Pennsylvania Department of Environmental Protection

Northwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0210196**
Facility Type	**Industrial**	APS ID	**1026405**
Major / Minor	**Minor**	Authorization ID	**1332484**

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

Applicant and Facility Information

Applicant Name	**Seneca Landfill Inc.**	Facility Name	**Seneca Landfill**
Applicant Address	PO Box 1080	Facility Address	421 Hartmann Road
	Mars, PA 16046-1080		Evans City, PA 16033-3211
Applicant Contact	Dave Smith	Facility Contact	Nick Krause
Applicant Phone	(724) 625-1511	Facility Phone	
Client ID	25747	Site ID	524239
SIC Code	4953	Municipality	Jackson Township
SIC Description	Trans. & Utilities - Refuse Systems	County	Butler
Date Application Received	October 30, 2020	EPA Waived?	Yes
Date Application Accepted		If No, Reason	

Purpose of Application: Renewal of NPDES permit to discharge treated industrial waste and stormwater

Summary of Review

1.0 General Discussion

The application is for renewal of NPDES permit to discharge treated industrial waste and stormwater from Seneca Landfill. Seneca Landfill, Inc. owns and operates the municipal solid waste landfill located in Jackson Township, Butler County. The landfill is permitted under a waste management permit No. 100403 to accept municipal solid waste and approved residual waste. The leachate treatment plant is permitted as a Centralized Waste Treatment (CWT) facility for metal and organics. The CWT facility collects and treats leachate generated at the landfill and non-hazardous liquid wastes received from off-site sources. Influent wastewater is pretreated through aeration. Metals are precipitated using ferric chloride and sodium hydroxide. The remaining treatment of wastewater process includes clarification, aerobic biological treatment, filtration and disinfection before stream discharge to Outfall 001. is treated at the CWT facility. The hydraulic capacity of the CWT is 0.144MGD. Effluent from the CWT facility is discharged to the Connoquenessing Creek via Outfall 001. Stormwater runoff from the landfill is collected in sedimentation basins, which discharge to Connoquenessing Creek through Outfalls 003, 005 and 006. Connoquenessing Creek is classified for warm water fishes, aquatic life, water supply and recreation. The facility is regulated under the Effluent Limitation Guidelines (ELGs) for CWT facilities with multiple waste streams as identified in 40 CFR 437.42(a). The existing NPDES permit was issued on April 08, 2016, with an effective date of May 1, 2016, and expiration date of April 30, 2021. The permit was amended on April 16, 2018, to a CWT facility. The applicant submitted a timely NPDES permit renewal application to the Department and is currently operating under the terms and conditions in the existing permit.

A topographic map showing discharge locations is presented in attachment A and the treatment plant process flow diagram is presented in attachment D.

Approve	Deny	Signatures	Date
X		*J. Pascal Kwedza* J. Pascal Kwedza, P.E. / Environmental Engineer	July 22, 2025
X		Adam Olesnanik Adam Olesnanik, P.E. / Environmental Engineer Manager	July 31, 2025

Summary of Review

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)	0.144
Latitude	40º 48' 15"	Longitude	-80º 05' 08"
Quad Name	Evans City	Quad Code	05032
Wastewater Description:	Centralized waste treatment (metals & organics wastestreams)		
Receiving Waters	Connoquenessing Creek	Stream Code	34025
NHD Com ID	126218619	RMI	25.56 mi
Drainage Area	203.84 mi^2	Yield (cfs/mi^2)	0.0334
Q_{7-10} Flow (cfs)	6.80	Q_{7-10} Basis	USGS Gage Station #03106000
Elevation (ft)	905	Slope (ft/ft)	0.0
Watershed No.	20-C	Chapter 93 Class.	WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use	None	Exceptions to Criteria	None
Assessment Status	Impaired		
Cause(s) of Impairment	Organic Enrichment/Low D.O.		
Source(s) of Impairment	Agriculture		
TMDL Status		Name	

Background/Ambient Data		Data Source
pH (SU)	7.9	Beaver River Priority Waterbody Survey - 1991
Temperature (°C)	25	Default value for a warm water fishery
Hardness (mg/L)	266	Permit application
Other:		

Nearest Downstream Public Water Supply Intake		Beaver Falls Municipal Authority - Eastvale	
PWS Waters	Beaver River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall	approx. 30 mi

Changes Since Last Permit Issuance: None

1.2.1 Water Supply Intake

The nearest downstream potable water supply is the Beaver Falls Municipal Authority intake on the Beaver River, located at Eastvale, approximately 30 miles below the point of discharge. Due to the distance and dilution, no impact is expected from this discharge on the intake.

1.3 Discharge, Receiving Waters and Water Supply Information

Outfall No.	003	Design Flow (MGD)	N/A
Latitude	41º 48' 40"	Longitude	-80º 04' 44"
	Sedimentation Basin No. 2		
Outfall No.	005	Design Flow (MGD)	N/A
Latitude	41º 48' 38"	Longitude	-80º 04' 44"
	Sedimentation Basin No. 1 & 4		
Outfall No.	006	Design Flow (MGD)	N/A
Latitude	41º 48' 36"	Longitude	-80º 05' 02"
	Sedimentation Basin No. 5		
Quad Name	Evans City	Quad Code	05032
Wastewater Description:	Stormwater runoff from the landfill site		
Receiving Waters	Connoquenessing Creek	Stream Code	34025
NHD Com ID	126218619	RMI	---
Exceptions to Use	None	Exceptions to Criteria	None
Assessment Status	Impaired		
Cause(s) of Impairment	Organic Enrichment/Low D.O.		
Source(s) of Impairment	Agriculture		

Changes Since Last Permit Issuance: None

1.3.1 Stormwater

The facility has 3 stormwater Outfalls 003, 005 and 006. Part C condition in the existing permit for compliance with standard requirements applicable to stormwater outfalls will remain in the permit. *Stormwater monitoring has been added to this permit renewal. – AO 7-31-25*

2.0 Treatment Facility Summary

Treatment Facility Name: Seneca Landfill

WQM Permit No.	Issuance Date
1008201-A4	9/7/16
1093201-A1	6/10/04

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Industrial	Biological (Industrial Waste)	Multiple (see description below)	No Disinfection	

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.144			Sludge Holding/Filter Press	Landfill

Changes Since Last Permit Issuance: None

2.1 Treatment System

#1093201: Flow Equalization, Primary Screening, Two-Stage Biological Treatment (anaerobic and aerobic), Sedimentation, Sand Filter, (2) Carbon Absorbers, Sorption Filter System, final pH adjustment, Post-Flow Equalization and Sludge Handling (pressure filtration).

#1093201-A1: Convert the post treatment storage tanks to pre-treatment storage tanks. This increases the hydraulic capacity from 0.0173 MGD to 0.0432 MGD. This was a re-rate in the form of a letter.

#1008201: Equalization Tanks/Leachate Pumping System, Metals Precipitation/Clarification unit, Leachate Heating, (2) Aerobic Biotowers, (2) Final Clarifiers, (3) Multimedia Filters, (2) Sludge Holding Tanks, Filter Press, Chemical Addition & pH adjustment. [This permit incorporates the treatment facilities authorized under 1093201 and its amendment]

The Anaerobic Biotower & Sorption Filter System will remain but will not be part of the normal treatment train.

#1008201-A1: Convert the third bio-tower from an anaerobic to an aerobic operating system. Addition of a hypochlorite disinfection treatment system.

#1008201-A2: Two, new 3,100-gallon reaction tanks for coagulation and pH adjustment of the raw leachate prior to metals removal, addition of a new metals removal clarifier to improve solids handling of the reaction tank wastewater, rerating of the existing, final clarifiers units from 90 gpm (0.1296 MGD) to 100 gpm (0.144 MGD), three, 3,800 gallon sludge holding tanks to handle the increased solids production from the larger metals removal system and waste biomass from the upgraded bio-towers and a new 50 ft^3 membrane filter press, which will become the primary unit, with the existing 30 ft^3 press serving as the back-up.

#1008201-A3: Conversion of a leachate storage tank to a moving bed biofilm reactor (aerobic bio-tower). This fourth bio-tower is being added for ammonia removal. A chemical metering system will also be included to add supplemental alkalinity and to control the operating pH. An Equalization/Pretreatment Tank will be added to minimize the variability of the incoming leachate's ammonia concentration. The tank will also be set up to provide supplemental nitrifying microorganisms that will afford pretreatment of the leachate prior to the primary treatment system.

With the completion of the additional treatment facilities (permitted under WQM #1008201-A3), the construction of the additional storage facilities (permitted by the Waste Management Program) and the approval of the revised waste acceptance plan (to receive off-site waste), the landfill can be reclassified as centralized waste treatment facility.

#1008201-A4: Install a fourth sludge holding/thickening tank (w/ a working volume of 4,500-gallons) to handle increased solids production from the metals removal system and more waste biomass from the newly installed fourth bio-reactor.

The existing and new tanks will operate as follows:

- The system will be divided into parallel trains, A & B.
- Train A will consist of two existing tanks with a total working volume of 6,000-gallons (3,000-gallons ea.). These tanks will be interconnected at the top.
- Train B will be the third, existing tank and the new, fourth tank. The tanks will also be interconnected with a total working volume of 7,500 gallons.
- Both trains will be interconnected for overflows.
- The operation of the two trains will alternate between sludge receiving and sludge thickening.
- A second set of air diaphragm pumps will be installed on Train B. A 1.5-inch pump will be used to return decant to the head of the plant for retreatment. A 2-inch pump will convey thickened sludge to the Sludge Conditioning Tank.

Install a second sludge filter press feed tank (w/ a working volume of 5,450-gallons) to maximize the efficiency in the operation of the membrane filter press. This new tank will increase the effective Sludge Press Feed volume to 7.580-gallons. It will be the primary feed tank for the sludge press. The existing Sludge Press Feed Tank will only feed the press if the new tank is required to be removed from service.

