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Part IV

**Environmental
Protection Agency**

**40 CFR Part 441
Effluent Limitations Guidelines and
Pretreatment Standards for the Industrial
Laundries Point Source Category;
Proposed Rule**

**ENVIRONMENTAL PROTECTION
AGENCY**

40 CFR Part 441

[FRL-6373-5]

RIN 2040-AB97

**Effluent Limitations Guidelines and
Pretreatment Standards for the
Industrial Laundries Point Source
Category**

AGENCY: Environmental Protection Agency (EPA).

ACTION: Withdrawal of proposed rule.

SUMMARY: On December 17, 1997 (62 FR 66182), EPA published proposed pretreatment standards for the control of wastewater pollutants from the industrial laundries industry. After careful consideration of all of the information in the record for this rulemaking, EPA has decided not to promulgate national categorical pretreatment standards for the industrial laundries point source category because industrial laundry discharges to publicly owned treatment works (POTWs) do not present a national problem warranting national regulation. EPA is not issuing effluent limitations guidelines and new source performance standards for direct dischargers since there are no direct dischargers and no means to evaluate performance to determine the appropriate level of control for national rulemaking purposes. For this action, EPA considered many regulatory technology options as well as the no regulation option. EPA has determined that indirect discharges from industrial laundries do not warrant national regulation because of the small amount of pollutants removed by pretreatment options determined to be economically achievable. For existing sources, EPA estimates that a rule for this industry would remove less than 650 pounds of pollutant per facility per year (which, on a toxic-weighted basis, is only 32 pound equivalents). For new sources, EPA estimates that a rule for this industry would remove less than 1,040 pounds of pollutant per facility per year (which, on a toxic-weighted basis, is only 51 pound equivalents). These pollutant reductions represent much smaller removals than any other categorical pretreatment standards promulgated by EPA. EPA's record does not demonstrate that Publicly Owned Treatment Works (POTWs) are generally experiencing problems with discharges from this industry, and EPA believes that such discharges will rarely, if ever, present a problem. To the extent that

isolated problem discharges occur, existing pretreatment authority is available to control these isolated discharges. EPA believes that for this industry, the best way to control effluent discharges of certain organic pollutants is to remove the pollutants which are contained on the laundry items before they are washed. EPA's Office of Solid Waste (OSW) plans to address the amount of certain waste solvents being sent to laundries in a future rulemaking (the first quarter of the year 2000) with an aim toward decreasing the amount of solvent based organics on towels.

DATES: In accordance with 40 CFR Part 23, this final action shall be considered issued for the purposes of judicial review at 1 pm Eastern time on September 1, 1999. Under section 509(b)(1) of the CWA, judicial review of the Administrator's final action regarding effluent limitations guidelines and pretreatment standards can only be had by filing a petition for review in the United States Court of Appeals within 120 days after the decision is considered issued for purposes of judicial review.

ADDRESSES: For additional technical information write to Ms. Marta E. Jordan, Engineering and Analysis Division (4303), U.S. EPA, 401 M Street SW, Washington, DC 20460 or send e-mail to: Jordan.Marta@epa.gov or call at (202) 260-0817. For additional economic information contact Mr. George Denning at the address above or by calling (202) 260-7374.

The complete administrative record (excluding confidential business information) for this action is available for review at EPA's Water Docket at EPA Headquarters at Waterside Mall, room EB-57, 401 M Street, SW, Washington, DC 20460. For access to docket materials, call (202) 260-3027 between 9:00 am and 3:30 pm for an appointment. A reasonable fee may be charged for copying.

FOR FURTHER INFORMATION CONTACT: Ms. Marta E. Jordan, (202) 260-0817.

