Pennsylvania Department of Environmental Protection

Southwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0254827**
Facility Type	**Non-Municipal**	APS ID	**1114521**
Major / Minor	**Minor**	Authorization ID	**1486454**

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Pbs Coals Inc.**	Facility Name	**A-Seam Deep Mine/56101301**
Applicant Address	PO Box 260 1576 Stoystown Road	Facility Address	Intersection Of Sr 3010 & Sr 2031
	Friedens, PA 15541-0260		Berlin, PA 15530
Applicant Contact	Matthew Twichell	Facility Contact	Same as Applicant
Applicant Phone	(814) 443-4668	Facility Phone	Same as Applicant
Client ID	233	Site ID	746073
Ch 94 Load Status		Municipality	Brothersvalley Township
Connection Status		County	Somerset
Date Application Received	May 28, 2024	EPA Waived?	Yes
Date Application Accepted		If No, Reason	

Purpose of Application: Application for renewal of an NPDES Permit for treated sewage

Summary of Review

Pbs Coals Inc. has applied for a renewal of NPDES Permit No. PA0254827. PA0254827 was previously issued by the Pennsylvania Department of Environmental Protection (DEP) on November 18, 2019 and expired November 30, 2024. The renewal application was submitted in a timely manner, so the permit was granted an administrative extension.

Pbs Coals Inc. has not applied for a WQM permit for this facility, therefore, there is no current sewage treatment at the site.

After the sewage treatment plant is constructed, Pbs Coals Inc. will need to enroll in and use eDMR.

The applicant has complied with Act 14 Notification with letters dated May 30, 2024 and sent to Borthersvalley Township and Somerset County.

The following changes are being made this permit cycle:

- The DO instantaneous minimum limit was increased from 4.0 mg/L to 5.0 mg/L based on water quality modeling.
- Annual *E. coli* monitoring was added in accordance 25 Pa. Code 93.7(a).
- The TRC average monthly and instantaneous limitations are changing from 0.1 mg/L to 0.083 mg/L and from 0.239 mg/L to 0.273 mg/L.
- Average monthly and daily maximum effluent limitations have been added to the Total Maximum Daily Load (TMDL) parameters.

Anti-Backsliding

Approve	Deny	Signatures	Date
X		Stephanie Conrad / Project Manager	May 22, 2025
X		Mahbuba Iasmin, Ph.D., P.E. / Environmental Engineering Manager	June 20, 2025

Summary of Review

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 TRC IMAX WQBEL has been made less stringent compared to the previous permit cycle. Details have been added to the Development of Effluent Limitations – Water Quality Based-Effluent Limitations section.

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.	005	Design Flow (MGD)	.003
Latitude	39º 55' 52.28"	Longitude	-79º 3' 6.37"
Quad Name	Murdock	Quad Code	1913
Wastewater Description:	Sewage Effluent		

Receiving Waters	Wilson Creek (WWF)	Stream Code	38947
NHD Com ID	69918491	RMI	6.30
Drainage Area	0.26	Yield (cfs/mi^2)	0.00912
Q_{7-10} Flow (cfs)	0.00237	Q_{7-10} Basis	USGS Stream Stats
Elevation (ft)	2484	Slope (ft/ft)	
Watershed No.	19-F	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	METALS, METALS, PH, PH		
Source(s) of Impairment	ACID MINE DRAINAGE, ACID MINE DRAINAGE, ACID MINE DRAINAGE, ACID MINE DRAINAGE		
TMDL Status	Final, Final	Name	Coxes Creek Watershed,Wilson Creek Somerset County

Background/Ambient Data		Data Source
pH (SU)		
Temperature (°F)		
Hardness (mg/L)		
Other:		

Nearest Downstream Public Water Supply Intake	Indian Creek Valley Water Authority		
PWS Waters	Youghiogheny River	Flow at Intake (MGD)	0.259
PWS RMI	62.9	Distance from Outfall (mi)	40.21

Changes Since Last Permit Issuance: None

Other Comments:

Development of Effluent Limitations

Outfall No. 005 **Design Flow (MGD)** .003
Latitude 39º 55' 52.28" **Longitude** -79º 3' 6.37"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

