

Application Type
Facility Type
Major / Minor

Renewal
Storm Water
Minor

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

Application No. **PAS806111**
APS ID **1095681**
Authorization ID **1452323**

Applicant and Facility Information

Applicant Name	<u>Old Dominion Freight Line Inc.</u>	Facility Name	<u>Old Dominion Freight Line Inc.</u>
Applicant Address	<u>500 Old Dominion Way</u>	Facility Address	<u>20 Old Dominion Way</u>
Applicant Contact	<u>Thomasville, NC 27360-8923</u>	Facility Contact	<u>Eighty Four, PA 15330-2928</u>
Applicant Phone	<u>(336) 822-1745</u>	Facility Phone	<u>Same as Applicant</u>
Applicant email	<u>joseph.fuhr@odfl.com</u>	Facility email	<u>Same as Applicant</u>
Client ID	<u>185421</u>	Site ID	<u>721337</u>
SIC Code	<u>4213</u>	Municipality	<u>North Strabane Township</u>
SIC Description	<u>Trans. & Utilities - Trucking, Except Local</u>	County	<u>Washington</u>
Date Application Received	<u>August 24, 2023</u>	EPA Waived?	<u>Yes</u>
Date Application Accepted		If No, Reason	
Purpose of Application	<u>NPDES Permit coverage renewal</u>		

Summary of Review

The Department received a timely renewal NPDES permit application from Old Dominion Freight Line, Inc. for their motor freight transportation terminal located in Nottingham Township, Washington County, on August 24, 2023. The Facility has a SIC Code of 4213 (Trucking, except local) and North American Industry Classification System Code of 484122 (General freight trucking, long-distance, less than truckload).

The facility has three (3) stormwater outfalls. The facility has no industrial process wastewater discharges to waters of the Commonwealth. Outfall 001 discharges water from the northern of the property which includes half of the freight terminal, office building roof, concrete paved roadway, asphalt paved yard, and a 15,000-gallon diesel fuel AST No. 1 Tank at the perimeter. Outfall 002 discharges water from the southern left half of the property which includes the other half of the freight terminal, office building roof, concrete paved roadway and employee parking lot. Outfall 003 discharges water from the office building, a portion of the employee parking area, and the paved entrance to the fenced yard. Outfalls 001, 002 and 003 discharge to an unnamed tributary of Little Chartiers Creek, designated as a high-quality, warm water fishery (HQ-WWF) stream per 25 PA Code Chapter 93.

On May 19, 2022, Old Dominion submitted an amendment application requesting the removal of Outfall 002 from the monitoring requirements outlined in the permit. The facility stated that modifications made to the property after the permit application was originally submitted have resulted in no industrial activities or material storage in the area draining to Outfall 002. Significant improvements include repaving the original asphalt pavement with concrete; installing perforated stormwater piping with gravel pack to treat runoff prior to discharge; and moving dumpsters out of the drainage area.

Approve	Deny	Signatures	Date
X		 Angela Rohrer / Environmental Engineering Specialist	June 25, 2024
X		 Michael E. Fifth, P.E. / Environmental Engineer Manager	June 25, 2024

Summary of Review

In 2021, Old Dominion commissioned an environmental consultant, Burns & McDonnell, to conduct a Pollutant Source Identification Study in an attempt to help determine the sources of the Constituents of Concern (COC).

To support the request to remove Outfall 002 from the monitoring requirements in the permit, samples were collected at Outfall 003 during the source identification study to compare results to those collected at Outfall 002. The 003 outfall was included in the study as a reference site, since no industrial activities are located in that drainage area.

- Outfall 002 had eight exceedances of benchmark standards over the time span that samples were collected, including for Chemical Oxygen Demand (COD); TSS; Total Nitrogen; Nitrate Nitrite as N; and Total Aluminum.
- Samples collected from Outfall 003 had seven exceedances of benchmark standards during wet weather events, including for COD; TSS; Total Aluminum; and Total Iron, during the study frame, even though there are no industrial operations draining to this outfall.

As part of the study, a regional assessment was conducted that indicated there are several industrial and non-industrial (e.g., un-vegetated agricultural land) areas adjacent to the facility that are potential sources of COCs at the facility through atmospheric deposition.

Atmospheric monitoring was conducted over the course of the 24-hour periods in late September 2021, with two high volume ambient samplers located on the south west and northeast corners of the Old Dominion facility. The results of the study indicated that atmospheric deposition from outside source is potentially a large contributor of aluminum, iron, nitrate, and particulate matter to stormwater runoff from the Facility.

As a result, monitoring requirements for Outfall 002 were removed and Outfall 001 was classified as representative of Outfall 002.

Following a technical review of the current application, the Department believes that Outfall 002 should still be subject to the effluent limitations established in 2019 based on the following reasons:

- Industrial activities, including material handling, loading, unloading, and transportation, continue to operate within the drainage area of Outfall 002.
- Since Outfall 001 is not in compliance, it can't be considered a representative Outfall for Outfall 002. Moreover, the environmental concern and issues occurring at Outfall 001 are likely to be replicated at Outfall 002, highlighting the need for continued monitoring and effluent limitations.
- After analysis of historical data, the discharges from Outfall 002 didn't demonstrate non-degrading characteristics.

Due to the multiple exceedances of the effluent limitations, a meeting between Old Dominion and the DEP was held on February 7, 2024. The Department recommended that Old Dominion conduct an evaluation to identify the source of pollutant concentrations, improve the housekeeping practices and consider a wet pavement cleaning. The facility has submitted a report detailing the Best Management Practices (BMPs) currently in place and outlining the following additional measures slated for implementation in May 2024.

- The chain link and electric fences bordering the north side of the property will be temporarily removed.
- Surficial soil (approximately 6 to 12 inches depth) from the north pavement edge to the swale will be excavated and replaced with geotextile fabric and rock.
- Existing vegetation from the entire length of the swale will be removed.
- The upper 6 to 12 inches of soil in the swale will be removed and disposed offsite.
- New, clean soil will be imported and placed along the swale to bring back to grade.
- Geotextile fabric and rock will be installed along the entire length of the swale.
- Several replacement check dams consisting of rock will be constructed at intervals along the swale.
- The sample collection point at Outfall 001 will be reconstructed, as necessary.
- An interceptor trench will be installed adjacent and parallel to the north edge of the swale. The purpose of the trench is to intercept non-industrial, upgradient, offsite stormwater runoff flowing from the hillside north of the developed part of the facility into the swale leading to Outfall 001. Perforated, geotextile-wrapped HDPE pipe, surrounded by 1"

Summary of Review

diameter stone, will be installed in the interceptor trench. Stormwater entering the interceptor trench will gravity drain through piping to the west and discharge downstream from Outfall 001.

- Passive filtration pollutant removal socks will be placed along the entire length of the north pavement edge, as well as at check dam locations and at the sample collection point.

The Department issued a Consent Assessment of Civil Penalty (CACP) on September 20, 2022 due to the multiple exceedances of the effluent limitations from October 2019 to December 2021. Old Dominion Freight Line has exceeded the effluent limitations 63 times after December 2021. See Attachment A. Operations Compliance Check Summary Report.

