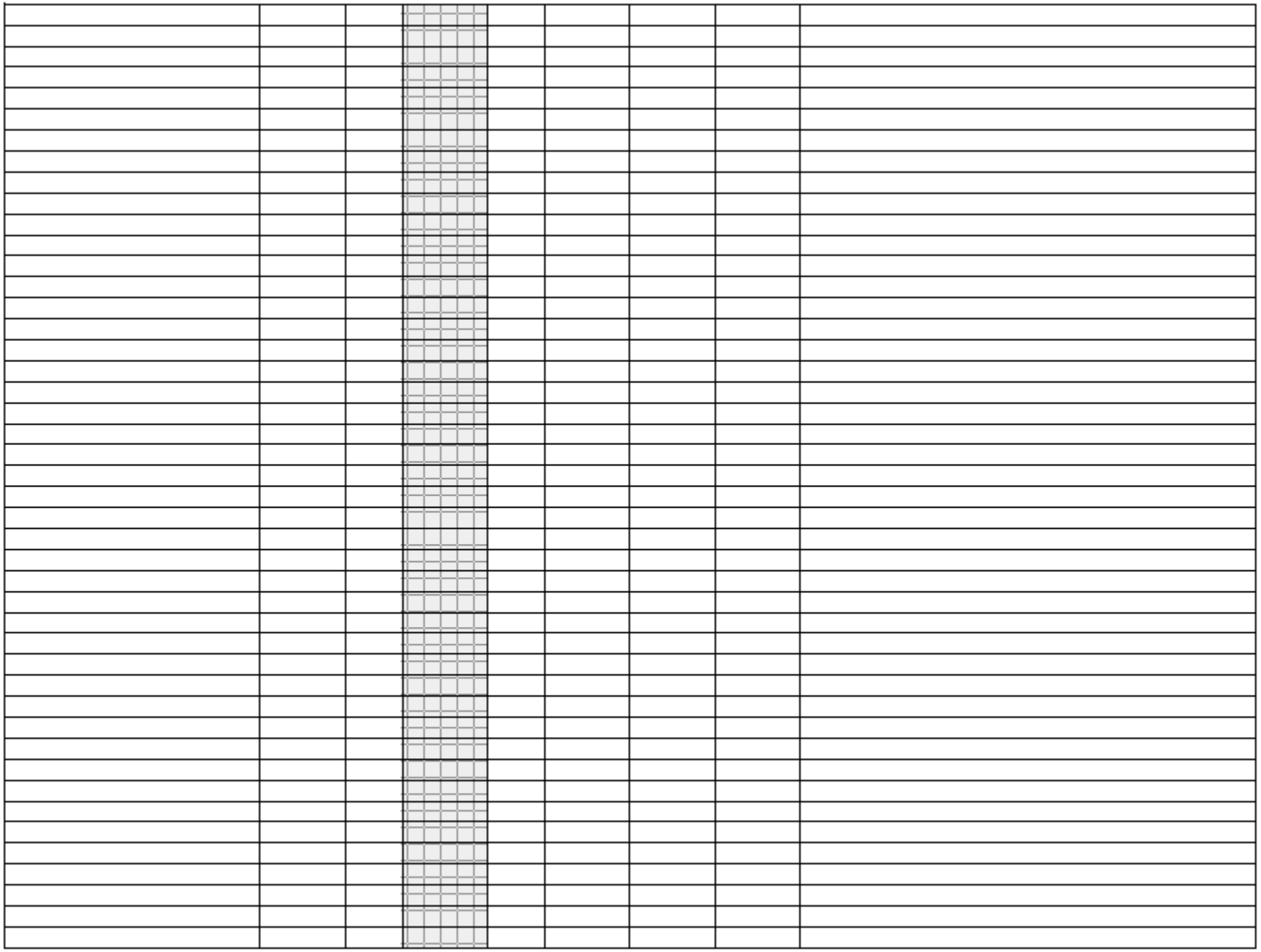
Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	1,204	
Total Antimony	0	0		0	1,100	1,100	1,766	
Total Arsenic	0	0		0	340	340	546	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	33,711	
Total Boron	0	0		0	8,100	8,100	13,003	
Total Cadmium	0	0		0	2.245	2.39	3.84	Chem Translator of 0.939 applied
Total Chromium (III)	0	0		0	624.429	1,976	3,172	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	26.2	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	153	
Total Copper	0	0		0	14.933	15.6	25.0	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	72.930	94.1	151	Chem Translator of 0.775 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	2.64	Chem Translator of 0.85 applied
Total Nickel	0	0		0	514.712	516	828	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	3.899	4.59	7.36	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	104	
Total Zinc	0	0		0	128.830	132	211	Chem Translator of 0.978 applied



