

geographic center of census blocks within 2 kilometers of the site and in the population-weighted centers of census block groups or census tracts out to 50 kilometers. Two commenters did not agree with this methodology for determining receptor location for threshold pollutants. One commenter stated that EPA's methodology would be more appropriate for cancer causing agent, where the risk is based on probabilities of health effects. The commenter argued that for noncancer (*i.e.*, threshold pollutants) compounds, placing the receptors at the center of census tracts would not properly identify the highest impacts close to the facility. They felt that it was more appropriate to measure the exposure of the most exposed individual (*e.g.*, someone living at the fence line of a facility or directly downwind).

*Response:* We certainly agree with the commenters that the greatest impacts will likely occur near the facility for this source subcategory. However, we do not agree with the commenters that our approach fails to meet statutory requirements. We do not feel that considering an "ample margin of safety" means that we must demonstrate no risk or adverse health effects for a theoretical person living at the fence line. Rather, it is appropriate to assess the risks at locations where people most likely reside. A census block is the smallest geographic unit for which the Census Bureau tabulates 100 percent data. While census blocks in rural areas may be larger, many blocks correspond to individual city blocks in more populated areas. The commenter is correct in that an individual could live closer to the plant than the center of the census block and our approach would have slightly underestimated risk. It is just as likely, however, that the closest individual could live farther from the plant than the center of the census block causing our risk estimates to be slightly overestimated. By placing receptors at the center of populated census blocks on all sides of a facility, we have evaluated people living "downwind." In conclusion, we continue to feel that placing a receptor in the geographic center of populated census blocks near a facility is a well established approach to exposure modeling which results in a reasonable approximation of estimating the risks where people actually live, and we maintain that this methodology is appropriate for actions taken under the authority of section 112(d)(4).

*Comment:* One commenter stated that all chlorine emissions from chlorine production facilities that are collocated with other source categories need to be

reviewed as a whole when evaluating public health risk, adverse environmental effects, and possible control strategies. The commenter stressed that other sources of chlorine and HCl should be included in the risk assessment under section 112(d)(4). The commenter was concerned that not accounting for all chlorine and HCl emissions from a facility would provide the community with a false sense of assurance of protection and is not consistent with the legislative intent of the CAA to consider cumulative HAP exposure issues through an integrated approach under section 112(d), 112(f), and 112(k). Therefore, the commenter requested that EPA evaluate the potential for adverse health and environmental impacts using conservative risk assessment methodology that incorporates all known chlorine and HCl emissions from a contiguous facility.

*Response:* Section 112 of the CAA requires us to list categories and subcategories of major sources and area sources of HAP and to establish NESHAP for the listed source categories and subcategories. In directing us how to establish MACT emission limits, section 112(d)(3) of the CAA requires us to set the emission limitation at a level that assures that all major sources achieve the level of control at least as stringent as that already achieved by the better-controlled and lower-emitting sources in each source category or subcategory. Therefore, the entire MACT program is structured on a source category-specific basis. All MACT standards developed to date have addressed emissions from specific source categories.

There are instances where mercury cell chlor-alkali facilities are collocated with other source categories. However, based on the risk assessment for chlorine and HCl emissions from mercury cell chlor-alkali plants, the predicted impacts from chlorine and HCl at these plants are extremely low. We believe that the human health and environmental impacts from all sources in the subcategory even when collocated with other chlorine and HCl emissions will still be within an ample margin of safety to protect the public health, and will not cause adverse environmental effects. Moreover, as indicated in the preamble to the proposed action, most major processes at the sites where mercury cell chlor-alkali facilities are located are subject to, or will be subject to, NESHAP to reduce HAP emissions (67 FR 44714, July 3, 2002). Therefore, it would be inappropriate to include emissions from those sources in an assessment for the mercury cell chlor-

alkali subcategory conducted under the authority of section 112(d)(4).

*Comment:* Two commenters stated that the environmental effects analysis was not adequate. One commenter stated that potential ecological effects of HCl emissions have not been properly referenced. One commenter stated that EPA's proposed action falls short of its obligation to protect against environmental effects. According to the commenter, EPA has understated its statutory obligation in the proposed action. The commenter referred to the legislative history, which indicates that CAA section 112(d)(4) requires standards that "would not result in adverse environmental effects which would otherwise be reduced or eliminated." The commenter listed the several shortcomings in the EPA's environmental assessment.

The commenter concluded that although EPA acknowledged that it had an obligation to ensure that any standards set under section 112(d)(4) did not have any adverse environmental effects, the Agency did not properly consider the issue. Therefore, the commenter stated that EPA could not promulgate standards under section 112(d)(4) without contravening the CAA.

*Response:* While CAA section 112(d)(4) makes no mention of environmental effects, we took the potential of such adverse effects into account when we issued our proposed action. The level of our analysis at proposal was adequate to satisfy the requirements of section 112(d)(4). The commenters did not suggest that they believed there was the potential for adverse environmental effects from HCl or chlorine emissions from mercury cell chlor-alkali plants. Were there any evidence that such adverse effects were likely, or even possible, we would have conducted a more intensive ecological risk assessment.

The commenters are correct, however, that we did not discuss the ecological effects of chlorine. This was because, as was stated in the proposal preamble, we did not perform a separate evaluation of chronic chlorine exposure because chlorine is converted to HCl in the atmosphere so rapidly.

Atmospheric exposure is the primary pathway for environmental effects from chlorine emissions. However, since most chlorine is converted to HCl, studies have focused on the effects of HCl on vegetation. Although plant exposures to elevated levels of chlorine can cause plant injury, it tends to be converted to other, less toxic forms rather rapidly in plants and may not result in the direct accumulation of