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

Pollutant	Limit (mg/l)	SBC	Federal Regulation	State Regulation
Flow (MGD)	Report	Average Monthly	-	92a.27, 92a.61
$CBOD_5$	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
Total Suspended Solids	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)
Ammonia-Nitrogen	25	Average Monthly	-	BPJ
Dissolved Oxygen	4.0	Min	-	BPJ
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Total Nitrogen	Report	Average Monthly	-	92a.61
Total Phosphorus	Report	Average Monthly	-	92a.61
Fecal Coliform (5/1 – 9/30)	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
Fecal Coliform (5/1 – 9/30)	1,000 / 100 ml	IMAX	-	92a.47(a)(4)
Fecal Coliform (10/1 – 4/30)	2,000 / 100 ml	Geo Mean	-	92a.47(a)(5)
Fecal Coliform (10/1 – 4/30)	10,000 / 100 ml	IMAX	-	92a.47(a)(5)

Water Quality-Based Limitations

Pursuant to EPA's approval of Pennsylvania's 2017 Triennial Review of Water Quality Standards and corresponding regulatory changes published in the *Pennsylvania Bulletin* on July 11, 2020, new water quality criteria for ammonia-nitrogen apply to waters of the commonwealth. Therefore, WQBELs for Outfall 001 are being re-evaluated even though there is currently no treatment plant.

WQM 7.0 Water Quality Modeling

DEP's WQM 7.0 version 1.1 model is a Microsoft Access Program used for sewage dischargers to determine whether TBELs are sufficient to meet in-stream water quality criteria for ammonia-nitrogen, carbonaceous biochemical oxygen demand ($CBOD_5$), and dissolved oxygen (DO). To accomplish this, the model simultaneously simulates mixing and degradation of ammonia-nitrogen and mixing and consumption of DO through $CBOD_5$ and ammonia-nitrogen degradation. WQM 7.0 determines the highest pollutant loadings that the stream can assimilate while still meeting water quality criteria under design conditions.

The model is a two-step process. The discharge is first modeled for the summer period (May through October) because warm temperatures are more likely to result in critical loading conditions. Reduced DO levels likely also play a role in ammonia toxicity and solubility of DO decreases at increased water temperature. If summer modeling determines that WQBELs are appropriate for the summer period, then modeling is completed for the winter period (November through April). This is in accordance with DEP's *Implementation Guidance of Section 93.7 Ammonia Criteria* [Do. No. 391-2000-013] (Ammonia Guidance).

River mile index (RMI) was measured in eMAP PA as the distance from the GPS point 39º 55' 52.28" N, -79 º 3' 6.37" W to the mouth of Wilson Creek. Elevation was determined using Google Earth Pro. Discharge point and downstream drainage areas as well as Q-7-10 were generated by USGS Stream Stats. USGS Stream Stats output files are included in Attachment A. In the absence of site-specific data, discharge temperature, and stream pH were assumed to be 20, 25, and 7 in accordance with the Ammonia Guidance. Stream width to depth was assumed to be 10 in accordance with DEP's *Technical Reference Guide (TRG) WQM 7.0 for Windows Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen Version 1* [Doc. No. 391-2000-007]. Effluent ammonia-nitrogen, $CBOD_5$, and DO concentrations were set equal to the 2019 permit effluent limitations. The DO Goal was set equal to the 7-day average instream DO criteria defined for WWF in 25 Pa Code Section 93.7.

WQM 7.0 modeling summer inputs are documented in the table below:

Discharge Characteristics		Basin/Stream Characteristics	
Parameter	**Value**	**Parameter**	**Value**
River Mile Index (RMI)	3.65	Drainage Area	0.26
Discharge Flow (MGD)	0.003	Q_{7-10} (cfs)	0.00237
Discharge Temp (ºC)	20	Low-flow yield (cfs/mi^2)	0.00912
Ammonia-Nitrogen (mg/L)	2.5	Elevation (ft)	2484
$CBOD_5$ (mg/L)	25	Stream Width/Depth	10
Dissolved Oxygen (mg/L)	4.0	Stream Temp (ºC)	25
DO Goal	5.5	Stream pH (s.u.)	7

The discharge was modeled using WQM 7.0 to evaluate limits for ammonia-nitrogen, $CBOD_5$, and DO. Modeling confirmed that that water quality-based effluent limits are necessary for ammonia-nitrogen, $CBOD_5$, and DO. In accordance with DEP's SOP for *Establishing Effluent Limitations for Individual Sewage Permits* [SOP No. BCW-PMT-033 revised March 24, 2021 Version 1.9], winter ammonia-nitrogen limits are assessed by comparing winter WQM 7.0 output value with one calculated by multiplying the summer limit by a multiplier of three. The more restrictive limit is then imposed. For this facility, the model results equaled the limits generated based on summer limits and a conversion factor. WQM 7.0 output files are included in Attachment B.