3.0 Compliance History

3.1 DMR Data for Outfall 001 (from June 1, 2024 to May 31, 2025)

Parameter	MAY-25	APR-25	MAR-25	FEB-25	JAN-25	DEC-24	NOV-24	OCT-24	SEP-24	AUG-24	JUL-24	JUN-24
Flow (MGD) Average Monthly	0.0717	0.0824	0.0506	0.0583	0.0448	0.0604	0.0608	0.0556	0.0408	0.0789	0.0569	0.0583
Flow (MGD) Daily Maximum	0.0887	0.1065	0.0806	0.10223	0.0759	0.0790	0.0792	0.0879	0.0777	0.1157	0.0850	0.0815
pH (S.U.) Daily Minimum	7.77	7.4	7.2	6.96	6.73	6.72	6.8	7.14	7.36	7.19	7.5	7.74
pH (S.U.) Daily Maximum	8.16	8.18	8.21	7.92	7.77	7.8	8.04	8.07	8.26	8.08	8.38	8.55
TRC (mg/L) Average Monthly	0.75	0.6	0.6	0.61	0.78	0.53	0.7	0.66	0.86	0.8	0.75	0.72
BOD5 (lbs/day) Average Monthly	4	5	4	7	3	2	5	5	< 2.0	4	4	3
BOD5 (lbs/day) Daily Maximum	10	10	7	3	5	2	9	6	3.0	7	6	3
BOD5 (mg/L) Average Monthly	7.0	9.0	12.0	9.0	9.0	7.0	11.0	13.0	< 4.0	7.0	10.0	6.0
BOD5 (mg/L) Daily Maximum	18.0	18.0	18.0	11.0	13.0	8.0	19.0	21.0	7.0	12.0	13.0	6.0
TSS (lbs/day) Average Monthly	9	14	10	10	14	5	15	18	18	18	20	13
TSS (lbs/day) Daily Maximum	14	18	17	16	27	6	49	24	28	28	31	18
TSS (mg/L) Average Monthly	16.8	23.0	31.3	30.3	39.4	15.5	40.2	50.0	42.3	33.0	45.3	24.8
TSS (mg/L) Daily Maximum	25.0	26.0	38.0	47.0	60.0	20.0	133.0	79.0	56.0	48.0	67.0	32.0
Total Dissolved Solids (lbs/day) Daily Maximum			920			1621			4068			3502
Total Dissolved Solids (mg/L) Daily Maximum			4410			5140			8130			6390
Oil and Grease (mg/L) Average Monthly	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Oil and Grease (mg/L) Instantaneous Maximum	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Ammonia (lbs/day) Average Monthly	0.1	0.3	0.9	0.2	0.3	0.07	0.2	5	5	0.7	1	2
Ammonia (mg/L) Average Monthly	0.25	1.0	3.0	0.46	1.0	0.21	1.0	17.0	10.0	1.0	2.0	3.0

TKN (lbs/day) Daily Maximum			< 21			< 32			200			205
TKN (mg/L) Daily Maximum			< 100			< 100			400			374
Total Antimony (lbs/day) Daily Maximum			0.002			0.003			0.005			0.009
Total Antimony (mg/L) Average Quarterly			0.007			0.009			0.009			0.020
Total Antimony (mg/L) Daily Maximum			0.008			0.009			0.009			0.017
Total Arsenic (lbs/day) Daily Maximum			0.001			0.002			0.007			0.006
Total Arsenic (mg/L) Average Quarterly			0.004			0.005			0.010			0.010
Total Arsenic (mg/L) Daily Maximum			0.005			0.005			0.013			0.011
Total Cadmium (lbs/day) Average Quarterly			< 0.0007			< 0.001			< 0.0009			< 0.001
Total Cadmium (lbs/day) Daily Maximum			< 0.001			< 0.001			< 0.001			< 0.002
Total Cadmium (mg/L) Average Quarterly			< 0.0020			< 0.0020			< 0.0020			< 0.0020
Total Cadmium (mg/L) Daily Maximum			< 0.002			< 0.002			< 0.002			< 0.002
Total Chromium (lbs/day) Daily Maximum			0.008			0.01			0.03			0.03
Total Chromium (mg/L) Average Quarterly			0.04			0.04			0.06			0.05
Total Chromium (mg/L) Daily Maximum			0.04			0.04			0.06			0.05
Total Cobalt (lbs/day) Daily Maximum			0.005			0.008			0.02			0.01
Total Cobalt (mg/L) Average Quarterly			0.020			0.020			0.030			0.020
Total Cobalt (mg/L) Daily Maximum			0.022			0.021			0.032			0.024
Total Copper (lbs/day) Average Monthly	< 0.005	< 0.006	< 0.003	< 0.004	0.003	< 0.004	0.006	< 0.007	0.009	< 0.008	< 0.006	0.008
Total Copper (lbs/day) Daily Maximum	< 0.006	< 0.007	0.005	0.006	0.005	0.006	0.009	0.009	0.01	0.01	0.009	0.01
Total Copper (mg/L) Average Monthly	< 0.01	< 0.01	< 0.01	< 0.01	0.01	< 0.01	0.02	< 0.02	0.02	< 0.01	< 0.01	0.02
Total Copper (mg/L) Daily Maximum	< 0.01	< 0.01	0.01	0.02	0.01	0.02	0.02	0.03	0.03	0.02	0.02	0.02
Total Lead (lbs/day) Average Monthly	< 0.0005	< 0.0006	< 0.0003	< 0.0004	< 0.0003	< 0.0003	< 0.0004	< 0.0004	< 0.0004	< 0.0005	< 0.0004	< 0.0005

Total Lead (lbs/day) Daily Maximum	< 0.0006	< 0.0007	< 0.0005	< 0.0006	< 0.0005	< 0.0004	< 0.0005	< 0.0005	< 0.0005	< 0.0006	< 0.0005	< 0.0006
Total Lead (mg/L) Average Monthly	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Total Lead (mg/L) Daily Maximum	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Total Mercury (lbs/day) Daily Maximum			< 0.00005			< 0.00007			< 0.0001			< 0.0001
Total Mercury (mg/L) Average Quarterly			< 0.0002			< 0.0002			< 0.0002			< 0.0002
Total Mercury (mg/L) Daily Maximum			< 0.0002			< 0.0002			< 0.0002			< 0.0002
Total Nickel (lbs/day) Daily Maximum			0.05			0.1			0.2			0.2
Total Nickel (mg/L) Average Quarterly			0.21			0.29			0.41			0.30
Total Nickel (mg/L) Daily Maximum			0.26			0.31			0.42			0.32
Total Silver (lbs/day) Daily Maximum			< 0.001			< 0.002			< 0.003			< 0.003
Total Silver (mg/L) Average Quarterly			< 0.0050			< 0.0050			< 0.0050			< 0.0050
Total Silver (mg/L) Daily Maximum			< 0.005			< 0.005			< 0.0050			< 0.005
Total Tin (lbs/day) Daily Maximum			< 0.03			< 0.04			< 0.05			< 0.05
Total Tin (mg/L) Average Quarterly			< 0.10			< 0.10			< 0.10			< 0.10
Total Tin (mg/L) Daily Maximum			< 0.10			< 0.10			< 0.10			< 0.10
Total Titanium (lbs/day) Daily Maximum			< 0.003			< 0.004			< 0.005			< 0.005
Total Titanium (mg/L) Average Quarterly			< 0.0100			< 0.0100			< 0.0100			< 0.0100
Total Titanium (mg/L) Daily Maximum			< 0.010			< 0.010			< 0.010			< 0.010
Total Vanadium (lbs/day) Daily Maximum			< 0.001			< 0.002			< 0.003			< 0.003
Total Vanadium (mg/L) Average Quarterly			< 0.0050			< 0.0050			< 0.0050			< 0.0050
Total Vanadium (mg/L) Daily Maximum			< 0.005			< 0.005			< 0.0050			< 0.005
Total Zinc (lbs/day) Daily Maximum			< 0.003			0.004			0.03			0.01
Total Zinc (mg/L) Average Quarterly			< 0.01			< 0.01			0.06			0.02

Total Zinc (mg/L) Daily Maximum			< 0.01			0.01			0.06			0.02
o-Cresol (lbs/day) Daily Maximum			< 0.001			< 0.004			< 0.005			< 0.005
o-Cresol (mg/L) Average Quarterly			< 0.005			< 0.005			< 0.010			< 0.010
o-Cresol (mg/L) Daily Maximum			< 0.005			< 0.0099			< 0.010			< 0.01
2,4,6-Trichlorophenol (lbs/day) Daily Maximum			< 0.001			< 0.004			< 0.005			< 0.005
2,4,6-Trichlorophenol (mg/L) Average Quarterly			< 0.005			< 0.008			< 0.008			< 0.007
2,4,6-Trichlorophenol (mg/L) Daily Maximum			< 0.005			< 0.0099			< 0.010			< 0.0099
Phenol (lbs/day) Daily Maximum			< 0.001			< 0.004			< 0.005			< 0.005
Phenol (mg/L) Average Quarterly			< 0.004			< 0.007			< 0.007			< 0.007
Phenol (mg/L) Daily Maximum			< 0.004			< 0.0099			< 0.01			< 0.0099
Acetone (lbs/day) Daily Maximum			< 0.003			0.007			0.009			0.01
Acetone (mg/L) Average Quarterly			< 0.01			< 0.01			0.02			0.01
Acetone (mg/L) Daily Maximum			0.0113			0.0183			0.0188			0.0178
Acetophenone (lbs/day) Daily Maximum			< 0.001			< 0.004			< 0.005			< 0.005
Acetophenone (mg/L) Average Quarterly			< 0.0050			< 0.0050			< 0.0100			< 0.0100
Acetophenone (mg/L) Daily Maximum			< 0.005			< 0.0099			< 0.010			< 0.010
2-Butanone (lbs/day) Daily Maximum			< 0.001			< 0.002			< 0.003			< 0.003
2-Butanone (mg/L) Average Quarterly			< 0.005			< 0.005			< 0.005			< 0.005
2-Butanone (mg/L) Daily Maximum			< 0.005			< 0.005			< 0.005			< 0.005
p-Cresol (lbs/day) Daily Maximum			< 0.001			< 0.004			< 0.005			< 0.005
p-Cresol (mg/L) Average Quarterly			< 0.005			< 0.005			< 0.010			< 0.010
p-Cresol (mg/L) Daily Maximum			< 0.005			< 0.0099			< 0.01			< 0.01

Pyridine (lbs/day) Daily Maximum			< 0.001			< 0.007			< 0.01			< 0.009
Pyridine (mg/L) Average Quarterly			< 0.005			< 0.010			< 0.020			< 0.020
Pyridine (mg/L) Daily Maximum			< 0.005			< 0.02			< 0.02			< 0.02

3.2 Summary of DMRs:

DMRs review for the facility for the last 12 months of operation, presented on the table above in section 3.1 indicates permit limits have been met consistently. No effluent violation noted during the period reviewed.

3.3 Summary of Inspections:

The facility has been inspected a couple of times during the previous permit cycle. No effluent violations were found during plant inspections.

4.0 Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** .11
Latitude 40º 48' 15.00" **Longitude** -80º 5' 8.00"
Wastewater Description: IW Process Effluent with ELG

4.1 Technology-Based Limitations

Discharges from CWT facilities are regulated under effluent limitation guidelines (ELG) located 40 CFR §437. Subpart D applies to this facility since the facility receives and treats multiple wastestreams. The limits from 40 CFR 437.42(a) presented on the table below must be included in the permit unless water quality based effluent limits (WQBELs) are more stringent.

