pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0085448**
Facility Type	**Non-Municipal**	APS ID	**977748**
Major / Minor	**Minor**	Authorization ID	**1292773**

Applicant and Facility Information

Applicant Name	**Goodville Industrial Center**	Facility Name	**Goodville Industrial Center WWTP**
Applicant Address	222 Conestoga Creek Road	Facility Address	1564 Main Street
	Ephrata, PA 17522		East Earl, PA 17519
Applicant Contact	Elvin Hoover	Facility Contact	Steve Cawley
Applicant Phone	(717) 733-0630	Facility Phone	(484) 593-2989
Client ID	345615	Site ID	239083
Ch 94 Load Status	Not Overloaded	Municipality	East Earl Township
Connection Status	No Limitations	County	Lancaster
Date Application Received	October 16, 2019	EPA Waived?	Yes
Date Application Accepted	October 29, 2019	If No, Reason	

Purpose of Application: NPDES Renewal.

Summary of Review

Goodville Industrial Center has applied to the Pennsylvania Department of Environmental Protection (DEP) for reissuance of its National Pollutant Discharge Elimination System (NPDES) permit. The permit was issued on April 9, 2015 and became effective on May 1, 2015. The permit authorized discharge of treated sewage from the existing wastewater treatment plant (WWTP) located in East Earl Township, Lancaster County into UNT to Conestoga River. The existing permit expiration date was April 30, 2020, and the permit has been administratively extended since that time.

Per the previous fact sheet, the industrial center previously had a subsurface sewage facility which malfunctioned. Because of the existence of nearby wetlands, the decision was made to construct a treatment system which would discharge to a constructed lined wetland system, which would flow into existing wetlands – instead of digging an outfall line to be placed through the existing wetlands. The constructed wetland is approximately 60' x 60'. After flowing through the constructed and natural wetland area, the discharge flows through a dry swale in a pasture area for approximately 800' before reaching the point of first use on UNT 07797 to Conestoga River. An aquatic biologist for the Department agreed with this determination.

A regional WWTP, the Weaverland Valley Authority (WVA) WWTP will ultimately be constructed, and will be located adjacent to Conestoga Wood Specialties. Once the WWTP is constructed, Goodville Industrial Center will discharge directly to WVA and will cease discharge from their onsite WWTP.

Changes to this renewal: Ammonia-nitrogen monitoring has been added to the permit.

Supplemental information is located at the end of this fact sheet.

Approve	Deny	Signatures	Date
X		*Benjamin Lockwood* Benjamin R. Lockwood / Environmental Engineering Specialist	February 13, 2021
		Daniel W. Martin, P.E. / Environmental Engineer Manager	
		Maria D. Bebenek, P.E. / Program Manager	

Summary of Review
Sludge use and disposal description and location(s): Offsite location 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)	.004
Latitude	40º 7' 11"	Longitude	76º 0' 12"
Quad Name	New Holland	Quad Code	1837
Wastewater Description:	Sewage Effluent		
Receiving Waters	Unnamed Tributary of Conestoga River (WWF, MF)	Stream Code	07797
NHD Com ID	57462375	RMI	0.8
Drainage Area	0.68 mi^2	Yield (cfs/mi^2)	0.098
Q_{7-10} Flow (cfs)	.0669	Q_{7-10} Basis	USGS PA StreamStats
Elevation (ft)	436	Slope (ft/ft)	
Watershed No.	7-J	Chapter 93 Class.	WWF, MF
Existing Use	N/A	Existing Use Qualifier	N/A
Exceptions to Use	N/A	Exceptions to Criteria	N/A
Assessment Status	Impaired		
Cause(s) of Impairment	Nutrients, Pathogens		
Source(s) of Impairment	Agriculture, Source Unknown		
TMDL Status	N/A	Name	N/A
Nearest Downstream Public Water Supply Intake	Lancaster City Water Bureau		
PWS Waters	Conestoga River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	28

Changes Since Last Permit Issuance: USGS PA StreamStats provided a drainage area of 0.68 mi^2 and a Q_{7-10} flow of 0.0669 cfs at the point of discharge.

Other Comments: None

Treatment Facility Summary				
Waste Type	**Degree of Treatment**	**Process Type**	**Disinfection**	**Avg Annual Flow (MGD)**
Sewage	Secondary	Activated Sludge	Calcium Hypochlorite	0.004
Hydraulic Capacity (MGD)	**Organic Capacity (lbs/day)**	**Load Status**	**Biosolids Treatment**	**Biosolids Use/Disposal**
0.004		Not Overloaded	Sludge Holding	Other WWTP

Changes Since Last Permit Issuance: None

Other Comments: The WWTP process is as follows: Equalization Tank – Aeration Tank – Clarifier – Chlorine Contact Tank – Dechlorination System – Outfall 001 to UNT of Conestoga River.

