

Corrections and Clarifications to the *Stormwater Management Manual for Western Washington*(February 2005) – Volume V

Chapter 3

- p. 3-3, Oil Control Menu *clarification*:

Under “**Options:**” remove the bullet: “**Catch Basin Inserts** – See Chapter 12”

Under “**Options:**” add the bullet: “**Emerging Stormwater Treatment Technologies for Oil Treatment** – See Chapter 12”

- p. 3-5, Phosphorus Treatment Menu *clarification*:

Under “**Options:**” remove the bullet: “**Media Filter targeted for phosphorus removal** – See Chapter 12. Note: The use of a Stormfilter™ with iron-infused media is approved for use in limited circumstances, provided a monitoring program consistent with the TAPE protocols (Ch. 12) is implemented.”

Under “**Options:**” add the bullet “**Emerging Stormwater Treatment Technologies for Phosphorus Treatment** – See Chapter 12”

- p. 3-8, Table 3-2

Remove footnote and replace with: “The media must be a type approved for use by Ecology. See Chapter 12 for approved media filters.”

Chapter 6

- p. 6-1, Purpose *clarification*:

First bullet: remove “and media filtration”

Chapter 9

- p. 9-3, Guidance for Bypassing Off-line Facilities *correction*:

Figure 9.5b should read Figure 9.6b.

- p. 9-14, D-6 *correction*:

Figure 9.5a should read Figure 9.6a

- p. 9-18, Table 9.4 *correction*:

Remove St. John’s-wort from the list of groundcover options. It is currently on the State’s noxious weed list.

- p. 9-22, BMP T9.20 Wet Biofiltration Swale *correction*:

Current language:

Criterion 1: The bottom width may be increased to 25 feet maximum, but a length-to-width ratio of 5:1 must be provided. No longitudinal dividing berm is needed.

Note: The minimum swale length is still 100 feet.

Replace with corrected language:

Criterion 1: The bottom width may be increased to 25 feet maximum, but a minimum length-to-width ratio of 5:1 must be provided. No longitudinal dividing berm is needed. *Note: The minimum swale length is still 100 feet.*

Current language:

High-Flow Bypass: A high-flow bypass (i.e., an off-line design) is required for flows greater than the off-line water quality design flow that has been increased by the ratio indicated in Figure 9.5b.

Correction: The reference should be to Figure 9.6b.

- p. 9-24, BMP T9.30, Continuous Inflow Biofiltration Swale

Current Language:

“If only a single design flow is used, the flow rate at the outlet should be used. The goal is to achieve an average residence time through the swale of 9 minutes as calculated using the on-line water quality design flow rate multiplied by the ratio, K, in Figure 9.5a.

Correction: The reference should be to Figure 9.6a.

- p. 9-26, BMP T9.40, Basic Filter Strip

Current Language: K= The ratio determined by using Figure 9.5a.

Correction: The reference should be to Figure 9.6a.

Chapter 10

- p. 10-25, BMP T10.20, Wetvaults

Current Language

“Wetvaults used as oil/water separators must be off-line and must bypass flows greater than the off-line WQ design flow multiplied by the off-line ratio indicated in Figure 9.5b.

Correction: The reference should be to Figure 9.6b.

Chapter 11

- p. 11-8, BMP T11.10 API (Baffle Type) Separator Bay *correction*:

The Stoke's Law Equation for Rise Rate symbols should be changed to the symbols as expressed below:

$$Vt = [(g)(\rho_w - \rho_o)(d^2)] / [(18*\mu_w)]$$

Where:

Vt = the rise rate of the oil droplet (cm/s or ft/sec)
g = acceleration due to gravity (cm/s² or ft/s²)
 ρ_w = density of water at the design temperature (g/cm³ or lbm/ft³)
 ρ_o = density of oil at the design temperature (g/cm³ or lbm/ft³)
d = oil droplet diameter (cm or ft)
 μ_w = absolute viscosity of the water (g/cm·s or lbm/ft·s)

- pg. 11-10, BMP T11.11 Coalescing Plate (CP) Separator *correction*:

The equation for calculating horizontal surface area of plates needed should be changed to the equation below:

$$A_h = Q/Vt = [Q] / [(.00386) * ((S_w - S_o)/(\mu_w))]$$

Where

A_h = horizontal surface area of the plates (ft²)
Vt = rise rate of the oil droplet (ft/min)
Q = design flowrate (ft³/min)
 S_w = specific gravity of water at the design temperature
 S_o = specific gravity of oil at the design temperature
 μ_w = absolute viscosity of the water (poise)

The above equation is based on an oil droplet diameter of 60 microns.