A new instantaneous effluent limitation of 5.0 is being imposed for DO based on WQM 7.0 modeling. This facility has not yet been designed. When the WQM permit is submitted, the plant must be designed to meet the new, more restrictive DO limit.

Total Residual Chlorine

DEP's Total Residual Chlorine (TRC) Spreadsheet is a Microsoft Excel ® Program used to evaluate WQBELs tor TRC using a mass balance. In accordance with the Department's SOP for *Establishing Effluent Limitations for Individual Sewage Permits* [SOP No.BCW-PMT-033 Version 1.9], default values of 0.3 mg/L and 0 mg/L for in-stream and discharge chlorine demand were used. Additionally, a discharge flow of 0.003 MGD and a Q7-10 of 0.00237 were used. TRC Modeling determined that a new, more restrictive technology based effluent limit of 0.083 is necessary to protect instream water quality. The facility has not yet been designed, so the facility does not require a compliance period for compliance with the new, more restrictive limit. The TRC output file is provided in Attachment C.

The TRC modeling determined documented that based on the input used, an instantaneous maximum limitation of 0.273 mg/L was adequate to protect instream water quality. Previous modeling, however, suggested a more restrictive limitation of 0.239 mg/L. Review of the previous model documented that the input used for number of samples was 4 and the BAT/BPJ input values was 1.4. According to the TRC spreadsheet, the input value for number of samples should equal the number of TRC samples taken in the average month. The correct value, therefore, should be 30. Additionally, the BAT/BPJ input value should equal the technology-based average monthly effluent limitation as defined in 25 PA Code Section 92a.48(b)(2). The values should therefore be 0.5. In accordance with 40 CFR 122.44.I.2.i.B.2, an exception can be made to antibacksliding if "the Administrator determines that technical mistakes were made in issuing the permit." The department asserts that technical mistakes were made in the 2019 TRC model because incorrect input values were used for number of samples and BAT/BPJ value. For this reason, the IMAX TRC limit is being increased from 0.239 mg/L to 0.273 mg/L.

Additional Considerations

In accordance with Section I.A. of DEP's SOP for *Establishing Effluent Limitations for Individual Sewage Permits* [SOP No. BCW-PMT-033 Version 1.9], pursuant to EPA's approval of Pennsylvania's 2017 Triennial Review of Water Quality Standards and corresponding regulatory changes published in the Pennsylvania Bulletin on July 11, 2020 and under the authority of 25 Pa. Code § 93.7(a) and § 92.a.61, sewage dischargers will include monitoring for *E. coli*. For new and reissued permit, a monitoring frequency of 1/year will be imposed for design flows ≥ 0.002 MGD and < 0.05 MGD.

In accordance with Section I.A of the DEP's SOP for *Establishing Effluent Limitations for Individual Sewage Permits* [SOP No. BCW-PMT-033 Version 1.9], and under the authority of 25 Pa. Code § 92a.61(b), nutrient monitoring for total nitrogen and total phosphorus will be imposed for sewage facilities with a design flow greater than 2,000 GPD. The intent of this monitoring is to establish the nutrient load of the wastewater and evaluate the impact that load may have on the quality of the receiving stream. The SOP states that if the receiving stream is not impaired for nutrients, then discretion may be used in setting the monitoring frequency. Wilson Creek is not impaired for nutrients, therefore, a monitoring frequency of 1/year will again be imposed.

Conventional and toxic concentration limits are rounded in accordance with the guidelines in Chapter 5 Section C.2. of DEP's *Technical Guidance for the Development and Specification of Effluent Limitations* [Doc. No. 362-0400-001].

