

## Section 2.8 – Characteristics of Aquatic Discharge Systems

---

WAC 463-60-185

Proposal – Characteristics of aquatic discharge systems.

*(1) Where discharges into a watercourse are involved, the applicant shall identify outfall configurations including: (a) Location(s) of water discharge pipeline or conveyance system, the outfall, and any associated dilution systems; (b) Average and maximum discharge rate; (c) Extent of the dilution zone if necessary; (d) Width of the receiving water body at the outfall location; (e) Dimension(s), and rated and maximum carrying capacity of the water discharge pipeline or conveyance system, the outfall structure and any associated dilution systems; (f) Depth and width of the receiving water body at the discharge point; (g) Average, minimum and maximum water velocity of the receiving water body at the discharge point, and the times when the maximum and minimum flows occur.*

*(2) Where discharges are into a water-course via an existing discharge system for which certification is not being sought, the applicant shall also provide the following information: (a) Ownership of the discharge conveyance system; (b) A description of, and the terms and duration contained in, the use agreement that allows the applicant to use the discharge conveyance system; (c) Identification of the party responsible for operation and maintenance of the discharge conveyance system; (d) NPDES or state wastewater discharge permit number for the existing system discharge; (e) Location of connection point into the existing discharge system; (f) Diameter and rated and maximum volume capacity of the wastewater line or conveyance system into which discharge is being proposed; (g) Existing, rated and maximum flow levels in the wastewater line or conveyance system into which the discharge is being proposed; (h) Where a discharge is proposed to a publicly owned treatment works, in addition to the items provided in subsections (1) and (2) of this section, the applicant shall provide an engineering analysis showing that the proposed discharge will not cause the waste treatment facility to exceed capacities or to violate its authorized discharge limits, including both the quality of the discharge and the volume of the discharge, or to violate the permits governing its operation.*

*(Statutory Authority: RCW 80.50.040 (1) and (12). 04-21-013, amended and recodified as § 463-60-185, filed 10/11/04, effective 11/11/04. Statutory Authority: RCW 80.50.040(1) and Chapter 80.50 RCW. 81-21-006 (Order 81-5), § 463-42-185, filed 10/8/81. Formerly WAC 463-42-440.)*



## **Section 2.8 Characteristics of Aquatic Discharge Systems**

Discharges from the Facility contribute indirectly to downstream aquatic outfalls. All onsite sources of aquatic discharges, including stormwater and wastewater sources, discharge to existing conveyance and treatment systems prior to the eventual release of water to the Columbia River. All of the downstream outfalls are permitted and regulated by Ecology.

### **2.8.1 Description of Discharge Systems**

There are four separate conveyance systems in which discharges are released from the Facility to eventual aquatic discharges. The multiple discharges are directly related to the spread-out nature of the Facility and the boundaries of the existing drainage basins at the Port. The conveyance systems are listed below.

- Terminal 5 stormwater system
- Terminal 4 stormwater system
- Combined Marine Terminal and Subaru lot treatment swales
- Wastewater discharge to City sanitary sewer

A portion of the Facility lease boundary is located within areas determined by the Port to be within its general use area, which the Port defines as areas in which it is not feasible that individual tenants collect and treat their own stormwater discharges. Areas in this Facility that fall under that designation are limited to rail improvements located within the master plan rail corridor, transfer pipeline alignment, and non-pollution-generating rail yard area on the north side of the rail unloading building..

#### **2.8.1.1 Terminal 5 Stormwater System**

Stormwater discharging to Terminal 5 is generated from the following Facility locations.

- Area 200 unloading and office
- Portion of Area 500 transfer pipelines
- Area 600 West Boiler
- Rail infrastructure

Stormwater is discharged from the Facility to the Terminal 5 stormwater system in a single location just south of the rail unloading building. Stormwater from the Facility is treated to basic treatment standards prior to its discharge in accordance with the Terminal 5 Western Washington Phase II Municipal Stormwater Permit WAR045201. The Port owns the stormwater conveyance systems and downstream treatment ponds. Stormwater from this connection point flows through a series of minimum 24-inch-diameter manmade conveyance pipelines to a pump station and is pumped to two water quality treatment ponds located west of Terminal 5. The project site discharges approximately 1.09 cubic feet per second (cfs) during a water quality event and approximately 11.39 cfs during a 100-year storm. An outfall is located immediately south of the treatment ponds at latitude 45° 38' 60" and longitude -122° 44' 45".

A master stormwater system plan was prepared for the entire Terminal 5 expansion area by HDR Engineering Inc. and dated May 3, 2012; it is attached to the stormwater report in Appendix F. The conveyance system was sized assuming the entire 91-acre drainage basin is fully impervious at buildout. The report concluded that the conveyance system functions as intended to accommodate the 25- and 100-year storm events.

Stormwater generated on Terminal 5 is currently collected and treated in accordance with the current stormwater regulations and permitted under permit WAR045201. Construction of the additional rail lines will not affect collection or treatment of the stormwater adversely as the facilities in place were previously designed for the entire 91-acre basin. The conveyance pipeline and non-pollution-generating yard area is considered non-pollution-generating. As part of this project, stormwater inlets receiving stormwater from the general use areas in which the Facility is making improvements will be confirmed to have, or will be retrofitted, with spill containment devices.

