



DEP ARTIFICIAL TURF STORMWATER STUDY JULY 2010

In response to public interest and concern, four state agencies, the University of Connecticut Health Center, The Connecticut Agricultural Experiment Station, the Department of Public Health and DEP, completed a two-year long, multi-phased evaluation of the health and environmental impacts associated with artificial turf fields. As a component of the project, DEP completed a study of the environmental risks associated with stormwater runoff from artificial turf fields in Connecticut.

DEP was specifically tasked with evaluating the potential environmental risk associated with stormwater runoff from artificial turf fields that included a crumb rubber infill layer derived from recycled tires. DEP staff collected eight stormwater samples from three artificial turf fields and analyzed them for total metals, hardness, pH, volatile organic compounds, semi-volatile organic compounds, pesticides/ polychlorinated biphenyls (PCBs) and acute aquatic toxicity. In general, the analysis of the collected stormwater detected insignificant levels of metals and semi-volatile organic compounds known to leach from tires. However, three of the eight stormwater samples showed elevated levels of zinc and were determined to be acutely toxic to aquatic organisms. The detected levels of zinc were well below groundwater protection criteria, but did exceed DEP's acute aquatic toxicity criteria for surface waters.

Based on these results, DEP concludes that there is a potential risk to surface waters and aquatic organisms associated with whole effluent and zinc toxicity of stormwater runoff from artificial turf fields. Zinc concentrations in the stormwater may cause exceedences of the acute aquatic toxicity criteria for receiving surface waters, especially smaller watercourses.

The DEP suggests that use of stormwater treatment measures, such as stormwater treatment wetlands, wet ponds, infiltration structures, compost filters, sand filters and biofiltration structures, may reduce the concentrations of zinc in the stormwater runoff from artificial turf fields to levels below the acute aquatic toxicity criteria. Individual artificial turf field owners may want to evaluate the stormwater drainage systems at the fields and the hydrologic and water quality characteristics of any receiving waters to determine the appropriateness of a stormwater treatment measure..