Pollutant (mg/L)	Monthly Average	Maximum Daily
BOD_5	53	163
O&G	50.2	205
pH	Within the range 6 to 9 at all times	
TSS	31	60
Antimony	0.206	0.249
Arsenic	0.104	0.162
Cadmium	0.0962	0.474
Chromium	3.07	15.5
Cobalt	0.124	0.192
Copper	0.757	0.865
Lead	0.283	1.32
Mercury	0.000739	0.00234
Nickel	1.45	3.95
Silver	0.0351	0.12
Tin	0.12	0.409
Titanium	0.0618	0.0947
Vanadium	0.0662	0.218
Zinc	0.42	0.497
Acetone	7.97	30.2
Acetophenone	0.0562	0.114
2-Butanone	1.85	4.81
o-Cresol	0.561	1.92
p-Cresol	0.205	0.698
Phenol	1.08	3.65
Pyridine	0.182	0.37
2,4,6-Trichlorophenol	0.106	0.155

4.3 Water Quality-Based Limitations

4.3.1 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

4.3.2 Stream flows

The stream flows are based on USGS Gage Station #03106000 on Connoquenessing Creek near Zelienople, PA. The modelled yield is 0.0334-cfs per square mile. The drainage area at the discharge point taken from the previous factsheet = 203.84mi^2. The resulting streamflows at the point of discharge are as follows:

$Q_{7\text{-}10}$ = 203.84 mi^2 x 0.0334 cfs/mi^2 = 6.8 cfs
$Q_{30\text{-}10}$/ $Q_{7\text{-}10}$ = 1.36
$Q_{1\text{-}10}$/ $Q_{7\text{-}10}$ = 0.64

4.3.3 Input for WQM and TMS Models

The following data were used in the WQM and TMS models for water quality analysis of the stream:

- Discharge pH = 6.4 (DMR median)
- Discharge Temperature = 20 ^{o} C (Default)
- Discharge Hardness = 484 mg/l

4.3.4 $CBOD_5$:

The attached model result of WQM 7.0 stream model (attachment B) indicates that, a limitation of 100 mg/L CBOD5 as a monthly average limit is adequate to protect the water quality of the stream. This limit is less stringent than the existing tech limit and will not apply due to anti-backsliding restrictions. The existing tech limit of 53 mg/L monthly average limit and 163mg/L IMAX for BOD5 will remain in the permit. The facility has been complying with the limitation.

4.3.5 NH_3-N:

The attached model result of the WQM 7.0 stream model (attachment B) also indicates that a limitation of 36mg/L NH_3-N as a monthly average is necessary to protect the aquatic life from toxicity effects during the summer months. This limit is slightly less stringent than the existing limit and will not apply due to anti-backsliding restrictions. The existing limit will remain in the permit.

4.3.6 Toxics

A reasonable potential (RP) analysis was done for pollutant Groups submitted with the application. All pollutants that were presented in the application sampling data were entered into the Toxics Management Spreadsheet (TMS) to calculate WQBELs. WQBELs recommended by the TMS are presented in attachment C. TMS recommended monitoring for Total Boron, Total Zinc. Total Copper and Dichlorobromomethane. The existing permit has technology limit for Total Zinc and water quality limit for Total Copper, no monitoring is required. Monthly monitoring is proposed for Total Boron and Dichlorobromomethane. In addition, the existing water quality limits for Total Copper and Total Lead and the technology limits will remain in the permit.

4.3.7 PFAS Monitoring Strategy:

PFAS, also known as ‘forever chemicals,’ are prevalent in the environment. They are a category of chemicals used since the 1940s to repel oil and water and resist heat, which makes them useful in everyday products such as nonstick cookware, stain resistant clothing, and firefighting foam. Exposure to certain PFAS over a long period of time can cause cancer, adverse health impacts and other illnesses. EPA categorized the following activities it believes are the main sources of

PFAS: organic chemicals, plastics & synthetic fibers; metal finishing; electroplating; electric and electronic components; landfills; pulp, paper & paperboard; leather tanning & finishing; plastics molding & forming; textile mills; paint formulating, and airports. DEP is implementing PFAS monitoring program to investigate and address PFAS discharges and pollution. Under the plan, all new industrial and some major sewage permit applicants are required to test for 4 of the PFAS parameters, PFOA, PFOS, HFPO-DA and PFBS during permit applications. If the results of the tests are non-detect using screening level at or below DEP's Target QLs, an annual monitoring will be required and if there are detections or non-detects above the TQLs a quarterly monitoring will be required in the permit. Applications received without the tests and applications already received will be drafted with quarterly monitoring if an industrial facility falls under EPA categories or if a major sewage facility receives flow from one of EPA categories. If an industrial facility does not fall under, or a major sewage facility does not receive flow any EPA categories, annual monitoring will be required in the draft permit. This facility falls in one of the EPA categories and requires quarterly monitoring of PFOA, PFOS, HFPO-DA, and PFBS in the permit. The permittee may discontinue monitoring for PFOA, PFOS, HFPO-DA, and PFBS if the results in 4 consecutive monitoring periods indicate non-detect results at or below Quantitation Limits of 4.0 ng/L for PFOA, 3.7 ng/L for PFOS, 3.5 ng/L for PFBS and 6.4 ng/L for HFPO-DA. When monitoring is discontinued, permittees shall enter a No Discharge Indicator (NODI) Code of "GG" on DMRs.

4.3.8 Flow and pH

The existing technology limit for pH limit between 6 - 9 S.U per 40 CFR §437.42(a) and 95.2(1), and flow monitoring per 40 CFR § 122.44(i)(1)(ii) will remain in the permit.

4.3.9 Total Suspended Solids (TSS) & Oil and Grease (O&G):

There is no water quality criteria for TSS and O&G. The ELG limit of 31mg/L AML and 60 mg/L MDL for TSS referenced in section 4.1 will replace the existing TSS limit which are less stringent. The existing O&G limit based on PA Code 25 Chapter 95.2(2)(i) will remain in the permit.

4.3.10 Color Evaluation

Color was evaluated was conducted using mass balance presented below.

- Discharge flow = 0.11 MGD = 0.11 ft^3/s
- Stream Q_{7-10} = 6.8 ft^3/s
- Color ambient default = 10 units
- Instream maximum = 75 units
- X = discharge maximum

(10 units x 6.8 ft^3/s) + (X units x 0.17 ft^3/s) = 75 units (6.8 ft^3/s + 0.17 ft^3/s), X = 2675 units
The mass balance calculation did not show a reasonable potential for the discharge to exceed the 75 pt-co unit water quality criteria.

4.3.11 Best Professional Judgement (BPJ) Limitations

The existing monitoring for Total Nitrogen and the addition of 4mg/l minimum for dissolved oxygen follows the recommendation in Department SOP for establishing effluent limits. Monitoring of total residual chlorine in the existing permit will remain to collect data for further analysis. TDS monitoring is being retained to keep track of changing concentration & mass of this pollutant as the permittee operates as a CWT. TKN monitoring is being continued from the 2016 renewal permit due to the nutrient impairment listing for the receiving stream.

4.3.12 Chemical Additives

One Chemical additive NALCO 7473 was been listed with a maximum usage rate of 0.047GDP as approved for the facility and will continue to be used during the current permit cycle at the site. The permit is written with chemical additive usage and notification requirement.

4.4 Other Requirements

4.4.1 Anti-backsliding

Not applicable to this permit

4.4.2 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. The facility discharge to a stream segment designated as High-Quality Waters. The discharge is not expected to impact the stream negatively. No Exceptional Value Waters are impacted by this discharge.

4.4.3 Class A Wild Trout Fisheries

The limits have been developed for protection of Class A Wild Trout Fisheries.

4.4.4 303d Listed Streams

The discharge is located on a stream segment that is designated on the 303(d) list as impaired, and the impairment is due to organic enrinchment/low DO from agricultural activities in the watershed. TMDL is pending, no further action is warranted at this time.

5.0 Development of Effluent Limitations (*)

Outfall No.	003	**Design Flow (MGD)**	0
Latitude	40º 48' 40.00"	**Longitude**	-80º 04' 44.00"
Outfall No.	005	**Design Flow (MGD)**	0
Latitude	40º 48' 38.00"	**Longitude**	-80º 4' 44.00"
Outfall No.	006	**Design Flow (MGD)**	0
Latitude	40º 48' 36.00"	**Longitude**	-80º 5' 2.00"

Wastewater Description: Stormwater

5.1 Technology-Based Limitations

The stormwater outfalls will be subject to the monitoring requirements from the PAG-03 General Stormwater Permit as a minimum requirement because the outfalls receive stormwater. The SIC code for the site is 4953 (Landfills and Land Application Sites) and the corresponding appendix of the PAG-03 that would apply to the facility is Appendix C. The Draft Permit requires a Corrective Action Plan when there are two consecutive exceedances of the benchmark values at each outfall, which are also included in the Part C condition. The Benchmark values are not effluent limitations, an exceedance of the benchmark value is not a violation. As described above, if there are two consecutive exceedances of the benchmark value, a Corrective Action Plan must be developed and submitted to the Department to evaluate site stormwater controls and BMPs. Benchmark monitoring is a feedback tool, along with routine inspections and visual assessments, for assessing the effectiveness of stormwater controls and BMPs. An exceedance of the benchmark provides permittees with an indication that the facility's controls may not be sufficiently controlling pollutants in stormwater. Benchmark values for pH, TSS and COD are included in Part C of the draft permit.

Stormwater Monitoring Requirements

Parameter	Monitor Requirement	Benchmark Values (mg/L)	Frequency
Total Nitrogen*	Monitor	XXX	1/6 Months
Total Phosphorus	Monitor	XXX	1/6 Months
pH	Monitor	9.0	1/6 Months
Total Suspended Solids	Monitor	100	1/6 Months
Chemical Oxygen Demand	Monitor	120	1/6 Months
Ammonia-Nitrogen	Monitor	XXX	1/6 Months
Total Iron	Monitor	XXX	1/6 Months

*Total Nitrogen is the sum of Total Kjeldahl-N (TKN) plus Nitrite-Nitrate as N (NO_2+NO_3-N), where TKN and NO_2+NO_3-N are measured in the same sample.

5.2 Water Quality-Based Limitations

Water quality analysis

Water quality analyses are typically performed under low-flow (Q&-10) conditions. Stormwater discharges occur at variable rates and frequencies but not however during Q7-10 conditions. Since the discharges from these outfalls are composed entirely of stormwater, a formal water quality analysis cannot be accurately conducted. Accordingly, water quality-based effluent limitations based on water quality analyses are not proposed.

5.3 Anti-Backsliding

The previous permit did not include limitations, or monitoring requestions at these stormwater outfalls. Therefore, the anti-backsliding is not applicable to these Outfalls.