SUPPLEMENTARY INFORMATION:

Supporting Documentation

The basis for this final action is detailed in four documents, each of which is supported in turn by additional information and analyses in the rulemaking record. EPA's technical foundation for this final action is presented in the Technical Development Document for the Final Action Regarding Pretreatment Standards for the Industrial Laundries Point Source Category (hereafter, "Technical Development Document"; EPA Report No. 821-R-99-010. EPA's economic

analysis is presented in the Economic Assessment for the Final Action Regarding Pretreatment Standards for the Industrial Laundries Point Source Category (hereafter, "Economic Assessment"; EPA Report No. EPA-821-R-99-011.) and in the Cost-Effectiveness Analysis for the Final Action Regarding Pretreatment Standards for the Industrial Laundries Point Source Category (hereafter, "Cost-Effectiveness Analysis"; EPA Report No. EPA-821-R-99-009). EPA's environmental benefits analysis is presented in the Water Quality Benefits Analysis for the Final Action Regarding Pretreatment Standards for the Industrial Laundries Point Source Category (hereinafter, "WQBA"). EPA's responses to comments on the proposal and a Notice of Data Availability (NODA) which are part of this action are presented in the Comment Response Document for the Final Action Regarding Pretreatment Standards for the Industrial Laundries Point Source Category (hereinafter, "Comment Response Document").

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I. Legal Authority

This final action withdraws the proposed pretreatment standards for the industrial laundries point source category. EPA takes this action pursuant to sections 301, 304, 306, 307, 308, 402, and 501 of the Clean Water Act, 33 U.S.C. 1311, 1314, 1316, 1317, 1318, 1342, and 1361.

II. Background

A. Clean Water Act

The Federal Water Pollution Control Act Amendments of 1972 (Clean Water Act) established a comprehensive program to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters," (section 101 (a)). To implement the Act, EPA is to issue effluent limitations guidelines, pretreatment standards and new source performance standards for industrial dischargers. These types of effluent guidelines and standards are summarized in the proposed regulation at 62 FR 66182 (December 17, 1997).

Section 304(m) of the Clean Water Act (33 U.S.C. 1314(m)), added by the Water Quality Act of 1987, requires EPA to establish schedules for (1) reviewing and revising existing effluent limitations guidelines and standards ("effluent guidelines"), and (2) promulgating new effluent guidelines. On January 2, 1990 EPA published an Effluent Guidelines Plan (55 FR 80), in which schedules were established for developing new and revised effluent guidelines for several industry categories. One of the industries for which the Agency established a schedule was the

Industrial Laundries Point Source Category.

Natural Resources Defense Council, Inc. (NRDC) and Public Citizen, Inc., challenged the Effluent Guidelines Plan in a suit filed in U.S. District Court for the District of Columbia (NRDC et al v. Reilly, Civ. No. 89-2980). The plaintiffs charged that EPA's plan did not meet the requirements of section 304(m). A Consent Decree in this litigation was entered by the Court on January 31, 1992. The terms of the Consent Decree are reflected in the Effluent Guidelines Plan most recently published on September 4, 1998 (63 FR 47285). This plan states, among other things, that EPA proposed effluent limitations guidelines and standards for the industrial laundries point source category in November 1997 and that EPA would take final action by June 1999. This notice serves to inform the public of EPA's final action pursuant to the decree.

B. Pollution Prevention Act

The Pollution Prevention Act of 1990 (PPA) (42 U.S.C. 13101 *et seq.*, Pub. L. 101-508, November 5, 1990) declares it to be the national policy of the United States that pollution should be prevented or reduced whenever feasible; pollution that cannot be prevented should be recycled in an environmentally safe manner, whenever feasible; pollution that cannot be prevented or recycled should be treated in an environmentally safe manner whenever feasible; and disposal or release into the environment should be employed only as a last resort (Section 6602; 42 U.S.C. 13101(b)). In short, preventing pollution before it is created is preferable to trying to manage, treat or dispose of it after it is created.

C. Profile of the Industry

An industrial laundry is any facility that launders industrial textile items from off-site as a business activity (i.e., launder industrial textile items for other business entities for a fee or through a cooperative arrangement). Either the industrial laundry or the off-site customer may own the industrial laundered textile items. This definition includes textile rental companies that perform laundering operations. For this action, laundering means washing with water, including water washing following dry cleaning. Laundering does not include laundering exclusively through dry cleaning. Industrial textile items include, but are not limited to, industrial: shop towels, printer towels, furniture towels, rags, mops, mats, rugs, tool covers, fender covers, dust control

items, gloves, buffing pads, absorbents, uniforms and filters.