☑ *CFC* CCT (min): 0.225 PMF: 1 Analysis Hardness (mg/l): 111.84 Analysis pH: 7.41

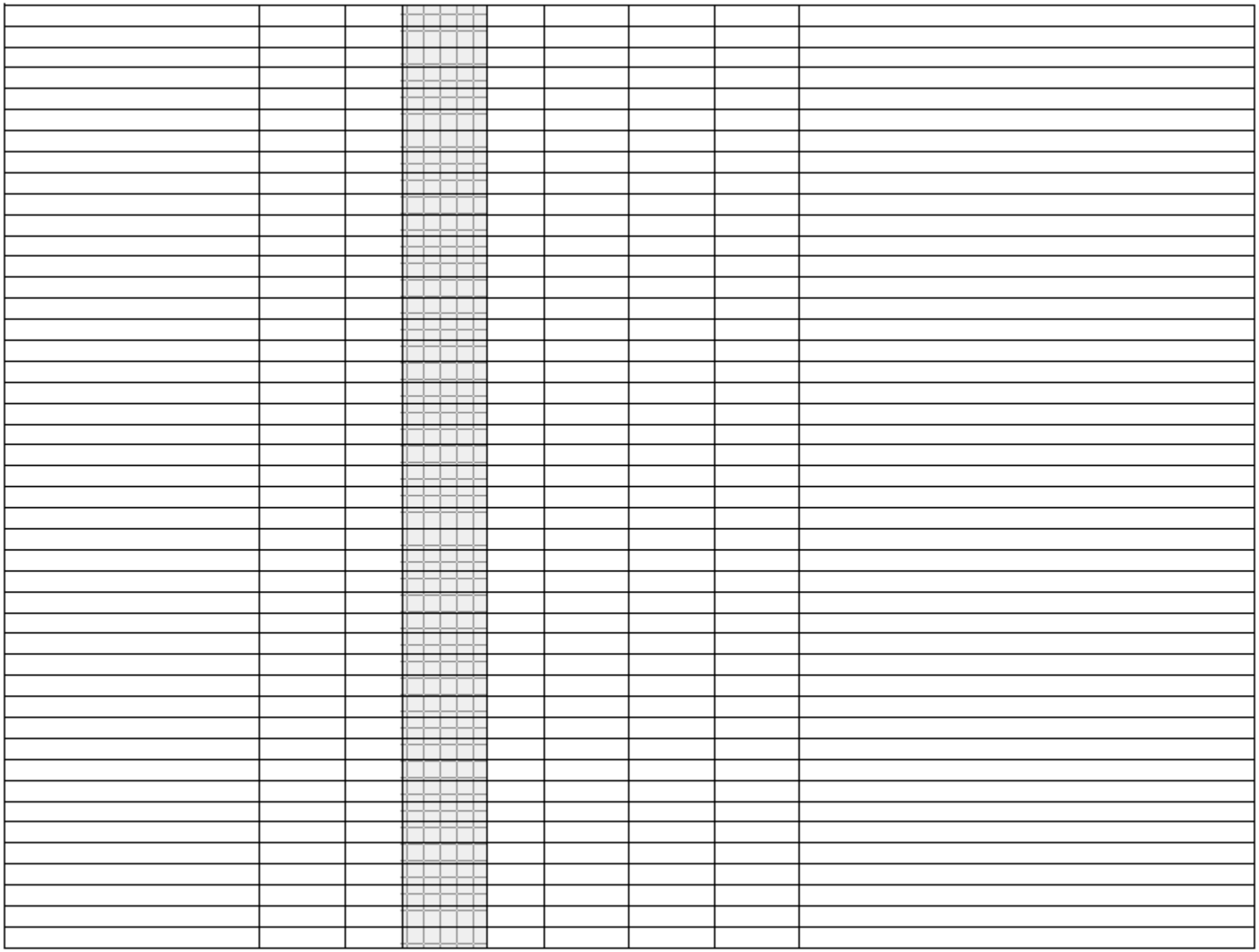
Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	220	220	353	
Total Arsenic	0	0		0	150	150	241	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	6,582	
Total Boron	0	0		0	1,600	1,600	2,568	
Total Cadmium	0	0		0	0.266	0.29	0.47	Chem Translator of 0.904 applied
Total Chromium (III)	0	0		0	81.225	94.4	152	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	16.7	Chem Translator of 0.962 applied