**Note, this evaluation was conducted and added by the Environmental Engineer Manager after the Environmental Engineer signed the factsheet. The Environmental Engineer did not review this addition.*

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" (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	Daily Maximum	Minimum	Average Quarterly	Daily Maximum	Instant. Maximum		
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	Continuous	Measured
pH (S.U.)	XXX	XXX	6.0 Daily Min	XXX	9.0	XXX	1/day	Grab
Dissolved Oxygen	XXX	XXX	4.0 Daily Min	XXX	XXX	XXX	1/day	Grab
Total Residual Chlorine (TRC)*	XXX	XXX	XXX	Report Avg Mo	XXX	XXX	1/day	Grab
Biochemical Oxygen Demand (BOD5)	Report	Report	XXX	53.0 Avg Mo	163.0	163	1/week	24-Hr Composite
Total Suspended Solids	Report	Report	XXX	31.0 Avg Mo	60.0	60	1/week	24-Hr Composite
Total Dissolved Solids	XXX	Report	XXX	XXX	Report	XXX	1/quarter	24-Hr Composite
Oil and Grease	XXX	XXX	XXX	15.0 Avg Mo	XXX	30.0	2/month	Grab
Ammonia-Nitrogen	Report	XXX	XXX	35.0 Avg Mo	XXX	88	2/month	24-Hr Composite
Total Kjeldahl Nitrogen	XXX	Report	XXX	XXX	Report	XXX	1/quarter	24-Hr Composite
Antimony, Total	XXX	Report	XXX	0.206	0.249	0.515	2/quarter	24-Hr Composite
Arsenic, Total	XXX	Report	XXX	0.104	0.162	0.26	2/quarter	24-Hr Composite
Boron, Total	Report	Report	XXX	Report Avg Mo	Report	XXX	1/month	24-Hr Composite

Outfall 001, Continued (from Permit Effective Date through Permit Expiration Date)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Quarterly	Daily Maximum	Instant. Maximum		
Cadmium, Total	XXX	Report	XXX	0.0962	0.474	0.474	2/quarter	24-Hr Composite
Chromium, Total	XXX	Report	XXX	3.07	15.5	15.5	2/quarter	24-Hr Composite
Cobalt, Total	XXX	Report	XXX	0.124	0.192	0.31	2/quarter	24-Hr Composite
Copper, Total	0.50	1.0	XXX	0.54 Avg Mo	1.1	1.35	1/week	24-Hr Composite
Lead, Total	0.18	0.37	XXX	0.2 Avg Mo	0.4	0.5	1/week	24-Hr Composite
Mercury, Total	XXX	Report	XXX	0.0007	0.0023	0.0023	2/quarter	24-Hr Composite
Nickel, Total	XXX	Report	XXX	1.45	3.95	3.95	2/quarter	24-Hr Composite
Silver, Total	XXX	Report	XXX	0.0351	0.12	0.12	2/quarter	24-Hr Composite
Tin, Total	XXX	Report	XXX	0.12	0.41	0.41	2/quarter	24-Hr Composite
Titanium, Total (as Ti)	XXX	Report	XXX	0.0618	0.095	0.15	2/quarter	24-Hr Composite
Vanadium, Total	XXX	Report	XXX	0.0662	0.22	0.22	2/quarter	24-Hr Composite
Zinc, Total	XXX	Report	XXX	0.42	0.5	1.05	2/quarter	24-Hr Composite
o-Cresol	XXX	Report	XXX	0.561	1.92	1.92	2/quarter	24-Hr Composite
2,4,6-Trichlorophenol	XXX	Report	XXX	0.106	0.155	0.265	2/quarter	24-Hr Composite
Phenol	XXX	Report	XXX	1.08	3.65	3.65	2/quarter	24-Hr Composite
Acetone	XXX	Report	XXX	7.97	30.2	30.2	2/quarter	Grab
Acetophenone	XXX	Report	XXX	0.0562	0.114	0.14	2/quarter	Grab
2-Butanone	XXX	Report	XXX	1.85	4.81	4.81	2/quarter	Grab

Outfall 001, Continued (from Permit Effective Date through Permit Expiration Date)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Daily Maximum	Minimum	Average Quarterly	Daily Maximum	Instant. Maximum		
Dichlorobromomethane	Report	Report	XXX	Report Avg Mo	Report	XXX	1/month	Grab
p-Cresol	XXX	Report	XXX	0.205	0.7	0.7	2/quarter	24-Hr Composite
Pyridine	XXX	Report	XXX	0.182	0.37	0.455	2/quarter	Grab
PFOA (ng/L)	XXX	XXX	XXX	XXX	XXX	Report	1/quarter	Grab
PFOS (ng/L)	XXX	XXX	XXX	XXX	XXX	Report	1/quarter	Grab
PFBS (ng/L)	XXX	XXX	XXX	XXX	XXX	Report	1/quarter	Grab
HFPO-DA (ng/L)	XXX	XXX	XXX	XXX	XXX	Report	1/quarter	Grab

Compliance Sampling Location: At Outfall 001

Comments:

All quarterly sampling shall be based on the calendar year and not the permit issuance date. Where two quarterly samples are specified, both samples shall be collected within the same calendar month.

7.0 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 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
COD	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
TSS	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Nitrogen	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Calculation
Ammonia	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Phosphorus	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Iron	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab

Compliance Sampling Location: at Outfall 003

Other Comments: none

**Note, these monitoring requirements were added by the Environmental Engineer Manager after the Environmental Engineer signed the factsheet. The Environmental Engineer did not review this addition.*

8.0 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 005, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Daily Maximum	Instant. Maximum		
pH (S.U.)	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
Total Nitrogen	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Calculation
Ammonia	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Phosphorus	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Iron	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab

Compliance Sampling Location: at Outfall 005

Other Comments: none

**Note, these monitoring requirements were added by the Environmental Engineer Manager after the Environmental Engineer signed the factsheet. The Environmental Engineer did not review this addition.*

9.0 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 006, 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
COD	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
TSS	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Nitrogen	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Calculation
Ammonia	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Phosphorus	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab
Total Iron	XXX	XXX	XXX	XXX	Report	XXX	1/6 months	Grab

Compliance Sampling Location: at Outfall 006

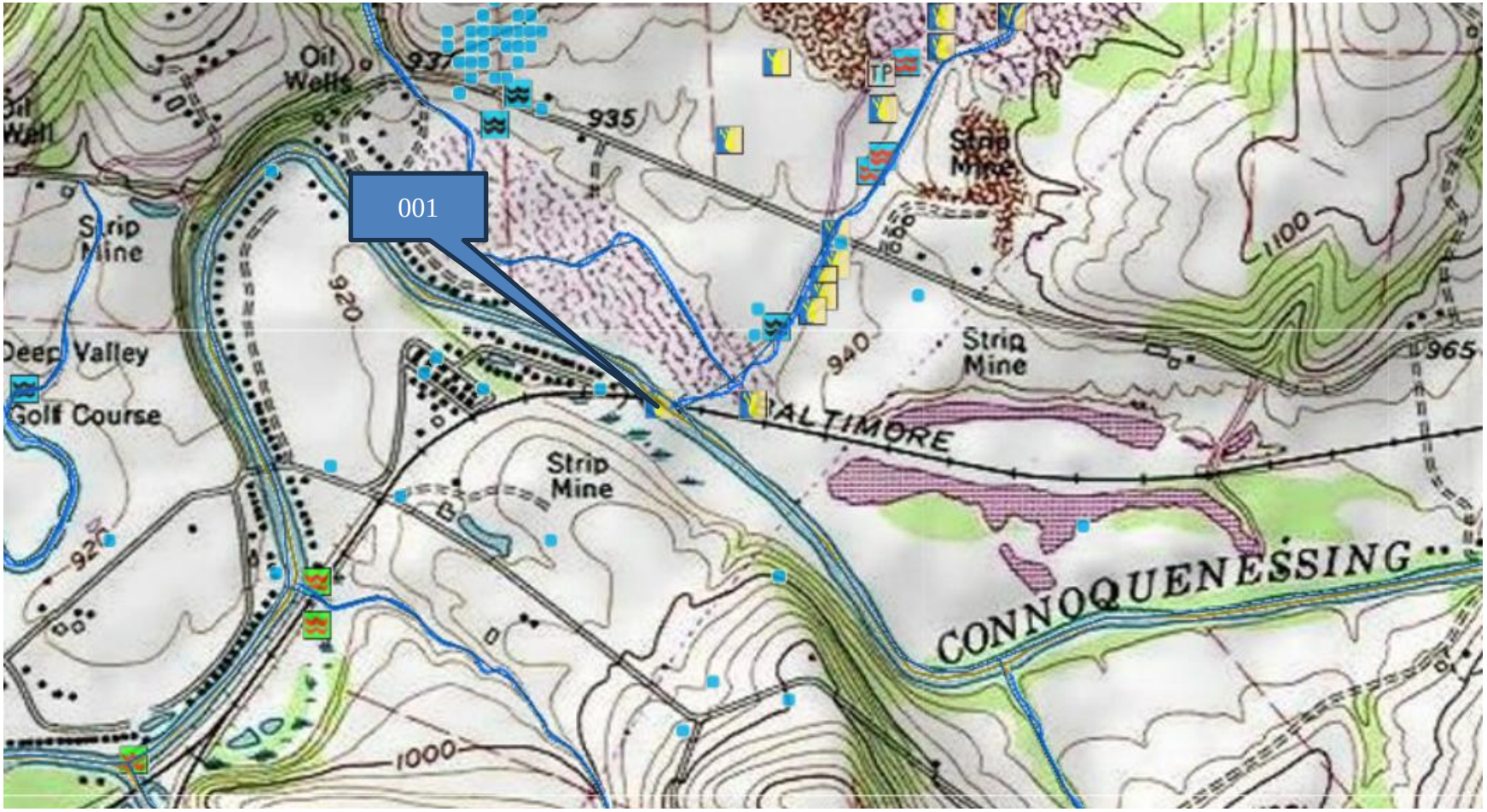
Other Comments: none

**Note, these monitoring requirements were added by the Environmental Engineer Manager after the Environmental Engineer signed the factsheet. The Environmental Engineer did not review this addition.*

7.0 Tools and References Used to Develop Permit	
☒	WQM for Windows Model (see Attachment **B**)
☒	Toxics Management Spreadsheet (see Attachment **C**)
☐	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, 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 waste
☒	Other: ELG for CWT facility discharge 40 CFR 437

Attachments

A. Topographical Map



B. WQM Model Results

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
20C	34025	CONNOQUENESSING CREEK

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
25.560	Seneca Ldfl	PA0210198	0.110	CBOD5	100		
				NH3-N	36.88	73.76	
				Dissolved Oxygen			4

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
20C	34025	CONNOQUENESSING CREEK	**25.560**	905.00	203.84	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	0.033	0.00	0.00	0.000	0.000	0.0	0.00	0.00	25.00	7.90	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
Seneca Ldfl	PA0210198	0.1100	0.1100	0.1100	0.000	20.00	7.40