Monitoring frequency for the proposed effluent limits are based on Table 6-3, Self -Monitoring Requirements for Sewage Dischargers, from DEP's *Technical Guidance for the Development and Specification of Effluent Limitations* [Doc. No. 362-0400-001]. Table 6-3 does not define sampling frequency for toxic pollutants for treatment facilities with design flows less than 0.01 MGD. A-seem Deep Mine has a design flow of 0.003 MGD. DEP does not anticipate this facility to contribute to the impairment of the stream, therefore, a sampling frequency of 1/year will be imposed.

Wilson Creek Somerset County TMDL

Section 303(d) of the Clean Water Act and the U.S. Environmental Protection Agency's Water Quality Planning and Management Regulation (codified at Title 40 of the Code of Federal Regulations Part 130) requires states to develop a TMDL for impaired water bodies. A TMDL establishes the amount of a pollutant that a water body can assimilate without exceeding water quality criteria for the pollutant. TMDLs also provide a scientific basis for States to establish water quality-based controls for reducing pollution from both point and non-point sources in order to restore and maintain the quality of the state's water resources (USEPA 1991a). Stream reaches of Wilson Creek and its unnamed tributaries are included in the state's 1996, 1992, 2002, 2004, and 2006 Section 303(d) lists because impairments for metals and pH as a result of acid mine drainage.

A-S
eam Deep ine STP PA0254827 will discharge to the section identified as "Wilson12" in the TMDL approved by EPA on April 10, 2008. The TMDL addressed aluminum, iron, manganese, and pH associated with mine drainage. In accordance with 40 CFR § 122.44(d)(1)(vii)(B), when developing WQBELs, the permitting authority shall ensure that effluent limits developed to protect a narrative water criterion, a numeric water quality criterion, or both, are consistent with the assumptions and requirements of any available wasteload allocation (WLA) for the discharge. In accordance with section 1.D of DEP's SOP for *Establishing Effluent Water Quality-Based Effluent Limitations (WQBELs) and Permit Conditions for Toxic Pollutants in NPDES Permits for Existing Dischargers* [SOP No. BCW-PMT-037], when a new point source discharges to waters with an approved TMDL and that discharge does not have an assigned waste load allocation (WLA), the stream is considered to have zero assimilative capacity. When there is zero assimilative capacity, the average monthly limit will be set equal to the most restrictive applicable water quality criterion.

Table 1 of the Department's *Water Quality Toxics Management Strategy* (Doc. No. 361-0100-003) addresses design conditions in detail, including the appropriate durations to assign to water quality criteria. The design duration for Criteria Maximum Concentration (CMC) criteria is 1 hour (acute). The design duration for Criteria Continuous Concentration (CCC) criteria is 4 days (chronic). The design duration for Threshold Human Health (THH) criteria is 30 days (chronic). The design duration for Cancer Risk Level (CRL) criteria is 70 years (chronic).

The 0.75 mg/L aluminum criterion in 25 Pa. Code § 93.8c is a CMC criterion with a duration of 1 hour. Therefore, 0.75 mg/L will be imposed as a maximum daily limit. There is no CCC criterion for aluminum which would necessitate a more restrictive monthly average limit. 0.75 mg/L will be imposed both as a maximum daily and average monthly limit.

The 1.5 mg/L iron criterion in 25 Pa. Code § 93.7(a). is expressed as a 30-day average. Therefore, 1.5 mg/L will be imposed as a monthly average limit. A maximum daily effluent limit of 3.0 mg/L was calculated by using a multiplier of two times the average monthly limit in accordance with the Department's Technical Guidance for the Development and Specification of Effluent Limitations and Other Permit Conditions in NPDES Permits (Doc. No. 362-0400-001, Chapter 3, pp. 15 – 16).

The 1.0 mg/L potable water supply criterion for manganese in 25 Pa. Code § 93.7(a). is a THH criterion with a duration of 30 days. Therefore, 1mg/L will be imposed as an average monthly limit. A maximum daily effluent limit of 2.0 mg/L was calculated using a multiplier of two times the average monthly limit consistent with the guidance sited above for total iron.

Mass loading limits will also be imposed for aluminum, total iron, dissolved iron, and manganese. Average monthly mass loading limits (lbs/day) are based on the formula: design flow (MGD) x concentration limit (mg/L) x conversion factor (8.34).