The facility was last inspected by Anthony Ascolillo on September 26, 2023, with one violation noted: 25 Pa. Code 92A.44 Violation of effluent limits of Part A permit. This violation was resolved on January 11, 2024.

During the site inspection it was requested to monitor sheet flow within the vicinity of the light pole near the former Outfall 002 drainage area and if stormwater collects within this area an outfall designation may be needed. The facility verified that stormwater does collect there, and at least once while observing over the last several months, water ran off under the fence in that area. A recent infiltration test conducted on the west side of the property revealed that infiltrating the sheet flow is not a viable option. As a result, the facility is developing a plan for a grassy swale/berm to be constructed parallel to the western fence line, the plan is to intercept that flow and direct it to the southwest corner where it will discharge at Outfall 002.

The issuance of a final permit is conditional upon resolution of ongoing effluent limit violations.

Public Participation

DEP will publish notice of the receipt of the NPDES permit application and a tentative decision to issue the individual NPDES permit in the *Pennsylvania Bulletin* in accordance with 25 Pa. Code § 92a.82. Upon publication in the *Pennsylvania Bulletin*, DEP will accept written comments from interested persons for a 30-day period (which may be extended for one additional 15-day period at DEP's discretion), which will be considered in making a final decision on the application. Any person may request or petition for a public hearing with respect to the application. A public hearing may be held if DEP determines that there is significant public interest in holding a hearing. If a hearing is held, notice of the hearing will be published in the *Pennsylvania Bulletin* at least 30 days prior to the hearing and in at least one newspaper of general circulation within the geographical area of the discharge.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0
Latitude	40° 11' 22.54"	Longitude	-80° 08' 58.23"
Quad Name	Washington East	Quad Code	1704
Wastewater Description: Stormwater			
Receiving Waters	Unnamed Tributary to Little Chartiers Creek (HQ-WWF)	Stream Code	36991
NHD Com ID	99694382	RMI	0.3
Drainage Area	0.69 square mile	Yield (cfs/mi ²)	0.007
Q ₇₋₁₀ Flow (cfs)	0.00523	Q ₇₋₁₀ Basis	USGS StreamStats
Elevation (ft)	1068	Slope (ft/ft)	0.0001
Watershed No.	20-F	Chapter 93 Class.	HQ-WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining Use(s)	Chartiers/ Little Chartiers Creek TMDL for PCB and Chlordane.	
Cause(s) of Impairment	Pathogens	Chartiers Creek Watershed TMDLs for Acid Mine Drainage	
Source(s) of Impairment	Unknown	Name	
TMDL Status	Final, Final		
Nearest Downstream Public Water Supply Intake		West View Municipal Authority (40 MGD)	
PWS Waters	Ohio River	Flow at Intake (cfs)	4,730
PWS RMI	975.1	Distance from Outfall (mi)	41.45

Other Comments:

Discharge, Receiving Waters and Water Supply Information			
Outfall No.	002	Design Flow (MGD)	0
Latitude	40° 11' 17.09"	Longitude	-80° 08' 59.60"
Quad Name	Washington East	Quad Code	1704
Wastewater Description: Stormwater			
Receiving Waters	Unnamed Tributary of Chartiers Creek (HQ-WWF)	Stream Code	36991
NHD Com ID	99694382	RMI	0.2
Drainage Area	0.69 square mile	Yield (cfs/mi ²)	0.007
Q ₇₋₁₀ Flow (cfs)	0.00523	Q ₇₋₁₀ Basis	USGS StreamStats
Elevation (ft)	1068	Slope (ft/ft)	0.0001
Watershed No.	20-F	Chapter 93 Class.	HQ-WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining Use(s)	Chartiers/ Little Chartiers Creek TMDL for PCB and Chlordane.	
Cause(s) of Impairment	Pathogens	Chartiers Creek Watershed TMDLs for Acid Mine Drainage	
Source(s) of Impairment	Unknown	Name	
TMDL Status	Final, Final		
Nearest Downstream Public Water Supply Intake		West View Municipal Authority (40 MGD)	
PWS Waters	Ohio River	Flow at Intake (cfs)	4,730
PWS RMI	975.1	Distance from Outfall (mi)	41.35

Other Comments:

The removal of monitoring requirements for Outfall 002 on May 17, 2023 was an oversight that must be rectified to assure non-degrading conditions.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	003	Design Flow (MGD)	0
Latitude	40° 11' 19.89"	Longitude	-80° 08' 49.97"
Quad Name	Washington East	Quad Code	1704
Wastewater Description:	Stormwater		
Receiving Waters	Unnamed Tributary of Chartiers Creek (HQ-WWF)	Stream Code	36991
NHD Com ID	99694382	RMI	0.26
Drainage Area	0.69 square mile	Yield (cfs/mi ²)	0.007
Q ₇₋₁₀ Flow (cfs)	0.00523	Q ₇₋₁₀ Basis	USGS StreamStats
Elevation (ft)	1068	Slope (ft/ft)	0.0001
Watershed No.	20-F	Chapter 93 Class.	HQ-WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Attaining Use(s)		
Cause(s) of Impairment	Pathogens		
Source(s) of Impairment	Unknown	Chartiers/ Little Chartiers Creek TMDL for PCB and Chlordane. Chartiers Creek Watershed TMDLs for Acid Mine Drainage	
TMDL Status	Final, Final	Name	
Nearest Downstream Public Water Supply Intake		West View Municipal Authority (40 MGD)	
PWS Waters	Ohio River	Flow at Intake (cfs)	4,730
PWS RMI	975.1	Distance from Outfall (mi)	41.41

Other Comments:

Outfall 003 discharges stormwater runoff exclusively from the office building, a portion of the employee parking area, and the paved entrance to the fenced yard. No monitoring is required.

Development of Effluent Limitations

Outfall No. 001
Latitude 40° 11' 22.54"

Design Flow (MGD) 0
Longitude -80° 08' 58.23"

Wastewater Description: Stormwater associated with industrial activity

Outfall No. 002
Latitude 40° 11' 17.09"

Design Flow (MGD) 0
Longitude -80° 08' 59.60"

Wastewater Description: Stormwater associated with industrial activity

Technology-Based Limitations

Stormwater Technology Limits

Outfalls 001 and 002 will be subject to PAG-03 General Stormwater Permit conditions as a minimum requirement because these outfalls discharge stormwater associated with industrial activity. The SIC code for the site is 4213 and the corresponding appendix of the PAG-03 that would apply to the facility is Appendix L. The reporting requirements applicable to stormwater discharges are shown in Table 1 below. Along with the monitoring requirements, sector specific BMPs included in Appendix L of the PAG-03 will also be included in Part C of the Draft Permit.

