pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southcentral Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0008010**
Facility Type	**Industrial**	APS ID	**566063**
Major / Minor	**Minor**	Authorization ID	**1444918**

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

Applicant and Facility Information

Applicant Name	**Table Trust Brands LLC**	Facility Name	**Table Trust Brands Poultry Proc Plant**
Applicant Address	220 N Center Street PO Box 10	Facility Address	220 N Center Street
	Fredericksburg, PA 17026-9723		Fredericksburg, PA 17026-9723
Applicant Contact	Kevin McTeer	Facility Contact	Jeff Grassley
Applicant Phone	(717) 994-8667	Facility Phone	(717) 610-6241
Client ID	242730	Site ID	444113
SIC Code	2015	Municipality	Bethel Township
SIC Description	Manufacturing - Poultry Slaughtering And Processing	County	Lebanon
Date Application Received	June 23, 2023	EPA Waived?	Yes
Date Application Accepted	June 29, 2023	If No, Reason	

Purpose of Application: Permit renewal to discharge treated industrial waste.

Summary of Review

1.0 General Discussion

This factsheet supports the renewal of an existing NPDES permit for a discharge of treated industrial waste and stormwater from Table Trust Brands Freebird East poultry slaughtering and processing plant. The name of the facility changed to Table Trust Brands LLC during the last permit cycle. Processing at the plant consists of live receiving, killing, scalding, defeathering, eviscerating, cutting-up, deboning, and bulk ice packaging of chicken. Ice making and by-product rendering are also conducted at the plant. Most of the wastes generated in the process are recyclable and recoverable. Wastes which originate from the scalder, the chiller, manure from the receiving area and from general facility wash-down are treated in an on-site wastewater treatment plant. Wastewater receive preliminary treatment in a fine screen (drum screen). From the screening unit, effluent flow via collection box to equalization tank1 where it is pumped to equalization tank 2 prior to the saturated air floatation (SAF) system for chemical addition and pretreatment. SAF is used in place of the dissolved air flotation (DAF). The operator indicated that SAF produced by Heron Innovators Inc. was more efficient with their treatment compared with the DAF process. From the SAF process, flow goes to aeration tank1 and then to the Schreiber tank, followed by clarification, chlorination, de-chlorination and post aeration. Chlorine contact tank has turbidity probe for process control. Waste sludge is treated in 2 aerobic digesters and ultimate disposal by either land application or hauled to a POTW for further treatment. Treatment chemicals used at the facility include polymer and ferric chloride in the SAF unit, sodium aluminate for phosphorus removal and sodium hypochlorite for chlorination and sodium bisulfite for de-chlorination. Treated effluent is discharged through outfall 001 to Beach Run. There are two stormwater outfalls 002 and 003 associated with the permit. The existing NPDES permit was issued on December 27, 2018 with effective date of January 1, 2019 and expiration date of December 31, 2024. The applicant submitted a timely NPDES renewal application to the Department and is currently operating under the terms and conditions in the existing permit pending Department action on the renewal application.

Approve	Deny	Signatures	Date
X		*J. Pascal Kwedza* J. Pascal Kwedza, P.E. / Environmental Engineer	June 13, 2025
X		*Maria D. Bebenek for* Daniel W. Martin, P.E. / Environmental Engineer Manager	July 1, 2025
X		*Maria D. Bebenek* Maria D. Bebenek, P.E. / Program Manager	July 1, 2025

Summary of Review

A topographical map showing discharge location is presented in attachment A. Schematic water flow diagram showing the various sources and amounts of process wastewater produced is presented in attachment D.

1.1 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.

1.2 Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	.15
Latitude	40º 26' 51.92"	Longitude	-76º 25' 39.43"
Quad Name	Fredericksburg	Quad Code	1534
Wastewater Description:	IW Process Effluent with ELG		

Receiving Waters	Beach Run	Stream Code	09898
NHD Com ID	56395963	RMI	1.36
Drainage Area	1.62	Yield (cfs/mi^2)	0.0656
Q_{7-10} Flow (cfs)	0.11	Q_{7-10} Basis	USGS Gage Station
Elevation (ft)	468	Slope (ft/ft)	
Watershed No.	7-D	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Siltation		
Source(s) of Impairment	Urban Runoff/Storm Sewers		
TMDL Status	Final	Name	Deep Run, Beach Run, and Elizabeth Run Nutrient TMDL

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

Nearest Downstream Public Water Supply Intake	Veolia Water PA		
PWS Waters	Swatara Creek	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	29

Changes Since Last Permit Issuance: None

1.2.1 Water Supply Intake

The closest water supply intake located downstream from the discharge is the Veolia Water PA on the Swatara Creek. The distance downstream from the discharge to the intake is approximately 29 miles. The discharge should not have an impact on the intake.

1.3 Discharge, Receiving Waters and Water Supply Information

Outfall No.	002	Design Flow (MGD)	0
Latitude	40º 26' 51.03"	Longitude	-76º 25' 40"
Quad Name		Quad Code	
Wastewater Description:	Stormwater		
Receiving Waters	Beach Run	Stream Code	09898
NHD Com ID	56395963	RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	7-D	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Siltation		
Source(s) of Impairment	Urban Runoff/Storm Sewers		
TMDL Status	Final	Name	Deep Run, Beach Run, and Elizabeth Run Nutrient TMDL

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

Nearest Downstream Public Water Supply Intake			
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance: None

1.3.1 Stormwater

See stormwater section of the report for details on Outfall 002

1.4 Discharge, Receiving Waters and Water Supply Information

Outfall No.	003	Design Flow (MGD)	0
Latitude	40º 26' 51"	Longitude	-76º 25' 39"
Quad Name		Quad Code	
Wastewater Description:	Stormwater		
Receiving Waters	Beach Run	Stream Code	09898
NHD Com ID	56395963	RMI	
Drainage Area		Yield (cfs/mi^2)	
Q_{7-10} Flow (cfs)		Q_{7-10} Basis	
Elevation (ft)		Slope (ft/ft)	
Watershed No.	7-D	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Siltation		
Source(s) of Impairment	Urban Runoff/Storm Sewers		
TMDL Status	Final	Name	Deep Run, Beach Run, and Elizabeth Run Nutrient TMDL

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

Nearest Downstream Public Water Supply Intake			
PWS Waters		Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance: None

1.4.1 Stormwater

See stormwater section of the report for details on Outfall 003

2.0 Treatment Facility Summary

Treatment Facility Name: Table Trust Brands Freebird East

WQM Permit No.	Issuance Date
3878201 06-1	May 30, 2006
3887201 06-1	May 30, 2006
3804201 06-1	May 30, 2006

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Industrial	Tertiary		Hypochlorite	0.15

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.15			Aerobic Digestion	Combination of methods

Changes Since Last Permit Issuance: None

2.1 Treatment Facility

Influent pumps, screening, saturated air pre-treatment system, equalization tanks, Aeration tanks, Schreiber tank, aerobic digesters, chlorine contact tank with de-chlorination and post aeration.