The mass loading limit for total iron is becoming more restrictive for total iron due to department rounding guidance. The facility is not constructed and should take applicable actions to meet the new, more restrictive limit. Additionally, the daily maximum limit for total aluminum is becoming more restrictive because the maximum daily limit was incorrectly assigned during the last permit cycle. The facility should be designed and constructed to meet the new, more restrictive limit.

The following WQBELs are being assigned due to the Kiski-Conemaugh TMDL:

Parameter	Average Monthly (mg/l)	Maximum Daily (mg/L)	Average Monthly (lbs/day)	Maximum Daily (lbs/day)
Aluminum, Total	0.75	0.75	0.01	0.01
Iron, Total	1.50	3.00	0.03	0.06
Manganese, Total	1.00	2.00	0.02	0.04

Coxes Creek Watershed TMDL

A TMDL for the Coxes Creek Watershed was finalized on February 23, 2009. In accordance with 40 CFR § 122.44(d)(1)(vii)(B), when developing WQBELs, the permitting authority shall ensure that effluent limits developed to protect a narrative water quality criterion, a number water quality criterion, or both, are consistent with the assumptions and requirements of any available waste load allocation (WLA) for the discharge prepared by the State and approved by the EPA pursuant to 40 CFR § 130.7. The TMDL covers impairment due to historic mining including metals, pH, and suspended solids/siltation. The TMDL specifies that suspended solids and siltation impairment is due to stormwater runoff from refuse piles.

A-Seam Deep Mine STP PA0254827 discharges to Wilson Creek (Stream Code 38947), which is not listed in the TMDL, but is part of the Coxes Creek Watershed. Limits for aluminum, iron, and manganese are already imposed in the permit due to the stream's inclusion in the Wilson Creek Somerset County TMDL.

In accordance with section 1.D of DEP's SOP for *Establishing Effluent Water Quality-Based Effluent Limitations (WQBELs) and Permit Conditions for Toxic Pollutants in NPDES Permits for Existing Dischargers* [SOP No. BCW-PMT-037], when a new point source discharges to waters with an approved TMDL and that discharge does not have an assigned waste load allocation (WLA), the stream is considered to have zero assimilative capacity. When there is zero assimilative capacity, the average monthly limit will be set equal to the most restrictive applicable water quality criterion. Coxes Creek Watershed is impaired for suspended solids/siltation. PA Code section 25.93 does not define water quality criteria for total suspended solids. An average monthly TBEL of 30 mg/L will be imposed in accordance with 40 CFR 133.102(b)(1) and 25 PA Code Section 92a.47(a)(1) and an average weekly TBEL of 45 will be imposed in accordance with 40 CFR 133.102(b)(2) and 25 PA Code Section 92a.47(a)(2).

Permit Limits

Parameter	Limit (mg/l)	SBC	Model	Basis

Dissolved Oxygen	5.0	Instantaneous Minimum	WQM 7.0	WQBEL
$CBOD_5$	25	Average Monthly	WQM 7.0	WQBEL
Ammonia-Nitrogen (Summer)	2.5	Average Monthly	WQM 7.0	WQBEL
Ammonia-Nitrogen (Winter)	7.5	Average Monthly	WQM 7.0	WQBEL
Total Suspended Solids	30	Average Monthly	N/A	TBEL
Fecal Coliform (May 1 - Oct 31)	200/100 mL as a geometric mean	Average Monthly	N/A	TBEL
Fecal Coliform (Oct 1 - Apr 30)	2000/100 mL as a geometric mean	Average Monthly	N/A	TBEL
TRC	0.083	Average Monthly	N/A	TBEL
Aluminum	0.75	Average Monthly	N/A	TMDL
Iron	1.5	Average Monthly	N/A	TMDL
Manganese	1.0	Average Monthly	N/A	TMDL

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 005, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	0.003	XXX	XXX	XXX	XXX	XXX	2/month	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0 Inst Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.083	XXX	0.273	1/day	Grab
$CBOD_5$	XXX	XXX	XXX	25	XXX	50	2/month	Grab
TSS	XXX	XXX	XXX	30	XXX	60	2/month	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
E. Coli (No./100 ml)	XXX	XXX	XXX	XXX	XXX	Report	1/year	Grab
Total Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab
Ammonia-Nitrogen Nov 1 - Apr 30	XXX	XXX	XXX	7.5	XXX	15.0	2/month	Grab
Ammonia-Nitrogen May 1 - Oct 31	XXX	XXX	XXX	2.5	XXX	5.0	2/month	Grab
Total Phosphorus	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab
Total Aluminum	0.01	0.01	XXX	0.75	0.75 Daily Max	XXX	1/year	Grab
Total Iron	0.03	0.06	XXX	1.50	3.00 Daily Max	XXX	1/year	Grab