Table 1: PAG-03 Appendix (L) Monitoring Requirements

Parameter	Max Daily Concentration	Measurement Frequency	Sample Type
Total Nitrogen (mg/L)	Monitor and Report	1/6 Months	Calculated
Total Phosphorus (mg/L)	Monitor and Report	1/6 Months	Grab
Total Suspended Solids (TSS)	Monitor and Report	1/6 Months	Grab
Oil and Grease (mg/L)	Monitor and Report	1/6 Months	Grab

Water Quality-Based Limitations

Stormwater WQBELs

Water quality analyses are typically performed under low-flow (Q7-10) conditions. Stormwater discharges occur at variable rates and frequencies but not however during Q7-10 conditions. Since the discharges from Outfall 001 and 002 are composed entirely of stormwater associated with industrial activity, a formal water quality analysis cannot be accurately conducted. Accordingly, water quality-based effluent limitations based on water quality analyses are not proposed.

Anti-Degradation

Antidegradation regulations under Chapter 93.4c(a)(i)(i) require discharges to protect the existing use of receiving waters. Chapter 93.4c(b) requires dischargers to consider non-discharge alternatives, public participation and social/economic justification when proposing new, additional or increased discharges to high quality or exceptional value streams. Existing use protection required under Chapter 93.4c(a)(i)(i) is ensured for discharges to high quality streams imposing the most stringent of technology-based, water quality based and non-degrading effluent limitations. In this case, non-degradation effluent limitations are applicable because the discharge is stormwater. Because the discharge is stormwater runoff, the Department can ensure compliance with the anti-degradation policy through the imposition of No Exposure benchmark values. These values reflect the conditions present at a well-maintained facility with little to no industrial stormwater impacts. The goal for the permittee is to discharge stormwater runoff with pollutant loadings that are consistently below these benchmark values; doing this shows that the discharges are uncontaminated stormwater and will maintain and protect the existing quality of the receiving waters.

After reviewing the DMR, the discharges from the facility have not been consistently below the benchmark values, therefore, to ensure that the discharge does not degrade the stream, the no exposure benchmark values will be imposed as effluent limitations.

Total Maximum Daily Load (TMDL)

Discharges from Old Dominion Freight Line are located within the Chartiers Creek Watershed for which the Department has developed two TMDLs. The watershed is impacted by metals pollution (aluminum, iron & manganese) from abandoned mine drainage, sedimentation, low pH, PCBs and chlordane.

Section 303(d) of the Clean Water Act and the U.S. Environmental Protection Agency's Water Quality Planning and Management Regulations (codified at Title 40 of the Code of Federal Regulations Part 130) require states to develop a TMDL for impaired water bodies. A TMDL establishes the amount of a pollutant that a water body can assimilate without exceeding the water quality criteria for that pollutant. TMDLs provide the scientific basis for a state to establish water quality-based controls to reduce pollution from both point and non-point sources in order to restore and maintain the quality of the state's water resources (USEPA 1991). Stream reaches within the Chartiers Creek watershed are included in the state's 2008 Section 303(d) list because of various impairments, including PCBs, chlordane, metals and pH. The TMDLs include consideration for each tributary within their target watersheds and relevant impairment sources. Stream data is then used to calculate minimum pollutant reductions that are necessary to attain water quality criteria levels. Target concentrations published in the TMDLs are based on established water quality criteria of 0.750 mg/L total recoverable aluminum, 1.5 mg/L total recoverable iron based on a 30-day average and 1.0 mg/L total recoverable manganese. The reduction needed to meet the minimum water quality standards is then divided between each known point and non-point pollutant source in the form of a watershed allocation. TMDLs prescribe allocations that minimally achieve water quality criteria (i.e., 100 percent use of a stream's assimilative capacity).

The flow from this facility is outside the TMDL designated segments, and therefore, the PCB and Chlordane TMDL does not apply to the facility.

The Chartiers Creek Watershed TMDL was finalized on April 9, 2003 and regulates the discharge of aluminum, iron, and manganese primarily from abandoned mine discharges within the Chartiers Creek Watershed. The TMDL does not include a specific wasteload allocation for Old Dominion Freight Line. Allocations were provided only for abandoned mine discharges, active mining operations, and one industrial wastewater generator (Allegheny Ludlum Houston Plant). Old Dominion discharges to the Unnamed Tributary (UNT) 36991 of Little Chartiers Creek and flows into the Unnamed Tributary 36989 to Little Chartiers Creek to ultimately drain into Little Chartiers Creek. The UNT 36989 is listed in the TMDL as impaired by metals

Calculations used in the development of water quality-based effluent limitations are provided below:

Aluminum: The specific water quality criterion for aluminum is expressed as an acute or maximum daily in 25 Pa. Code Chapter 93. Discharges of aluminum may only be authorized to the extent that they will not cause or contribute to any violation of the water quality standards. Therefore, the water quality criterion for aluminum (0.75 mg/L) is imposed as a maximum daily effluent limit (MDL). Whenever the most stringent criterion is selected for the MDL, the Department should also impose an average monthly limit (AML) and instantaneous maximum limit (IMAX) if applicable. The imposition of an AML that is more stringent than the MDL is typically not appropriate because the water quality concerns have already been fully addressed by setting the MDL equal to the most stringent applicable criterion. Therefore, where the MDL is set at the value of the most stringent applicable criterion, the AML should be set equal to the MDL. In Old Dominion's case, since the sampling frequency will be set to once per month, only the MDL will be imposed at Outfalls 001 and 002.

Iron: The specific water quality criterion for iron is expressed as a 30-day average of 1.5 mg/L in 25 Pa. Code § 93.7(a). The criterion is based on the protection of aquatic life and is associated with chronic exposure. There are no other criteria for total iron. Since the duration of the total iron criterion coincides with the 30-day duration of the AML, the 30-day average criterion for total iron is set equal to the AML.

In addition, because the total iron criterion is associated with chronic exposure, the MDL (representing acute exposure) and the IMAX may be made less stringent according to established procedures described in Section III.C.3.h on Page 13 of the Water Quality Toxics Management Strategy (Doc. # 361-0100-003). These procedures state that a MDL and IMAX may be set at 2 times and 2.5 times the AML, respectively, or there is the option to use multipliers from EPA's Technical Support Document for Water Quality-based Toxics Control, if data are available to support the use of alternative multipliers. In Old Dominion's case, imposition of MDL will be set equal to 3.0 mg/L to ensure that water quality concerns are fully addressed at Outfalls 001 and 002.

Manganese: The specific water quality criterion for manganese is expressed as an acute or maximum daily of 1.0 mg/L in 25 Pa. Code § 93.7(a). The criterion is based on the protection of human health and is associated with chronic exposure associated with a potable water supply (PWS). In Old Dominion's case, the sampling frequency will be set to once per month, and therefore, the imposition of MDL will be set equal to 1.0 mg/L.

Anti-Backsliding

Effluent limitations in the site's current permit can be used pursuant to EPA's anti-backsliding regulation, 40 CFR 122.44(l) and are displayed in Table 2 below.