Total Cobalt	0	0		0	19	19.0	30.5	
Total Copper	0	0		0	9.854	10.3	16.5	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	2,408	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	2.842	3.67	5.89	Chem Translator of 0.775 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	1.45	Chem Translator of 0.85 applied
Total Nickel	0	0		0	57.169	57.3	92.0	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	8.01	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	20.9	
Total Zinc	0	0		0	129.884	132	211	Chem Translator of 0.986 applied



☑ ***THH*** CCT (min): 0.225 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	
Fluoride (PWS)	0	0		0	2,000	2,000	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	8.99	
Total Arsenic	0	0		0	10	10.0	16.1	
Total Barium	0	0		0	2,400	2,400	3,853	
Total Boron	0	0		0	3,100	3,100	4,976	
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	482	
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	1,605	
Total Mercury	0	0		0	0.050	0.05	0.08	
Total Nickel	0	0		0	610	610	979	
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	0.39	
Total Zinc	0	0		0	N/A	N/A	N/A	



☑ *CRL* CCT (min): 0.414 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

	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	772	AFC	Discharge Conc > 10% WQBEL (no RP)
Dissolved Iron	Report	Report	Report	Report	Report	µg/L	482	THH	Discharge Conc > 10% WQBEL (no RP)
Total Iron	Report	Report	Report	Report	Report	µg/L	2,408	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Manganese	Report	Report	Report	Report	Report	µg/L	1,605	THH	Discharge Conc > 10% WQBEL (no RP)

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

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

Pollutants	Governing WQBEL	Units	Comments
Total Dissolved Solids (PWS)	N/A	N/A	PWS Not Applicable
Chloride (PWS)	N/A	N/A	PWS Not Applicable
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Fluoride (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	3,853	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	2,568	µg/L	Discharge Conc < TQL
Total Cadmium	0.47	µg/L	Discharge Conc < TQL
Total Chromium (III)	152	µg/L	Discharge Conc < TQL
Hexavalent Chromium	16.7	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cobalt	30.5	µg/L	Discharge Conc < TQL
Total Copper	0.016	mg/L	Discharge Conc ≤ 10% WQBEL
Total Cyanide	N/A	N/A	No WQS
Total Lead	5.89	µg/L	Discharge Conc < TQL
Total Mercury	0.08	µg/L	Discharge Conc < TQL
Total Nickel	92.0	µg/L	Discharge Conc < TQL
Total Phenols (Phenolics) (PWS)		µg/L	PWS Not Applicable
Total Selenium	8.01	µg/L	Discharge Conc < TQL
Total Silver	4.72	µg/L	Discharge Conc < TQL
Total Thallium	0.39	µg/L	Discharge Conc < TQL

Total Zinc	0.14	mg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS

Attachment C

Total Residual Chlorine Evaluation

0.0206	= Q stream (cfs)	0.5	= CV Daily
0.022	= Q discharge (MGD)	0.5	= CV Hourly
4	= no. samples	1	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stre	1	= CFC_Partial Mix Factor
0	= Chlorine Demand of Dis	15	= AFC_Criteria Compliance Time (min)
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)
	= % Factor of Safety (FOS)		=Decay Coefficient (K)

