



Article 7

Technical Note #15 from *Watershed Protection Techniques*, 1(1): 30-31

Sources of Urban Stormwater Pollutants Defined in Wisconsin

For the past two decades, most urban runoff monitoring activity has been focused at the end of a pipe or storm drain. Consequently, our knowledge about the concentration of pollutants in urban runoff has been confined to broad land use categories, such as residential, commercial, industrial, or combinations thereof.

With recent advances in runoff micro-monitoring pioneered by Roger Bannerman and his colleagues, we are starting to get a better resolution of the various source areas in the urban landscape that collectively contribute to the pollutant levels measured at the end of the pipe. Urban source areas include lawns, driveways, rooftops, parking lots, and streets.

Using specialized sampling devices, Bannerman *et al.* (1993) collected over 300 runoff samples from 46 micro-sites in two watersheds (Figure 1). The samplers

collected runoff from lawns, driveways, rooftops (both residential and industrial), commercial and industrial parking lots, and a series of street surfaces (feeder, collector and arterial).

Up to nine samples were collected at each of the micro-sites over a two month period, characterized by small and moderate sized rainfall events. Geometric means of pollutant concentrations were calculated for each of the micro-sites (see Table 1). Runoff volumes were obtained by hydrologic simulation models that were calibrated for each subwatershed.

The monitoring revealed that streets were the single most important source area for urban pollutants in residential, commercial, and industrial areas. Not only did streets produce some of the highest concentrations of phosphorus, suspended solids, bacteria, and several metals, but they also generated a disproportionate

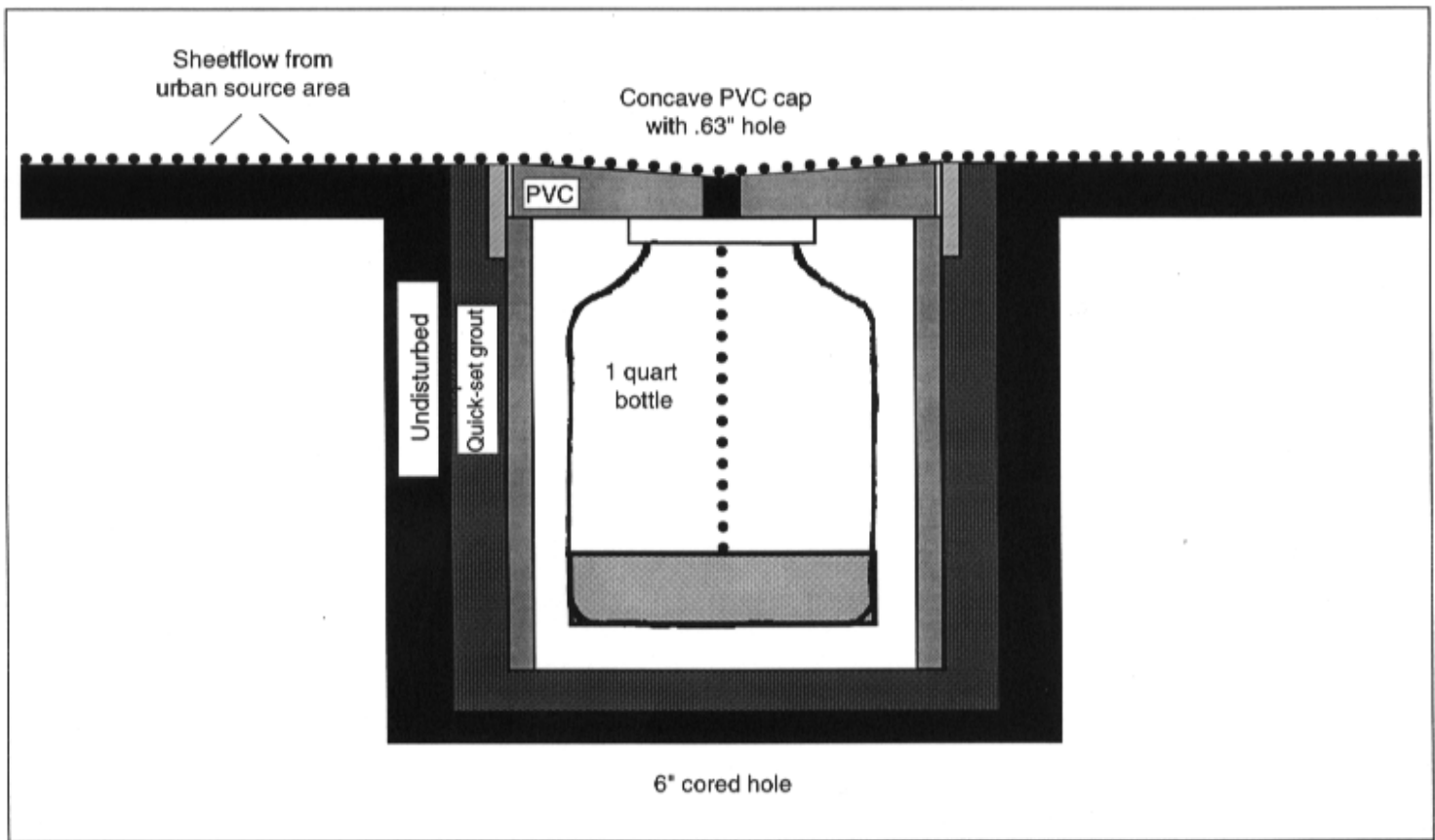


Figure 1: Diagram of a Street Sampler (Bannerman *et al.* 1993)