Compliance History	
Summary of DMRs:	A summary of the past 12-month DMR effluent data is presented on the next page of this fact sheet
Summary of Inspections:	5/4/2016: A routine inspection was conducted. All treatment units were online. It appeared the operator was using bleach for disinfection. The outfall was not located. The effluent in the chlorine contact tank was clear. 4/17/2018: A routine inspection was conducted. No floating debris was present in the EQ tank. The aeration tank appeared to have an even distribution of aeration. The EQ tank and aeration tank were covered with a tarp and weights. The clarifier had some popping sludge and pin floc. The sludge baffle in the clarifier had an accumulation of solids. The clarifier trough was free of debris. Effluent from the chlorine contact tank appeared mostly clear with some suspended solids. Field sample results were within permitted limits. Calcium hypochlorite tablets are used for disinfection. 8/14/2020: An administrative inspection was conducted to determine the current status of operations. The facility was operating normally and all treatment units were online and operable. There were no issues noted in the inspection report.

Other Comments: There are currently no open violations associated with the permittee or the facility.

Compliance History

DMR Data for Outfall 001 (from January 1, 2020 to December 31, 2020)

Parameter	DEC-20	NOV-20	OCT-20	SEP-20	AUG-20	JUL-20	JUN-20	MAY-20	APR-20	MAR-20	FEB-20	JAN-20
Flow (MGD) Average Monthly	0.00027	0.00042	0.00032	0.00058	0.00126	0.00205	0.00214	0.00171	0.00181	0.00107	0.00096	0.00079
Flow (MGD) Daily Maximum	0.00064	0.00085	0.00061	0.00224	0.00425	0.00374	0.00439	0.00332	0.00409	0.012	0.00261	0.00234
pH (S.U.) Instantaneous Minimum	7.71	6.79	7.28	7.3	6.01	7.68	7.62	7.18	7.38	7.1	6.69	7.26
pH (S.U.) Instantaneous Maximum	8.59	8.61	8.83	8.15	8.65	8.36	8.35	8.16	8.57	8.73	8.44	8.2
DO (mg/L) Instantaneous Minimum	9.01	7.57	7.03	7.35	7.06	7.35	7.82	8.14	9.52	8.85	9.73	8.91
TRC (mg/L) Average Monthly	< 0.02	< 0.02	< 0.02	< 0.03	< 0.02	< 0.03	< 0.02	< 0.03	< 0.03	< 0.10	< 0.02	0.10
TRC (mg/L) Instantaneous Maximum	0.27	0.11	0.09	0.41	0.09	0.21	0.26	0.37	0.22	1.66	0.08	0.53
CBOD5 (lbs/day) Average Monthly	0.005	< 0.006	< 0.009	< 0.009	< 0.03	< 0.05	< 0.04	< 0.02	< 0.04	0.20	< 0.02	< 0.01
CBOD5 (lbs/day) Weekly Average	0.007	< 0.007	0.01	< 0.01	< 0.04	< 0.05	< 0.05	0.03	0.08	0.4	< 0.02	0.02
CBOD5 (mg/L) Average Monthly	3	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	20	< 2	< 2
CBOD5 (mg/L) Weekly Average	3	< 2	3	< 2	< 2	2	< 2	2	2	53	< 2	3
TSS (lbs/day) Average Monthly	0.02	0.03	0.03	0.04	0.1	0.2	< 0.1	0.06	0.1	0.2	< 0.04	< 0.03
TSS (lbs/day) Weekly Average	0.03	0.05	0.04	0.06	0.2	0.3	0.2	0.09	0.2	0.2	0.05	< 0.03
TSS (mg/L) Average Monthly	11	10	7	11	11	11	< 6	6	7	19	< 5	< 4
TSS (mg/L) Weekly Average	11	16	10	14	14	15	8	6	8	26	6	4
Fecal Coliform (No./100 ml) Geometric Mean	< 1	< 2	16	< 2	< 1	< 1	4	< 1	1	< 1	< 1	< 60

Fecal Coliform (No./100 ml) Instantaneous Maximum	< 1	6	262	3	1	< 1	9	< 1	1	2	< 1	3600
Nitrate-Nitrite (mg/L) Average Monthly	39.2	85.8	62.7	69.2	47.9	47.2	67.7	84.8	59.1	83	88.8	64.1
Nitrate-Nitrite (lbs) Total Monthly	4	8	9	13	32	35	49	11	10	23	22	12
Total Nitrogen (mg/L) Average Monthly	41.2	87	64.3	69.9	49	49.2	67.7	84.8	60.1	83	90.2	64.1
Total Nitrogen (lbs) Total Monthly	4	8	9	13	32	36	49	11	11	23	23	12
TKN (mg/L) Average Monthly	2.05	1.26	1.58	0.69	1.08	1.98	< 0.5	< 0.5	1.06	< 0.5	1.4	< 0.5
TKN (lbs) Total Monthly	0.2	0.1	0.2	0.1	0.7	1	< 0.4	< 0.07	0.2	< 0.1	0.4	< 0.09
Total Phosphorus (mg/L) Average Monthly	4.75	10.9	12.1	13.4	7.61	7.78	1.34	9.84	6.34	6.94	7.06	6.66
Total Phosphorus (lbs) Total Monthly	0.4	1	2	3	5	6	1	1	1	2	2	1