2.2 Existing Limitations and Monitoring Requirement

2.2.1 Outfall 001

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Metered
pH (S.U.)	XXX	XXX	6.0 Daily Min	XXX	9.0	XXX	1/day	Grab
DO	XXX	XXX	7.0 Daily Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.1	XXX	0.33	1/day	Grab
CBOD5	6.2	12.5	XXX	5	10	12.5	1/week	24-Hr Composite
TSS	12.5	25	XXX	10	20	25	1/week	24-Hr Composite
Oil and Grease	10	17.5	XXX	8.0	14	20	1/week	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	400	XXX	XXX	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200	XXX	XXX	1/week	Grab
Nitrate-Nitrite	XXX	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Nitrogen	XXX	XXX	XXX	103.0	147.0	XXX	1/week	Calculation
Ammonia Nov 1 - Apr 30	5.0	10	XXX	4.0	8.0	10	1/week	24-Hr Composite
Ammonia May 1 - Oct 31	3.1	6.2	XXX	2.5	5.0	6.25	1/week	24-Hr Composite
TKN	XXX	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Phosphorus	0.63	1.25	XXX	0.5	1.0	1.25	1/week	24-Hr Composite

2.2.2 Outfalls 002 and 003

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	Daily Maximum	Instant. Maximum		
pH (S.U.)	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
BOD5	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
COD	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
TSS	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Oil and Grease	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Nitrate-Nitrite	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
TKN	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Phosphorus	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab

3.0 Compliance History

3.1 DMR Data for Outfall 001 (from May 1, 2024 to April 30, 2025)

Parameter	APR-25	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24
Flow (MGD) Average Monthly	0.169	0.161	0.152	0.141	0.141	0.147	0.154	0.156	0.160	0.162	0.152	0.143
Flow (MGD) Daily Maximum	0.229	0.229	0.216	0.198	0.205	0.194	0.201	0.220	0.279	0.240	0.199	0.228
pH (S.U.) Daily Minimum	7.2	7.2	7.4	7.4	7.3	7.1	7.2	7.3	7.4	7.2	7.1	7.3
pH (S.U.) Daily Maximum	7.9	8.1	8.7	7.9	8.2	7.8	7.9	8.0	8.0	8.0	8.0	0.9
DO (mg/L) Daily Minimum	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.0	7.1	7.0	7.1
TRC (mg/L) Average Monthly	0.04	0.04	0.04	0.03	0.03	0.04	0.04	0.04	0.04	0.03	0.03	0.03
TRC (mg/L) Instantaneous Maximum	0.05	0.12	0.08	0.05	0.06	0.09	0.06	0.05	0.06	0.04	0.05	0.04
CBOD5 (lbs/day) Average Monthly	< 3.4	< 3.5	< 2.7	< 2.9	< 2.9	< 3.1	< 3.0	< 3.1	< 2.8	< 3.1	< 3.0	< 3.0
CBOD5 (lbs/day) Daily Maximum	< 3.8	< 3.7	< 3.0	3.2	< 3.4	< 3.2	< 3.3	< 3.5	< 3.5	4.9	< 3.2	< 3.4
CBOD5 (mg/L) Average Monthly	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
CBOD5 (mg/L) Daily Maximum	< 2	< 2	< 2	2.7	< 2	< 2	< 2	< 2	< 2	3.1	< 2	< 2
TSS (lbs/day) Average Monthly	< 3.7	< 3.6	< 2.4	< 6.4	3.5	< 2.9	5.4	4.0	< 2.3	< 3.0	< 1.50	< 3.6
TSS (lbs/day) Daily Maximum	6	6	4	25	7	7	10	7	5	9.0	< 2	7
TSS (mg/L) Average Monthly	< 2	< 2	< 2	< 4	2	< 2	4	3	< 2	< 2	< 1	< 3
TSS (mg/L) Daily Maximum	4	3	3	17	4	5	6	4	3	6	1	7
Oil and Grease (lbs/day) Average Monthly	< 7	< 7	< 6	< 5	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Oil and Grease (lbs/day) Daily Maximum	< 7.4	< 7.6	< 6.9	< 6.1	< 3.2	< 3.2	< 3.4	< 3.3	< 3.5	< 3.3	< 3.2	< 3.4
Oil and Grease (mg/L) Average Monthly	< 4.0	< 4.0	< 4.0	< 4.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0

Oil and Grease (mg/L) Daily Maximum	< 4	< 4	< 4	< 4.0	< 2	< 2	< 2.0	< 2	< 2.0	< 2.0	< 2	< 2
Fecal Coliform (No./100 ml) Average Monthly	19	< 21	152	< 27	< 22	< 13	< 5	< 2	< 6	< 2	< 2	< 2
Nitrate-Nitrite (mg/L) Average Monthly	< 48.98	< 66.4	< 62.16	< 70.37	< 55.19	< 50.45	< 59.66	< 63.64	< 60.16	< 51.06	< 52.56	< 56.78
Total Nitrogen (mg/L) Average Monthly	< 49.3	< 66.7	< 62.5	< 70.7	< 55.5	< 50.9	< 60.0	< 63.9	< 60.50	< 51.4	< 52.9	< 57.2
Total Nitrogen (mg/L) Daily Maximum	< 67.64	< 72.54	< 69.82	< 84.91	< 78.15	< 60.41	< 63.01	< 65.91	< 67.11	< 58.81	65.45	< 66.95
Ammonia (lbs/day) Average Monthly	0.7	0.8	0.3	0.2	0.4	< 0.2	0.2	0.1	0.3	0.2	0.4	0.3
Ammonia (lbs/day) Daily Maximum	0.9	1	0.4	0.4	1	0.3	0.3	0.1	0.5	0.3	0.9	0.9
Ammonia (mg/L) Average Monthly	0.4	0.5	0.2	0.2	0.2	< 0.1	0.1	0.1	0.20	0.1	0.3	0.2
Ammonia (mg/L) Daily Maximum	0.49	0.54	0.3	0.25	0.59	0.2	0.2	0.11	0.46	0.19	0.6	0.56
TKN (mg/L) Average Monthly	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Total Phosphorus (lbs/day) Average Monthly	0.10	0.08	0.10	0.10	0.09	0.07	0.05	< 0.06	0.07	0.07	< 0.06	0.10
Total Phosphorus (lbs/day) Daily Maximum	0.20	0.10	0.10	0.10	0.10	0.10	0.06	0.10	0.09	0.10	0.10	0.20
Total Phosphorus (mg/L) Average Monthly	0.1	0.05	0.1	0.1	0.1	0.05	0.03	< 0.04	0.05	0.1	< 0.04	0.10
Total Phosphorus (mg/L) Daily Maximum	0.11	0.07	0.09	0.1	0.08	0.06	0.04	0.09	0.06	0.07	0.07	0.11

3.2 DMR Data for Outfall 002 (from May 1, 2024 to April 30, 2025)

Parameter	APR-25	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24
pH (S.U.) Daily Maximum					7.33						6.76	
BOD5 (mg/L) Daily Maximum					15.7						51.2	
COD (mg/L) Daily Maximum					39						102	
TSS (mg/L) Daily Maximum					28						35	
Oil and Grease (mg/L) Daily Maximum					< 5						< 5	
Nitrate-Nitrite (mg/L) Daily Maximum					1.41						< 1.10	
TKN (mg/L) Daily Maximum					5.67						8.55	
Total Phosphorus (mg/L) Daily Maximum					1.28						1.25	

3.3 DMR Data for Outfall 003 (from May 1, 2024 to April 30, 2025)

Parameter	APR-25	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24	MAY-24
pH (S.U.) Daily Maximum					7.78						7.01	
BOD5 (mg/L) Daily Maximum					6.4						25.1	
COD (mg/L) Daily Maximum					29						68	
TSS (mg/L) Daily Maximum					29						50	
Oil and Grease (mg/L) Daily Maximum					< 5						< 5	
Nitrate-Nitrite (mg/L) Daily Maximum					< 1.97						< 17.50	
TKN (mg/L) Daily Maximum					3.49						4.93	
Total Phosphorus (mg/L) Daily Maximum					0.58						0.75	

3.4 DMR Summary

Discharge Monitoring Reports (DMRs) review for the facility for the last 12 months of operation presented on tables 3.1 to 3.3 above indicate permit limits have been met most of the time. Benchmark values were exceeded two consecutive monitoring period at outfall 002 for TSS in 2023. DEP accepted the facility's submitted corrective action plan for implementation to address TSS benchmark value exceedances.