Outfall 005 , Continued (from Permit Effective Date through Permit Expiration Date)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Total Manganese	0.02	0.04	XXX	1.00	2.00 Daily Max	XXX	1/year	Grab

Compliance Sampling Location:

Other Comments:

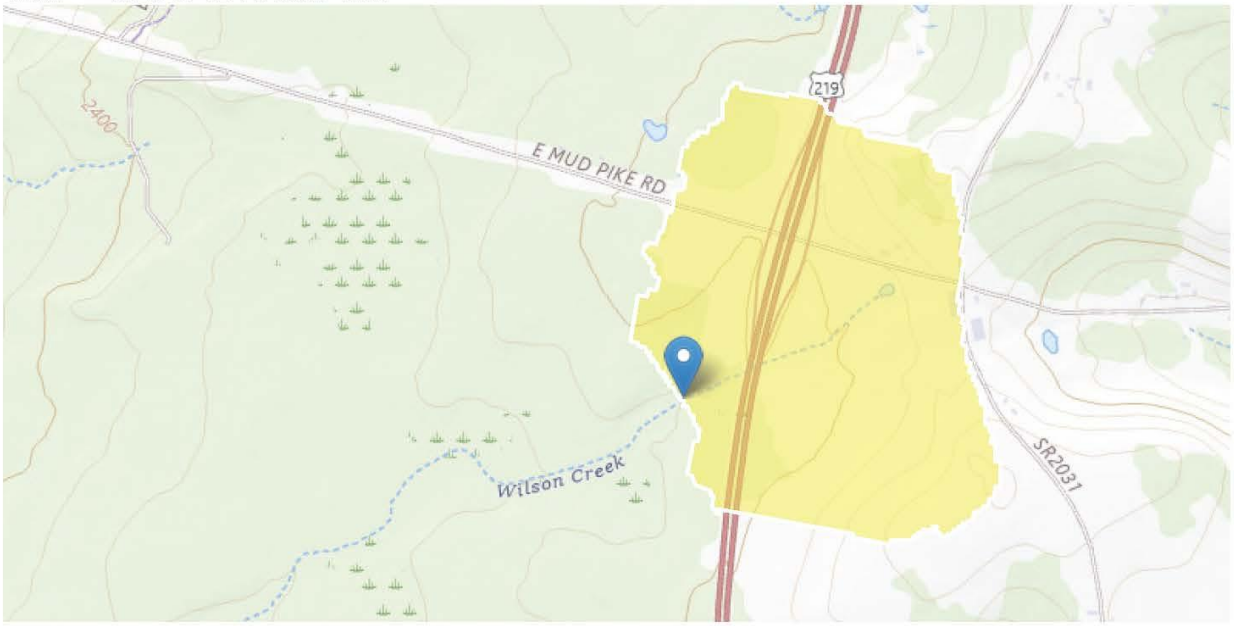
ATTACHMENT A

USGS Stream Stats Output Files

Discharge Point

StreamStats Report

Region ID: PA
Workspace ID: PA20250502151758346000
Clicked Point (Latitude, Longitude): 39.93125, -79.05152
Time: 2025-05-02 11:18:25 -0400



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Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.26	square miles
ELEV	Mean Basin Elevation	2527	feet

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.26	square miles	2.26	1400
ELEV	Mean Basin Elevation	2527	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	0.0113	ft^3/s
30 Day 2 Year Low Flow	0.0242	ft^3/s
7 Day 10 Year Low Flow	0.00237	ft^3/s
30 Day 10 Year Low Flow	0.00602	ft^3/s
90 Day 10 Year Low Flow	0.0156	ft^3/s