Compliance History

Effluent Violations for Outfall 001, from: February 1, 2020 To: December 31, 2020

Parameter	Date	SBC	DMR Value	Units	Limit Value	Units
TRC	03/31/20	IMAX	1.66	mg/L	1.6	mg/L
CBOD5	03/31/20	Wkly Avg	53	mg/L	40	mg/L

Existing Effluent Limitations and Monitoring Requirements

The table below summarizes the effluent limits and monitoring requirements implemented in the existing NPDES permit.

Outfall 001

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.50	XXX	1.6	1/day	Grab
CBOD5	0.83	1.3	XXX	25	40	50	2/month	8-Hr Composite
TSS	1.0	1.5	XXX	30	45	60	2/month	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	2/month	Grab
TKN	Report Total Mo	XXX	XXX	Report	XXX	XXX	1/month	8-Hr Composite
Nitrate-Nitrite	Report Total Mo	XXX	XXX	Report	XXX	XXX	1/month	8-Hr Composite
Total Nitrogen	Report Total Mo	XXX	XXX	Report	XXX	XXX	1/month	Calculation
Total Nitrogen	XXX	Report Total Annual	XXX	XXX	XXX	XXX	1/month	Calculation
Total Phosphorus	Report Total Mo	XXX	XXX	Report	XXX	XXX	1/month	8-Hr Composite
Total Phosphorus	XXX	Report Total Annual	XXX	XXX	XXX	XXX	1/month	Calculation

Compliance Sampling Location: At discharge from facility

Other Comments: None

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .004
Latitude 40º 7' 11" **Longitude** 76º 0' 12"
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	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)
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)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)

Water Quality-Based Limitations

Pursuant to 40 CFR § 122.44(d)(1)(i), more stringent requirements should be considered when pollutants are discharged at the levels which have the reasonable potential to cause or contribute to excursions above water quality standards.

WQM 7.0 ver. 1.0b is a water quality model designed to assist DEP in determining appropriate water quality based effluent limits (WQBELs) for carbonaceous biochemical oxygen demand ($CBOD_5$), ammonia (NH_3-N), and dissolved oxygen (D.O.). The model simulates two basic processes: In the NH_3-N module, the model simulates the mixing and degradation of NH_3-N in the stream and compares calculated instream NH_3-N concentrations to NH_3-N water quality criteria. In the D.O. module, the model simulates the mixing and consumption of D.O. in the stream due to the degradation of $CBOD_5$ and NH_3-N and compares calculated instream D.O. concentrations to D.O. water quality criteria. The model then determines the highest pollutant loadings that the stream can assimilate while still meeting water quality criteria under design conditions. DEP's Technical Guidance No. 391-2000-007 provides the technical methods contained in WQM 7.0 for determining wasteload allocations and for determining recommended NPDES effluent limits for point source discharges.

The model was utilized for this permit application. The flow data used to run the model was acquired from USGS PA StreamStats and is included in an attachment. Default stream pH and temperature inputs were used for this model run. The model output indicated a $CBOD_5$ average monthly limit of 25 mg/l, an NH_3-N average monthly limit of 25 mg/l, and a D.O. minimum limit of 5.0 mg/l were protective of water quality. The $CBOD_5$ limit is the same as the existing limit, which will remain in the permit. DEP's SOP No. BCW-PMT-033 recommends that for existing dischargers, if WQM modeling results for summer indicates that an average monthly limit of 25 mg/l is acceptable, the application manager will generally establish a year round monitoring requirement for ammonia-nitrogen, at a minimum. Therefore, an NH_3-N monitoring requirement has been added to the permit.

A review of the permit application revealed no toxic parameters of concern. Accordingly, evaluating reasonable potential of toxic pollutants is not necessary as effluent levels of toxic pollutants are expected to be insignificant.

Dissolved Oxygen (D.O.)

A minimum D.O. limit of 5.0 mg/L is a D.O. water quality criterion found in 25 Pa. Code § 93.7(a). This limit is included in the existing NPDES permit. This limit will continue to be included in the permit to ensure that the facility continues to achieve compliance with DEP water quality standards.

Total Residual Chlorine

The attached computer printout utilizes the equations and calculations as presented in the Department's May 1, 2003 Implementation Guidance for Total Residual Chlorine (TRC) (ID No. 391-2000-015) for developing chlorine limitations. The Guidance references Chapter 92, Section 92.2d (3) which establishes a standard BAT limit of 0.50 mg/l unless a facility-specific BAT has been developed. The attached printout indicates that a water quality limit of 0.5 mg/l would be needed to prevent toxicity concerns. It is recommended that a TRC limit of 0.50 mg/l monthly average and 1.6 mg/l instantaneous maximum be applied this permit cycle, which is the same as the existing limit.

