

Urban Runoff Bacteria and Viruses Disinfection

Beaches all across Southern California are facing major problems from Urban Runoff pollution. As the population has grown over the decades the volume of Urban Runoff has increased dramatically. The pollution is not only harmful to the environment it poses health hazards to people who swim in the polluted water. Public health concerns cause the cities and counties to post health warnings or close beaches that are exposed to contaminated Urban Runoff. This not only deprives people of a treasured natural resource, it has a major impact on the local economy.



Cities are struggling to find solutions to the multitude of problems caused by Urban Runoff. One city in San Diego County decided to take action as one of their most popular beaches was subject to a large amount of health postings. They decided to remove the major source of bacteria entering onto the beach from a small creek. The city obtained a grant from the State of California to build a disinfection system to kill the bacteria in the runoff. Originally, the city's engineering consultant was planning to build a treatment system around ozone technology, but changed the design to use ultraviolet light based upon the success of an Urban Runoff treatment system that Clear Creek Systems, Inc had built for another Southern California city. Due to our experience and success in this area, Clear Creek Systems, Inc. (CCS) was awarded the contract to build the treatment unit. CCS worked with the city and their construction managers to optimize the system for the site. All of this had to be done on a very tight timeline as the city would have lost some of the grant funding if the system was not up and operating within 16 weeks of receiving the contract.

CCS was able to build and install the 150 gpm system within the allotted time frame. Once the system was operational, the bacteria levels in the treated water were consistently well below the state requirements for human contact. The city's follow up testing showed a significant decrease in the bacteria levels in the ocean near the terminus of the stream. The project proved that concrete steps can be taken to reduce pollution and health risks from Urban Runoff. The project was awarded the 2002 "Award of Excellence" from the San Diego Chapter of the American Society of Civil Engineers.