Industrial laundry facilities are located in all 50 states and all 10 EPA regions. By state, the largest number of industrial laundries are in California. By EPA region, the largest concentration of industrial laundries is in Region V. Most of the industrial laundering facilities are in large urban areas. Industrial laundries vary in size from one- or two-person facilities to large corporations that operate many facilities with hundreds of employees nationwide. Annual laundry production per facility ranges from approximately 44,000 to over 32 million pounds, with a total annual industry production of over 9 billion pounds. At proposal, EPA estimated that the industrial laundry industry consisted of approximately 1,747 facilities nationwide.

In analyzing data submitted as part of the comment period of the proposed rule, EPA decided to eliminate clean room items (i.e., items used in particle- and static-free environments by computer manufacturing, pharmaceutical, biotechnology, aerospace, and other customers to control contamination in production areas) from the industrial textile items list. EPA compared data of pollutant concentrations in clean room items to pollutant concentrations in linens and industrial textile items. EPA found the clean room item pollutant concentrations lower than the linen concentrations and excluded the clean room items from the list. Since EPA excluded clean room items from the definition of industrial laundry textile items the number of facilities affected by this action decreased by five facilities. Thus, EPA's current estimate of industrial laundries consists of 1,742 facilities nationwide.

D. Proposed Rule

On December 17, 1997 (62 FR 66182), EPA published proposed pretreatment standards for the control of wastewater pollutants from the industrial laundries industry. The proposed rule covered facilities that launder industrial textile items from off-site as a business activity (i.e., launders industrial textile items for other business entities for a fee or through a cooperative arrangement). EPA proposed an exclusion for existing facilities processing less than one million pounds of incoming laundry and less than 255,000 pounds of shop and/or printer towels per calendar year to eliminate unacceptable disproportionate adverse economic impacts on the smaller facilities. By excluding these facilities, EPA's

proposed rule would have applied to 1,606 facilities nationwide.

EPA proposed pretreatment standards based on chemical precipitation technology for 11 parameters (3 metals, 7 organics, and one bulk parameter known as silica gel treated-hexane extracted material (SGT-HEM)). SGT-HEM was formerly called total petroleum hydrocarbon (TPH) under a previously used analytical method. The analytical method used for measuring SGT-HEM, EPA's Method 1664, was approved in a final rulemaking in the **Federal Register** on May 14, 1999 (64 FR 26315); the parameter is now called Non-polar material (NPM).

EPA received comments on the proposed exclusion and on the technology basis used in calculating limits. Other comments related to the necessity of a national rule, costs of compliance, benefits, cost-effectiveness, the toxic weighting factor and the POTW percent removal or SGT-HEM (TPH). EPA evaluated all of the issues based on the additional information gathered by EPA or received during the comment period following the proposal. EPA then discussed the results of most of these evaluations in a notice of data availability discussed below.

E. Notice of Data Availability

EPA published a notice of data availability (NODA) on December 23, 1998 (63 FR 71054). The NODA presented a summary of the data gathered or received from commenters since the proposal, an assessment of the usefulness of the data in EPA's analyses; a description and evaluation of a modified technology option suggested by commenters; and a discussion of a voluntary industry program, along with certain other specific issues raised by commenters.

1. Towel Only Option

In response to comments received on the proposal, EPA evaluated an option covering only facilities laundering shop and/or printer towels ("towel only"). EPA provided information on the towel only option in the NODA. This option was a modified version of the "heavy" options presented in the proposal. This towel only alternative would have applied to 1,333 facilities nationwide. Based on comments on the NODA, EPA decided that the towel only options were complicated to implement and enforce and could result in significantly increased monitoring costs for compliance with both the categorical standards for one portion of the facility's discharge, as well as with local limits applied to the remainder of the facility's discharge. In addition, there

was limited data identifying performance of the control technologies treating the towel only wastewater. Thus, EPA decided not to pursue the towel only options.

2. Total Petroleum Hydrocarbons (TPH)

In the NODA, EPA also discussed issues related to how TPH was used for two different analyses—the pass through analysis and the cost-effectiveness analysis. As part of the analyses conducted for the NODA, EPA incorporated data submitted on the POTW removal of the bulk parameter SGT-HEM (TPH). The new data showed nondetects for TPH in the POTW effluent. Thus, for the pass through analysis conducted for the NODA, EPA estimated a POTW removal of greater than 74 percent for SGT-HEM (TPH) based on the highest influent measurement of SGT-HEM (see NODA, 63 FR 71054).