Chesapeake Bay Total Maximum Daily Load (TMDL)

DEP developed a strategy to comply with the EPA and Chesapeake Bay Foundation requirements by reducing point source loadings of Total Nitrogen (TN) and Total Phosphorus (TP). This strategy can be located in the *Pennsylvania Chesapeake Watershed Implementation Plan* (WIP), dated January 11, 2011. Subsequently, an update to the WIP was published as the Phase 2 WIP. As part of the Phase 2 WIP, a *Phase 2 Watershed Implementation Plan Wastewater Supplement* (Phase 2 Supplement) was developed, providing an update on TMDL implementation for point sources and DEP's current implementation strategy for wastewater. A new update to the WIP was published as the Phase 3 WIP in August 2019. As part of the Phase 3 WIP, a *Phase 3 Watershed Implementation Plan Wastewater Supplement* (Phase 3 Supplement) was developed, and was most recently revised on December 17, 2019, and is the basis for the development of any Chesapeake Bay related permit parameters. Sewage discharges have been prioritized based on their design flow to the Bay. The highest priority (Phases 1, 2, and 3) dischargers will receive annual Cap Loads based on their design flow on August 29, 2005 and concentrations of 6 mg/l TN and 0.8 mg/l TP. These limits may be achieved through a combination of treatment technology, credits, or offsets. For Phase 4 and 5 facilities, Cap Loads are not currently being implemented for renewed or amended permits for facilities that do not increase design flow.

This facility is considered a Phase 5 non-significant discharger with a design flow less than 0.2 MGD but greater than 0.002 MGD. According to DEP's latest-revised Phase 3 Supplement, issuance of permits with monitoring and reporting for TN and TP is recommended for any Phase 5 non-significant sewage facilities. Furthermore, DEP's SOP No. BCW-PMT-033 states that in general, at a minimum, monitoring for TN and TP should be included in new and reissued permits for sewage discharges with design flows > 2,000 gpd. Therefore, TN and TP monitoring will be included in the renewed permit, which is consistent with the existing permit.

Fecal Coliform

PA Code § 92a.47.(a)(4) requires a monthly average limit of 200/100 mL as a geometric mean and an instantaneous maximum limit not greater than 1,000/100 mL from May through September for fecal coliform. PA Code § 92a.47.(a)(5) requires a monthly average limit of 2,000/100 mL as a geometric mean and an instantaneous maximum limit not greater than 10,000/100 mL from October through April for fecal coliform. These limits will remain in the permit.

Flow Monitoring

Flow monitoring is recommended by DEP's technical guidance and is also required by 25 PA Code §§ 92a.61.

Sampling Frequency & Sample Type

The monitoring requirements were established based on BPJ and/or Table 6-3 of DEP's Technical Guidance No. 362-0400-001.

Anti-Degradation (93.4)

The effluent limits for this discharge have been developed to ensure that existing instream water uses and the level of water quality necessary to protect the existing uses are maintained and protected. No High Quality Waters are impacted by this discharge. No Exceptional Value Waters are impacted by this discharge.

303d Listed Streams

The discharge is located on a stream segment that has a recreational impairment from pathogens due to an unknown source. There is also an aquatic life impairment from nutrients due to agriculture.

Class A Wild Trout Fisheries

No Class A Wild Trout Fisheries are impacted by this discharge.

Anti-Backsliding

Pursuant to 40 CFR § 122.44(l)(1), all proposed permit requirements addressed in this fact sheet are at least as stringent as the requirements implemented in the existing NPDES permit unless any exceptions are addressed by DEP in this fact sheet.

