Pennsylvania Department of Environmental Protection

Northeast Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0021873**
Facility Type	**Municipal**	APS ID	**852357**
Major / Minor	**Minor**	Authorization ID	**1458351**

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Borough of Jim Thorpe**	Facility Name	**Jim Thorpe Wastewater Treatment Plant**
Applicant Address	101 East 10th Street	Facility Address	1/2 Mile South of Laurel Street
	Jim Thorpe, PA 18229-2528		Jim Thorpe, PA 18229-2328
Applicant Contact	Maureen Sterner, Borough Manger	Facility Contact	Edward M. Gula, Plant Operator
Applicant Phone	(570) 325-3025	Facility Phone	(570) 325-2547
Client ID	118909	Site ID	250667
Ch 94 Load Status	Not Overloaded	Municipality	Jim Thorpe Borough
Connection Status	No Limitations	County	Carbon
Date Application Received	September 29, 2023	EPA Waived?	Yes
Date Application Accepted	December 13, 2023	If No, Reason	-

Purpose of Application: Renewal of NPDES permit for discharge of treated sewage.

Summary of Review

The applicant is requesting the renewal of an NPDES permit to discharge up to 0.92 MGD of treated sewage into the Lehigh River, a Trout Stocking, Migratory Fish (TSF, MF) receiving stream in State Water Plan Basin 2-B (Middle Lehigh River). As per the Department's current existing use list, the receiving stream does not have an existing use classification that is more protective than its designated use. This stream segment is not designated as a naturally reproducing trout stream as per PA Fish & Boat Commission. This discharge is not expected to affect public water supplies.

Limitations for pH, $CBOD_5$, Total Suspended Solids (TSS), and Fecal Coliform are technology-based and carried over from the previous permit.

Limitations for Ammonia-Nitrogen are water quality-based and carried over from the previous permit.

A BPJ-based limitation of 5.0 mg/L instantaneous minimum for Dissolved Oxygen (DO) has been added to the permit. The new limitation will come into effect three years after the permit effective date. Reporting will still be required during the first three years.

An IMAX limitation of 40.0 mg/L (two times the Average Monthly limitation) has been added to the permit per the Department's Standard Operating Procedures and Best Professional Judgment. eDMR data from the previous year indicates the facility is significantly below the new limitation.

The Total Residual Chlorine (TRC) Calculation Spreadsheet did not recommend stricter limitations than the previous permit. The IMAX technology-based limitation (1.6 mg/L) has been maintained in the permit and is to be sampled "daily when discharging" in the event the facility uses chlorine for cleaning purposes or as a back-up disinfection option.

WQM 7.0 modeling did not recommend stricter limits.

Approve	Deny	Signatures	Date
X		/s/ Allison Seyfried Zukosky / Project Manager	January 8, 2025
X		/s/ Amy M. Bellanca, P.E. / Acting Engineer Manager	1-21-25

Summary of Review

Sewage discharges now require monitoring and reporting for E. Coli. A monitoring frequency of 1/month for design flows >= 1 MGD, 1/quarter for design flows >= 0.05 and < 1 MGD, 1/year for design flows of 0.002 – 0.05 MGD will be utilized.

The Raw Sewage Influent TSS and BOD5 monitoring/ reporting has been maintained in the permit, per current Standard Operating Procedures for Publicly Owned Treatment Plants.

Pollutant sampling results submitted with the permit application were entered into the Toxic Management Spreadsheet (TMS). The TMS did not recommend any additional limitations or reporting/monitoring.

A final Total Maximum Daily Load (TMDL) exists for the Lehigh River Watershed. The TMDL addresses metals (iron, manganese, and aluminum) and pH associated with acid mine drainage (AMD). There are no approved Waste Load Allocations (WLA) for this facility. Quarterly monitoring requirements for Total Iron, Total Manganese, and Total Aluminum are continued for the upcoming permit cycle.

The latest DRBC Docket No. D-1996-019 CP-4 does not require any stricter limitations. An 85% minimum $CBOD_5$ Percent Removal at the same monitoring frequency as $CBOD_5$ has been added to the permit. The limitations for Total Dissolved Solids (TDS), Nitrate + Nitrite as N, Total Nitrogen, and Total Phosphorus have been maintained in the permit.

Monitoring frequencies for all parameters with limitations have been updated to the recommended frequencies found in Table 6-3 of DEP's Technical Guidance for the Development and Specification of Effluent Limitations (Document No. 362-0400-001).