- The total Aluminum, Total Iron and Total Manganese limitations were previously imposed due to the discharging to a stream within the Chartiers Creek Watershed for which the Department has developed a Total Maximum Daily Loads (TMDL).
- The TSS, Oil and Grease, BOD₅, COD, Total Nitrogen and Total Phosphorus limitations were imposed because the facility discharges to an UNT designated in the 25 PA Code Chapter 93 as a High Quality – Cold Water Fishes (HQ-CFW), therefore, the "no-exposure" benchmark values were established as effluent limitations.

Table 2. Current Effluent Limitation at Outfall 001

Parameters	Mass (lb/day)		Concentration (mg/L)			Monitoring Requirements		
	Average Monthly	Daily Maximum	Instant. Minimum	Average Monthly	Daily Maximum	Instant. Maximum	Frequency	Sample Type
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	1/month	Estimate
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/month	Grab
Total Suspended Solids (mg/L)	XXX	XXX	XXX	XXX	30.0	XXX	1/month	Grab
Oil and Grease (mg/L)	XXX	XXX	XXX	XXX	5.0	XXX	1/month	Grab
BOD ₅ (mg/L)	XXX	XXX	XXX	XXX	10.0	XXX	1/month	Grab
COD (mg/L)	XXX	XXX	XXX	XXX	30.0	XXX	1/month	Grab
Total Nitrogen (mg/L)	XXX	XXX	XXX	XXX	2.0	XXX	1/month	Grab
Total Phosphorus (mg/L)	XXX	XXX	XXX	XXX	1.0	XXX	1/month	Grab
Total Iron (mg/L)	XXX	XXX	XXX	XXX	3.0	XXX	1/month	Grab
Total Aluminum (mg/L)	XXX	XXX	XXX	XXX	0.75	XXX	1/month	Grab
Total Manganese (mg/L)	XXX	XXX	XXX	XXX	1.0	XXX	1/month	Grab

Proposed Effluent Limitations and Monitoring Requirements

The proposed effluent monitoring requirements for Outfalls 001 and 002 are displayed in Table 3 below, they are the most stringent values from the above effluent limitation development.

The monitoring frequency of 1/month was imposed in the previous permit. However, to reflect existing permitting practices, this has been changed and the monitoring frequency of 1/quarter will be imposed.

Table 3: Proposed Effluent Limitations at Outfalls 001 and 002

Parameters	Mass (lb/day)		Concentration (mg/L)			Monitoring Requirements		
	Average Monthly	Daily Maximum	Instant. Minimum	Average Monthly	Daily Maximum	Instant. Maximum	Frequency	Sample Type
Flow (MGD)	Report	Report	XXX	XXX	XXX	XXX	1/quarter	Estimate
pH (S.U.)	XXX	XXX	6.0	XXX	XXX	9.0	1/quarter	Grab
Total Suspended Solids (mg/L)	XXX	XXX	XXX	XXX	30.0	XXX	1/quarter	Grab
Oil and Grease (mg/L)	XXX	XXX	XXX	XXX	5.0	XXX	1/quarter	Grab
BOD ₅ (mg/L)	XXX	XXX	XXX	XXX	10.0	XXX	1/quarter	Grab
COD (mg/L)	XXX	XXX	XXX	XXX	30.0	XXX	1/quarter	Grab
Total Nitrogen (mg/L)	XXX	XXX	XXX	XXX	2.0	XXX	1/quarter	Grab
Total Phosphorus (mg/L)	XXX	XXX	XXX	XXX	1.0	XXX	1/quarter	Grab
Total Iron (mg/L)	XXX	XXX	XXX	XXX	3.0	XXX	1/quarter	Grab
Total Aluminum (mg/L)	XXX	XXX	XXX	XXX	0.75	XXX	1/quarter	Grab
Total Manganese (mg/L)	XXX	XXX	XXX	XXX	1.0	XXX	1/quarter	Grab

Tools and References Used to Develop Permit	
<input type="checkbox"/>	WQM for Windows Model (see Attachment)
<input type="checkbox"/>	Toxics Management Spreadsheet (see Attachment)
<input type="checkbox"/>	TRC Model Spreadsheet (see Attachment)
<input type="checkbox"/>	Temperature Model Spreadsheet (see Attachment)
<input type="checkbox"/>	Water Quality Toxics Management Strategy, 361-0100-003, 4/06.
<input type="checkbox"/>	Technical Guidance for the Development and Specification of Effluent Limitations, 386-0400-001, 10/97.
<input type="checkbox"/>	Policy for Permitting Surface Water Diversions, 386-2000-019, 3/98.
<input type="checkbox"/>	Policy for Conducting Technical Reviews of Minor NPDES Renewal Applications, 386-2000-018, 11/96.
<input type="checkbox"/>	Technology-Based Control Requirements for Water Treatment Plant Wastes, 386-2183-001, 10/97.
<input type="checkbox"/>	Technical Guidance for Development of NPDES Permit Requirements Steam Electric Industry, 386-2183-002, 12/97.
<input type="checkbox"/>	Pennsylvania CSO Policy, 386-2000-002, 9/08.
<input type="checkbox"/>	Water Quality Antidegradation Implementation Guidance, 391-0300-002, 11/03.
<input type="checkbox"/>	Implementation Guidance Evaluation & Process Thermal Discharge (316(a)) Federal Water Pollution Act, 386-2000-008, 4/97.
<input type="checkbox"/>	Determining Water Quality-Based Effluent Limits, 386-2000-004, 12/97.
<input type="checkbox"/>	Implementation Guidance Design Conditions, 386-2000-007, 9/97.
<input type="checkbox"/>	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.
<input type="checkbox"/>	Interim Method for the Sampling and Analysis of Osmotic Pressure on Streams, Brines, and Industrial Discharges, 386-2000-012, 10/1997.
<input type="checkbox"/>	Implementation Guidance for Section 95.6 Management of Point Source Phosphorus Discharges to Lakes, Ponds, and Impoundments, 386-2000-009, 3/99.
<input type="checkbox"/>	Technical Reference Guide (TRG) PENTOXSD for Windows, PA Single Discharge Wasteload Allocation Program for Toxics, Version 2.0, 386-2000-015, 5/2004.
<input type="checkbox"/>	Implementation Guidance for Section 93.7 Ammonia Criteria, 386-2000-022, 11/97.
<input type="checkbox"/>	Policy and Procedure for Evaluating Wastewater Discharges to Intermittent and Ephemeral Streams, Drainage Channels and Swales, and Storm Sewers, 386-2000-013, 4/2008.
<input type="checkbox"/>	Implementation Guidance Total Residual Chlorine (TRC) Regulation, 386-2000-011, 11/1994.
<input type="checkbox"/>	Implementation Guidance for Temperature Criteria, 386-2000-001, 4/09.
<input type="checkbox"/>	Implementation Guidance for Section 95.9 Phosphorus Discharges to Free Flowing Streams, 386-2000-021, 10/97.
<input type="checkbox"/>	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.
<input type="checkbox"/>	Field Data Collection and Evaluation Protocol for Determining Stream and Point Source Discharge Design Hardness, 386-2000-005, 3/99.
<input type="checkbox"/>	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.
<input type="checkbox"/>	Design Stream Flows, 386-2000-003, 9/98.
<input type="checkbox"/>	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.
<input type="checkbox"/>	Evaluations of Phosphorus Discharges to Lakes, Ponds and Impoundments, 386-3200-001, 6/97.
<input type="checkbox"/>	Pennsylvania's Chesapeake Bay Tributary Strategy Implementation Plan for NPDES Permitting, 4/07.
<input type="checkbox"/>	SOP:
<input type="checkbox"/>	Other:

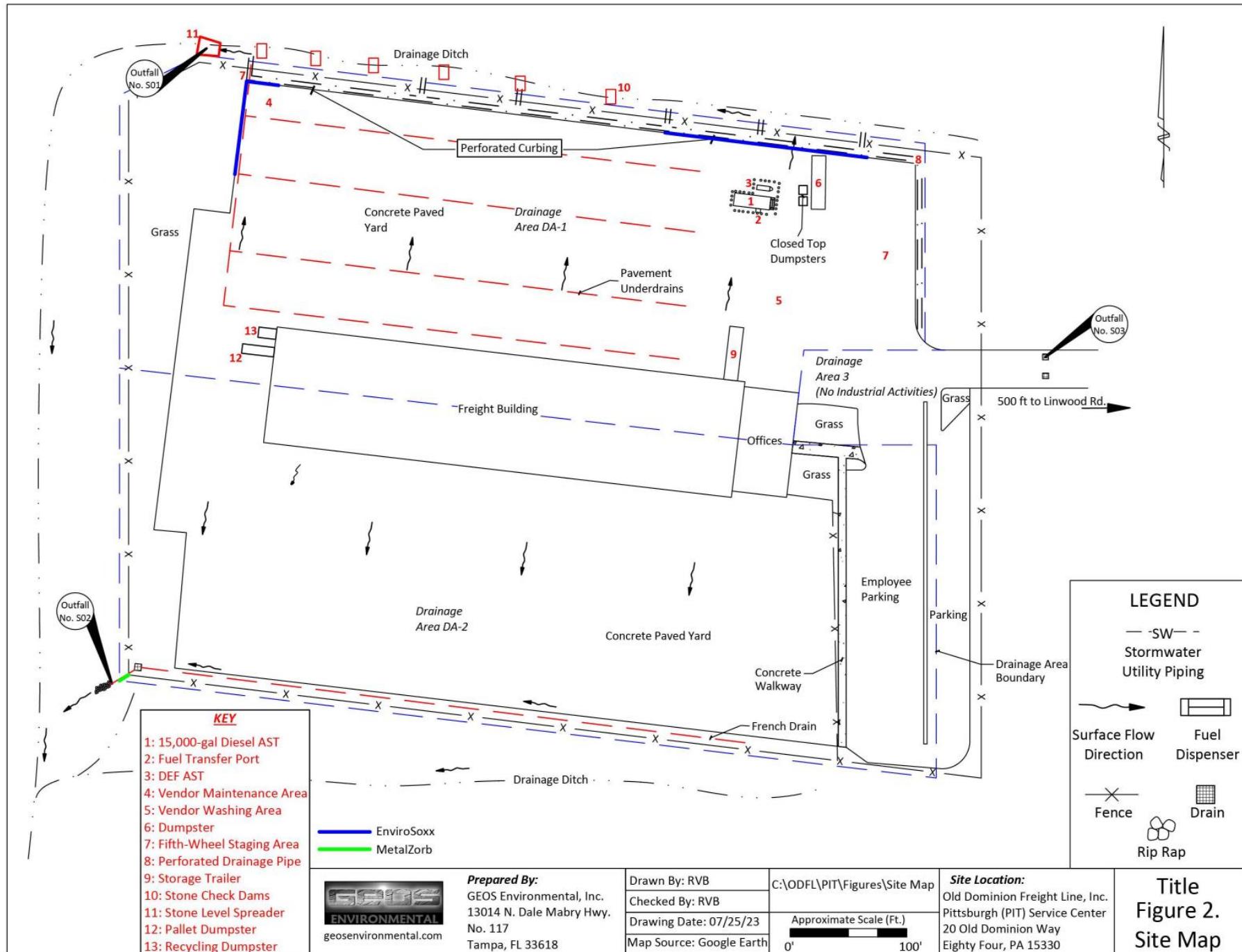
Attachments

Attachment A: Site Plan

Attachment B: Operations compliance check summary report

Attachment C: StreamStats Report

ATTACHMENT A. Site Plan



ATTACHMENT B.
Operations Compliance Check Summary Report

Operations Compliance Check Summary Report

Facility: Old Dominion Freight Line Inc

NPDES Permit No.: PAS806111

Compliance Review Period: 4/1/219-4/16/24

Inspection Summary:

INSPECTED DATE	INSP TYPE	AGENCY	INSPECTION RESULT DESC	INSPECTOR ID	INSPECTION COMMENT
09/26/2023	Follow-up Inspection	PA Dept of Environmental Protection	Violation(s) Noted	00789778	
08/02/2022	Routine/Partial Inspection	PA Dept of Environmental Protection	Administratively Closed	00789778	
04/26/2022	Administrative/File Review	PA Dept of Environmental Protection	Violation(s) Noted	00610195	
03/16/2021	Follow-up Inspection	PA Dept of Environmental Protection	No Violations Noted	00434771	Received and forwarded corrective action plan by facility consultant to eliminate stormwater effluent violations previously reported. Plan has goal of reducing TSS in effluent.
02/02/2021	Compliance Evaluation	PA Dept of Environmental Protection	Administratively Closed	00434771	Facility has CACP to settle effluent violations, asked to prevent ongoing effluent violations, by making operational changes.
12/09/2019	Compliance Evaluation	PA Dept of Environmental Protection	Violation(s) Noted	00692632	

Violation Summary:

VIOLATION DATE	VIOLATION TYPE	VIOLATION TYPE DESC	RESOLVED DATE	VIOLATION COMMENT
09/26/2023	92A.44	NPDES - Violation of effluent limits in Part A of permit	01/11/2024	
04/26/2022	92A.44	NPDES - Violation of effluent limits in Part A of permit	04/26/2022	
12/09/2019	92A.41(A)10A	NPDES - Failure to retain records required by the permit	12/09/2019	Sample records not available during inspection or within a week after request
12/09/2019	92A.41(A)12B	NPDES - Failure to submit monitoring report(s) or properly complete monitoring reports	12/09/2019	No DMRs for first few months of permit effective date until eDMR became effective.
12/09/2019	92A.41(A)12B	NPDES - Failure to submit monitoring report(s) or properly complete monitoring reports	12/09/2019	Incorrectly completed DMRs

12/09/2019	92A.41(A)8	NPDES - Failure to provide information or records required by the permit or otherwise needed to determine compliance	12/09/2019	
12/09/2019	92A.61(C)	NPDES - Failure to monitor pollutants as required by the NPDES permit	12/09/2019	No DMRs or records available to determine permittee collected samples in first few months of permit effective date.
12/09/2019	92A.44	NPDES - Violation of effluent limits in Part A of permit	12/09/2019	Upon receipt of permittees response with documents, effluent violations were noted.