Permit No. PA0085448

Proposed Effluent Limitations and Monitoring Requirements

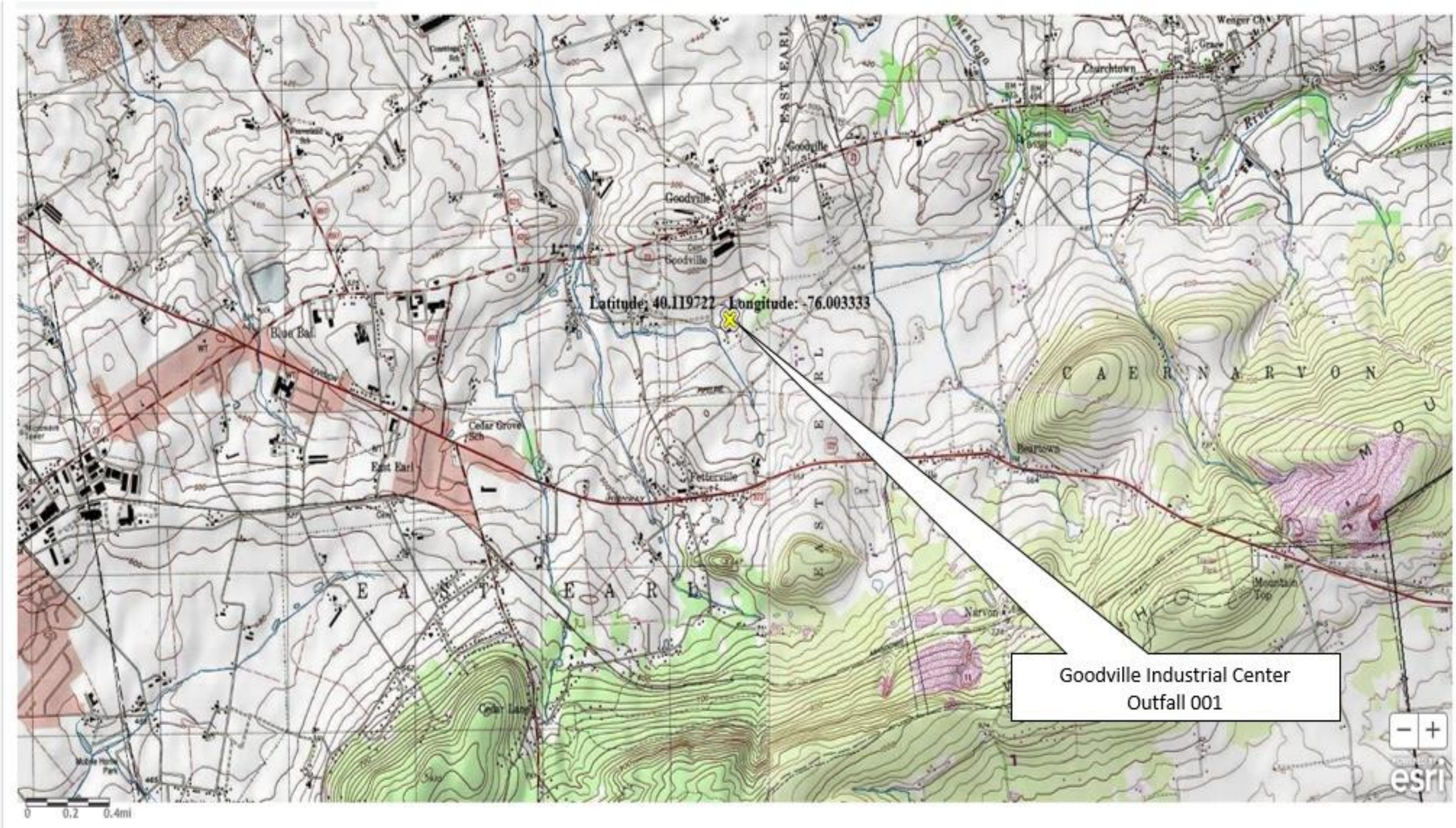
The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ.

Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Weekly Average	Minimum	Average Monthly	Weekly Average	Instant. Maximum		
Flow (MGD)	Report	Report Daily Max	XXX	XXX	XXX	XXX	Continuous	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	0.50	XXX	1.6	1/day	Grab
CBOD5	0.83	1.3	XXX	25	40	50	2/month	8-Hr Composite
TSS	1.0	1.5	XXX	30	45	60	2/month	8-Hr Composite
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2,000 Geo Mean	XXX	10,000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1,000	2/month	Grab
Ammonia	XXX	XXX	XXX	Report	XXX	XXX	1/month	8-Hr Composite
Nitrate-Nitrite	Report Total Mo	XXX	XXX	Report	XXX	XXX	1/month	8-Hr Composite
TKN	Report Total Mo	XXX	XXX	Report	XXX	XXX	1/month	8-Hr Composite
Total Nitrogen	Report Total Mo	XXX	XXX	Report	XXX	XXX	1/month	Calculation
Total Nitrogen	XXX	Report Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation
Total Phosphorus	Report Total Mo	XXX	XXX	Report	XXX	XXX	1/month	8-Hr Composite
Total Phosphorus	XXX	Report Total Annual	XXX	XXX	XXX	XXX	1/year	Calculation

Compliance Sampling Location: At discharge from facility

Tools and References Used to Develop Permit	
☒	WQM for Windows Model (see Attachment)
☐	Toxics Management Spreadsheet (see Attachment)
☒	TRC Model Spreadsheet (see Attachment)
☐	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, 362-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 362-2000-003, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 362-2000-008, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 362-2183-003, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 362-2183-004, 12/97.
☐	Pennsylvania CSO Policy, 385-2000-011, 9/08.
☐	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 391-2000-002, 4/97.
☐	Determining Water Quality-Based Effluent Limits, 391-2000-003, 12/97.
☐	Implementation Guidance Design Conditions, 391-2000-006, 9/97.
☒	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 391-2000-007, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 391-2000-008, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 391-2000-010, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 391-2000-011, 5/2004.
☐	Implementation Guidance for Section 93.7 Ammonia Criteria, 391-2000-013, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 391-2000-014, 4/2008.
☐	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 391-2000-015, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 391-2000-017, 4/09.
☐	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 391-2000-018, 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, 391-2000-019, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 391-2000-021, 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, 391-2000-022, 3/1999.
☐	Design Stream Flows, 391-2000-023, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 391-2000-024, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 391-3200-013, 6/97.
☐	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☐	SOP: No. BCW-PMT-002, No. BCW-PMT-033
☐	Other:



