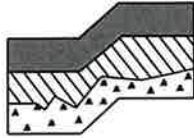


DESIGN MEMORANDUM



TERRA ASSOCIATES, Inc.

Consultants in Geotechnical Engineering, Geology
and
Environmental Earth Sciences

To: Mr. Tyler Litzenberger
Vector Development

From: Carolyn S. Decker, P.E.

Subject: Offsite Infiltration Rate

Date: 12-3-2024

Project Number: T-8565

Project Name: Freeman Logistics
Pierce County, Washington

Tyler:

As requested, we have derived a preliminary long-term design infiltration rate for the offsite infiltration facility located near the intersection of North Levee Road East and Freeman Road East. We used Soil Grain Size Analysis Method as outlined in Volume V Section 5.4 of the 2019 Washington State Department of Ecology Stormwater Management Manual for Western Washington, to determine a preliminary long-term design infiltration rate. This method correlates the saturated hydraulic conductivity with the D_{10} , D_{60} , and D_{90} particle sizes determined from gradation testing of the soils in accordance with ASTM Test Designation D-422. The D_{10} particle size represents the grain size below which ten percent of the soil is smaller in size. The D_{60} particle size represents the grain size below which 60 percent of the soil is smaller in size. The D_{90} particle size represents the grain size below which 90 percent of the soil is smaller in size. The particle sizes are put in the Massman formula to determine the saturated hydraulic conductivity. Based on the results of the testing, a long-term design infiltration rate of 0.2 inches per hour would be expected for the offsite facility.

We trust the information presented is sufficient for your current needs. If you have any questions or require additional information, please call.