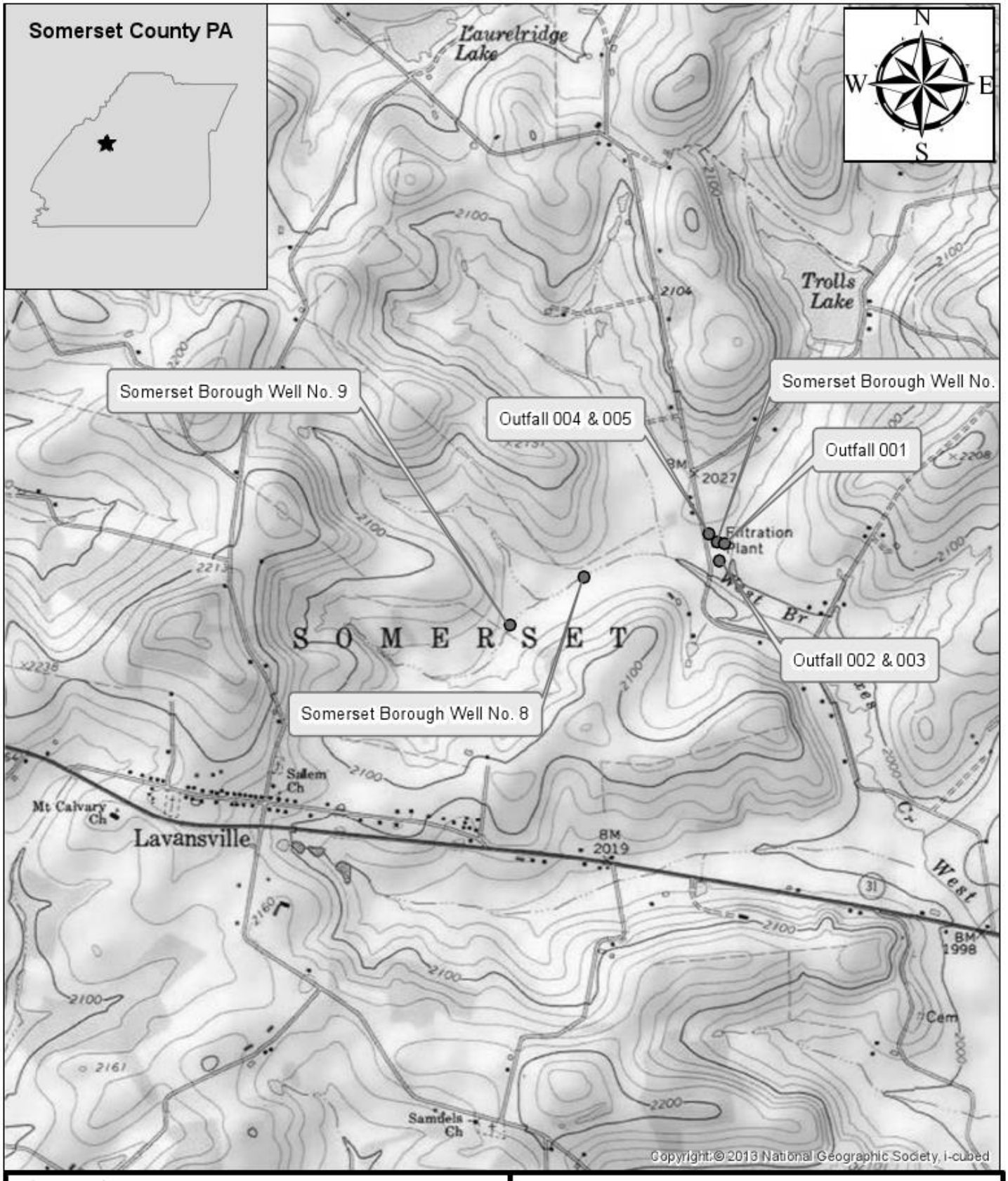
Source	Reference	AFC Calculations		Reference	CFC Calculations	
TRC	1.3.2.iii	WLA afc =	0.212	1.3.2.iii	WLA cfc =	0.199
PENTOXSD TF	5.1a	LTAMULT afc =	0.373	5.1c	LTAMULT cfc =	0.581
PENTOXSD TF	5.1b	LTA_afc=	0.079	5.1d	LTA_cfc =	0.116

Source		Effluent Limit Calculations		
PENTOXSD TF	5.1f	AML MULT =	1.720	
PENTOXSD TF	5.1g	AVG MON LIMIT (mg/l) =	0.136	AFC
		INST MAX LIMIT (mg/l) =	0.318	

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)**

Attachment D

Site Location Map


Somerset County PA
N
W
E
S
Laurelridge Lake
Trolls Lake
Somerset Borough Well No. 9
Somerset Borough Well No.
Outfall 004 & 005
Outfall 001
Outfall 002 & 003
Somerset Borough Well No. 8
Filtration Plant
West Br
SOMERSET
Salem Ch
Mt Calvary Ch
Lavansville
BM 2019
BM 1998
Cem
Samdels Ch
Copyright © 2013 National Geographic Society, i-cubed
North American Datum of 1983
Scale
1 inch = 2,000 feet
0 500 1000 2000 Feet
Legend
Borough of Somerset Wells & Outfalls
Date: 12/4/2018
Path: R:\7500 Somerset Boro\18033 Water Retainer\05 Design\20 MS\NPDES Renewal - Coxes Creek WTP\Project Map.mxd
The Municipal Authority of the Borough of Somerset
Coxes Creek Water Treatment Plant
Somerset Township Somerset County PA