Enter report title:

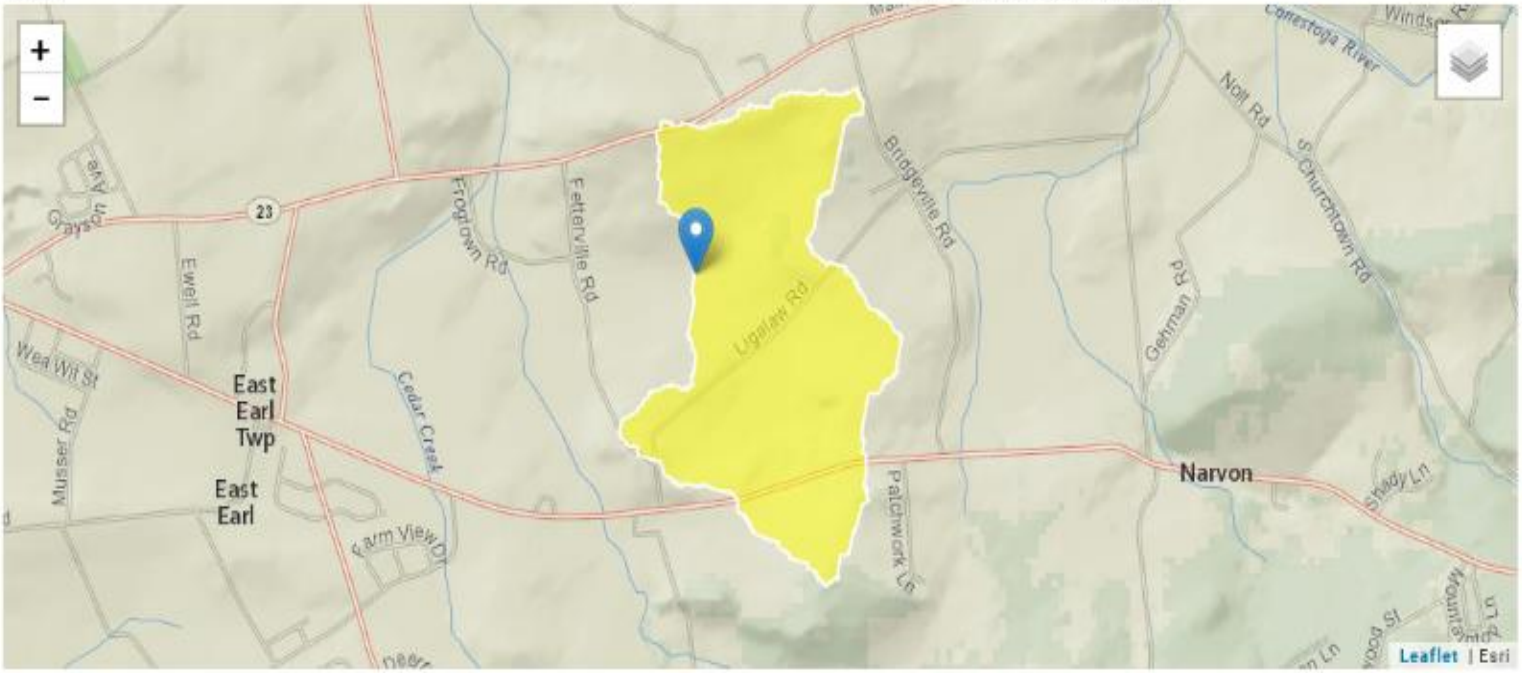
Goodville Industrial Center PA0085448 Outfall 001

Enter comments:

Some comments here

Goodville Industrial Center PA0085448 Outfall 001

Region ID:	PA
Workspace ID:	PA20210212191944427000
Clicked Point (Latitude, Longitude):	40.11907, -76.00520
Time:	2021-02-12 14:20:02 -0500



Permit No. PA0085448

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.68	square miles
BSLOPD	Mean basin slope measured in degrees	2.9863	degrees
ROCKDEP	Depth to rock	5.6	feet
URBAN	Percentage of basin with urban development	2.9028	percent

Low-Flow Statistics Parameters[Low Flow Region 1]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.68	square miles	4.78	1150
BSLOPD	Mean Basin Slope degrees	2.9863	degrees	1.7	6.4
ROCKDEP	Depth to Rock	5.6	feet	4.13	5.21
URBAN	Percent Urban	2.9028	percent	0	89

Low-Flow Statistics Disclaimers[Low Flow Region 1]

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 1]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.161	ft^3/s
30 Day 2 Year Low Flow	0.213	ft^3/s
7 Day 10 Year Low Flow	0.0669	ft^3/s
30 Day 10 Year Low Flow	0.0919	ft^3/s
90 Day 10 Year Low Flow	0.164	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.

