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PLANNED POTABLE REUSE:
THE LAST FRONTIER

Dr. George Tchobanoglous, Ph.D., PE, NAE, Professor Emeritus
Department of Civil and Environmental Engineering
University of California, Davis

Abstract
The nation’s water supplies are derived from a variety of sources, including local and imported surface water, groundwater, desalinated brackish water and seawater, and recycled water. Public water supplies, in many regions, are becoming stressed because of population growth, urbanization, the growth of megacities (especially along coastal regions), cyclical droughts, and climate change. Further, the opportunity to develop new groundwater or surface water sources is becoming more difficult, if not impossible. While conservation can reduce per capita demand, the existing supplies may not be enough to meet overall water needs. Consequently, new strategies are needed to help meet future water demands and to develop more sustainable water supplies. One way to meet the increasing demand is to augment public water supplies by means of planned potable reuse of a community’s treated wastewater. Planned potable reuse is the final frontier in wastewater reuse hierarchy that includes agricultural irrigation, landscape irrigation, industrial reuse, groundwater recharge, recreational and environmental use, and other non-potable reuse applications.

Four forms of planned potable reuse exist. The first two forms are often identified as indirect potable reuse in which treated wastewater is introduced into an environmental buffer (e.g., groundwater aquifer or surface water reservoir, lake, or river) before the blended water is introduced into the water supply system. The second two forms are identified as direct potable reuse in which highly treated wastewater is introduced either upstream of a water treatment plant or directly into an existing water supply system, depending on the degree of processing and appropriate permitting. All four types of planned potable reuse represent a significant water quality improvement over de facto indirect potable reuse that occurs when downstream surface waters subject to upstream wastewater discharges are used as a source of drinking water. Given the technological developments that have occurred over the past 10 years that are ongoing, treatment consistent with all applicable health standards and beyond is no longer an issue. Similarly, the cost of producing potable water from wastewater is cost competitive with other sources of supply. Finally, when the elements of a planned potable reuse program are presented and documented properly, the public is also supportive. Clearly, the time is now for planned potable reuse.