In the NODA, EPA also discussed the new data collected related to constituents of TPH and modifications made to improve both the pass through and cost-effectiveness analyses based on this new data. Following the proposal, EPA conducted a study to evaluate the bulk parameter SGT-HEM (TPH) in order to identify more accurately the constituents comprising the SGT-HEM (TPH) measurement. The study was conducted by sampling the influents and effluents of the Dissolved Air Flotation (DAF) and Chemical Precipitation (CP) treatment units at the same facilities EPA sampled prior to and soon after proposal. EPA analyzed these samples for SGT-HEM (TPH) and total oil and grease using Method 1664 and evaluated the sample extracts using gas chromatography and mass spectroscopy (GC/MS) methods. Based on these analyses, EPA was able to identify several constituents measured as part of the SGT-HEM (TPH) parameter. Most of the constituents identified in the influent samples were n-alkanes, as well as naphthalene, bis(2-ethylhexyl) phthalate and 2-methylnaphthalene. The identified constituents, however, represent only a very small portion of the total SGT-HEM (TPH) measurement.

In the NODA, EPA solicited additional information on influent and effluent pollutant concentrations from POTWs operating secondary treatment. EPA did not receive any additional data in response to the NODA that was useful in revising POTW percent removals for individual constituents, including the identified constituents of SGT-HEM (TPH).

As part of EPA's analysis for the rule, EPA also conducted a cost-effectiveness

analysis. This analysis, in part, compares for various technology options the cost of removing toxic and nonconventional pollutants that would otherwise pass through the POTW. EPA expresses these pollutant removals as "pound equivalents" which EPA estimates by multiplying pounds of a pollutant removed by an assigned toxic weighting factor. The assigned toxic weighting factor for each pollutant is based on the pollutant's relative toxicity to copper. At proposal, EPA included the bulk parameter TPH in the cost-effectiveness calculations. Following the TPH study, EPA used a revised toxic weighting factor for TPH based on the toxic weighting factors for the individual constituents of SGT-HEM (TPH). Based on the identified constituents of SGT-HEM (TPH), EPA revised its average toxic weighting factor for the bulk parameter TPH from 0.10 (used at proposal) to 0.009. EPA used this value, as discussed in the NODA, to identify the "total toxic pound equivalents" of SGT-HEM (TPH) removed by the rule. EPA also calculated cost-effectiveness based on removals of the individual constituents of SGT-HEM (TPH) rather than on removals of the bulk parameter SGT-HEM (TPH). The results of the analyses using both the individual constituents only and the bulk parameter TPH can be found in the record and supporting documents.

3. Pollution Prevention Program

In comments on the proposal and NODA, the industrial laundries trade associations, Uniform and Textile Service Association and Textile Rental Services Association of America, (UTSA and TRSA) submitted a description of a voluntary multi-media environmental stewardship and pollution prevention program as an alternative approach to a national pretreatment standard. The centerpiece of the voluntary program is a series of initiatives seeking to achieve an annual reduction of pollutants being discharged of 20,000 toxic pound equivalents and an annual reduction of up to 25 percent in industry water, energy, and washroom chemical usage (on a per pound of textiles laundered basis) by the year 2002. The program would be initiated by UTSA and TRSA surveying the industry to develop a 1997 "benchmark" against which progress towards these reduction goals will be measured. EPA supports industry efforts to reduce pollution at the source, and believes that the environment would benefit from this pollution prevention program whether or not categorical pretreatment standards are established.

F. Changes Since Proposal

1. Cost Changes

Engineering cost changes have been made based on supplementary data and comments. These changes, which are reflected in the economic impact analyses, cost-effectiveness analysis, and small business analyses, are discussed more fully in the Technical Development Document (TDD), Economic Assessment (EA), and Cost-Effectiveness documents. The major changes since the proposal resulted from the following:

- EPA removed three model clean room facilities (equivalent to five facilities in the industry) from the scope of the rule, based on the raw wastewater loadings for their items. This change had minor effects on the overall industry costs.
- EPA added a cost for facilities that currently (based on 1993 data) operate dissolved air flotation (DAF) and chemical precipitation in order to upgrade performance to meet the projected standards. This change increased the capital and O & M costs for all options.
- EPA revised the labor costs associated with the operation and maintenance of the option treatment equipment. The labor costs are now calculated as one full-time equivalent operator per treatment system, which generally increased the costs for all options.
- EPA increased the required square footage and the cost per square foot of buildings that were included in the option costs to house the treatment systems, thus increasing the costs for all options.
- EPA changed the sludge generation rates of the treatment technologies based on available treatment system data. This change had a minor effect on the option costs (some model facility costs increased, while others decreased).