3.5 Summary of Inspections:

The facility was inspected a couple of times during the past permit cycle. Inspection reports review for the facility during the period indicate permit limits have been met consistently. No effluent violations were found during plant inspections.

4.0 Development of Effluent Limitations

Outfall No.	001	**Design Flow (MGD)**	.15
Latitude	40º 26' 51.92"	**Longitude**	-76º 25' 39.43"

Wastewater Description: IW Process Effluent with ELG

4.1 Basis for Effluent Limitations

In general, the Clean Water Act (CWA) requires that the effluent limits for a particular pollutant be the more stringent of either technology-based limits or water quality-based limits. Technology-based limits are set according to the level of treatment that is achievable using available technology. A water quality-based effluent limit is designed to ensure that the water quality standards applicable to a waterbody are being met and may be more stringent than technology-based effluent limits.

4.2 Technology Based Limits

Discharges from poultry processors are regulated by 40 CFR 432 that presents production-based effluent limits in mg/l for existing and new sources. Subpart K (Poultry First Processing) applies since the process wastewater resulted from slaughtering of poultry, further processing of poultry and rendering of material derived from a facility that slaughters more than 100 million pounds per year (in units of live weight killed (LWK)). Full year production data reported in the application for 2018, 2019, 2020, 2021 and 2022 are 121,542,100 pounds per year of LWK, 118,959,663 pounds per year of LWK, 117,218,801 pounds per year of LWK, 109,908,568 pounds per year of LWK and 108,051,813 pounds per year of LWK respectively. Section 432.112 (BPT) and 432.113 (BAT) are applicable. The following table presents the BPT/BAT limits that are applicable and would be included in the permit unless water quality based effluent limits (WQBELs) are more stringent.

SUMMARY OF BPT/BAT LIMITS

Pollutant	Effluent Concentrations (mg/l)	
	Average Monthly	Maximum Daily
BOD_5	16	26
TSS	20	30
Oil & Grease	8	14
NH_3-N	4	8
Total N	103	147
Fecal Coliform	Maximum of 400/100ml	

4.3 Water Quality-Based Limitations

4.3.1 Receiving Stream

The receiving stream is the Beach Run. According to 25 PA § 93.9o, this stream is protected for Warm Water Fishes (WWF) and Migratory Fishes (MF). It is located in Drainage List o and State Watershed 7-D. It has been assigned stream code 09898. Beach Run is impaired for DO and nutrients with a TMDL finalized which be discussed in detail in the report.

4.3.2 TMDLs for Deep Run, Beach Run, and Elizabeth Run

Two TMDLs were finalized on 8/9/2004 for Nutrient and Sediment. The nutrient TMDL allocated a DO of 7.0 mg/l, BOD5 of 5.0 mg/l and 456lbs/year Total Phosphorus and the sediment TMDL allocated 11,400lbs/year (5.7tons/yr) of sediments to Table Trust Brands Freebird East Plant (formerly Hain Pure Protein and also College Hill Poultry). The most stringent limit between the TMDL, TBELs and WQBELs will apply to the permit.

4.3.3 WQM 7.0 Stream Model

WQM 7.0 is a water quality model DEP utilizes to establish appropriate effluent limits for $CBOD_5$, NH_3-N and DO in permits. The model simulates 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 and also simulates mixing and consumption of D.O. in the stream due to the

degradation of $CBOD_5$ and NH_3N and compares calculated instream D.O. concentrations to D.O. water quality criteria and recommends effluent limits.

4.3.4 Streamflow:

Streamflows for the water quality analysis were determined by correlating with the yield of USGS gauging station No 01573000 on Swatara Creek at Harper Tavern. The Q_{7-10} and drainage area at the gage is 22.1ft3/s and 337 mi^2 respectively. The resulting yields are as follows:

- Q_{7-10} = (22.1ft^3/s)/337 mi^2 = 0.0656ft^3/s/ mi^2
- Q_{30-10} / Q_{7-10} = 1.40
- Q_{1-10} / Q_{7-10} = 0.80

The drainage area at discharge taken from the previous protection report is 1.62 mi^2

The Q_{7-10} at discharge = 1.62 mi^2 x 0.0656ft^3/s/mi^2 = 0.11 ft^3/s.

4.3.5 NH_3N Calculations

NH_3N calculations will be based on the Department's Implementation Guidance of Section 93.7 Ammonia Criteria, dated 11/4/97 (ID No. 391-2000-013). The following data is necessary to determine the instream NH_3N criteria used in the attached computer model of the stream:

STP pH	=7.5 (DMR median for July to Sept)
STP Temp	=25^{0}C (Default)
Stream pH	=7.0 (Default)
Stream Temp	=20^0 C (Default)
Background NH_3N	=0.00 (Default)

4.3.6 $CBOD_5$

WQM7.0 was used to calculate WQBELs for $CBOD_5$ and NH_3-N for Table Trust East Plant's discharge. The WQM 7.0 stream modeling was done using default values for stream and discharge temperature and DMR median pH, and the flow of 0.15MGD. The attached result of the WQM 7.0 stream model (attachment B) indicates that, a water quality limit of 25 mg/L as monthly average is adequate to protect water quality of the stream. This is less stringent than the 20mg/L required by 40 CFR 432 and the existing limit of 5mg/L based on the allocation in the Nutrient TMDL approved for Deep Run, Beach Run, and Elizabeth Run. Therefore, the existing limit of 5mg/L average monthly, 10mg/L daily maximum and 12.5mg/L IMAX will remain in the permit. Permit Writers Manual specifies that mass loadings should be written for water quality-based limits and reported for technology-based limits (Document No. 362-0400-001, Table 5-2, 10/1/97).

4.3.7 NH_3-N

The result of the WQM 7.0 stream model presented in attachment B also indicates that a summer limit of 2.0 mg/L(rounded) NH_3-N as a monthly average is necessary to protect the aquatic life from toxicity effects. This limit is slightly more stringent than the existing limit in the permit, but the facility can meet the new proposed limit. The existing technology limit of 4mg/l will remain in the permit for the winter months. Mass-based limits will continue to be written in the permit. The mass-based limits are expressed in pounds per day and are calculated as follows:

Mass based average monthly (lb/day) for the summer months for 2.0 NH_3-N (mg/L) × 0.15 (mgd) × 8.34 = 2.5

Mass based daily maximum (lb/day) for the summer months for 4.0 NH_3-N (mg/L) × 0.15 (mgd) × 8.34 = 5.0

Mass based average monthly (lb/day) for the winter months for 4.0 NH_3-N (mg/L) × 0.15 (mgd) × 8.34 = 5

Mass based daily maximum (lb/day) for the winter months for 8.0 NH_3-N (mg/L) × 0.15 (mgd) × 8.34 = 10

4.3.8 Dissolved Oxygen

The existing permit limit of 7 mg/l for Dissolved Oxygen (DO) allocated in the TMDL is more stringent than the water quality requirement for warm water fishes and will remain in the permit with a daily monitoring requirement.

