

SCCWRP #0334

Environmental auditing: Microbiological Monitoring of Marine Recreational Waters in Southern California

Kenneth C. Schiff¹, Stephen B. Weisberg¹, John H. Dorsey²

¹*Southern California Coastal Water Research Project, Westminster, CA*

²*City of Los Angeles Department of Public Works, Bureau of Sanitation Stormwater Management Program, Los Angeles, CA*

ABSTRACT

An inventory was conducted to assess the number, type, spatial distribution, and costs of microbiological monitoring programs in southern California marine waters from Point Conception to the US/Mexico international Border. The location of each sampling site was determined using global positioning system (GPS), and estimates of geographic coverage were determined using geographic information system (GIS) techniques. Twenty-one programs conducted 87,007 tests annually at 576 sites in the study area. The largest number of analyses was performed in Los Angeles County because monitoring programs in this area focused on daily monitoring. Fifteen of the 21 programs were managed by National Pollutant Discharge Elimination System (NPDES) permitted sewage effluent dischargers who sampled both offshore and shoreline waters and typically tested for three indicator bacteria (total coliform, fecal coliform, and enterococcus). Their combined efforts comprised 82% of all of the microbiological indicator analyses conducted on an annual basis. Five of the remaining monitoring organizations were public health agencies, which typically focus their efforts on testing only total coliforms. Laboratory methodology also varied considerably, with NPDES permittees predominantly utilizing membrane filtration while public health agencies generally used multiple tube fermentation or premanufactured test kits. Nearly three quarters of all the effort expended in southern California occurred along the shoreline as opposed to offshore locations. Two thirds of this shoreline effort was focused on high-use sandy beaches and in proximity to perennial freshwater outlets (storm drains and creeks). Most sampling occurred at a set of fixed sites that were revisited frequently, but only represented about 7% of the total shoreline. We estimated that roughly 3\$ million is spent annually on monitoring bathing water quality in southern California, exceeding that spent in any other part of the country.

Due to distribution restrictions, the full-text version of this article is available by request only.

Please contact pubrequest@sccwrp.org to request a copy.