Low-Flow Statistics Citations

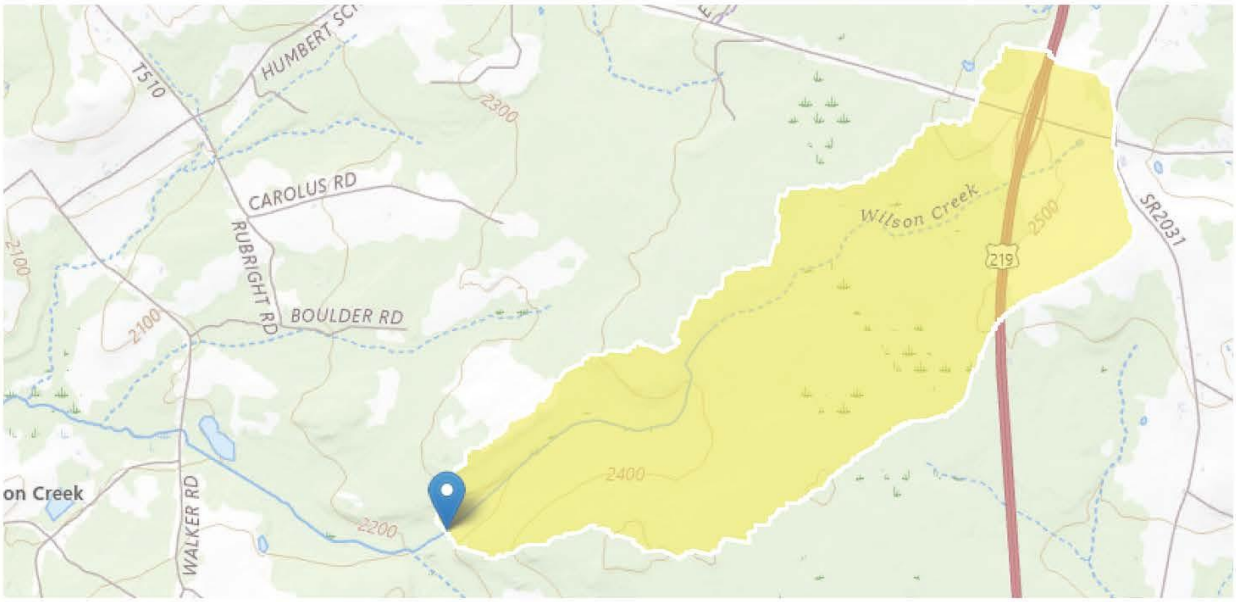
Stuckey, M.H.,2006, Low-flow, base-flow, and mean-flow regression equations for Pennsylvania streams: U.S. Geological Survey Scientific Investigations Report 2006-5130, 84 p. (http://pubs.usgs.gov/sir/2006/5130/)

Application Version: 4.28.1
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

End of Reach

StreamStats Report

Region ID: PA
Workspace ID: PA20250502152313296000
Clicked Point (Latitude, Longitude): 39.91639, -79.08259
Time: 2025-05-02 11:23:40 -0400



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Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	1.44	square miles
ELEV	Mean Basin Elevation	2470	feet

Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.44	square miles	2.26	1400
ELEV	Mean Basin Elevation	2470	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	0.0777	ft^3/s
30 Day 2 Year Low Flow	0.154	ft^3/s
7 Day 10 Year Low Flow	0.0193	ft^3/s
30 Day 10 Year Low Flow	0.0431	ft^3/s
90 Day 10 Year Low Flow	0.102	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/)

Application Version: 4.28.1
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

ATTACHMENT B

WQM 7.0 Modeling Results

Summer Modeling

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
19F	38947	WILSON CREEK	**6.300**	2484.00	0.26	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.009	0.00	0.00	0.000	0.000	10.0	0.00	0.00	25.00	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
A-Sema Deep Min	PA0254827	0.0000	0.0030	0.0000	0.000	20.00	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	4.00	8.24	0.00	0.00
NH3-N	2.50	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
19F	38947	WILSON CREEK	**4.110**	2258.00	1.44	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.009	0.00	0.00	0.000	0.000	10.0	0.00	0.00	25.00	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

SWP Basin	Stream Code	Stream Name
19F	38947	WILSON CREEK

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
6.300	0.00	0.00	0.00	.0046	0.01954	.226	1.57	6.95	0.02	6.802	21.69	7.00
Q1-10 Flow												
6.300	0.00	0.00	0.00	.0046	0.01954	NA	NA	NA	0.02	7.315	21.23	7.00
Q30-10 Flow												
6.300	0.00	0.00	0.00	.0046	0.01954	NA	NA	NA	0.02	6.378	22.05	7.00