### **2.8.1.2 Terminal 4 Stormwater System**

Stormwater discharging to Terminal 4 is generated from the following Facility locations.

- Areas 300 storage
- Portion of Area 500 transfer pipelines

Stormwater is discharged from the Facility to the Terminal 4 stormwater system in a single location just south of the Storage Area. In accordance with the Port's Terminal 4 Industrial Stormwater General Permit WAR000424, stormwater from the Facility is treated to enhanced treatment standards prior to its discharge. The Port owns the stormwater conveyance systems and outfall. Stormwater from this connection point flows through a series of 36-inch minimum manmade conveyance pipelines prior to the Columbia River outfall. The project site discharges approximately 3.48 cfs during a water quality event and 20.60 cfs during a 100-year storm. The outfall is located upriver of the Storage Area at latitude 45° 38' 15" and longitude -122° 42' 45".

BergerABAM reviewed the drainage options for Parcel 1A (Storage Area) for the Port in June 2010; a copy of the review is included in the stormwater report (Appendix F). The conveyance system was sized assuming the Parcel 1A and adjacent tenant parcel totaling 44 acres would be fully impervious at buildout. The report concluded that the conveyance system, if designed and installed according to the recommendations of the memo, will function as designed to accommodate the 25- and 100-year storm events.

Stormwater from the general use area of Terminal 4 is currently collected and treated in accordance with the current stormwater regulations and permitted under permit WAR000424. Construction of the conveyance pipeline along the general use area will not impact collection or treatment of the stormwater adversely as the facilities in place were designed for stormwater runoff along the rail corridor. As part of this project, stormwater inlets receiving stormwater from the general use areas in which the Facility is making improvements will be confirmed to have, or will be retrofitted with, spill containment devices. The typical containment device is the installation of a T or 90 degree elbow on the outlet pipe to prevent crude oil from entering the outlet. Final design and maintenance requirements will be completed in consultation with the Port.

### **2.8.1.3 Combined Marine Terminal & Subaru Treatment & Infiltration Swales**

Stormwater discharging to the combined Marine Terminal and Subaru treatment and infiltration swales is generated from the following Facility locations.

- Area 400 Marine Terminal
- Portion of Area 500 transfer pipelines

Stormwater discharged from the Facility to the Combined Marine Terminal & Subaru Treatment & Infiltration Swales will sheet flow across a proposed filter strip abutting the south side of the southernmost swale. The existing treatment and infiltration swales were designed by David Evans and Associates as part of the Port of Vancouver Columbia Gateway – Phase 1 project. The swales current collect and treat the entire 25-acre basin through the pair of northernmost swales which eventually overflow after required treatment into the southernmost swales for infiltration. The project will not add any additional pollution generating surfaces or additional contributing land coverage to the treatment and infiltration swale system. The project site discharges approximately 0.15 cfs during a water quality event and 0.87 cfs during a 100-year storm. There is no outfall for this existing stormwater system.

#### **2.8.1.4 Wastewater Discharge to City Sanitary Sewer**

Wastewater discharging to the City sanitary sewer is generated from the following Facility locations and is described in further detail in section 2.9.

- Process water from West Boiler effluent
- Process water from Storage Boiler Building effluent
- Process water from Storage Pump Basin sump pump
- Process water from Storage Fire Pump cooling water
- Domestic sewage from Administrative and Support Buildings
- Domestic sewage from Storage Boiler Building restroom

Wastewater is discharged to the City's sanitary sewer at two locations, one just north of the Administrative and Support Buildings into an existing 18-inch diameter gravity sewer, and a second just south of the Storage Area into an existing 18-inch diameter gravity sewer.

Wastewater is conveyed through the City's conveyance system to the WWTP located approximately 1 mile east of the Storage Area at 2323 West Mill Plain Boulevard. The City owns the conveyance pipeline system, treatment plant, and associated outfall. The treatment plant and outfall are regulated under the Municipal NPDES Individual Permit WA0024350.

The WWTP discharges to the Columbia River, which is designated a Class A receiving water in the vicinity of RM 105. The Columbia River has a special temperature standard of 20 degrees C. Nearby outfalls include Northwest Packing Company (RM 105.1), Great Western Malting (RM 106), Vancouver Marine Park Treatment Plant (RM 110), Vancouver Trout Hatchery (RM 113.5), City of Gresham STP (RM 117.5), and Camas STP (RM 121.2). Ecology approved the most recent mixing zone report in January 1996. A detailed discussion and engineering analysis relating to water body depth, width, maximum and minimum velocities, and a complete mixing zone engineering analysis for surface water quality-based discharge limitations and conformance are included in the previously approved mixing zone study.

A letter confirming conveyance system and treatment capacity from the City has been requested and the City's Industrial Information Form, along with a completed Wastewater Discharge to POTW permit application, have been submitted for City review. Preliminarily, the City reviewed the contents of the pre-application narrative and did not identify capacity restrictions or required offsite improvements for a wastewater flow of approximately 30 gpm (see Appendix I.1). The maximum day wastewater generated from the Facility is approximately 26 gpm. The Applicant has demonstrated that the proposed discharge will not cause the waste treatment facility to exceed capacities or to violate its authorized discharge limits, including both the quality of the discharge and the volume of the discharge, or to violate the permits governing its operation.