Open Violations by Client ID:

No open violations for client ID 185421

Enforcement Summary:

ENF ID	ENF TYPE	ENF TYPE DESC	EXECUTED DATE	VIOLATIONS	AMOUNT RECEIVED	ENF FINAL STATUS	ENF CLOSED DATE
403079	CACP	Consent Assessment of Civil Penalty	04/20/2022	92A.44	\$25,000.00	Comply/Closed	04/26/2022
381922	NOV	Notice of Violation	12/17/2019	92A.41(A)10A; 92A.41(A)12B; 92A.41(A)8; 92A.44; 92A.61(C)		Comply/Closed	06/30/2022
422147	NOV	Notice of Violation	11/21/2023	92A.44		Administrative Close Out	4/16/2024

DMR Violation Summary:

MON PD	OUTFALL	PARAMETER	SAMPLE	PERMIT	UNIT	STAT BASE CODE
Mar-24	1	Total Nitrogen	2.7	2	mg/L	Daily Maximum
Feb-24	1	Aluminum, Total	1.24	0.75	mg/L	Daily Maximum
Feb-24	1	Biochemical Oxygen Demand (BOD5)	18.8	10	mg/L	Daily Maximum
Feb-24	1	Chemical Oxygen Demand (COD)	80.3	30	mg/L	Daily Maximum
Feb-24	1	Total Nitrogen	5	2	mg/L	Daily Maximum
Feb-24	1	Total Suspended Solids	93.3	30	mg/L	Daily Maximum
Jan-24	1	Total Nitrogen	4.9	2	mg/L	Daily Maximum
Nov-23	1	Total Nitrogen	8	2	mg/L	Daily Maximum
Oct-23	1	Oil and Grease	< 5.2	5	mg/L	Daily Maximum
Oct-23	1	Total Nitrogen	8	2	mg/L	Daily Maximum
Oct-23	1	Total Suspended Solids	62.3	30	mg/L	Daily Maximum
Sep-23	1	Total Nitrogen	3.9	2	mg/L	Daily Maximum
Aug-23	1	Total Nitrogen	12	2	mg/L	Daily Maximum
Jul-23	1	Total Nitrogen	10	2	mg/L	Daily Maximum
Jun-23	1	Total Nitrogen	5.9	2	mg/L	Daily Maximum
May-23	1	Biochemical Oxygen Demand (BOD5)	32	10	mg/L	Daily Maximum
May-23	1	Manganese, Total	2.2	1	mg/L	Daily Maximum
May-23	1	Total Nitrogen	16	2	mg/L	Daily Maximum

<u>MON</u>	<u>PD</u>	<u>OUTFALL</u>	<u>PARAMETER</u>	<u>SAMPLE</u>	<u>PERMIT</u>	<u>UNIT</u>	<u>STAT</u>	<u>BASE</u>	<u>CODE</u>
Apr-23	1		Total Nitrogen	11	2	mg/L			Daily Maximum
			Biochemical Oxygen Demand (BOD5)						
Mar-23	1			12.6	10	mg/L			Daily Maximum
Mar-23	1		Chemical Oxygen Demand (COD)	33.5	30	mg/L			Daily Maximum
			Biochemical Oxygen Demand (BOD5)						
Feb-23	1			21.7	10	mg/L			Daily Maximum
Feb-23	1		Chemical Oxygen Demand (COD)	67.7	30	mg/L			Daily Maximum
Jan-23	1		Total Nitrogen	4.1	2	mg/L			Daily Maximum
Dec-22	2		pH	9.6	9	S.U.			Instantaneous Maximum
			Biochemical Oxygen Demand (BOD5)						
Oct-22	1			63.1	10	mg/L			Daily Maximum
Oct-22	1		Chemical Oxygen Demand (COD)	111	30	mg/L			Daily Maximum
Aug-22	1		Total Nitrogen	3.7	2	mg/L			Daily Maximum
Aug-22	2		Total Nitrogen	2.1	2	mg/L			Daily Maximum
Jul-22	2		pH	5.66	6	S.U.			Daily Minimum
Jun-22	1		Chemical Oxygen Demand (COD)	48.7	30	mg/L			Daily Maximum
Jun-22	1		Total Nitrogen	6.2	2	mg/L			Daily Maximum
Jun-22	1		Total Suspended Solids	35	30	mg/L			Daily Maximum
Jun-22	2		Aluminum, Total	1.63	0.75	mg/L			Daily Maximum
			Biochemical Oxygen Demand (BOD5)						
Jun-22	2			17.8	10	mg/L			Daily Maximum
Jun-22	2		Chemical Oxygen Demand (COD)	73.7	30	mg/L			Daily Maximum
Jun-22	2		Total Nitrogen	4.4	2	mg/L			Daily Maximum
Jun-22	2		Total Phosphorus	1.1	1	mg/L			Daily Maximum
Jun-22	2		Total Suspended Solids	78	30	mg/L			Daily Maximum
May-22	1		Total Nitrogen	2.9	2	mg/L			Daily Maximum
May-22	2		Aluminum, Total	1.38	0.75	mg/L			Daily Maximum
May-22	2		Chemical Oxygen Demand (COD)	142	30	mg/L			Daily Maximum
May-22	2		pH	5.9	6	S.U.			Daily Minimum
May-22	2		Total Nitrogen	2.9	2	mg/L			Daily Maximum
Apr-22	1		Aluminum, Total	44.6	0.75	mg/L			Daily Maximum
Apr-22	1		Chemical Oxygen Demand (COD)	101	30	mg/L			Daily Maximum
Apr-22	1		Iron, Total	54.6	3	mg/L			Daily Maximum
Apr-22	1		Manganese, Total	1.5	1	mg/L			Daily Maximum
Apr-22	1		Oil and Grease	< 5.6	5	mg/L			Daily Maximum
Apr-22	1		Total Nitrogen	3.6	2	mg/L			Daily Maximum
Apr-22	1		Total Suspended Solids	236	30	mg/L			Daily Maximum
Apr-22	2		Chemical Oxygen Demand (COD)	48.7	30	mg/L			Daily Maximum
Apr-22	2		Total Nitrogen	2.3	2	mg/L			Daily Maximum
Mar-22	1		Chemical Oxygen Demand (COD)	57.9	30	mg/L			Daily Maximum
Mar-22	1		Total Nitrogen	12.1	2	mg/L			Daily Maximum
Mar-22	2		Chemical Oxygen Demand (COD)	38.2	30	mg/L			Daily Maximum
Mar-22	2		Total Nitrogen	3.5	2	mg/L			Daily Maximum
			Biochemical Oxygen Demand (BOD5)						
Feb-22	1			24.5	10	mg/L			Daily Maximum
Feb-22	1		Chemical Oxygen Demand (COD)	70.5	30	mg/L			Daily Maximum
Feb-22	1		Total Nitrogen	6.1	2	mg/L			Daily Maximum