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	100.00	2.00	0.00	1.50
Dissolved Oxygen	4.00	8.24	0.00	0.00
NH3-N	100.00	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
20C	34025	CONNOQUENESSING CREEK	**20.900**	890.00	325.14	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	0.033	0.00	10.90	0.000	0.000	0.0	0.00	0.00	25.00	7.90	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
Western Butler	PA0021504	2.2000	2.2000	2.2000	0.000	20.00	6.40

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	4.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
20C	34025	CONNOQUENESSING CREEK

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
25.560	6.81	0.00	6.81	.1702	0.00061	.818	52.46	64.11	0.16	1.752	24.88	7.88
Q1-10 Flow												
25.560	4.36	0.00	4.36	.1702	0.00061	NA	NA	NA	0.13	2.232	24.81	7.87
Q30-10 Flow												
25.560	9.26	0.00	9.26	.1702	0.00061	NA	NA	NA	0.19	1.480	24.91	7.88

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		

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
20C	34025	CONNOQUENESSING CREEK

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
25.560	Seneca Ldfl	3.36	89.38	3.36	89.38	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
25.560	Seneca Ldfl	.67	36.88	.67	36.88	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)		
25.56	Seneca Ldfl	100	100	36.88	36.88	4	4	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
20C	34025	CONNOQUENESSING CREEK

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
25.560	0.110	24.878	7.878
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
52.461	0.818	64.112	0.163
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
4.39	0.349	0.90	1.019
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
8.140	1.057	Tsivoglou	5
Reach Travel Time (days)			
1.752			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.175	4.07	0.75	7.13
0.350	3.77	0.63	6.42
0.526	3.49	0.53	5.95
0.701	3.23	0.44	5.65
0.876	2.99	0.37	5.49
1.051	2.77	0.31	5.43
1.226	2.57	0.26	5.44
1.401	2.38	0.22	5.51
1.577	2.20	0.18	5.61
1.752	2.04	0.15	5.73

C. Toxics Management Spreadsheet.(TMS)

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Toxics Management Spreadsheet
Version 1.4, May 2023

Discharge Information

Instructions | Discharge | Stream

Facility: **Seneca Landfill** NPDES Permit No.: **PA0210196** Outfall No.: **001**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **Inudustrial 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
0.11	484	7.4						

					0 if left blank		0.5 if left blank		0 if left blank			1 if left blank	
	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Stream CV	Fate Coeff	FOS	Criteria Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		8360									
	Chloride (PWS)	mg/L		3000									
	Bromide	mg/L	<	20									
	Sulfate (PWS)	mg/L		70									
	Fluoride (PWS)	mg/L	<	5									
Group 2	Total Aluminum	µg/L		54									
	Total Antimony	µg/L	<	13.1									
	Total Arsenic	µg/L	<	12									
	Total Barium	µg/L		37.8									
	Total Beryllium	µg/L	<	0.5									
	Total Boron	µg/L	<	14500									
	Total Cadmium	µg/L	<	0.2									
	Total Chromium (III)	µg/L	<	49									
	Hexavalent Chromium	µg/L	<	0.5									
	Total Cobalt	µg/L	<	27.5									
	Total Copper	µg/L		46.6									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L		31									
	Dissolved Iron	µg/L	<	390									
	Total Iron	µg/L		830									
	Total Lead	µg/L		0.2									
	Total Manganese	µg/L		500									
	Total Mercury	µg/L	<	0.1									
	Total Nickel	µg/L	<	325									
	Total Phenols (Phenolics) (PWS)	µg/L	<	60									
	Total Selenium	µg/L	<	1.1									
	Total Silver	µg/L	<	0.1									
	Total Thallium	µg/L	<	0.1									
	Total Zinc	µg/L		262									
	Total Molybdenum	µg/L		73.3									
	Acrolein	µg/L	<	2									
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<	0.5									
	Benzene	µg/L	<	0.2									
	Bromoform	µg/L	<	12.4									

Group 3	Carbon Tetrachloride	µg/L	<	0.2									
	Chlorobenzene	µg/L		0.2									
	Chlorodibromomethane	µg/L		43.1									
	Chloroethane	µg/L	<	0.2									
	2-Chloroethyl Vinyl Ether	µg/L	<	0.5									
	Chloroform	µg/L		54.1									
	Dichlorobromomethane	µg/L		80.8									
	1,1-Dichloroethane	µg/L	<	0.2									
	1,2-Dichloroethane	µg/L	<	0.2									
	1,1-Dichloroethylene	µg/L	<	0.2									
	1,2-Dichloropropane	µg/L	<	0.2									
	1,3-Dichloropropylene	µg/L	<	0.2									
	1,4-Dioxane	µg/L	<	0.2									
	Ethylbenzene	µg/L	<	14.1									
	Methyl Bromide	µg/L	<	0.2									
	Methyl Chloride	µg/L	<	0.5									
	Methylene Chloride	µg/L	<	0.5									
	1,1,2,2-Tetrachloroethane	µg/L	<	0.4									
	Tetrachloroethylene	µg/L	<	0.2									
	Toluene	µg/L	<	0.4									
	1,2-trans-Dichloroethylene	µg/L	<	0.2									
	1,1,1-Trichloroethane	µg/L	<	0.5									
	1,1,2-Trichloroethane	µg/L	<	0.2									
	Trichloroethylene	µg/L	<	0.5									
	Vinyl Chloride	µg/L	<	0.2									
Group 4	2-Chlorophenol	µg/L	<	0.2									
	2,4-Dichlorophenol	µg/L	<	0.25									
	2,4-Dimethylphenol	µg/L	<	0.25									
	4,6-Dinitro-o-Cresol	µg/L	<	0.6									
	2,4-Dinitrophenol	µg/L	<	1.27									
	2-Nitrophenol	µg/L	<	1.27									
	4-Nitrophenol	µg/L	<	0.63									
	p-Chloro-m-Cresol	µg/L	<	0.63									
	Pentachlorophenol	µg/L	<	0.25									
	Phenol	µg/L	<	0.63									
	2,4,6-Trichlorophenol	µg/L	<	0.5									
Group 5	Acenaphthene	µg/L	<	2									
	Acenaphthylene	µg/L	<	0.13									
	Anthracene	µg/L	<	0.13									
	Benzidine	µg/L	<	0.2									
	Benzo(a)Anthracene	µg/L	<	0.63									
	Benzo(a)Pyrene	µg/L	<	0.13									
	3,4-Benzofluoranthene	µg/L	<	0.13									
	Benzo(ghi)Perylene	µg/L	<	0.13									
	Benzo(k)Fluoranthene	µg/L	<	0.13									
	Bis(2-Chloroethoxy)Methane	µg/L	<	0.13									
	Bis(2-Chloroethyl)Ether	µg/L	<	0.13									
	Bis(2-Chloroisopropyl)Ether	µg/L	<	0.13									
	Bis(2-Ethylhexyl)Phthalate	µg/L	<	0.13									
	4-Bromophenyl Phenyl Ether	µg/L	<	1.27									
	Butyl Benzyl Phthalate	µg/L	<	0.13									
	2-Chloronaphthalene	µg/L	<	1.27									
	4-Chlorophenyl Phenyl Ether	µg/L	<	0.13									
	Chrysene	µg/L	<	0.13									
	Dibenzo(a,h)Anthrancene	µg/L	<	0.13									
	1,2-Dichlorobenzene	µg/L	<	0.13									
	1,3-Dichlorobenzene	µg/L	<	0.13									
	1,4-Dichlorobenzene	µg/L	<	0.13									
	3,3-Dichlorobenzidine	µg/L	<	0.13									
	Diethyl Phthalate	µg/L	<	0.63									
	Dimethyl Phthalate	µg/L	<	1.27									
	Di-n-Butyl Phthalate	µg/L	<	1.27									
	2,4-Dinitrotoluene	µg/L	<	1.27									

	2,6-Dinitrotoluene	µg/L	<	0.25									
	Di-n-Octyl Phthalate	µg/L	<	0.25									
	1,2-Diphenylhydrazine	µg/L	<	1.27									
	Fluoranthene	µg/L	<	0.13									
	Fluorene	µg/L	<	0.13									
	Hexachlorobenzene	µg/L	<	0.13									
	Hexachlorobutadiene	µg/L	<	0.13									
	Hexachlorocyclopentadiene	µg/L	<	0.13									
	Hexachloroethane	µg/L	<	0.63									
	Indeno(1,2,3-cd)Pyrene	µg/L	<	0.13									
	Isophorone	µg/L	<	0.13									
	Naphthalene	µg/L	<	0.5									
	Nitrobenzene	µg/L	<	0.13									
	n-Nitrosodimethylamine	µg/L	<	0.13									
	n-Nitrosodi-n-Propylamine	µg/L	<	0.13									
	n-Nitrosodiphenylamine	µg/L	<	0.13									
	Phenanthrene	µg/L	<	0.13									
	Pyrene	µg/L	<	0.63									
	1,2,4-Trichlorobenzene	µg/L	<	0.13									
Group 6	Aldrin	µg/L	<	0.002									
	alpha-BHC	µg/L	<	0.002									
	beta-BHC	µg/L	<	0.002									
	gamma-BHC	µg/L	<	0.002									
	delta BHC	µg/L	<	0.002									
	Chlordane	µg/L	<	0.1									
	4,4-DDT	µg/L	<	0.002									
	4,4-DDE	µg/L	<	0.002									
	4,4-DDD	µg/L	<	0.002									
	Dieldrin	µg/L	<	0.002									
	alpha-Endosulfan	µg/L	<	0.002									
	beta-Endosulfan	µg/L	<	0.002									
	Endosulfan Sulfate	µg/L	<	0.002									
	Endrin	µg/L	<	0.002									
	Endrin Aldehyde	µg/L	<	0.002									
	Heptachlor	µg/L	<	0.002									
	Heptachlor Epoxide	µg/L	<	0.002									
	PCB-1016	µg/L	<	0.002									
	PCB-1221	µg/L	<	0.02									
	PCB-1232	µg/L	<	0.02									
	PCB-1242	µg/L	<	0.04									
	PCB-1248	µg/L	<	0.02									
	PCB-1254	µg/L	<	0.04									
	PCB-1260	µg/L	<	0.02									
	PCBs, Total	µg/L	<	0.02									
	Toxaphene	µg/L	<	0.101									
	2,3,7,8-TCDD	ng/L	<										
Group 7	Gross Alpha	pCi/L											
	Total Beta	pCi/L	<										
	Radium 226/228	pCi/L	<										
	Total Strontium	µg/L	<										
	Total Uranium	µg/L	<										
	Osmotic Pressure	mOs/kg											
	Acenaphthene												

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Toxics Management Spreadsheet
Version 1.4, May 2023

Stream / Surface Water Information

Seneca Landfill, NPDES Permit No. PA0210196, Outfall 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: **Connoquenessing Creek**

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	034025	25.56	905	203.84			Yes
End of Reach 1	034025	20.9	890	325.14			Yes