4.3.9 Total Suspended Solids (TSS):

This is an industrial wastewater; therefore, conventional secondary treatment requirement of 30 mg/l is not applicable. 40 CFR 432 requires average monthly (20 mg/l) and maximum day concentration (30 mg/l). The Elizabeth-Deep-Beach Run TMDL allocate a total annual load limit of 11,400 lbs/year (equivalent of a 25 mg/l concentration). However, the permittee has agreed during previous permit renewals that a TSS average monthly concentration limit of 10 mg/l and 20 mg/l maximum daily limit with the corresponding mass limits of 12.5lbs/day and 25lbs/day respectively should be used in the permit to better assure cleanup of the Beach Run basin. This limit will be continued in the current renewed permit.

4.3.10 Fecal Coliform:

25 PA code § 92a.47(a)(4) requires a summer technology limit of 200/100 ml as a geometric mean and § 92a.47(a)(5) requires a winter limit of 2,000/100ml as a geometric mean for Fecal Coliform. However, 40 CFR 432 requires a maximum daily limit of 400/100 ml, which was required in the existing permit as a winter geometric mean since it is more stringent than 2,000/100ml and will remain in the permit. Therefore, a summer limit of 200/100 ml and a winter limit of 400/100 ml as a geometric mean, and a maximum daily limit of 400/100 ml for both seasons will be required in the permit. This is consistent with existing permit and the facility is meeting this permit requirement.

4.3.11 Total Phosphorus(TP):

The TMDL specifies an annual load of 456 lbs (1 mg/l) of phosphorus. The TMDL does not specify a concentration limit. The permittee has agreed during previous permit renewals that, a TP average monthly limit of 0.5 mg/L and 1 mg/L maximum daily with corresponding mass limits of 0.63lbs/day and 1.25lbs/day respectively should be established in the permit to better assure cleanup of the Beach Run basin. The facility has been meeting the limits. The average monthly mass limit is more stringent than the annual mass limit. Therefore, an annual mass limit will not be included in the permit renewal.

4.3.12 Total Nitrogen (TN):

There is no water quality criterion for TN, the technology limits of 103mg/l monthly average and 147mg/l daily maximum TN applicable to poultry processing facilities required in 40 CFR 432 will apply with a weekly monitoring frequency.

4.3.13 Chesapeake Bay Strategy:

In 2003, EPA established state-wide cap loads for Total Nitrogen and Total Phosphorus for Pennsylvania that are needed to ensure compliance with new water quality standards enacted to restore the water quality of the Chesapeake Bay. DEP released Pennsylvania's Chesapeake Bay Tributary Strategy (CBTS) in January of 2005 to guide Pennsylvania's efforts to meet those cap loads and revised the Strategy in 2006-2007 following a stakeholder process. Industrial discharges have been prioritized based on their delivered TN and TP loadings to the Bay. Significant industrial wastewater dischargers are facilities that discharge more than 75 lbs/day of TN or 25 lbs/day of TP on an average annual basis and the rest are classified as non-significant dischargers. DEP developed Chesapeake Bay IW monitoring plan for all industrial facilities that discharge to the Chesapeake Bay. This facility is classified as a non-significant discharger with potential to introduce nutrients to the receiving stream but has limits in the permit for Total Nitrogen and Total Phosphorus, no monitoring is required.

4.3.14 Total Residual Chlorine:

TRC analysis was based on the equations and calculations 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 92a, Section 92a.48 (b) which establishes a standard BAT limit of 0.5 mg/L unless a facility-specific BAT has been developed. The attached results presented in attachment C indicates a water quality limit of 0.08 mg/L AML and IMAX of 0.26 mg/L would be needed to prevent toxicity concerns. This recommendation is slightly more stringent than limit in the existing permit, but the facility can meet the recommended limit based on DMR data and inspection reports.

4.3.15 Oil and Grease

ELG of 8 mg/l monthly average and 16 mg/l maximum daily along with mass limits in the existing permit will remain in the permit. In addition to this technology-based numerical effluent limits, narrative general water quality-based requirement for oil and grease, such as prohibiting of visible sheening, are included in the draft permit.

4.3.16 pH

Following PA code 25 § 95.2, the existing pH limit of not less than 6 and not greater than 9, will be continued in the permit for this industrial waste discharge with daily monitoring requirement.

4.3.17 Toxics Limits

Toxics are not expected to be present at levels of concern in the discharge from poultry processing facilities and data presented in the application shows effluent levels that are below screening detection levels for all parameters. No limits or monitoring is needed for any toxics at this time.

4.3.18 Chemical Additives

The facility has been using chemical additives that were not approved previously by the DEP. The permittee submitted chemical additive notification forms dated 8/7/24, 1/15/25 and 6/3/25 for approval during this permit renewal.

The following Chemical additives are approved to be used in the Cooling Tower: 3DT 465 scale inhibitor (Proposed Max usage rate 0.5 gal/day), ST70 biocide (Proposed Max usage rate 0.1 gal/day), H550 biocide (Proposed Max usage rate 0.1 gal/week), 4100 for pH adjustment (Proposed Max usage rate 0.05 gal/day), Stabrom 909 cooling tower treatment (Proposed Max usage rate 0.11 gal/day), Preventol P 91 cooling tower treatment (Proposed Max usage rate 0.06 gal/day) and the boiler treatment chemical additive Greentech 2700 (Proposed Max usage rate 0.6 gal/day).

The following Sanitation Chemical additives are approved for the Processing Plant: Chlorinated foam 30094 (Proposed Max usage rate 4.6 gal/day), Caustic Cleaner 5953 (Proposed Max usage rate 4.8 gal/day), Chlorsan 0115 / Bleach (Proposed Max usage rate 6.9 gal/day), Alkaline Scrub 45642 (Proposed Max usage rate 2 gal/day), Acid Cleaner 94800 (Proposed Max usage rate 5 gal/week), Acid Foam 90028 (Proposed Max usage rate 5 gal/week). The permittee provided justification for some of the proposed maximum usage rates that are higher than the allowable usage rate.

Sumary of TMS results for the Cooling Tower and boiler treatment, and sanitation chemical additives are presented in attachement E and F. The permit is written with chemical additives usage and notification requirement located in Part C.II of the permit.

4.3.19 Stormwater:

The application listed outfall 002 (40º 26' 51"/76º 25' 40") and 003(40º 26' 51"/76º 25' 39") as receiving stormwater from the treatment plant site. Outfall (002) drains a 3.4 acre portion of the plant site. Trailers bringing in live chickens are parked near or within a holding shed located in this area until they are moved to the live receiving area for unloading. A sump is installed in this area to collect the initial 30 minutes first flush of storm water and pumped to the wastewater treatment plant for treatment and the remainder of the runoff flows untreated to outfall 002. Outfall 003 is located north of the chlorine contact tank and receives drainage from the office driveway and fuel station area. Stormwater is monitored and managed using best management practices. Rendering and poultry processing facilities fall under SIC codes 2077 and 2015. The requirements in Appendix I of the current PAG 03 listed in the table below applies. The permittee has been and will continue to monitor and report analytical results for the parameters listed in the table below on Discharge Monitoring Reports (DMRs) for outfalls 002 and 003. The benchmark values listed in the table are not effluent limitations, and exceedances do not constitute permit violations. However, if the permittee's sampling demonstrates exceedances of benchmark values for two consecutive monitoring periods, the permittee shall submit a corrective action plan within 90 days of the end of the monitoring period triggering the plan.

