

dissolved solids. They stated that removal of both solids and organics should be required, and EPA must establish appropriate levels of treatment. If an appropriate level of treatment cannot be defined, then all process wastewater should be prohibited for quenching coke. One commenter suggested that return water from the quench tower and all process wastewater be prohibited, whether treated or not. This commenter further stated that if EPA chooses to allow treated process water, then daily sampling and analysis must be required to ensure the treatment process is removing the contaminants.

*Response:* We agree that altering the definition of "clean water" is necessary to clarify what types of water can be used as makeup water. We also agree that it is appropriate to establish TDS limits to control quench water quality. Our intent at proposal was that untreated process wastewater, whether contaminated with solids, organic compounds, or both, should not be used for quenching. These contaminants have been shown to increase HAP emissions from quenching, and most plants have abandoned the practice of disposing of untreated wastewater in the quenching process.

Process wastewater must be treated to remove solids and organics, as necessary, before it can be used for quenching. This can be ensured by requiring that process wastewater be treated to meet effluent limitation guidelines. It was not our intent to prohibit the use of non-contact process water, cooling water, or other miscellaneous sources of water that would not contribute to additional emissions from pushing. For example, the water used to seal standpipe caps and storm water are not process wastewater. To address the above concerns, we have replaced the term "clean water" in the proposed rule with the term "acceptable makeup water," which is defined in the final rule to mean surface water from a river, lake, or stream; water meeting drinking water standards; storm water runoff and production area cleanup water except for water from the by-product recovery plant area; process wastewater treated to meet effluent limitations guidelines; any of these types of water that has been used only for non-contact cooling or in water seals; or water from scrubbers used to control pushing emissions. We believe this change accommodates most if not all of the concerns stated in the comments.

Water used for quenching is usually taken from a sump near the base of the quench tower and consists of recycled

water and makeup water. Recycled water is the runoff from quenching that is returned from the quench tower to the sump. Makeup water is from some other source, such as a river or lake, and is added to replenish the water lost by evaporation during quenching. Dissolved solids in the quench water contribute to HAP and PM emissions during quenching. We reviewed data from tests at quench towers and found that HAP emissions increase as the TDS level in the quench water increases. Several States have established TDS limits for the quench water to ensure that high levels of solids are not present to contribute to emissions from the quench tower. We agree with commenters who requested that TDS limits be established in the final rule and that the quench water be sampled periodically. We reviewed the available data on TDS levels in quench water. However, we have only limited data, much of the data included the use of by-product plant wastewater which is no longer used for quenching, and we could not validate the procedures that were used for sampling and analysis by the various plants. In addition, we have only one data point for reporting plants, which does not reflect the variability in TDS levels over time.

We also reviewed existing State and local TDS requirements and found that most of the existing limits are in the range of 800 to 1,500 mg/L. We evaluated the five most stringent State limits (12 percent of 36 quench towers) applied to quench towers at coke plants that were operating during the development of the proposed rule. Two quench towers (one in Michigan and one in Ohio) are subject to a limit of 800 mg/L, two others in Illinois are subject to a limit of 1,200 mg/L, and one in Illinois is subject to a limit of 1,500 mg/L. We chose the mean value of 1,100 mg/L as the MACT floor. We chose the mean value rather than the median value (1,200 mg/L) because we usually use the median value when that value is associated with a specific source and the operation of a particular emission control technology. In this case, the mean value is more appropriate because the State limits are not directly related to the level of control achieved by a particular control technology.

We also evaluated the test method used by the plants that comprise the MACT floor and determined that all of these plants measure TDS by drying the filterable residue at 103 to 105° C. (There is an alternative TDS method that specifies drying at 180° C.) Our data indicate that the lower drying temperature is more appropriate for coke plant quench water because the

higher temperature evaporates some organic PM and results in an inaccurate measure of TDS. This organic PM contributes to the total TDS and emissions at the normal temperatures of the quench water before it is used for quenching. Consequently, we specify that TDS must be determined by drying the filterable residue at 103 to 105° C.

We believe the existing limits are a reasonable proxy for TDS levels that can be achieved, and they account for the normal variability in TDS levels. For example, the available data indicate that TDS concentrations in clean makeup water are usually less than 600 mg/L. We reviewed data for several plants and concluded that TDS in quench water is about twice that in makeup water. Therefore, we believe a level of 1,100 mg/L TDS or less is indicative of acceptable quench water. Consequently, we are establishing this level in the final rule as the maximum TDS allowed in quench water. We are also requiring weekly sampling of the quench water to ensure that water quality is maintained.

Although a TDS limit is a proven historical method for limiting emissions from quenching, we believe that plant owners or operators can achieve equivalent levels of HAP control by limiting the HAP in quench water. To provide additional flexibility, we included in the final rule an alternative to develop a site-specific limit for the quench water for the HAP that are indicators of coke oven emissions—benzene, benzo(a)pyrene, and naphthalene. To qualify for the alternative, a plant owner or operator must sample and analyze at least nine quench water samples for TDS, benzene, benzo(a)pyrene, and naphthalene. The alternative HAP limit is the highest sum of the concentrations of the HAP in any single sample that meets the TDS limit of 1,100 mg/L.

*Comment:* Two commenters noted that baffles control PM and that EPA had not explained why PM is a suitable surrogate for HAP emissions from quenching. One commenter said that the requirement for 95 percent coverage of quench towers by baffles is unclear and that coverage cannot be measured. Another commenter stated that the 95 percent coverage requirement is too lenient and will allow the release of significant emissions. The commenter noted that two layer baffles which cause two changes in flow direction have been installed and successfully used at coke plants in Allegheny County, Pennsylvania.

Several commenters stated that it is difficult or impossible to wash and repair baffles in cold and inclement weather because water lines freeze and