24-hour composite sampling is now required in place of 8-hour composite sampling.

Data from the downstream USGS gage 1449000 (Lehigh River at Lehighton, PA) was used to model the discharge, resulting in a low flow yield (LFY) of 0.25 cfs/mi^2 and Q_{7-10} of 222.03 cfs. This is the same stream gage that was used for modeling in the previous permit renewal. River Mile Index (RMI) values were obtained using the Department's eMapPA, drainage areas were delineated using USGS's StreamStats interactive map, and elevations were obtained using the elevation profile tool on StreamStats.

The existing permit expired on May 31, 2024 and the application for renewal was received on time.

A Water Management System Inspection query indicated that on December 13, 2024 a Compliance Evaluation was performed.

There are currently no open violations for this client that warrant withholding issuance of this permit.

Sludge use and disposal description and location(s): As per the permittee's NPDES Renewal Application, sludge is hauled to the Grand Central Sanitary Landfill in Pen Argyl, PA by Waste Management.

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)	0.92
Latitude	40º 51' 35.11"	Longitude	-75º 44' 14.00"
Quad Name	1239	Quad Code	Nesquehoning
Wastewater Description:	Sewage Effluent		
Receiving Waters	Lehigh River (TSF, MF)	Stream Code	3335
NHD Com ID	132812877	RMI	46.53
Drainage Area	580 mi^2	Yield (cfs/mi^2)	0.25
Q_{7-10} Flow (cfs)	147.84	Q_{7-10} Basis	USGS Stream Gage 1449000
Elevation (ft)	506.88	Slope (ft/ft)	-
Watershed No.	2-B	Chapter 93 Class.	TSF, MF
Existing Use	-	Existing Use Qualifier	-
Exceptions to Use	-	Exceptions to Criteria	-
Assessment Status	Impaired		
Cause(s) of Impairment	METALS		
Source(s) of Impairment	ACID MINE DRAINAGE		
TMDL Status	Final	Name	Lehigh River TMDL
Nearest Downstream Public Water Supply Intake	Lehighton Water Authority		
PWS Waters	Lehigh River	Flow at Intake (cfs)	-
PWS RMI	44.3	Distance from Outfall (mi)	~ 2.25

Treatment Facility Summary

Treatment Facility Name: Jim Thorpe Wastewater Treatment Plant

WQM Permit No.	Issuance Date
1315401	3/25/2016

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Integrated Fixed Film Activated Sludge (IFAS)	Ultraviolet Light	0.40 (2020-2022)

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.92	1,535	Not Overloaded	Aerobic Digestor, Dewatered via Rotary	Hauled off-site

Compliance History

DMR Data for Outfall 001 (from December 1, 2023 to November 30, 2024)

Parameter	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24	APR-24	MAR-24	FEB-24	JAN-24	DEC-23
Flow (MGD) Average Monthly	0.456	0.352	0.350	0.399	0.363	0.360	0.466	0.593	0.598	0.464	0.772	0.738
Flow (MGD) Daily Maximum	2.296	0.411	0.416	0.975	0.485	0.417	0.674	1.833	1.2	0.795	2.15	2.16
pH (S.U.) Instantaneous Minimum	6.86	6.91	6.85	6.84	6.79	6.77	6.77	6.81	6.87	6.98	6.87	6.88
pH (S.U.) Instantaneous Maximum	7.21	7.16	7.18	7.2	7.21	7.13	7.19	7.08	7.11	7.26	7.27	7.34
DO (mg/L) Instantaneous Minimum	3.58	3.45	3.28	3.24	2.99	3.32	3.47	2.72	3.02	3.34	3.49	3.03
DO (mg/L) Average Monthly	3.85	3.73	3.81	3.61	3.4	3.62	3.64	3.42	3.67	3.61	4.28	3.71
TRC (mg/L) Instantaneous Maximum	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG	GG
CBOD5 (lbs/day) Average Monthly	< 17.0	< 16.0	< 15.7	< 27.6	< 25.3	< 17.2	< 23.6	< 27.0	< 28.7	< 23.4	< 45.2	< 37.0
CBOD5 (lbs/day) Weekly Average	< 20.2	< 17.3	< 17.8	58.1	52.9	< 18.6	< 27.7	< 42.2	< 36.7	30.3	< 107.6	< 59.0
CBOD5 (mg/L) Average Monthly	< 6.0	< 6.0	< 6.0	< 9.8	< 8.6	< 6.0	< 6.0	< 6.0	< 6	< 6.7	< 6.0	< 6.0
CBOD5 (mg/L) Weekly Average	< 6.0	< 6.0	< 6.0	21.0	19.0	< 6.0	< 6.0	< 6.0	< 6	8.7	< 6.0	< 6.0
BOD5 (lbs/day) Raw Sewage Influent Average Monthly	520	387	539	372	439	660	622.0	696	635	507	1261	714
BOD5 (mg/L) Raw Sewage Influent Average Monthly	185	147	213	133	150	229	167.0	171	142	145	179	130
TSS (lbs/day) Average Monthly	< 14.1	< 13.4	< 13.1	< 14.4	< 15.1	< 14.3	< 19.7	< 22.5	< 23.9	< 18.4	< 45.5	< 30.8