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

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	25.56	0.0334										266	7.9		
End of Reach 1	20.9	0.0334													

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	25.56														
End of Reach 1	20.9														

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Toxics Management Spreadsheet
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Model Results

Seneca Landfill, NPDES Permit No. PA0210196, Outfall 001

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

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 15 PMF: 0.276 Analysis Hardness (mg/l): 284.08 Analysis pH: 7.83

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	9,041	
Total Antimony	0	0		0	1,100	1,100	13,261	
Total Arsenic	0	0		0	340	340	4,099	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	253,155	
Total Boron	0	0		0	8,100	8,100	97,646	
Total Cadmium	0	0		0	5.551	6.17	74.3	Chem Translator of 0.9 applied
Total Chromium (III)	0	0		0	1339.884	4,240	51,115	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	15.730	16.0	193	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	1,145	
Total Copper	0	0		0	35.942	37.4	451	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	197.050	308	3,718	Chem Translator of 0.639 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	19.9	Chem Translator of 0.85 applied
Total Nickel	0	0		0	1132.610	1,135	13,681	Chem Translator of 0.998 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	Chem Translator of 0.922 applied
Total Silver	0	0		0	19.380	22.8	275	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	784	
Total Zinc	0	0		0	283.831	290	3,499	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	36.2	

Acrylonitrile	0	0		0	650	650	7,836	
Benzene	0	0		0	640	640	7,715	
Bromoform	0	0		0	1,800	1,800	21,699	
Carbon Tetrachloride	0	0		0	2,800	2,800	33,754	
Chlorobenzene	0	0		0	1,200	1,200	14,466	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	216,990	
Chloroform	0	0		0	1,900	1,900	22,905	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	15,000	15,000	180,825	
1,1-Dichloroethylene	0	0		0	7,500	7,500	90,413	
1,2-Dichloropropane	0	0		0	11,000	11,000	132,605	
1,3-Dichloropropylene	0	0		0	310	310	3,737	
Ethylbenzene	0	0		0	2,900	2,900	34,960	
Methyl Bromide	0	0		0	550	550	6,630	
Methyl Chloride	0	0		0	28,000	28,000	337,540	
Methylene Chloride	0	0		0	12,000	12,000	144,660	
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	12,055	
Tetrachloroethylene	0	0		0	700	700	8,439	
Toluene	0	0		0	1,700	1,700	20,494	
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	81,974	
1,1,1-Trichloroethane	0	0		0	3,000	3,000	36,165	
1,1,2-Trichloroethane	0	0		0	3,400	3,400	40,987	
Trichloroethylene	0	0		0	2,300	2,300	27,727	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	560	560	6,751	
2,4-Dichlorophenol	0	0		0	1,700	1,700	20,494	
2,4-Dimethylphenol	0	0		0	660	660	7,956	
4,6-Dinitro-o-Cresol	0	0		0	80	80.0	964	
2,4-Dinitrophenol	0	0		0	660	660	7,956	
2-Nitrophenol	0	0		0	8,000	8,000	96,440	
4-Nitrophenol	0	0		0	2,300	2,300	27,727	
p-Chloro-m-Cresol	0	0		0	160	160	1,929	
Pentachlorophenol	0	0		0	20.055	20.1	242	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	460	460	5,545	
Acenaphthene	0	0		0	83	83.0	1,001	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	300	300	3,617	
Benzo(a)Anthracene	0	0		0	0.5	0.5	6.03	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	30,000	30,000	361,650	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	54,248	
4-Bromophenyl Phenyl Ether	0	0		0	270	270	3,255	
Butyl Benzyl Phthalate	0	0		0	140	140	1,688	

2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	820	820	9,885	
1,3-Dichlorobenzene	0	0		0	350	350	4,219	
1,4-Dichlorobenzene	0	0		0	730	730	8,800	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	4,000	4,000	48,220	
Dimethyl Phthalate	0	0		0	2,500	2,500	30,138	
Di-n-Butyl Phthalate	0	0		0	110	110	1,326	
2,4-Dinitrotoluene	0	0		0	1,600	1,600	19,288	
2,6-Dinitrotoluene	0	0		0	990	990	11,934	
1,2-Diphenylhydrazine	0	0		0	15	15.0	181	
Fluoranthene	0	0		0	200	200	2,411	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	10	10.0	121	
Hexachlorocyclopentadiene	0	0		0	5	5.0	60.3	
Hexachloroethane	0	0		0	60	60.0	723	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	10,000	10,000	120,550	
Naphthalene	0	0		0	140	140	1,688	
Nitrobenzene	0	0		0	4,000	4,000	48,220	
n-Nitrosodimethylamine	0	0		0	17,000	17,000	204,935	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	300	300	3,617	
Phenanthrene	0	0		0	5	5.0	60.3	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	130	130	1,567	
Aldrin	0	0		0	3	3.0	36.2	
alpha-BHC	0	0		0	N/A	N/A	N/A	
beta-BHC	0	0		0	N/A	N/A	N/A	
gamma-BHC	0	0		0	0.95	0.95	11.5	
Chlordane	0	0		0	2.4	2.4	28.9	
4,4-DDT	0	0		0	1.1	1.1	13.3	
4,4-DDE	0	0		0	1.1	1.1	13.3	
4,4-DDD	0	0		0	1.1	1.1	13.3	
Dieldrin	0	0		0	0.24	0.24	2.89	
alpha-Endosulfan	0	0		0	0.22	0.22	2.65	
beta-Endosulfan	0	0		0	0.22	0.22	2.65	
Endosulfan Sulfate	0	0		0	N/A	N/A	N/A	
Endrin	0	0		0	0.086	0.086	1.04	
Endrin Aldehyde	0	0		0	N/A	N/A	N/A	
Heptachlor	0	0		0	0.52	0.52	6.27	
Heptachlor Epoxide	0	0		0	0.5	0.5	6.03	
PCBs, Total	0	0		0	N/A	N/A	N/A	
Toxaphene	0	0		0	0.73	0.73	8.8	

☑ ***CFC*** CCT (min): ###### PMF: 1 Analysis Hardness (mg/l): 271.32 Analysis pH: 7.88

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	220	220	9,022	
Total Arsenic	0	0		0	148	148	6,069	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	168,135	
Total Boron	0	0		0	1,600	1,600	65,614	
Total Cadmium	0	0		0	0.492	0.57	23.2	Chem Translator of 0.867 applied
Total Chromium (III)	0	0		0	167.849	195	8,004	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	426	Chem Translator of 0.962 applied
Total Cobalt	0	0		0	19	19.0	779	
Total Copper	0	0		0	21.014	21.9	898	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	61,513	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	7.318	11.3	465	Chem Translator of 0.646 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	37.1	Chem Translator of 0.85 applied
Total Nickel	0	0		0	120.998	121	4,977	Chem Translator of 0.997 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	4.600	4.99	205	Chem Translator of 0.922 applied
Total Silver	0	0		0	N/A	N/A	N/A	Chem Translator of 1 applied
Total Thallium	0	0		0	13	13.0	533	
Total Zinc	0	0		0	275.218	279	11,447	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	123	
Acrylonitrile	0	0		0	130	130	5,331	
Benzene	0	0		0	130	130	5,331	
Bromoform	0	0		0	370	370	15,173	
Carbon Tetrachloride	0	0		0	560	560	22,965	
Chlorobenzene	0	0		0	240	240	9,842	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	143,530	
Chloroform	0	0		0	390	390	15,993	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	127,127	
1,1-Dichloroethylene	0	0		0	1,500	1,500	61,513	
1,2-Dichloropropane	0	0		0	2,200	2,200	90,219	
1,3-Dichloropropylene	0	0		0	61	61.0	2,502	
Ethylbenzene	0	0		0	580	580	23,785	

Methyl Bromide	0	0		0	110	110	4,511	
Methyl Chloride	0	0		0	5,500	5,500	225,547	
Methylene Chloride	0	0		0	2,400	2,400	98,421	
1,1,2,2-Tetrachloroethane	0	0		0	210	210	8,612	
Tetrachloroethylene	0	0		0	140	140	5,741	
Toluene	0	0		0	330	330	13,533	
1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	57,412	
1,1,1-Trichloroethane	0	0		0	610	610	25,015	
1,1,2-Trichloroethane	0	0		0	680	680	27,886	
Trichloroethylene	0	0		0	450	450	18,454	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	110	110	4,511	
2,4-Dichlorophenol	0	0		0	340	340	13,943	
2,4-Dimethylphenol	0	0		0	130	130	5,331	
4,6-Dinitro-o-Cresol	0	0		0	16	16.0	656	
2,4-Dinitrophenol	0	0		0	130	130	5,331	
2-Nitrophenol	0	0		0	1,600	1,600	65,614	
4-Nitrophenol	0	0		0	470	470	19,274	
p-Chloro-m-Cresol	0	0		0	500	500	20,504	
Pentachlorophenol	0	0		0	15.387	15.4	631	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	91	91.0	3,732	
Acenaphthene	0	0		0	17	17.0	697	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	59	59.0	2,420	
Benzo(a)Anthracene	0	0		0	0.1	0.1	4.1	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	6,000	6,000	246,051	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	910	910	37,318	
4-Bromophenyl Phenyl Ether	0	0		0	54	54.0	2,214	
Butyl Benzyl Phthalate	0	0		0	35	35.0	1,435	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	160	160	6,561	
1,3-Dichlorobenzene	0	0		0	69	69.0	2,830	
1,4-Dichlorobenzene	0	0		0	150	150	6,151	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	800	800	32,807	
Dimethyl Phthalate	0	0		0	500	500	20,504	
Di-n-Butyl Phthalate	0	0		0	21	21.0	861	
2,4-Dinitrotoluene	0	0		0	320	320	13,123	

2,6-Dinitrotoluene	0	0		0	200	200	8,202	
1,2-Diphenylhydrazine	0	0		0	3	3.0	123	
Fluoranthene	0	0		0	40	40.0	1,640	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	2	2.0	82.0	
Hexachlorocyclopentadiene	0	0		0	1	1.0	41.0	
Hexachloroethane	0	0		0	12	12.0	492	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	2,100	2,100	86,118	
Naphthalene	0	0		0	43	43.0	1,763	
Nitrobenzene	0	0		0	810	810	33,217	
n-Nitrosodimethylamine	0	0		0	3,400	3,400	139,429	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	59	59.0	2,420	
Phenanthrene	0	0		0	1	1.0	41.0	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	26	26.0	1,066	
Aldrin	0	0		0	0.1	0.1	4.1	
alpha-BHC	0	0		0	N/A	N/A	N/A	
beta-BHC	0	0		0	N/A	N/A	N/A	
gamma-BHC	0	0		0	N/A	N/A	N/A	
Chlordane	0	0		0	0.0043	0.004	0.18	
4,4-DDT	0	0		0	0.001	0.001	0.041	
4,4-DDE	0	0		0	0.001	0.001	0.041	
4,4-DDD	0	0		0	0.001	0.001	0.041	
Dieldrin	0	0		0	0.056	0.056	2.3	
alpha-Endosulfan	0	0		0	0.056	0.056	2.3	
beta-Endosulfan	0	0		0	0.056	0.056	2.3	
Endosulfan Sulfate	0	0		0	N/A	N/A	N/A	
Endrin	0	0		0	0.036	0.036	1.48	
Endrin Aldehyde	0	0		0	N/A	N/A	N/A	
Heptachlor	0	0		0	0.0038	0.004	0.16	
Heptachlor Epoxide	0	0		0	0.0038	0.004	0.16	
PCBs, Total	0	0		0	0.014	0.014	0.57	
Toxaphene	0	0		0	0.0002	0.0002	0.008	