Parameter	Minimum Measuring Frequency	Sample Type (mg/l)	Benchmark Values
pH (S.U.)	1 / 6months	Grab	9
BOD_5	1 / 6months	Grab	30
TSS	1 / 6months	Grab	100
COD	1 / 6months	Grab	120
NO_3+NO_2-N	1 / 6months	Grab	XXX
Oil & Grease	1 / 6months	Grab	30
Total Nitrogen*	1 / 6months	Calculation	XXX

Total Phosphorus	1 / 6months	Grab	XXX

*Total Nitrogen is the sum of Total Kjeldahl-N (TKN) plus Nitrite-Nitrate as N (NO2+NO3-N), where TKN and NO2+NO3-N are measured in the same sample.

4.3.20 Best Management Practices (BMPs)

In addition to general BMPs, the permittee shall implement the following BMPs that may be applicable to SIC codes 2077 and 2015.

- Store all dry raw materials, additives and products in enclosed/covered areas; install dust collection and control system for silos, holding bins, etc.
- Store liquids in tanks with secondary containment and lead detection, where appropriate.
- Minimize raw water usage for washing products and raw materials; recycle wash water to the maximum extent practicable.
- Practice good housekeeping to limit spillage/leakage of residue and provide for prompt clean-up; dispose of rotting products promptly.
- Manage inventories to ensure only short-term supplies of raw materials and products are stored on-site.
- Limit use of pesticides, insecticides and rodenticides to the maximum extent possible; apply during dry conditions; investigate non (or least) hazardous alternatives.
- Wherever possible, enclose/cover animal holding areas; install run-on controls and collect and treat run-off, as appropriate.
- Practice good housekeeping by containing and promptly removing and managing animal manure

4.3.21 Biosolids Management

Sludge generated from the biological process and SAF sludge will be digested in aerobic digesters prior to hauling off-site for final disposal by land application or to a POTW.

5.0 Other Requirements

5.1 Antidegradation (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.

5.2 Anti-backsliding

Not applicable to the permit.

5.3 Class A Wild Trout Fisheries:

No Class A Wild Trout Fisheries are impacted by this discharge

5.4 Endangered Species

There is no confirmed existence of endangered species in the area close to the discharge. Therefore, the discharge authorized by this permit is not likely to impact any endangered or threatened species or adversely affect its critical habitat.

5.5 303d Listed Streams:

The Elizabeth-Deep-Beach Run watershed receives significant loads of pollutants from two poultry processing plants, a rendering plant, and various non-point sources. A stream survey conducted in November of 2000 below the facility's discharge concluded that the discharge was having an adverse impact on aquatic life in a 0.5-mile-long reach of Beach Run. Large deposits of wastewater solids and high NH_3-N levels were found in the stream downstream from the discharge. The discharge is located on a stream segment that is impaired, and the impairment is due to nutrients and siltation from urban runoff and storm sewers and agricultural activities in the watershed. TMDL was finalized that allocated various loads to this facility and other point sources on the stream segment. An average monthly limit of 5 mg/l BOD_5 and a DO of 7.0mg/l

were allocated in the TMDL and was established in the permit during previous permit cycles and will be retained during this permit cycle. Load allocation for TP and TSS were not included in the permit because the average monthly TP and TSS concentration and corresponding monthly mass limit are more stringent than the annual TP and TSS mass limit as discussed under TSS and TP section of this report.

5.6 Basis for Effluent and Surface Water Monitoring

Section 308 of the CWA and federal regulation 40 CFR 122.44(i) require monitoring in permits to determine compliance with effluent limitations. Monitoring may also be required to gather effluent and surface water data to determine if additional effluent limitations are required and/or to monitor effluent impacts on receiving water quality. The permittee is responsible for conducting the monitoring and for reporting results on Discharge Monitoring Reports (DMRs).

5.7 Effluent Monitoring Frequency

Monitoring frequencies are based on the nature and effect of the pollutant, as well as a determination of the minimum sampling necessary to adequately monitor the facility's performance. Permittees have the option of taking more frequent samples than are required under the permit. These samples can be used for averaging if they are conducted using EPA-approved test methods (generally found in 40 CFR 136) and if the Method Detection Limits are less than the effluent limits. The sampling location must be after the last treatment unit and prior to discharge to the receiving water. If no discharge occurs during the reporting period, "no discharge" shall be reported on the DMR.

6.0 Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (386-0400-001), SOPs and/or BPJ.

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

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Metered
pH (S.U.)	XXX	XXX	6.0 Daily Min	XXX	9.0	XXX	1/day	Grab
DO	XXX	XXX	7.0 Daily Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.08	XXX	0.26	1/day	Grab
CBOD5	6.2	12.5	XXX	5	10	12.5	1/week	24-Hr Composite
TSS	12.5	25	XXX	10	20	25	1/week	24-Hr Composite
Oil and Grease	10	17.5	XXX	8.0	14	20	1/week	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	400	XXX	XXX	1/week	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200	XXX	XXX	1/week	Grab
Nitrate-Nitrite	XXX	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Nitrogen	XXX	XXX	XXX	103.0	147.0	XXX	1/week	Calculation
Ammonia Nov 1 - Apr 30	5.0	10	XXX	4.0	8.0	10	1/week	24-Hr Composite
Ammonia May 1 - Oct 31	3.0	6.0	XXX	2.0	4.0	5.0	1/week	24-Hr Composite
TKN	XXX	XXX	XXX	Report	XXX	XXX	1/week	24-Hr Composite
Total Phosphorus	0.63	1.25	XXX	0.5	1.0	1.25	1/week	24-Hr Composite

Compliance Sampling Location: At Outfall 001

6.1 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.

Outfalls 002 and 003, 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	Daily Maximum	Instant. Maximum		
pH (S.U.)	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
BOD5	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
COD	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
TSS	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Oil and Grease	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Nitrate-Nitrite	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Nitrogen	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Phosphorus	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab

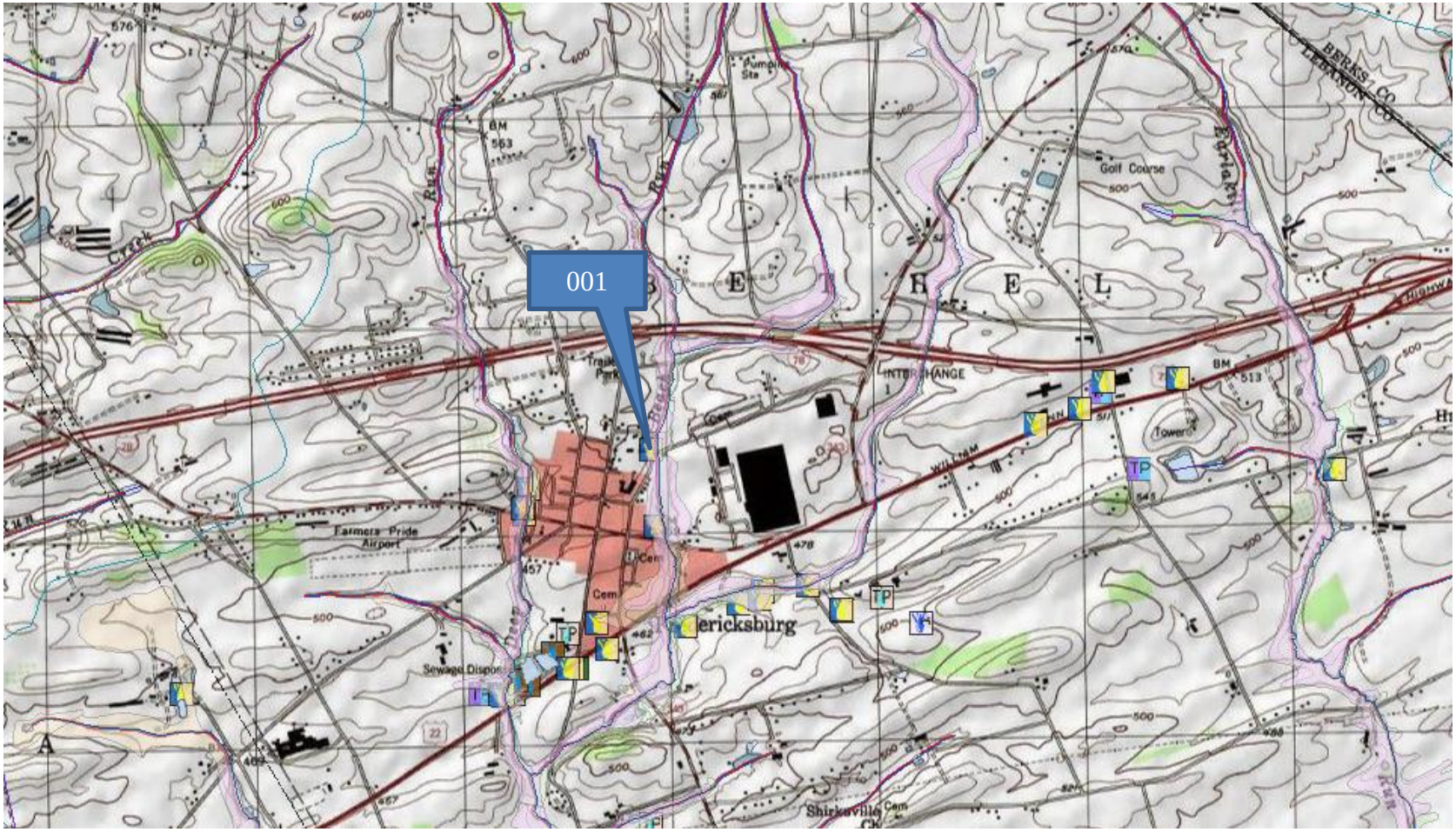
Compliance Sampling Location: Outfall 002 and 003

Other Comments: These are storm water outfalls

7.0 Tools and References Used to Develop Permit	
☒	WQM for Windows Model (see Attachment **B**)
☐	Toxics Management Spreadsheet (see Attachment)
☒	TRC Model Spreadsheet (see Attachment **C**)
☐	Temperature Model Spreadsheet (see Attachment)
☒	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
☐	Technical Guidance for the Development and Specification of Effluent Limitations, 386-0400-001, 10/97.
☐	Policy for Permitting Surface Water Diversions, 386-2000-019, 3/98.
☐	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 386-2000-018, 11/96.
☐	Technology-Based Control Requirements for Water Treatment Plant Wastes, 386-2183-001, 10/97.
☐	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 386-2183-002, 12/97.
☐	Pennsylvania CSO Policy, 386-2000-002, 9/08.
☒	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
☐	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 386-2000-008, 4/97.
☒	Determining Water Quality-Based Effluent Limits, 386-2000-004, 12/97.
☐	Implementation Guidance Design Conditions, 386-2000-007, 9/97.
☒	Technical Reference Guide (TRG) WQM 7.0 for Windows, Wasteload Allocation Program for Dissolved Oxygen and Ammonia Nitrogen, Version 1.0, 386-2000-016, 6/2004.
☐	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 386-2000-012, 10/1997.
☐	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 386-2000-009, 3/99.
☐	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 386-2000-015, 5/2004.
☒	Implementation Guidance for Section 93.7 Ammonia Criteria, 386-2000-022, 11/97.
☐	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 386-2000-013, 4/2008.
☒	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 386-2000-011, 11/1994.
☐	Implementation Guidance for Temperature Criteria, 386-2000-001, 4/09.
☒	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 386-2000-021, 10/97.
☐	Implementation Guidance for Application of Section 93.5(e) for Potable Water Supply Protection Total Dissolved Solids, Nitrite-Nitrate, Non-Priority Pollutant Phenolics and Fluorides, 386-2000-020, 10/97.
☐	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 386-2000-005, 3/99.
☐	Implementation Guidance for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations for Toxic Substances, 386-2000-010, 3/1999.
☐	Design Stream Flows, 386-2000-003, 9/98.
☐	Field Data Collection and Evaluation Protocol for Deriving Daily and Hourly Discharge Coefficients of Variation (CV) and Other Discharge Characteristics, 386-2000-006, 10/98.
☐	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 386-3200-001, 6/97.
☒	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
☒	SOP: Establishing effluent limitation for individual industrial permit.
☒	Other: ELG, 40 CFR 432 for poultry processors

Attachments

A. Topographical Map



B. **WQM Model Results**

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
07D	9898	BEACH RUN

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)
1.360	TableTrust East	PA0008010	0.150	CBOD5	25		
				NH3-N	2.28	4.56	
				Dissolved Oxygen			5

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
07D	9898	BEACH RUN	1.360	468.00	1.62	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	0.066	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
TableTrust East	PA0008010	0.1500	0.1500	0.1500	0.000	25.00	7.50

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

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
07D	9898	BEACH RUN	0.010	450.00	2.50	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	0.066	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

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

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	5.00	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
07D	9898	BEACH RUN

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												
1.360	0.11	0.00	0.11	.2321	0.00253	.435	8	18.4	0.10	0.848	23.43	7.27
Q1-10 Flow												
1.360	0.09	0.00	0.09	.2321	0.00253	NA	NA	NA	0.09	0.879	23.66	7.30
Q30-10 Flow												
1.360	0.15	0.00	0.15	.2321	0.00253	NA	NA	NA	0.10	0.793	23.05	7.23

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	0.8	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.4	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	5		

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
07D	9898	BEACH RUN

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
1.360	TableTrust East	8.97	12.26	8.97	12.26	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
1.360	TableTrust East	1.39	2.28	1.39	2.28	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)		
1.36	TableTrust East	25	25	2.28	2.28	5	5	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
07D	9898	BEACH RUN

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
1.360	0.150	23.429	7.275
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
7.998	0.435	18.397	0.097
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
17.78	1.385	1.56	0.911
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
6.019	23.073	Owens	5
Reach Travel Time (days)			
0.848			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.085	15.49	1.45	6.54
0.170	13.50	1.34	6.82
0.254	11.77	1.24	7.04
0.339	10.26	1.15	7.23
0.424	8.94	1.06	7.39
0.509	7.79	0.98	7.54
0.594	6.79	0.91	7.67
0.678	5.92	0.84	7.75
0.763	5.16	0.78	7.75
0.848	4.50	0.72	7.75