Application Version: 4.4.0

Permit No. PA0085448

Enter report title:

Goodville Industrial Center PA0085448 RMI = 0.0

Enter comments:

Some comments here

Goodville Industrial Center PA0085448 RMI = 0.0

Region ID:	PA
Workspace ID:	PA20210212192404761000
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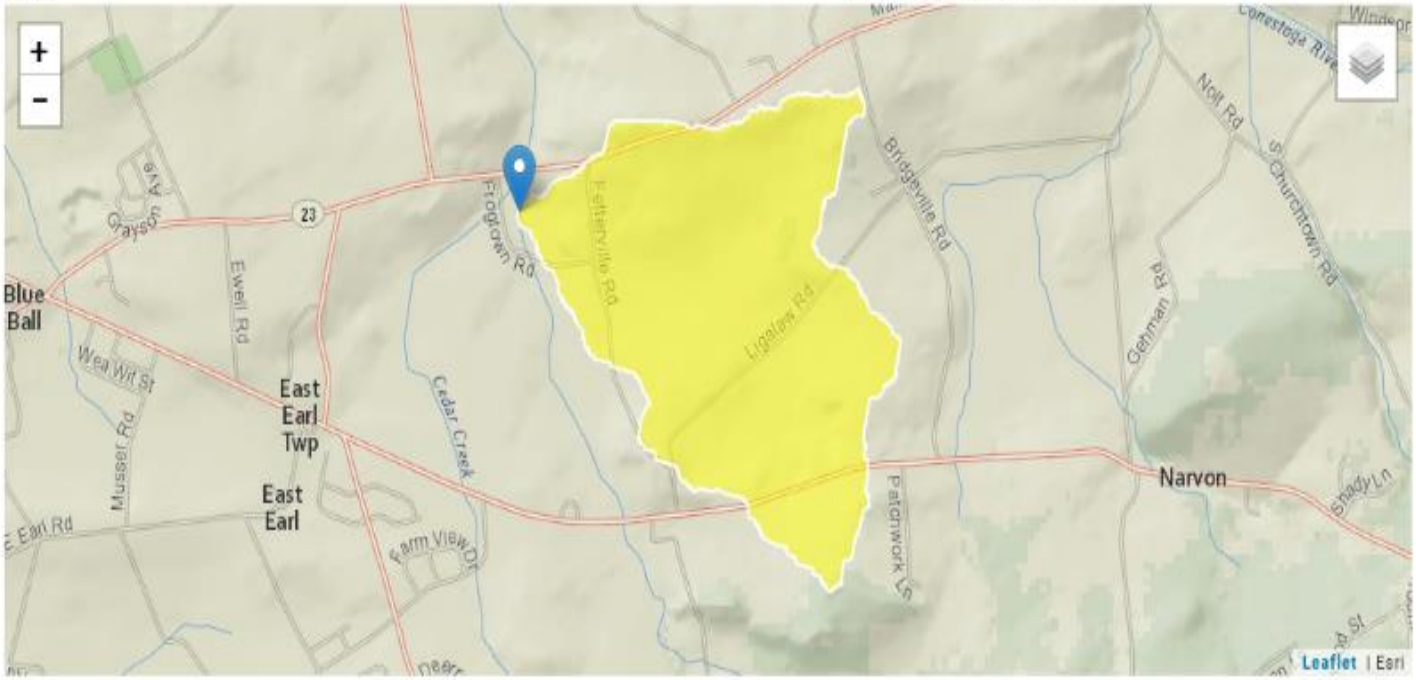
Time:	2021-02-12 14:24:22 -0500



Permit No. PA0085448

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.99	square miles
BSLOPD	Mean basin slope measured in degrees	2.7832	degrees
ROCKDEP	Depth to rock	5.7	feet
URBAN	Percentage of basin with urban development	2.377	percent

Low-Flow Statistics Parameters[Low Flow Region 1]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.99	square miles	4.78	1150
BSLOPD	Mean Basin Slope degrees	2.7832	degrees	1.7	6.4
ROCKDEP	Depth to Rock	5.7	feet	4.13	5.21
URBAN	Percent Urban	2.377	percent	0	89

Low-Flow Statistics Disclaimers[Low Flow Region 1]

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 1]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.23	ft^3/s
30 Day 2 Year Low Flow	0.305	ft^3/s
7 Day 10 Year Low Flow	0.0959	ft^3/s
30 Day 10 Year Low Flow	0.132	ft^3/s
90 Day 10 Year Low Flow	0.239	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.