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

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	500,000	500,000	N/A	
Chloride (PWS)	0	0		0	250,000	250,000	N/A	

Sulfate (PWS)	0	0		0	250,000	250,000	N/A	
Fluoride (PWS)	0	0		0	2,000	2,000	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	230	
Total Arsenic	0	0		0	10	10.0	410	
Total Barium	0	0		0	2,400	2,400	98,421	
Total Boron	0	0		0	3,100	3,100	127,127	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	300	300	12,303	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	1,000	1,000	41,009	
Total Mercury	0	0		0	0.003	0.003	0.13	
Total Nickel	0	0		0	610	610	25,015	
Total Phenols (Phenolics) (PWS)	0	0		0	5	5.0	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	0.24	0.24	9.84	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	3	3.0	123	
Acrylonitrile	0	0		0	N/A	N/A	N/A	
Benzene	0	0		0	N/A	N/A	N/A	
Bromoform	0	0		0	N/A	N/A	N/A	
Carbon Tetrachloride	0	0		0	N/A	N/A	N/A	
Chlorobenzene	0	0		0	100	100.0	4,101	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	5.7	5.7	234	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	N/A	N/A	N/A	
1,1-Dichloroethylene	0	0		0	33	33.0	1,353	
1,2-Dichloropropane	0	0		0	N/A	N/A	N/A	
1,3-Dichloropropylene	0	0		0	N/A	N/A	N/A	
Ethylbenzene	0	0		0	68	68.0	2,789	
Methyl Bromide	0	0		0	100	100.0	4,101	
Methyl Chloride	0	0		0	N/A	N/A	N/A	
Methylene Chloride	0	0		0	N/A	N/A	N/A	
1,1,2,2-Tetrachloroethane	0	0		0	N/A	N/A	N/A	
Tetrachloroethylene	0	0		0	N/A	N/A	N/A	
Toluene	0	0		0	57	57.0	2,337	
1,2-trans-Dichloroethylene	0	0		0	100	100.0	4,101	

1,1,1-Trichloroethane	0	0		0	10,000	10,000	410,086	
1,1,2-Trichloroethane	0	0		0	N/A	N/A	N/A	
Trichloroethylene	0	0		0	N/A	N/A	N/A	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	30	30.0	1,230	
2,4-Dichlorophenol	0	0		0	10	10.0	410	
2,4-Dimethylphenol	0	0		0	100	100.0	4,101	
4,6-Dinitro-o-Cresol	0	0		0	2	2.0	82.0	
2,4-Dinitrophenol	0	0		0	10	10.0	410	
2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	N/A	N/A	N/A	
Phenol	0	0		0	4,000	4,000	164,034	
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A	
Acenaphthene	0	0		0	70	70.0	2,871	
Anthracene	0	0		0	300	300	12,303	
Benzidine	0	0		0	N/A	N/A	N/A	
Benzo(a)Anthracene	0	0		0	N/A	N/A	N/A	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroisopropyl)Ether	0	0		0	200	200	8,202	
Bis(2-Ethylhexyl)Phthalate	0	0		0	N/A	N/A	N/A	
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A	
Butyl Benzyl Phthalate	0	0		0	0.1	0.1	4.1	
2-Chloronaphthalene	0	0		0	800	800	32,807	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	1,000	1,000	41,009	
1,3-Dichlorobenzene	0	0		0	7	7.0	287	
1,4-Dichlorobenzene	0	0		0	300	300	12,303	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	600	600	24,605	
Dimethyl Phthalate	0	0		0	2,000	2,000	82,017	
Di-n-Butyl Phthalate	0	0		0	20	20.0	820	
2,4-Dinitrotoluene	0	0		0	N/A	N/A	N/A	
2,6-Dinitrotoluene	0	0		0	N/A	N/A	N/A	
1,2-Diphenylhydrazine	0	0		0	N/A	N/A	N/A	
Fluoranthene	0	0		0	20	20.0	820	
Fluorene	0	0		0	50	50.0	2,050	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	N/A	N/A	N/A	
Hexachlorocyclopentadiene	0	0		0	4	4.0	164	

Hexachloroethane	0	0		0	N/A	N/A	N/A	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	34	34.0	1,394	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	10	10.0	410	
n-Nitrosodimethylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	N/A	N/A	N/A	
Phenanthrene	0	0		0	N/A	N/A	N/A	
Pyrene	0	0		0	20	20.0	820	
1,2,4-Trichlorobenzene	0	0		0	0.07	0.07	2.87	
Aldrin	0	0		0	N/A	N/A	N/A	
alpha-BHC	0	0		0	N/A	N/A	N/A	
beta-BHC	0	0		0	N/A	N/A	N/A	
gamma-BHC	0	0		0	0.47	0.47	19.3	
Chlordane	0	0		0	N/A	N/A	N/A	
4,4-DDT	0	0		0	N/A	N/A	N/A	
4,4-DDE	0	0		0	N/A	N/A	N/A	
4,4-DDD	0	0		0	N/A	N/A	N/A	
Dieldrin	0	0		0	N/A	N/A	N/A	
alpha-Endosulfan	0	0		0	20	20.0	820	
beta-Endosulfan	0	0		0	20	20.0	820	
Endosulfan Sulfate	0	0		0	20	20.0	820	
Endrin	0	0		0	0.03	0.03	1.23	
Endrin Aldehyde	0	0		0	1	1.0	41.0	
Heptachlor	0	0		0	N/A	N/A	N/A	
Heptachlor Epoxide	0	0		0	N/A	N/A	N/A	
PCBs, Total	0	0		0	N/A	N/A	N/A	
Toxaphene	0	0		0	N/A	N/A	N/A	

☑ ***CRL*** CCT (min): 64.756 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	N/A	N/A	N/A	
Total Arsenic	0	0		0	N/A	N/A	N/A	
Total Barium	0	0		0	N/A	N/A	N/A	
Total Boron	0	0		0	N/A	N/A	N/A	

Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	N/A	N/A	N/A	
Total Nickel	0	0		0	N/A	N/A	N/A	
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	0.06	0.06	14.1	
Benzene	0	0		0	0.58	0.58	136	
Bromoform	0	0		0	7	7.0	1,641	
Carbon Tetrachloride	0	0		0	0.4	0.4	93.8	
Chlorobenzene	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	0	0		0	0.8	0.8	188	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	N/A	N/A	N/A	
Dichlorobromomethane	0	0		0	0.95	0.95	223	
1,2-Dichloroethane	0	0		0	9.9	9.9	2,321	
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,2-Dichloropropane	0	0		0	0.9	0.9	211	
1,3-Dichloropropylene	0	0		0	0.27	0.27	63.3	
Ethylbenzene	0	0		0	N/A	N/A	N/A	
Methyl Bromide	0	0		0	N/A	N/A	N/A	
Methyl Chloride	0	0		0	N/A	N/A	N/A	
Methylene Chloride	0	0		0	4.7	4.7	1,102	
1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	46.9	
Tetrachloroethylene	0	0		0	10	10.0	2,344	
Toluene	0	0		0	N/A	N/A	N/A	
1,2-trans-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,1,1-Trichloroethane	0	0		0	N/A	N/A	N/A	
1,1,2-Trichloroethane	0	0		0	0.55	0.55	129	
Trichloroethylene	0	0		0	0.6	0.6	141	
Vinyl Chloride	0	0		0	0.02	0.02	4.69	
2-Chlorophenol	0	0		0	N/A	N/A	N/A	
2,4-Dichlorophenol	0	0		0	N/A	N/A	N/A	
2,4-Dimethylphenol	0	0		0	N/A	N/A	N/A	

4,6-Dinitro-o-Cresol	0	0		0	N/A	N/A	N/A	
2,4-Dinitrophenol	0	0		0	N/A	N/A	N/A	
2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	0.030	0.03	7.03	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	1.5	1.5	352	
Acenaphthene	0	0		0	N/A	N/A	N/A	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	0.0001	0.0001	0.023	
Benzo(a)Anthracene	0	0		0	0.001	0.001	0.23	
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	0.023	
3,4-Benzofluoranthene	0	0		0	0.001	0.001	0.23	
Benzo(k)Fluoranthene	0	0		0	0.01	0.01	2.34	
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	7.03	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	75.0	
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A	
Butyl Benzyl Phthalate	0	0		0	N/A	N/A	N/A	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	0.12	0.12	28.1	
Dibenzo(a,h)Anthrancene	0	0		0	0.0001	0.0001	0.023	
1,2-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
1,3-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
1,4-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
3,3-Dichlorobenzidine	0	0		0	0.05	0.05	11.7	
Diethyl Phthalate	0	0		0	N/A	N/A	N/A	
Dimethyl Phthalate	0	0		0	N/A	N/A	N/A	
Di-n-Butyl Phthalate	0	0		0	N/A	N/A	N/A	
2,4-Dinitrotoluene	0	0		0	0.05	0.05	11.7	
2,6-Dinitrotoluene	0	0		0	0.05	0.05	11.7	
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	7.03	
Fluoranthene	0	0		0	N/A	N/A	N/A	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	0.000045	0.00005	0.011	
Hexachlorobutadiene	0	0		0	0.01	0.01	2.34	
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A	
Hexachloroethane	0	0		0	0.1	0.1	23.4	
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	0.23	
Isophorone	0	0		0	N/A	N/A	N/A	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	N/A	N/A	N/A	
n-Nitrosodimethylamine	0	0		0	0.0007	0.0007	0.16	
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	1.17	

n-Nitrosodiphenylamine	0	0		0	3.3	3.3	774	
Phenanthrene	0	0		0	N/A	N/A	N/A	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	N/A	N/A	N/A	
Aldrin	0	0		0	0.0000008	8.00E-07	0.0002	
alpha-BHC	0	0		0	0.0004	0.0004	0.094	
beta-BHC	0	0		0	0.008	0.008	1.88	
gamma-BHC	0	0		0	N/A	N/A	N/A	
Chlordane	0	0		0	0.000025	0.00003	0.006	
4,4-DDT	0	0		0	0.000015	0.00002	0.004	
4,4-DDE	0	0		0	0.00002	0.00002	0.005	
4,4-DDD	0	0		0	0.0001	0.0001	0.023	
Dieldrin	0	0		0	6.5E-07	6.50E-07	0.0002	
alpha-Endosulfan	0	0		0	N/A	N/A	N/A	
beta-Endosulfan	0	0		0	N/A	N/A	N/A	
Endosulfan Sulfate	0	0		0	N/A	N/A	N/A	
Endrin	0	0		0	N/A	N/A	N/A	
Endrin Aldehyde	0	0		0	N/A	N/A	N/A	
Heptachlor	0	0		0	0.000006	0.000006	0.001	
Heptachlor Epoxide	0	0		0	0.00003	0.00003	0.007	
PCBs, Total	0	0		0	3.9E-07	3.90E-07	0.00009	
Toxaphene	0	0		0	0.0000068	0.000007	0.002	

