

B. DBPs in Distribution Systems

EPA wanted to understand DBP occurrence in distribution systems likely to exist after implementation of the Stage 1 DBPR. Such an understanding would enable EPA to recognize options on how to improve protection under the Stage 2 DBPR. The analysis of occurrence data to support the Stage 2 DBPR is complicated because available national occurrence data do not reflect the changes in occurrence resulting from the implementation of the Stage 1 DBPR. Many utilities have only recently changed their treatment to comply with the Stage 1 DBPR (subpart H systems serving 10,000 people or more were required to comply beginning January 2002) or are about to make changes in treatment to comply with this rule (subpart H systems serving fewer than 10,000 people and ground water systems are required to comply beginning January 2004).

To address the above issue, EPA evaluated Stage 1 DBPR implications by using Information Collection Rule data from plants that would not exceed the

Stage 1 DBPR TTHM and HAA5 MCLs as an annual average. The TTHM and HAA5 data consist of quarterly measurements in four locations in distribution systems associated with each Information Collection Rule treatment plant. Two samples were collected at sites representing average residence time (AVG1 and AVG2), one sample at a site intended to represent the maximum residence time (MAX), and one sample was reported as a distribution system equivalent (DSE). The DSE sample was generally representative of average residence times. EPA believes that the monitoring locations of the Information Collection Rule, while not necessarily being the same as the Stage 1 DBPR compliance monitoring sites, provide a close approximation of monitoring under the Stage 1 DBPR. EPA recognizes, however, that data for plants that are in compliance with Stage 1 MCLs even without installing additional treatment (perhaps because of low source water TOC) are not necessarily reflective of plants that make treatment changes to comply with the Stage 1 DBPR.

1. DBPs Above the MCL Occur at Some Locations in a Substantial Number of Plants

Figure IV-1 compares the TTHM running annual average (RAA) levels with the single highest TTHM concentration in the distribution system. Twenty one percent (60 of 290) of the Information Collection Rule plants had single TTHM concentrations higher than the 0.080 mg/L MCL. Figure IV-2 makes the same comparison for HAA5. Fourteen percent (40 of 290) of the plants meeting the Stage 1 DBPR MCL had single HAA5 concentrations higher than the 0.060 mg/L MCL. In systems with a low RAA for TTHM and HAA5, the highest single TTHM and HAA5 values are generally not much higher than the respective Stage 1 DBPR MCLs. However, as the RAAs increase, there is a greater likelihood of having peak levels above the MCLs. As the RAAs approach the Stage 1 DBPR MCLs, some of the distribution system single highest concentrations approach levels that are double the Stage 1 DBPR MCLs.

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