

King County Industrial Waste Program (KCIW)

Article about the technical memorandum:

“King County Sanitary Sewer System – Sampling for Selected Phthalates and Benzyl Alcohol in the Lower Duwamish Basin – 2003 to 2006”

As part of the ongoing Lower Duwamish Waterway sediment cleanup process, King County did a voluntary cleanup in 2004 near the outfall of the Duwamish/Diagonal Combined Sewer Overflow/Storm Drain. The outfall is estimated to discharge approximately 1,100 million gallons per year (MGY) of stormwater and approximately 12 MGY of combined stormwater/sanitary wastewater. The remediation of this site involved a combination of sediment removal followed by capping of the remaining sediment with clean material.

The County’s follow-up monitoring of the cleanup site indicated that the sediments were being recontaminated above Washington state sediment management standards for a few selected compounds. These compounds were benzyl alcohol (BA), benzyl butyl phthalate (BzBP), and bis-(2-ethylhexyl) phthalate (BEHP). The recontamination prompted the County to sample within its sewer system to evaluate if there are locations in the system where these chemicals appear in greater amounts and if there are controllable sources of these chemicals. This sampling involved sampling of industrial dischargers in the Lower Duwamish basin and comparing these results with sampling conducted at County wastewater pump stations and its two large wastewater treatment plants.

The results of sampling of industrial users indicate that industrial wastewater, as a whole, has approximately similar concentrations of BA, BzBP and BEHP as the influent of the county’s two large treatment plants. However, some industries do tend to have higher concentrations than others, even though their discharge volumes may be small. KCIW has made pretreatment recommendations for these types of facilities:

A. Barrel Cleaning, container washing and pressure washing facilities should be sure that they adequately treat their wastestreams for removal of oil and particulate matter. The typical pretreatment for these wastestreams would be the use of an oil-water separator or some form of gravitational settling, mainly to remove particulate matter, since the selected phthalates generally adsorb to this.

B. Larger commercial laundries and food processing facilities tend to use products (e.g., detergents and cleaning agents) which make it difficult to remove BA, BzBP and BEHP from their respective wastestreams. However, as with other wastestreams, efforts to remove particulate material can be beneficial.

These chemicals are commonly found in the environment. Although standard pretreatment technologies can help, these alone will not be able to overcome the amounts of the chemicals coming from domestic (i.e., residential) sources that are not regulated by KCIW.

For more information, contact the KCIW staff engineer, Bruce Tiffany at bruce.tiffany@kingcounty.gov.