TSS (lbs/day) Raw Sewage Influent Average Monthly	515	448	469	560	566	573	580.0	897.0	1325	672	1860	1497
TSS (lbs/day) Weekly Average	< 16.8	< 14.4	< 14.1	< 16.8	< 17.8	< 15.5	< 23.1	< 35.2	< 30.6	20.9	< 129.1	< 49.2
TSS (mg/L) Average Monthly	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5	< 5.3	< 5.4	< 5.0
TSS (mg/L) Raw Sewage Influent Average Monthly	181	167	180	195	191	201	148.0	211	289	192	216	267
TSS (mg/L) Weekly Average	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5	6.0	< 7.2	< 5.0
Total Dissolved Solids (mg/L) Average Quarterly			268			210			265			249
Fecal Coliform (No./100 ml) Geometric Mean	< 5.0	5.0	4.0	< 3	6.0	6.0	3.0	< 2.0	< 2	> 36	< 1	< 2.0
Fecal Coliform (No./100 ml) Instantaneous Maximum	10.8	23.3	6.3	13.5	17.1	33.1	8.6	26.9	7.5	> 2420	2.0	6.3
Nitrate-Nitrite (lbs/day) Average Monthly	8.2	6.3	8.6	8.0	7.2	7.7	7.1	17.2	10.9	2.7	7.3	14.4
Nitrate-Nitrite (mg/L) Average Monthly	3.15	2.19	2.91	2.88	2.54	2.48	1.93	2.44	1.79	0.77	1.52	3.24
Total Nitrogen (lbs/day) Average Monthly	12.3	10.7	14.2	12.5	11.4	11.7	18.2	28.1	21.5	16.7	18.6	20.1
Total Nitrogen (mg/L) Average Monthly	4.69	3.73	4.79	4.52	4.02	3.79	4.95	4.0	3.51	4.8	3.88	4.52
Ammonia (lbs/day) Average Monthly	< 0.5	< 0.6	1.7	0.8	< 0.6	< 0.6	0.8	2.0	3.4	8.1	5.8	1.7
Ammonia (mg/L) Average Monthly	< 0.2	< 0.2	0.584	0.3	< 0.2	< 0.2	0.2	0.3	0.6	2.3	1.2	0.4
TKN (lbs/day) Average Monthly	4.0	4.0	6.0	5.0	4.0	4.0	11.0	11.0	11	14	11	6.0
TKN (mg/L) Average Monthly	1.54	1.54	1.88	1.64	1.48	1.31	3.02	1.56	1.72	4.03	2.36	1.28
Total Phosphorus (lbs/day) Average Monthly	6.6	5.2	3.8	8.9	10.4	6.6	7.3	5.4	2.2	2.4	2.5	7.3

Total Phosphorus (mg/L) Average Monthly	2.53	1.83	1.29	3.21	3.67	2.14	1.99	0.766	0.358	0.697	0.529	1.64
Total Aluminum (mg/L) Average Quarterly			< 0.1			< 0.1			< 0.1			< 0.1
Total Iron (mg/L) Average Quarterly			< 0.04			0.051			0.068			0.032
Total Manganese (mg/L) Average Quarterly			0.034			0.054			0.088			< 0.02

Compliance History

Effluent Violations for Outfall 001, from: January 1, 2024 To: November 30, 2024

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
Fecal Coliform	02/29/24	Geo Mean	> 36	No./100 ml	2000	No./100 ml
Fecal Coliform	02/29/24	IMAX	> 2420	No./100 ml	10000	No./100 ml

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.92
Latitude 40º 51' 36.38" **Longitude** -75º 44' 13.17"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