C. TRC Calculations

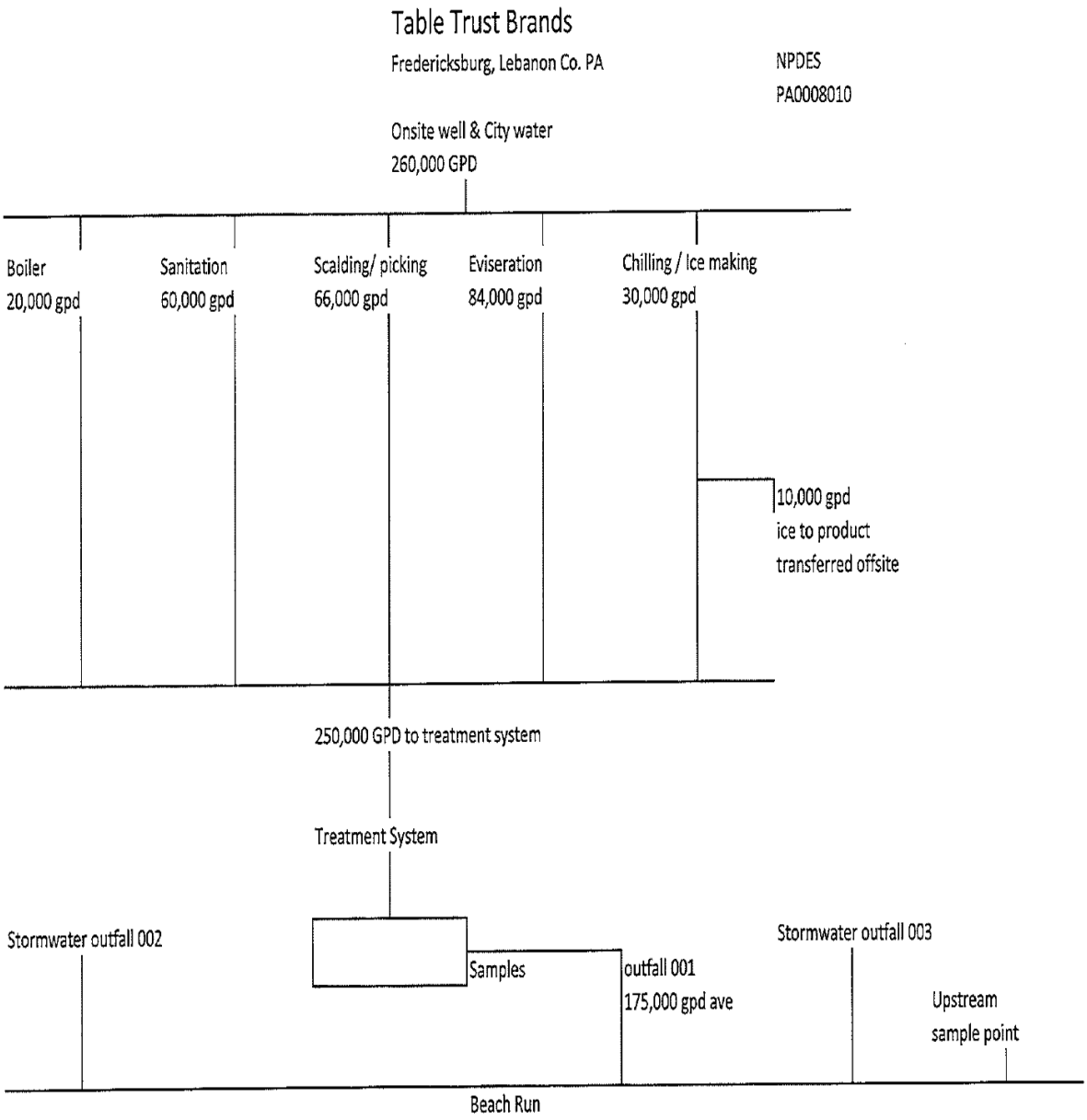
TRC EVALUATION			
Input appropriate values in A3:A9 and D3:D9			
0.11	= Q stream (cfs)	0.5	= CV Daily
0.15	= Q discharge (MGD)	0.5	= CV Hourly
30	= no. samples	1	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor
0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)
0	= % Factor of Safety (FOS)	0	=Decay Coefficient (K)

Source	Reference	AFC Calculations	Reference	CFC Calculations
TRC	1.3.2.iii	WLA afc = 0.170	1.3.2.iii	WLA cfc = 0.158
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 0.063	5.1d	LTA_cfc = 0.092

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.078	AFC
		INST MAX LIMIT (mg/l) = 0.255	

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)**

D. Process Flow Diagram



E. TMS Results for Cooling Tower and Boiler Chemical Additives

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: **Table trust Brands** NPDES Permit No.: **Pa0008010** Outfall No.: **001**

Evaluation Type: **Custom / Additives** Wastewater Description: **Final Effluent**

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
0.15	100	7.2	1	1			0.11	

				0 if left blank		*0.5 if left blank*		*0 if left blank*			*1 if left blank*	
Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Stabrom 909	mg/L	<	1									
ST70	mg/L	<	1									
H550	mg/L	<	1									
3DT 465	mg/L	<	1									
Formula 4100	mg/L	<	1									
Greentech 2700	mg/L	<	1									
Preventol P91	mg/L	<	1									

Stream / Surface Water Information

Table trust Brands, NPDES Permit No. Pa0008010, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Beach Run**

No. Reaches to Model: **1**

(●) Statewide Criteria
( ) Great Lakes Criteria
( ) ORSANCO Criteria

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi²)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	009898	1.36	468	1.62			Yes
End of Reach 1	009888	0	465	3.52			Yes

Q_{7-10}

Location	RMI	LFY (cfs/mi²)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	1.36	0.1	0.11									100	7		
End of Reach 1	0	0.1													

Q_h

Location	RMI	LFY (cfs/mi²)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	1.36														
End of Reach 1	0														

Model Results

Table trust Brands, NPDES Permit No. Pa0008010, Outfall 001

Instructions | *Results* | RETURN TO INPUTS | SAVE AS PDF | PRINT | (●) All ( ) Inputs ( ) Results ( ) Limits

☑ ***Hydrodynamics***

Q_{7-10}

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
1.36	0.11		0.11	0.232	0.00042	0.466	8.711	18.707	0.084	0.986	0.11
0	0.30		0.3								

Q_h

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
1.36	1.08		1.08	0.232	0.00042	0.841	8.711	10.356	0.179	0.464	4.468
0	2.594		2.59								

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 0.110 PMF: 1 Analysis Hardness (mg/l): 100 Analysis pH: 7.13

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Stabrom 909	0	0		0	150	150	221	
ST70	0	0		0	100	100.0	147	
H550	0	0		0	43	43.0	63.4	
3DT 465	0	0		0	96,500	96,500	142,244	
Formula 4100	0	0		0	400	400	590	
Greentech 2700	0	0		0	11,870	11,870	17,497	
Preventol P91	0	0		0	320.8	321	473	

☑ ***CFC*** CCT (min): 0.110 PMF: 1 Analysis Hardness (mg/l): 100 Analysis pH: 7.13