Application Version: 4.4.0

Permit No. PA0085448

	A	B	C	D	E	F	G	H
1	1A	B	C	D	E	F	G	
2	2	**TRC EVALUATION**						
3	3	Input appropriate values in B4:B8 and E4:E7						
4	4	0.0669	= Q stream (cfs)		0.5	= CV Daily		
5	5	0.004	= Q discharge (MGD)		0.5	= CV Hourly		
6	6	30	= no. samples		1	= AFC_Partial Mix Factor		
7	7	0.3	= Chlorine Demand of Strea		1	= CFC_Partial Mix Factor		
8	8	0	= Chlorine Demand of Disch		15	= AFC_Criteria Compliance Time (min		
9	9	0.5	= BAT/BPJ Value		720	= CFC_Criteria Compliance Time (min		
10		0	= % Factor of Safety (FOS)			=Decay Coefficient (K)		
11	10	Source	Reference	AFC Calculations		Reference	CFC Calculations	
12	11	TRC	1.3.2.iii	WLA afc = 3.468		1.3.2.iii	WLA cfc = 3.373	
13	12	PENTOXSD TRC	5.1a	LTAMULT afc = 0.373		5.1c	LTAMULT cfc = 0.581	
14	13	PENTOXSD TRC	5.1b	LTA_afc= 1.292		5.1d	LTA_cfc = 1.961	
15	14							
16	15	Source		Effluent Limit Calculations				
17	16	PENTOXSD TRC	5.1f	AML MULT = 1.231				
18	17	PENTOXSD TRC	5.1g	AVG MON LIMIT (mg/l) = 0.500		BAT/BPJ		
19	18			INST MAX LIMIT (mg/l) = 1.635				
20								
21								
22								
23		WLA afc	**(.019/e(-k*AFC_tc)) + [(AFC_Yc*Qs*.019/Qd*e(-k*AFC_tc))...**					
24			**...+ Xd + (AFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)**					
25		LTAMULT afc	EXP((0.5*LN(cvh^2+1))-2.326*LN(cvh^2+1)^0.5)					
26		LTA_afc	wla_afc*LTAMULT_afc					
27								
28		**WLA_cfc**	**(.011/e(-k*CFC_tc) + [(CFC_Yc*Qs*.011/Qd*e(-k*CFC_tc))...**					
29			**...+ Xd + (CFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)**					
30		LTAMULT_cfc	EXP((0.5*LN(cvd^2/no_samples+1))-2.326*LN(cvd^2/no_samples+1)^0.5)					
31		**LTA_cfc**	wla_cfc*LTAMULT_cfc					
32								
33		AML MULT	EXP(2.326*LN((cvd^2/no_samples+1)^0.5)-0.5*LN(cvd^2/no_samples+1))					
34		AVG MON LIMIT	MIN(BAT_BPJ,MIN(LTA_afc,LTA_cfc)*AML_MULT)					
35		INST MAX LIMIT	**1.5*((av_mon_limit/AML_MULT)/LTAMULT_afc)**					
36								

Permit No. PA0085448

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
07J	7797	Trib 07797 of Conestoga River	0.800	436.00	0.68	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	0.100	0.00	0.07	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Goodville Ind.	PA0085448	0.0040	0.0040	0.0040	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	5.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

Permit No. PA0085448

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
07J	7797	Trib 07797 of Conestoga River	0.000	409.00	0.99	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	0.100	0.00	0.10	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
		0.0000	0.0000	0.0000	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	3.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

Permit No. PA0085448

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
07J	7797	Trib 07797 of Conestoga River

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												
0.800	0.07	0.00	0.07	.0062	0.00639	.335	4.04	12.06	0.05	0.906	20.42	7.00
Q1-10 Flow												
0.800	0.04	0.00	0.04	.0062	0.00639	NA	NA	NA	0.04	1.134	20.63	7.00
Q30-10 Flow												
0.800	0.09	0.00	0.09	.0062	0.00639	NA	NA	NA	0.06	0.773	20.32	7.00

Permit No. PA0085448

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		

Permit No. PA0085448

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
07J	7797	Trib 07797 of Conestoga River

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
0.800	Goodville Ind.	9.24	50	9.24	50	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
0.800	Goodville Ind.	1.87	25	1.87	25	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)		
0.80	Goodville Ind.	25	25	25	25	5	5	0	0

Permit No. PA0085448

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
07J	7797	Trib 07797 of Conestoga River

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
0.800	0.004	20.423	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
4.043	0.335	12.061	0.054
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
3.95	0.557	2.12	0.723
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
7.968	23.408	Owens	5
Reach Travel Time (days)			
0.906			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.091	3.75	1.98	8.18
0.181	3.56	1.86	8.18
0.272	3.38	1.74	8.18
0.363	3.21	1.63	8.18
0.453	3.05	1.53	8.18
0.544	2.90	1.43	8.18
0.635	2.75	1.34	8.18
0.725	2.62	1.25	8.18
0.816	2.48	1.17	8.18
0.906	2.36	1.10	8.18

Permit No. PA0085448

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
07J	7797	Trib 07797 of Conestoga 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)
0.800	Goodville Ind.	PA0085448	0.004	CBOD5	25		
				NH3-N	25	50	
				Dissolved Oxygen			5