<u>MON</u>	<u>PD</u>	<u>OUTFALL</u>	<u>PARAMETER</u>	<u>SAMPLE</u>	<u>PERMIT</u>	<u>UNIT</u>	<u>STAT</u>	<u>BASE</u>	<u>CODE</u>
			Biochemical Oxygen Demand (BOD5)	10.2	10	mg/L			Daily Maximum
Feb-22	2		Chemical Oxygen Demand (COD)	75.3	30	mg/L			Daily Maximum
Feb-22	2		pH	5.3	6	S.U.			Daily Minimum
Dec-21	1		Aluminum, Total	0.82	0.75	mg/L			Daily Maximum
Dec-21	1		pH	5.87	6	S.U.			Daily Minimum
Dec-21	1		Total Suspended Solids	54	30	mg/L			Daily Maximum
Nov-21	2		pH	9.24	9	S.U.			Instantaneous Maximum
Oct-21	1		Oil and Grease	< 5.1	5	mg/L			Daily Maximum
Oct-21	1		Total Nitrogen	9.5	2	mg/L			Daily Maximum
Oct-21	2		Total Nitrogen	2.5	2	mg/L			Daily Maximum
Sep-21	2		Aluminum, Total	1.1	0.75	mg/L			Daily Maximum
Jul-21	1		Aluminum, Total	1.41	0.75	mg/L			Daily Maximum
Jul-21	1		Chemical Oxygen Demand (COD)	40.8	30	mg/L			Daily Maximum
Jul-21	1		Total Nitrogen	4	2	mg/L			Daily Maximum
Jun-21	1		Aluminum, Total	0.94	0.75	mg/L			Daily Maximum
Jun-21	1		Total Nitrogen	2.55	2	mg/L			Daily Maximum
Jun-21	2		Aluminum, Total	1.14	0.75	mg/L			Daily Maximum
Jun-21	2		Total Nitrogen	2.65	2	mg/L			Daily Maximum
May-21	1		Aluminum, Total	0.94	0.75	mg/L			Daily Maximum
			Biochemical Oxygen Demand (BOD5)	12	10	mg/L			Daily Maximum
May-21	1		Total Nitrogen	70	2	mg/L			Daily Maximum
May-21	2		Total Nitrogen	4	2	mg/L			Daily Maximum
			Biochemical Oxygen Demand (BOD5)	12	10	mg/L			Daily Maximum
Apr-21	1		Total Nitrogen	6.7	2	mg/L			Daily Maximum
Apr-21	2		Total Nitrogen	5.6	2	mg/L			Daily Maximum
Mar-21	1		Total Nitrogen	2.3	2	mg/L			Daily Maximum
Mar-21	2		Total Nitrogen	2.1	2	mg/L			Daily Maximum
Feb-21	1		Chemical Oxygen Demand (COD)	48	30	mg/L			Daily Maximum
Feb-21	2		Chemical Oxygen Demand (COD)	69	30	mg/L			Daily Maximum
Jan-21	1		Chemical Oxygen Demand (COD)	110	30	mg/L			Daily Maximum
Jan-21	1		Total Nitrogen	3.6	2	mg/L			Daily Maximum
Jan-21	2		Aluminum, Total	0.92	0.75	mg/L			Daily Maximum
Jan-21	2		Chemical Oxygen Demand (COD)	53	30	mg/L			Daily Maximum
Jan-21	2		Total Nitrogen	4.6	2	mg/L			Daily Maximum
			Biochemical Oxygen Demand (BOD5)	14	10	mg/L			Daily Maximum
Dec-20	1		Chemical Oxygen Demand (COD)	40	30	mg/L			Daily Maximum
Dec-20	1		pH	9.24	9	S.U.			Instantaneous Maximum
Dec-20	1		Total Nitrogen	2.6	2	mg/L			Daily Maximum
Dec-20	2		Aluminum, Total	1.1	0.75	mg/L			Daily Maximum
Dec-20	2		pH	9.11	9	S.U.			Instantaneous Maximum
Dec-20	2		Total Nitrogen	4.5	2	mg/L			Daily Maximum
Nov-20	1		Aluminum, Total	0.79	0.75	mg/L			Daily Maximum
Nov-20	1		Total Nitrogen	4	2	mg/L			Daily Maximum

<u>MON</u>	<u>PD</u>	<u>OUTFALL</u>	<u>PARAMETER</u>	<u>SAMPLE</u>	<u>PERMIT</u>	<u>UNIT</u>	<u>STAT</u>	<u>BASE</u>	<u>CODE</u>
Oct-20	1		Aluminum, Total	0.91	0.75	mg/L			Daily Maximum
Oct-20	1		Total Suspended Solids	45	30	mg/L			Daily Maximum
Oct-20	2		Aluminum, Total	1	0.75	mg/L			Daily Maximum
Oct-20	2		Total Nitrogen	5.6	2	mg/L			Daily Maximum
Sep-20	1		Total Nitrogen	3.6	2	mg/L			Daily Maximum
Sep-20	2		Total Nitrogen	6.4	2	mg/L			Daily Maximum
Aug-20	1		Aluminum, Total	0.94	0.75	mg/L			Daily Maximum
Aug-20	1		Total Nitrogen	2.3	2	mg/L			Daily Maximum
Aug-20	2		Aluminum, Total	1.7	0.75	mg/L			Daily Maximum
Aug-20	2		Total Nitrogen	2.9	2	mg/L			Daily Maximum
Jul-20	1		Aluminum, Total	7.9	0.75	mg/L			Daily Maximum
Jul-20	1		Iron, Total	6.3	3	mg/L			Daily Maximum
Jul-20	1		Total Nitrogen	3.3	2	mg/L			Daily Maximum
Jul-20	1		Total Suspended Solids	230	30	mg/L			Daily Maximum
Jul-20	2		Aluminum, Total	6.1	0.75	mg/L			Daily Maximum
Jul-20	2		Iron, Total	4.8	3	mg/L			Daily Maximum
Jul-20	2		Total Nitrogen	2.6	2	mg/L			Daily Maximum
Jul-20	2		Total Suspended Solids	95	30	mg/L			Daily Maximum
Jun-20	1		Aluminum, Total	1.4	0.75	mg/L			Daily Maximum
Jun-20	1		Total Nitrogen	3.4	2	mg/L			Daily Maximum
Jun-20	1		Total Suspended Solids	48	30	mg/L			Daily Maximum
Jun-20	2		Aluminum, Total	2.4	0.75	mg/L			Daily Maximum
Jun-20	2		Total Nitrogen	3.3	2	mg/L			Daily Maximum
Jun-20	2		Total Suspended Solids	41	30	mg/L			Daily Maximum
May-20	1		Aluminum, Total	1	0.75	mg/L			Daily Maximum
May-20	1		Total Nitrogen	5.2	2	mg/L			Daily Maximum
May-20	2		Aluminum, Total	2.1	0.75	mg/L			Daily Maximum
May-20	2		Total Nitrogen	5.4	2	mg/L			Daily Maximum
Apr-20	1		Aluminum, Total	3.1	0.75	mg/L			Daily Maximum
Apr-20	1		Iron, Total	3.4	3	mg/L			Daily Maximum
Apr-20	1		Total Nitrogen	5.4	2	mg/L			Daily Maximum
Apr-20	1		Total Suspended Solids	93	30	mg/L			Daily Maximum
Apr-20	2		Aluminum, Total	1.1	0.75	mg/L			Daily Maximum
Apr-20	2		Total Nitrogen	4.4	2	mg/L			Daily Maximum
Mar-20	1		Aluminum, Total	0.89	0.75	mg/L			Daily Maximum
Mar-20	1		Biochemical Oxygen Demand (BOD5)	35	10	mg/L			Daily Maximum
Mar-20	1		Chemical Oxygen Demand (COD)	77	30	mg/L			Daily Maximum
Mar-20	1		Total Nitrogen	5.8	2	mg/L			Daily Maximum
Mar-20	1		Total Suspended Solids	38	30	mg/L			Daily Maximum
Mar-20	2		Aluminum, Total	0.97	0.75	mg/L			Daily Maximum
Mar-20	2		Total Nitrogen	6	2	mg/L			Daily Maximum
Feb-20	1		Aluminum, Total	1.4	0.75	mg/L			Daily Maximum
Feb-20	1		pH	9.04	9	S.U.			Instantaneous Maximum
Feb-20	1		Total Nitrogen	19	2	mg/L			Daily Maximum
Feb-20	2		Aluminum, Total	0.97	0.75	mg/L			Daily Maximum