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

No. Samples/Month: 4

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Total Boron	Report	Report	Report	Report	Report	µg/L	62,587	AFC	Discharge Conc > 10% WQBEL (no RP)
Total Copper	Report	Report	Report	Report	Report	µg/L	289	AFC	Discharge Conc > 10% WQBEL (no RP)
Total Zinc	Report	Report	Report	Report	Report	µg/L	2,242	AFC	Discharge Conc > 10% WQBEL (no RP)
Dichlorobromomethane	Report	Report	Report	Report	Report	µg/L	223	CRL	Discharge Conc > 25% WQBEL (no RP)

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

The following pollutants do not require effluent limits or monitoring based on water quality because reasonable potential to exceed water quality criteria was not determined and the discharge

concentration was less than thresholds for monitoring, or the pollutant was not detected and a sufficiently sensitive analytical method was used (e.g., <= Target QL).

Pollutants	Governing WQBEL	Units	Comments
Total Dissolved Solids (PWS)	N/A	N/A	PWS Not Applicable
Chloride (PWS)	N/A	N/A	PWS Not Applicable
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Fluoride (PWS)	N/A	N/A	PWS Not Applicable
Total Aluminum	5,795	µg/L	Discharge Conc ≤ 10% WQBEL
Total Antimony	230	µg/L	Discharge Conc ≤ 10% WQBEL
Total Arsenic	410	µg/L	Discharge Conc ≤ 10% WQBEL
Total Barium	98,421	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Cadmium	23.2	µg/L	Discharge Conc < TQL
Total Chromium (III)	8,004	µg/L	Discharge Conc ≤ 10% WQBEL
Hexavalent Chromium	124	µg/L	Discharge Conc < TQL
Total Cobalt	734	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	12,303	µg/L	Discharge Conc ≤ 10% WQBEL
Total Iron	61,513	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	465	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	41,009	µg/L	Discharge Conc ≤ 10% WQBEL
Total Mercury	0.003	µg/L	Discharge Conc < TQL
Total Nickel	4,977	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	PWS Not Applicable
Total Selenium	205	µg/L	Discharge Conc < TQL
Total Silver	176	µg/L	Discharge Conc < TQL
Total Thallium	9.84	µg/L	Discharge Conc < TQL
Total Molybdenum	N/A	N/A	No WQS
Acrolein	23.2	µg/L	Discharge Conc < TQL
Acrylonitrile	14.1	µg/L	Discharge Conc < TQL
Benzene	136	µg/L	Discharge Conc < TQL
Bromoform	1,641	µg/L	Discharge Conc ≤ 25% WQBEL
Carbon Tetrachloride	93.8	µg/L	Discharge Conc < TQL
Chlorobenzene	4,101	µg/L	Discharge Conc ≤ 25% WQBEL
Chlorodibromomethane	188	µg/L	Discharge Conc ≤ 25% WQBEL
Chloroethane	N/A	N/A	No WQS
2-Chloroethyl Vinyl Ether	139,082	µg/L	Discharge Conc < TQL
Chloroform	234	µg/L	Discharge Conc ≤ 25% WQBEL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	2,321	µg/L	Discharge Conc < TQL
1,1-Dichloroethylene	1,353	µg/L	Discharge Conc < TQL
1,2-Dichloropropane	211	µg/L	Discharge Conc < TQL
1,3-Dichloropropylene	63.3	µg/L	Discharge Conc < TQL

1,4-Dioxane	N/A	N/A	No WQS
Ethylbenzene	2,789	µg/L	Discharge Conc ≤ 25% WQBEL
Methyl Bromide	4,101	µg/L	Discharge Conc < TQL
Methyl Chloride	216,350	µg/L	Discharge Conc < TQL
Methylene Chloride	1,102	µg/L	Discharge Conc < TQL
1,1,2,2-Tetrachloroethane	46.9	µg/L	Discharge Conc < TQL
Tetrachloroethylene	2,344	µg/L	Discharge Conc < TQL
Toluene	2,337	µg/L	Discharge Conc < TQL
1,2-trans-Dichloroethylene	4,101	µg/L	Discharge Conc < TQL
1,1,1-Trichloroethane	23,180	µg/L	Discharge Conc < TQL
1,1,2-Trichloroethane	129	µg/L	Discharge Conc < TQL
Trichloroethylene	141	µg/L	Discharge Conc < TQL
Vinyl Chloride	4.69	µg/L	Discharge Conc < TQL
2-Chlorophenol	1,230	µg/L	Discharge Conc < TQL
2,4-Dichlorophenol	410	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	4,101	µg/L	Discharge Conc < TQL
4,6-Dinitro-o-Cresol	82.0	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	410	µg/L	Discharge Conc < TQL
2-Nitrophenol	61,814	µg/L	Discharge Conc < TQL
4-Nitrophenol	17,772	µg/L	Discharge Conc < TQL
p-Chloro-m-Cresol	1,236	µg/L	Discharge Conc < TQL
Pentachlorophenol	7.03	µg/L	Discharge Conc < TQL
Phenol	164,034	µg/L	Discharge Conc < TQL
2,4,6-Trichlorophenol	352	µg/L	Discharge Conc < TQL
Acenaphthene	641	µg/L	Discharge Conc < TQL
Acenaphthylene	N/A	N/A	No WQS
Anthracene	12,303	µg/L	Discharge Conc < TQL
Benzidine	0.023	µg/L	Discharge Conc < TQL
Benzo(a)Anthracene	0.23	µg/L	Discharge Conc < TQL
Benzo(a)Pyrene	0.023	µg/L	Discharge Conc < TQL
3,4-Benzofluoranthene	0.23	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Benzo(k)Fluoranthene	2.34	µg/L	Discharge Conc < TQL
Bis(2-Chloroethoxy)Methane	N/A	N/A	No WQS
Bis(2-Chloroethyl)Ether	7.03	µg/L	Discharge Conc < TQL
Bis(2-Chloroisopropyl)Ether	8,202	µg/L	Discharge Conc < TQL
Bis(2-Ethylhexyl)Phthalate	75.0	µg/L	Discharge Conc < TQL
4-Bromophenyl Phenyl Ether	2,086	µg/L	Discharge Conc < TQL
Butyl Benzyl Phthalate	4.1	µg/L	Discharge Conc < TQL
2-Chloronaphthalene	32,807	µg/L	Discharge Conc < TQL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS
Chrysene	28.1	µg/L	Discharge Conc < TQL
Dibenzo(a,h)Anthrancene	0.023	µg/L	Discharge Conc < TQL
1,2-Dichlorobenzene	6,336	µg/L	Discharge Conc < TQL
1,3-Dichlorobenzene	287	µg/L	Discharge Conc < TQL

1,4-Dichlorobenzene	5,641	µg/L	Discharge Conc < TQL
3,3-Dichlorobenzidine	11.7	µg/L	Discharge Conc < TQL
Diethyl Phthalate	24,605	µg/L	Discharge Conc < TQL
Dimethyl Phthalate	19,317	µg/L	Discharge Conc < TQL
Di-n-Butyl Phthalate	820	µg/L	Discharge Conc < TQL
2,4-Dinitrotoluene	11.7	µg/L	Discharge Conc < TQL
2,6-Dinitrotoluene	11.7	µg/L	Discharge Conc < TQL
Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	7.03	µg/L	Discharge Conc < TQL
Fluoranthene	820	µg/L	Discharge Conc < TQL
Fluorene	2,050	µg/L	Discharge Conc < TQL
Hexachlorobenzene	0.00005	µg/L	Discharge Conc < TQL
Hexachlorobutadiene	0.01	µg/L	Discharge Conc < TQL
Hexachlorocyclopentadiene	38.6	µg/L	Discharge Conc < TQL
Hexachloroethane	23.4	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	0.23	µg/L	Discharge Conc < TQL
Isophorone	1,394	µg/L	Discharge Conc < TQL
Naphthalene	1,082	µg/L	Discharge Conc < TQL
Nitrobenzene	410	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	0.16	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	1.17	µg/L	Discharge Conc < TQL
n-Nitrosodiphenylamine	774	µg/L	Discharge Conc < TQL
Phenanthrene	38.6	µg/L	Discharge Conc < TQL
Pyrene	820	µg/L	Discharge Conc < TQL
1,2,4-Trichlorobenzene	2.87	µg/L	Discharge Conc < TQL
Aldrin	0.0002	µg/L	Discharge Conc < TQL
alpha-BHC	0.094	µg/L	Discharge Conc < TQL
beta-BHC	1.88	µg/L	Discharge Conc < TQL
gamma-BHC	0.47	µg/L	Discharge Conc < TQL
delta BHC	N/A	N/A	No WQS
Chlordane	0.00003	µg/L	Discharge Conc < TQL
4,4-DDT	0.00002	µg/L	Discharge Conc < TQL
4,4-DDE	0.00002	µg/L	Discharge Conc < TQL
4,4-DDD	0.0001	µg/L	Discharge Conc < TQL
Dieldrin	6.50E-07	µg/L	Discharge Conc < TQL
alpha-Endosulfan	1.7	µg/L	Discharge Conc < TQL
beta-Endosulfan	1.7	µg/L	Discharge Conc < TQL
Endosulfan Sulfate	820	µg/L	Discharge Conc < TQL
Endrin	0.66	µg/L	Discharge Conc < TQL
Endrin Aldehyde	41.0	µg/L	Discharge Conc < TQL
Heptachlor	0.001	µg/L	Discharge Conc < TQL
Heptachlor Epoxide	0.007	µg/L	Discharge Conc < TQL
PCB-1016	N/A	N/A	No WQS
PCB-1221	N/A	N/A	No WQS
PCB-1232	N/A	N/A	No WQS

PCB-1242	N/A	N/A	No WQS
PCB-1248	N/A	N/A	No WQS
PCB-1254	N/A	N/A	No WQS
PCB-1260	N/A	N/A	No WQS
PCBs, Total	3.90E-07	µg/L	Discharge Conc < TQL
Toxaphene	0.000007	µg/L	Discharge Conc < TQL

D. Process Flow Diagram