

1990 was 1,660 pounds/year. In addition, these 14 facilities reported in their questionnaire responses that they emit from wastewater a total of 170 pounds/year of volatile organic pollutants. Subsequent analysis by EPA using its WATER7 model indicates that these 14 facilities may actually emit closer to 35,000 pounds/year from wastewater. See Section 12 of TDD for discussion of difference between questionnaire results and WATER7 results. By way of comparison, facilities with subcategory A and/or C operations reported in the 1990 questionnaire that they emit from wastewater a total of 3.2 million pounds/year of volatile organic and priority pollutants, and the WATER7 model projected 14 million pounds/year of those pollutants from wastewater.

Based on its evaluation of the data available to it, EPA proposes to base BAT limitations for facilities with subcategory B and/or D operations on advanced biological treatment (PSES Option 1 minus cyanide destruction). In view of the comparatively small quantities of pollutants reported to be discharged and emitted from wastewater from the 14 existing facilities with subcategory B and/or D operations only, EPA has determined that the chosen technology basis for the proposed BAT limit is best suited to the type of wastewater the data describe for direct discharges in these subcategories. Other technology options, which incorporate steam stripping or steam stripping with distillation technologies, are designed to remove large quantities and many varieties of solvents from process wastewater. They are not optimal treatment technologies for the type of wastestreams reported by the 14 direct dischargers in these subcategories, because the 1990 data indicate that these direct dischargers discharge only 6 solvents (in contrast to the 45 solvents reported to be discharged by the facilities with subcategory A and/or C operations), and then in relatively small amounts (an average of 1,660 pounds/year for facilities with subcategory B and/or D operations, compared to an average of 14,600 pounds/year for facilities with subcategory A and/or C operations). Accordingly, based on the data available to EPA for these facilities from the 1990 questionnaire, EPA is not proposing steam stripping or steam stripping with distillation as part of the technology basis for BAT for facilities with subcategory B and/or D operations.

However, in the event that new data for these facilities show that the wastestreams of these facilities actually resemble those of the indirect dischargers in these subcategories, EPA

proposes to base the BAT limitations on steam stripping technology, which EPA has determined is the best available technology for wastestreams of that character. See Section IX.E.5. Accordingly, EPA specifically invites comments on establishing BAT limitations equal to the proposed PSES for those pollutants, including those that EPA has determined pass through as part of co-proposal (1). See Section XIV, solicitation number 7. In addition, if EPA promulgated BAT limitations based on steam stripping or steam stripping with distillation, EPA would include BAT limitations on phenol, acetonitrile and polyethylene glycol 600 (based on advanced biological treatment), which are present in the wastestreams of indirect dischargers but which EPA does not propose to regulate under either PSES co-proposal because EPA has concluded that they do not pass through POTWs.

The Agency has estimated that the facilities with subcategory B and/or D operations would incur total post-tax annualized costs of \$0.71 million in complying with Option 1. The estimated total post-tax annualized costs for complying with other options are \$1.5 million for Option 2, and \$2.9 million for Option 3. The Agency estimated that none of the options would result in any closures or unemployment. These impacts, and the methodology behind them, are explained in greater detail in Section XI.B of this preamble and in the Economic Impact Analysis. Based upon these findings, EPA concluded that all four options are economically achievable. EPA selected Option 1 because it determined that option represented that best available technology from among all the economically achievable options.

In evaluating the non-water quality environmental impacts of the options, specifically electrical power consumption, the Agency found that the annual incremental increase in electrical power consumption for all facilities to achieve Option 1 was 265 megawatts (MW) beyond current usage (the same as for the proposed BPT limits). This is equivalent to an increase of approximately 0.005 percent of the pharmaceutical industry's purchased electrical energy usage in 1990. The incremental increases for electrical power consumption for the remaining options were: for Options 2 and 3, an increase of 182 MW and 364 MW, respectively, for all facilities for which EPA estimated compliance costs; and for Option 4 an increase of 911 MW for all facilities for which EPA estimated compliance costs. Further discussion of these non-water quality environmental

impacts are presented in Section 12 of the Technical Development Document.

The Agency considered other non-water quality environmental impacts of the proposed option, including the role which this proposal may play in the minimization, recycle, and disposal of characteristic (ignitable) volatile organic wastes. EPA has determined that Options 2, 3 and 4 will generate 76 metric tons per year of condensates as a result of the use of steam stripping or steam stripping with distillation technologies at direct discharging plants. Based on the small increase in condensate generation associated with Options 2, 3 and 4 EPA has concluded that the recovery opportunities or incineration issues prompted by condensate generation do not provide a basis for choosing one of the technology options as the basis for proposed BAT limitations for facilities with subcategory B and/or D operations. The Agency also considered the effect of these four options on the current levels of air emissions from wastewater at facilities with subcategory B and/or D operations. To do this, EPA used the WATER7 computer model to evaluate the 1990 levels of air emissions from wastewater for facilities with subcategory B and/or D operations. The results of the analyses were used to estimate air emission increases or decreases for the regulatory options. The Agency estimates that Option 1 would result in a minimal increase in air emissions, while Options 2, 3 and 4 would decrease air emissions by 16 metric tons per year. EPA concluded that the changes from current emission levels are not significant enough to justify selection of Options 2, 3 and 4.

EPA also concluded that the engineering aspects of all four options were compatible with current manufacturing processes employed and potential process changes at facilities with subcategory B and/or D operations and thus did not provide a basis for selecting an option. Similarly, the age of equipment and facilities involved did not provide any basis for selecting among the options.

The selection of Option 1 as BAT for facilities with subcategory B and/or D operations reflects, in large part, EPA's conclusion, based on currently available data, that BPT level biological treatment can degrade the relatively small load of organic pollutants generated by these facilities with a low occurrence of air emissions during advanced biological treatment. The Agency has noted, however, that this industry is dynamic with respect to its production processes. Thus, volatile organic pollutant loading data requested by EPA for 1991-1994