MON	PD	OUTFALL	PARAMETER	SAMPLE	PERMIT	UNIT	STAT	BASE	CODE
Feb-20	2		Chemical Oxygen Demand (COD)	150	30	mg/L			Daily Maximum
Feb-20	2		pH	9.3	9	S.U.			Instantaneous Maximum
Feb-20	2		Total Nitrogen	3.4	2	mg/L			Daily Maximum
Jan-20	1		Aluminum, Total	1.3	0.75	mg/L			Daily Maximum
Jan-20	1		Chemical Oxygen Demand (COD)	43	30	mg/L			Daily Maximum
Jan-20	1		Total Nitrogen	2.9	2	mg/L			Daily Maximum
Jan-20	1		Total Suspended Solids	34	30	mg/L			Daily Maximum
Jan-20	2		Aluminum, Total	1.4	0.75	mg/L			Daily Maximum
Jan-20	2		Total Nitrogen	2.6	2	mg/L			Daily Maximum
Dec-19	1		Total Nitrogen	5.1	2	mg/L			Daily Maximum
Dec-19	2		Total Nitrogen	2.8	2	mg/L			Daily Maximum
Nov-19	1		pH	9.27	9	S.U.			Instantaneous Maximum
Nov-19	1		Total Nitrogen	6.1	2	mg/L			Daily Maximum
Nov-19	2		pH	9.02	9	S.U.			Instantaneous Maximum
Nov-19	2		Total Nitrogen	3.8	2	mg/L			Daily Maximum
Oct-19	1		Aluminum, Total	2.2	0.75	mg/L			Daily Maximum
Oct-19	1		Total Nitrogen	3.7	2	mg/L			Daily Maximum
Oct-19	1		Total Suspended Solids	56	30	mg/L			Daily Maximum
Oct-19	2		Aluminum, Total	1	0.75	mg/L			Daily Maximum

Compliance Status: Facility continues to have ongoing exceedances. CACP to be pursued.

Completed by: Amanda Illar

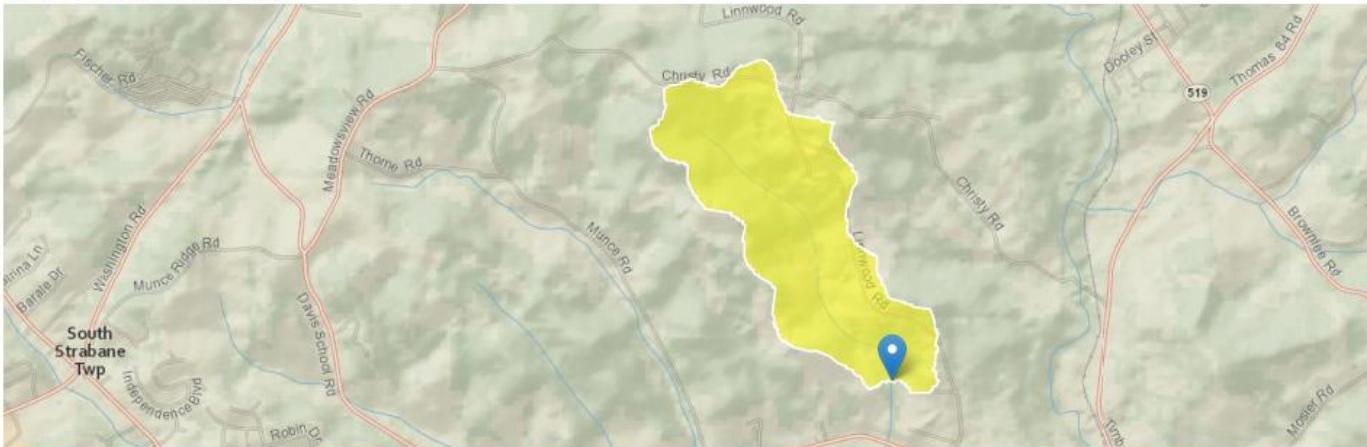
Completed date: 4/16/24

ATTACHMENT C

StreamStats Report

PAS806111 - Old Dominion Freight Line - StreamStats Report

Region ID: PA
Workspace ID: PA20240326180123606000
Clicked Point (Latitude, Longitude): 40.18948, -80.15061
Time: 2024-03-26 14:01:45 -0400



[Collapse All](#)

► Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
CARBON	Percentage of area of carbonate rock	0	percent
DRNAREA	Area that drains to a point on a stream	0.69	square miles
ELEV	Mean Basin Elevation	1212	feet
FOREST	Percentage of area covered by forest	57.5368	percent
PRECIP	Mean Annual Precipitation	39	inches
URBAN	Percentage of basin with urban development	14.5433	percent

► Low-Flow Statistics

Low-Flow Statistics Parameters [Low Flow Region 4]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.69	square miles	2.26	1400
ELEV	Mean Basin Elevation	1212	feet	1050	2580

Low-Flow Statistics Disclaimers [Low Flow Region 4]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Low-Flow Statistics Flow Report [Low Flow Region 4]

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.0186	ft^3/s
30 Day 2 Year Low Flow	0.0364	ft^3/s
7 Day 10 Year Low Flow	0.00523	ft^3/s
30 Day 10 Year Low Flow	0.0115	ft^3/s
90 Day 10 Year Low Flow	0.0241	ft^3/s

Low-Flow Statistics Citations

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