



Best Management Products, Inc.

To: Stormwater and Resource Planning Professionals

From: T. J. Mullen, President, Best Management Products, Inc.

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Subj: Vector Issues

Vector issues are a concern that we address regularly. SNOUT vented hoods are typically used in catch basins with sumps, which results in a static quantity of standing water being present in the structure at all times. The use of hoods and sumped catch basins, whether for MS4s (municipal storm sewers) or CSSs (combined sewers), is a common practice in many areas of the U. S. (New England, Mid Atlantic, Pacific Northwest, Midwest, Southeast). Catch basins with sumps and hoods have been found to present minimal insect problems (Pitt and Field, An Evaluation of Storm Drainage Inlet Devices for Stormwater Quality Treatment, 1998). More specifically, any device that traps oils, greases, and floatable debris on the surface of captured water may have a negative impact on breeding potential for some mosquitoes. The oily film and debris can alter the surface tension of the liquid in the catch basin thus hindering larvae from snorkeling as a part of their respiration process making it an unhealthy environment for the larvae. Anecdotal evidence suggests that emergence of adult vectors may coincidentally be hindered.

The recent outbreaks of West Nile virus and earlier, Equine Encephalitis, have indeed captured the public's attention. While any standing water may offer potential for mosquito breeding, reports indicate that some receptacles are clearly worse than others. Beverage cans, bottles, tires, and other vessels with a small amount of protected stagnant water were reported to offer greatest potential for mosquito breeding. The design of stormwater management facilities can also impact vector mortality. Poorly maintained stormwater management ponds, or natural systems that trap stagnant pools may present problems. For constructed systems, connections to open water, or the presence or introduction of natural predators of mosquito larvae have been shown to minimize problems (Tourbier and Westmacott, Lakes and Ponds, 1992). Other natural methods, such as Bti, *Bacillus thuringiensis israelensis*, an insecticidal bacteria are also available (Frederick and Goo, US EPA, and Corrigan, Bartow, Billingsley, Tetra-Tech, Economic Benefits of Runoff Controls, 1996). These bacteria have been used in "dry season" standing water applications in MS4s.

Public health concerns must always be weighed whenever we plan or manage our infrastructure. However, this issue, after careful consideration, should not prevent the water quality community from exercising good design or good judgment in an effort to reduce the impact of pollution from stormwater runoff. As mentioned earlier, while the issue is frequently raised, after thorough consideration by planners, it does not typically present a compelling reason to prevent a system using BMP, Inc. components from being implemented.