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Stabrom 909	0	0		0	16	16.0	23.6	

ST70	0	0		0	23	23.0	33.9	
H550	0	0		0	4.8	4.8	7.08	
3DT 465	0	0		0	10,700	10,700	15,772	
Formula 4100	0	0		0	45	45.0	66.3	
Greentech 2700	0	0		0	1,320	1,320	1,946	
Preventol P91	0	0		0	35.6	35.6	52.5	

☑ ***THH*** CCT (min): 0.110 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Stabrom 909	0	0		0	N/A	N/A	N/A	
ST70	0	0		0	200,000	200,000	294,807	
H550	0	0		0	2,000	2,000	2,948	
3DT 465	0	0		0	4,481,400	4,481,400	6,605,744	
Formula 4100	0	0		0	N/A	N/A	N/A	
Greentech 2700	0	0		0	N/A	N/A	N/A	
Preventol P91	0	0		0	6,900	6,900	10,171	

☑ ***CRL*** CCT (min): 4.468 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Stabrom 909	0	0		0	N/A	N/A	N/A	
ST70	0	0		0	N/A	N/A	N/A	
H550	0	0		0	N/A	N/A	N/A	
3DT 465	0	0		0	N/A	N/A	N/A	
Formula 4100	0	0		0	N/A	N/A	N/A	
Greentech 2700	0	0		0	N/A	N/A	N/A	
Preventol P91	0	0		0	N/A	N/A	N/A	

☑ ***Recommended WQBELs & Monitoring Requirements***

No. Samples/Month: 4

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Stabrom 909	0.03	0.046	0.024	0.037	0.059	mg/L	0.024	CFC	Discharge Conc ≥ 50% WQBEL (RP)
ST70	0.042	0.066	0.034	0.053	0.085	mg/L	0.034	CFC	Discharge Conc ≥ 50% WQBEL (RP)
H550	0.009	0.014	0.007	0.011	0.018	mg/L	0.007	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Formula 4100	0.083	0.13	0.066	0.1	0.17	mg/L	0.066	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Greentech 2700	2.43	3.8	1.95	3.04	4.86	mg/L	1.95	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Preventol P91	0.066	0.1	0.052	0.082	0.13	mg/L	0.052	CFC	Discharge Conc ≥ 50% WQBEL (RP)

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

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

Pollutants	Governing WQBEL	Units	Comments
3DT 465	15.8	mg/L	Discharge Conc ≤ 25% WQBEL

F. TMS Results for Sanitation Chemical Additives

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: **Table Trusts Brands Freebird East Plant** NPDES Permit No.: **PA0008010** Outfall No.: **001**

Evaluation Type: **Custom / Additives** Wastewater Description: **Industrial Waste**

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
0.15	100	7.2	1	1			0.11	

				0 if left blank		0.5 if left blank		0 if left blank			1 if left blank	
Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
30094	mg/L	<	1									
chlosan 0115	mg/L	<	1									
45642	mg/L	<	1									
90028	mg/L	<	100									
5953	mg/L	<	1									
94800	mg/L	<	10									

Stream / Surface Water Information

Table Trusts Brands Freebird East Plant, NPDES Permit No. PA0008010, Outfall 001

Instructions | Discharge | Stream

Receiving Surface Water Name: **Beach Run** No. Reaches to Model: **1**

- (●) Statewide Criteria
- ( ) Great Lakes Criteria
- ( ) ORSANCO Criteria

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi^2)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	009898	1.36	468	1.62			Yes
End of Reach 1	009898	0.01	450	3.52			Yes

Q_{7-10}

Location	RMI	LFY (cfs/mi^2)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	1.36	0.1	0.11									100	7		
End of Reach 1	0.01	0.1													

Q_h

Location	RMI	LFY (cfs/mi^2)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	1.36														
End of Reach 1	0.01														

Model Results

Table Trusts Brands Freebird East Plant, NPDES Permit No. PA0008010, Outfall 001

Instructions | Results | RETURN TO INPUTS | SAVE AS PDF | PRINT | (●) All ( ) Inputs ( ) Results ( ) Limits

☑ ***Hydrodynamics***

$Q_{7\text{-}10}$

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
1.36	0.11		0.11	0.232	0.003	0.435	8.023	18.423	0.098	0.843	0.11
0.01	0.30		0.3								

Q_h

RMI	Stream Flow (cfs)	PWS Withdrawal (cfs)	Net Stream Flow (cfs)	Discharge Analysis Flow (cfs)	Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Travel Time (days)	Complete Mix Time (min)
1.36	1.08		1.08	0.232	0.003	0.787	8.023	10.199	0.208	0.397	1.705
0.01	2.594		2.59								

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 0.110 PMF: 1 Analysis Hardness (mg/l): 100 Analysis pH: 7.13

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
30094	0	0		0	60.5	60.5	89.2	
chlosan 0115	0	0		0	118.3	118	174	
45642	0	0		0	2,317,600	2,317,600	3,416,225	
90028	0	0		0	86,073	86,073	126,875	
5953	0	0		0	3835.6	3,836	5,654	
94800	0	0		0	85,616	85,616	126,201	

☑ ***CFC*** CCT (min): 0.110 PMF: 1 Analysis Hardness (mg/l): 100 Analysis pH: 7.13

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
30094	0	0		0	6.7	6.7	9.88	

chlosan 0115	0	0		0	13.1	13.1	19.3	
45642	0	0		0	257,520	257,520	379,594	
90028	0	0		0	95,639	95,639	140,975	
5953	0	0		0	426.2	426	628	
94800	0	0		0	9513.2	9,513	14,023	

☑ ***THH*** CCT (min): 0.110 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
30094	0	0		0	17,400	17,400	25,648	
chlosan 0115	0	0		0	62,730	62,730	92,466	
45642	0	0		0	70	70.0	103	
90028	0	0		0	84,610	84,610	124,718	
5953	0	0		0	N/A	N/A	N/A	
94800	0	0		0	88,170	88,170	129,966	

☑ ***CRL*** CCT (min): 1.705 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
30094	0	0		0	N/A	N/A	N/A	
chlosan 0115	0	0		0	N/A	N/A	N/A	
45642	0	0		0	N/A	N/A	N/A	
90028	0	0		0	N/A	N/A	N/A	
5953	0	0		0	N/A	N/A	N/A	
94800	0	0		0	N/A	N/A	N/A	

☑ ***Recommended WQBELs & Monitoring Requirements***

No. Samples/Month: 4

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
30094	0.012	0.019	0.01	0.015	0.025	mg/L	0.01	CFC	Discharge Conc ≥ 50% WQBEL (RP)
chlosan 0115	0.024	0.038	0.019	0.03	0.048	mg/L	0.019	CFC	Discharge Conc ≥ 50% WQBEL (RP)
45642	0.13	0.2	0.1	0.16	0.26	mg/L	0.1	THH	Discharge Conc ≥ 50% WQBEL (RP)
90028	108	159	86.1	127	127	mg/L	86.1	AFC	Discharge Conc ≥ 50% WQBEL (RP)
5953	0.79	1.23	0.63	0.98	1.57	mg/L	0.63	CFC	Discharge Conc ≥ 50% WQBEL (RP)
94800	17.5	27.4	14.0	21.9	35.1	mg/L	14.0	CFC	Discharge Conc ≥ 50% WQBEL (RP)