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	EMPR	Use Inputted W/D Ratio	☐
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	5.5		

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
19F	38947	WILSON CREEK

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
6.300	A-Sema Deep Mi	15.13	5	15.13	5	0	0

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
6.300	A-Sema Deep Mi	1.65	2.5	1.65	2.5	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5		NH3-N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
6.30	A-Sema Deep Min	25	25	2.5	2.5	5	5	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
19F	38947	WILSON CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
6.300	0.003	21.691	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
1.574	0.226	6.952	0.020
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
17.22	0.293	1.65	0.797
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
6.097	25.365	Owens	5.5
Reach Travel Time (days)			
6.802			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.680	13.89	0.96	7.99
1.360	11.20	0.56	7.99
2.041	9.03	0.33	7.99
2.721	7.28	0.19	7.99
3.401	5.87	0.11	7.99
4.081	4.73	0.06	7.99
4.761	3.82	0.04	7.99
5.441	3.08	0.02	7.99
6.122	2.48	0.01	7.99
6.802	2.00	0.01	7.99

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
19F	38947	WILSON 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)
6.300	A-Sema Deep Min	PA0254827	0.000	CBOD5	25		
				NH3-N	2.5	5	
				Dissolved Oxygen			5

Winter Modeling

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
19F	38947	WILSON CREEK	**6.300**	2484.00	0.26	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.018	0.00	0.00	0.000	0.000	10.0	0.00	0.00	5.00	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
A-Sema Deep Min	PA0254827	0.0000	0.0030	0.0000	0.000	15.00	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	4.00	12.51	0.00	0.00
NH3-N	7.50	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
19F	38947	WILSON CREEK	**4.110**	2258.00	1.44	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.018	0.00	0.00	0.000	0.000	10.0	0.00	0.00	5.00	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

SWP Basin	Stream Code	Stream Name
19F	38947	WILSON CREEK

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
6.300	0.00	0.00	0.00	.0046	0.01954	.238	1.7	7.13	0.02	5.779	9.95	7.00
Q1-10 Flow												
6.300	0.00	0.00	0.00	.0046	0.01954	NA	NA	NA	0.02	6.467	11.05	7.00
Q30-10 Flow												
6.300	0.01	0.00	0.01	.0046	0.01954	NA	NA	NA	0.03	5.263	9.19	7.00

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	EMPR	Use Inputted W/D Ratio	☐
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	5.5		

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
19F	38947	WILSON CREEK

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
6.300	A-Sema Deep Mi	24.1	15	24.1	15	0	0

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
6.300	A-Sema Deep Mi	3.79	7.5	3.79	7.5	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5		NH3-N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
6.30	A-Sema Deep Min	25	25	7.5	7.5	4	4	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
19F	38947	WILSON CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
6.300	0.003	9.947	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
1.700	0.238	7.132	0.023
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
13.38	0.522	3.71	0.323
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
8.300	19.479	Owens	5.5
Reach Travel Time (days)			
5.779			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.578	11.06	3.08	10.15
1.156	9.15	2.55	10.15
1.734	7.56	2.12	10.15
2.312	6.26	1.76	10.15
2.889	5.17	1.46	10.15
3.467	4.28	1.21	10.15
4.045	3.54	1.00	10.15
4.623	2.92	0.83	10.15
5.201	2.42	0.69	10.15
5.779	2.00	0.57	10.15

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
19F	38947	WILSON 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)
6.300	A-Sema Deep Min	PA0254827	0.000	CBOD5	25		
				NH3-N	7.5	15	
				Dissolved Oxygen			4

ATTACHMENT C

TRC Modeling Results

TRC_CALC_A Seam Deep Mine

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

0.00237	= Q stream (cfs)	0.5	= CV Daily
0.003	= 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)		=Decay Coefficient (K)

Source	Reference	AFC Calculations	Reference	CFC Calculations
TRC	1.3.2.iii	WLA afc = 0.182	1.3.2.iii	WLA cfc = 0.170
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 0.068	5.1d	LTA_cfc = 0.099

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.083	AFC
		INST MAX LIMIT (mg/l) = 0.273	

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)**