

if needed, variance technologies for each size category. A compliance technology is a technology that is affordable and that achieves compliance with the MCL and/or treatment technique. Compliance technologies can include point-of-entry or point-of-use treatment units. Variance technologies are only specified for those system size/source water quality combinations for which there are no listed compliance technologies.

EPA has completed an analysis of the affordability of DBP control technologies for each of the three size categories. Based on this analysis, multiple affordable compliance technologies were found for each of the three system sizes (USEPA 2003i) and therefore variance technologies were not identified for any of the three size categories. The analysis was consistent with the methodology used in the document “National-Level Affordability Criteria Under the 1996 Amendments to

the Safe Drinking Water Act” (USEPA 1998g) and the “Variance Technology Findings for Contaminants Regulated Before 1996” (USEPA 1998h).

2. What Are the Affordable Treatment Technologies for Small Systems?

The treatment trains considered and predicted to be used in EPA’s compliance forecast for systems serving under 10,000 people, are listed in Table V–12.

TABLE V–12.—TECHNOLOGIES CONSIDERED AND PREDICTED TO BE USED IN COMPLIANCE TECHNOLOGY FORECAST FOR SMALL SYSTEMS <sup>1</sup>

SW water plants	GW water plants
<ul style="list-style-type: none"><li>• Switching to chloramines as a residual disinfectant .....</li><li>• Chlorine dioxide (Not for systems serving fewer than 100 people) .....</li><li>• UV .....</li><li>• Ozone (not for systems serving fewer than 100 people) .....</li><li>• Micro-filtration/Ultra-Filtration<sup>2</sup> .....</li><li>• GAC20<sup>2</sup> .....</li><li>• GAC20 + Advanced disinfectants .....</li><li>• Membranes (Micro-Filtration/Ultra-Filtration + Nanofiltration) .....</li></ul>	<ul style="list-style-type: none"><li>• Switching to chloramines as a residual disinfectant</li><li>• UV</li><li>• Ozone (not for systems serving fewer than 100 people)<sup>2</sup></li><li>• GAC20<sup>2</sup></li><li>• Nanofiltration<sup>2</sup></li></ul>

<sup>1</sup> Based on exhibits 6.8a and 6.8b in Economic Analysis for the proposed Stage 2 DBPR (USEPA 2003i)  
<sup>2</sup> Italicized technologies are those predicted to be used in the compliance forecast.

The household costs for these technologies were compared against the national-level affordability criteria to determine the affordable treatment technologies. The Agency’s national-level affordability criteria were published in the August 6, 1998 **Federal Register** (USEPA 1998g). In this document, EPA discussed the procedure for affordable treatment technology determinations for the contaminants regulated before 1996.

The following section provides a description of how EPA derived the national-level affordability criteria pertinent to this rule. First, EPA calculated an “affordability threshold” (*i.e.*, the total annual household water bill that would be considered affordable). The total annual water bill includes costs associated with water treatment, water distribution, and operation of the water system. In developing the threshold of 2.5% median household income, EPA considered the percentage of median household income spent by an average household on comparable goods and services and on cost comparisons with other risk reduction activities for drinking water such as households

purchasing bottled water or a home treatment device. The complete rationale for EPA’s selection of 2.5% as the affordability threshold is described in “Variance Technology Findings for Contaminants Regulated Before 1996” (USEPA 1998h).

The Variance Technology Findings document also describes the derivation of the baselines for median household income, annual water bills, and annual household consumption. Data from the Community Water System Survey (CWSS) were used to derive the annual water bills and annual water usage values for each of the three small system size categories. The data on zip codes were used with the 1990 Census data on median household income to develop the median household income values for each of the three small-system size categories. The median household-income values used for the affordable technology determinations are not based on the national median income. The value for each size category is a national median income for communities served by small water systems within that range. Table V–13 presents the baseline values for each of the three small-system size categories. Annual water bills are

based on 1995 estimates (USEPA 1998h) and adjusted upward for anticipated costs attributed to new drinking water regulations since 1995, *i.e.*, the IESWTR, Stage 1 DBPR, Filter Backwash Recycling Rule, Arsenic Rule, LT1ESWTR, Public Notification Rule, and Consumer Confidence Rule.<sup>1</sup> Median household income estimates are based on estimates made in 1995 (USEPA 1998h) and adjusted upward for inflation to represent 2000 incomes (USEPA 2003i).

<sup>1</sup> EPA is currently receiving input from a National Drinking Water Advisory Council (NDWAC). This process is expected to conclude in the fall of 2003 with a report that will be sent by the NDWAC. EPA has also received a report from the Science Advisory Board’s Environmental Economics Advisory Committee on its review of the national-level affordability criteria (USEPA 2002c). One of the charges given to both groups was to evaluate the process used by EPA to adjust the baseline water bills to account for costs attributable to regulations promulgated after 1996. Because the Stage 2 DBPR affordability analysis is being conducted before EPA can complete a comprehensive reassessment of affordability, today’s estimate for the increase to the average water bill to account for regulations after 1996 reflects existing Agency affordability criteria and methodology. This estimate may change in the future.