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

Pollutant	Limit (mg/l)	SBC	Federal Regulation	State Regulation
$CBOD_5$	25.0	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	40.0	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
	50.0	IMAX	-	-
Total Suspended Solids	30.0	Average Monthly	133.102(b)(1)	92a.47(a)(1)
	45.0	Average Weekly	133.102(b)(2)	92a.47(a)(2)
	60.0	IMAX	-	-
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Fecal Coliform (5/1 – 9/30)	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
Fecal Coliform (5/1 – 9/30)	1,000 / 100 ml	IMAX	-	92a.47(a)(4)
Fecal Coliform (10/1 – 4/30)	2,000 / 100 ml	Geo Mean	-	92a.47(a)(5)
Fecal Coliform (10/1 – 4/30)	10,000 / 100 ml	IMAX	-	92a.47(a)(5)
Dissolved Oxygen	5.0	Minimum	-	BPJ
Total Residual Chlorine	1.6	IMAX	-	92a.48(b)(2)
E. Coli	Report	IMAX	-	92a.61

Comments: Mass limitations (not shown) are based on the design flow of 0.92 MGD and the corresponding concentration limitation.

Water Quality-Based Limitations

The following limitations were determined through water quality modeling and the DRBC:

Parameter	Limit (mg/l)	SBC	Model
Ammonia-Nitrogen	20.0	Average Monthly	Previous Modeling/ DRBC Docket
	40.0	IMAX	Standard Operating Procedure and BPJ
Ammonia-Nitrogen (5/1 – 9/30)	7.3 lbs/day	Average Monthly	Previous Modeling/ DRBC Docket
Ammonia-Nitrogen (10/1 – 4/30)	21.9 lbs/day	Average Monthly	
Total Dissolved Solids	1,000	Average Quarterly	
Nitrate+Nitrite as N	109.6 lbs/day	Average Monthly	
Total Nitrogen	136.4 lbs/day	Average Monthly	
Total Phosphorus	20.0 lbs/day	Average Monthly	
Biochemical Oxygen Demand (BOD5) Raw Sewage Influent	Report	Average Monthly	POTW Requirement
CBOD5 Minimum % Removal (%)	85	Average Monthly	Previous Modeling/ DRBC Docket
Total Suspended Solids Raw Sewage Influent	Report	Average Monthly	POTW Requirement

Anti-Backsliding

No limitations were made less stringent.

Modeling with State-Wide default LFY of 0.1 cfs/mi²:

$$\frac{0.1\ ft^3/sec}{mi^2} \times 580\ mi^2 = \mathbf{58.0\ ft^3/sec}$$

Modeling Using StreamStats:

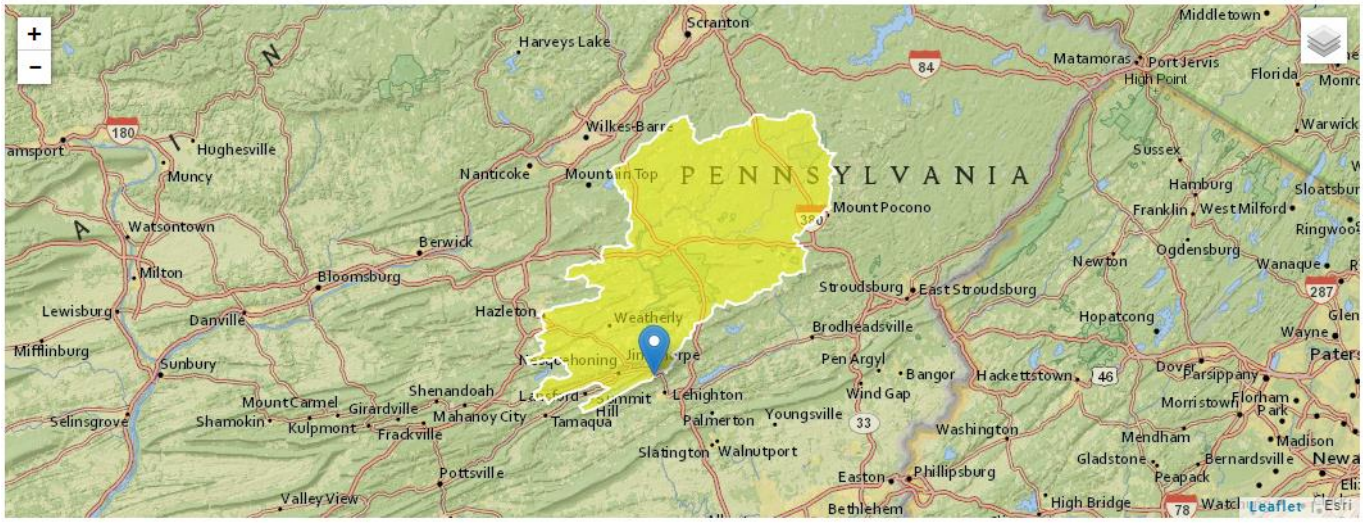
At Outfall 001 on Lehigh River:

RMI	Elevation (ft)	Drainage Area (mi²)	$Q_{7\text{-}10}$ Flow (cfs)
46.53	506.88	580	198

$$Low\ Flow\ Yield\ using\ StreamStats = \frac{198\ ft^3/sec}{580\ mi^2} = \mathbf{0.341\ \frac{ft^3/sec}{mi^2}}$$

StreamStats Report

Region ID:	PA
Workspace ID:	PA20250108153230069000
Clicked Point (Latitude, Longitude):	40.85985, -75.73730
Time:	2025-01-08 10:32:53 -0500



DRNAREA	Area that drains to a point on a stream	580	square miles

Statistic	Value	Unit
7 Day 2 Year Low Flow	204	ft^3/s
30 Day 2 Year Low Flow	243	ft^3/s
7 Day 10 Year Low Flow	138	ft^3/s

At confluence with Beaverdam Run:

RMI	Elevation (ft)	Drainage Area (mi^2)
44.33	471.41	587

StreamStats Report

Region ID:	PA
Workspace ID:	PA20250108153859369000
Clicked Point (Latitude, Longitude):	40.84956, -75.70874
Time:	2025-01-08 10:39:21 -0500

DRNAREA	Drainage Area	587	square miles

Modeling Using USGS Stream Gage

Stream Gage: 1449000 – Lehigh River at Lehighton, PA

Name	Value
USGS Station Number	01449000
Station Name	Lehigh River at Lehighton, PA
Station Type	Gaging Station, continuous record
Latitude	40.82926
Longitude	-75.70519
NWIS Latitude	40.8292587
NWIS Longitude	-75.70518938
Is regulated?	true
Agency	United States Geological Survey
NWIS Discharge Period of Record	10/01/1982 - 01/07/2025

Characteristic Name	Value	Units
Drainage Area	589	square miles

Statistic Name	Value	Units	Preferred?	Years of Record	Standard Error, percent	Citation	Comments
1 Day 10 Year Low Flow	135	cubic feet per second	✓	25		49	Statistic Date Range 4/1/1983 - 3/31/2008
7 Day 2 Year Low Flow	237	cubic feet per second	✓	25		49	Statistic Date Range 4/1/1983 - 3/31/2008
7 Day 10 Year Low Flow	148	cubic feet per second	✓	25		49	Statistic Date Range 4/1/1983 - 3/31/2008

$$Low\ Flow\ Yield\ using\ StreamStats\ Gage\ Data = \frac{148\ ft^3/sec}{589\ mi^2} = \mathbf{0.251}\ \frac{\boldsymbol{ft^3/sec}}{\boldsymbol{mi^2}}$$

$$Q_{7-10}\ at\ Outfall\ 001\ using\ StreamStats\ Gage\ Data = 0.251\ \frac{ft^3/sec}{mi^2} \times 589\ mi^2 = \mathbf{147.84}\ \boldsymbol{cfs}$$

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
02C	3335	LEHIGH RIVER

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)
46.530	Jim Thorpe WWTP	PA0021873	0.920	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			3

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

147.84	= Q stream (cfs)	0.5	= CV Daily
0.92	= 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 = 33.155	1.3.2.iii	WLA cfc = 32.316
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 12.354	5.1d	LTA_cfc = 18.787

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.500	BAT/BPJ
		INST MAX LIMIT (mg/l) = 1.635	

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)

TMS PA0021873.pdf

WQM 7.0 - Jim Thorpe.pdf

DRBC Docket 1996-019 CP-4.pdf

Pennsylvania
Department of
Environmental Protection

Approve	Deny	Signatures	Date
X		/s/ Allison Seyfried Zukosky / Project Manager	January 8, 2025
X		/s/ Amy M. Bellanca, P.E. / Acting Engineer Manager	1-21-25