

and/or C operations, cyanide were less than the long-term average loads achievable by the technology basis for today's proposed BPT limitations, the plant was estimated to have no compliance costs. If the resulting pollutant loads exceeded the proposed BPT long-term average loads, EPA estimated costs for treatment system upgrades and, in the case of cyanide, in-plant hydrogen peroxide oxidation technology. Based on this analysis, EPA concluded that 20 pharmaceutical manufacturing facilities would incur costs to comply with the proposed BPT limitations. EPA estimated the total capital expenditures for complying with the proposed BPT limitations to be \$15.3 million and the annual operating and maintenance (O&M) costs to be \$7.5 million. The estimated cost for implementing the proposed BPT limitations is summarized for the A and C and B and D subcategories below in Table IX.G.1.

2. BAT

EPA estimated the costs to comply with today's proposed BAT limitations

on priority and nonconventional pollutants on plant-by-plant and pollutant-by-pollutant basis. If the loading data provided by the facility in its Section 308 questionnaire response indicated that its discharge was above the proposed limitation target load for a given pollutant, EPA developed cost estimates for the control technology EPA believes is appropriate for that pollutant (e.g., steam stripping for all strippable pollutants).

For direct dischargers with subcategory A and C operations, BAT costs include, where necessary, the costs for in-plant steam stripping followed by end-of-pipe advanced biological treatment upgrades to comply with the proposed limitations for priority and nonconventional pollutants. The operation and maintenance costs include monitoring of strippable pollutants in-plant and nonstrippable biodegradable pollutants at the end-of-pipe.

For direct dischargers with subcategory B and D operations, BAT costs include the costs for end-of-pipe advanced biological treatment upgrades.

The upgrades are designed around treating conventional pollutants to specific targets, equivalent to BPT long-term mean performance. In a few cases, additional compliance costs were estimated for direct discharging facilities with subcategory B and D operations that already achieve these conventional pollutant upgrade targets, but require more closely controlled treatment system operation to comply with the priority and nonconventional pollutant BAT limitations.

The BAT operation and maintenance costs for subcategories B and D include monitoring for priority and nonconventional pollutants at the end-of-pipe. EPA estimated the total capital expenditures for complying with the proposed BAT limitations to be \$57.0 million, and the annual operating and maintenance (O&M) costs to be \$36.8 million. These costs are not incremental and include the advanced biological treatment upgrades also presented under BPT. See Table IX.G.2-1 for a breakdown of the costs by subcategory.

TABLE IX.G.1.—COST OF IMPLEMENTING PROPOSED BPT REGULATIONS
[In millions of 1990 dollars]

Subcategory	No. of plants	Capital costs	Annual O&M costs
Fermentation (A) and Chemical Synthesis (C)	15	14.7	7.0
Biological and Natural Extraction (B) and Mixing/Compounding/Formulating (D)	5	0.6	0.5

TABLE IX.G.2.—COST OF IMPLEMENTING PROPOSED BAT REGULATIONS
[In millions of 1990 dollars]

Subcategory	No. of plants	Capital costs	Annual O&M costs
Fermentation (A) and Chemical Synthesis (C)	23	56.4	35.7
Biological and Natural Extraction (B) and Mixing/Compounding/Formulating (D)	13	0.64	1.1

3. PSES

EPA developed PSES costs for compliance with the proposed pretreatment standards for strippable priority and nonconventional pollutants in the same manner that it developed BAT compliance costs for these pollutants. In developing these costs, EPA based the number of pollutants

proposed to be regulated under PSES on the pass-through findings of PSES co-proposal (1), which include the 33 less strippable volatile organic pollutants. EPA did not include cost estimates for nonstrippable nonconventional pollutants in the PSES costs because EPA is requesting comment on its technology basis for controlling the

discharge of these pollutants. See Section XIV, solicitation numbers 27.1 and 27.2. The estimated total capital expenditure for complying with the proposed PSES limitations are \$91.8 million and the annual operating and maintenance (O & M) costs are \$54.1 million. See table IX.G.3 for a breakdown of the costs by subcategory.

TABLE IX.G.3.—COST OF IMPLEMENTING PROPOSED PSES REGULATIONS
[In millions of 1990 dollars]

Subcategory	No. of plants	Capital costs	Annual O&M costs
Fermentation (A) and Chemical Synthesis (C)	71	70.8	46.4
Biological and Natural Extraction (B) and Mixing/Compounding/Formulating (D)	75	21.0	7.7