2. Pollutant Loading and Reduction Changes

Pollutant loading and reduction changes have been made based on supplementary data and comments. These changes, which are reflected in the pass through and cost-effectiveness analyses, are discussed more fully in the Technical Development Document and Cost-Effectiveness documents. The major changes since the proposal resulted from the following:

- EPA removed three model clean room facilities (equivalent to five facilities in the industry) from the scope of the rule, based on the raw wastewater loadings for their items. This change

had minor effects on the overall industry pollutant loadings and removals.

- For the primary assessment, EPA removed the toxic weighting factor (TWF) for total petroleum hydrocarbon (TPH) and included the TWFs for the identified constituents of TPH in the pollutant loadings and removals calculations. EPA also evaluated pollutant loadings and removals using the adjusted TWF for TPH as described in the NODA. Under either analysis, this greatly decreased the pound-equivalent loadings and removals for all options.
- EPA incorporated new sampling data collected since proposal for the chemical precipitation technology option, which modified the long term averages for those options. This change had minimal effects on the loadings calculations for the options.
- For calculating pollutant loadings, EPA used a revised pass through analysis. At proposal, EPA performed the pass through analyses on TPH (and not the individual pollutants that comprise TPH) using the average percent removal of three individual n-alkanes. For this final action, as discussed in the NODA, EPA performed the pass through analysis on the individual pollutants that comprise TPH (i.e., n-alkanes and others).
- Further, for all pollutants EPA looked at Henry's Law Constants to see if the individual pollutants were volatile. If the pollutants were volatile, EPA determined POTW percent removal based on the POTW removal model for the pollutant with the most similar Henry's Law Constant, as presented in the development document for the pharmaceutical manufacturing industry effluent limitations guidelines and standards (63 FR 50388) using a combination of POTW empirical data and the Water 8 biodegradation model.
- Finally, for the n-alkanes that were not volatile, EPA used the average POTW percent removal of two n-alkanes that were used for the proposal to represent the SGT-HEM (TPH) POTW percent removal. EPA did not use the percent removal from a third n-alkane because the percent removal is reported simply as "greater than 9 percent"; and therefore the actual removal based on this data could be anywhere between 9 and 99 percent. However, the two n-alkanes are volatile, under the Henry's Law Constant approach above, and EPA believes their removal by POTWs may overstate the POTW removal of all n-alkanes that are not volatile. To

evaluate POTW removal of non-volatile n-alkanes, EPA conducted two analyses. One used the average percent removal of the two n-alkanes, the other used the 74 percent removal identified in NODA as the basis for POTW removal of TPH, of which the non-volatile n-alkanes are constituents. EPA also evaluated pass through of the n-alkanes based on another method which used the POTW removal for the individual n-alkanes based on the 94 percent average of the same two n-alkanes used in the first method, regardless of their volatility. Both changes increased the pollutant removals of n-alkanes by POTWs and decreased the pollutant removals that would occur under the technology options considered.

3. Economic Analysis Changes

Based on comments, EPA made three changes to the economic impact methodology. These are discussed more fully in the EA.

- The main analysis assumes that costs of compliance cannot or will not be passed through to customers, but are absorbed by the affected facilities, as was done in an appendix to the EA for the proposal. EPA is using this assumption in its primary impact analyses because it is possible that some facilities or firms might not be able to pass through as much of their costs as would other facilities. This could happen where there is regional or local competition between industrial laundries and between industrial laundries and disposable product vendors or other providers of substitutes. Given that EPA believes that this is a competitive industry, EPA believed this conservative assumption was appropriate. A cost passthrough approach is discussed as a sensitivity analysis in an appendix in the EA.
- Minor refinements to the cash flow analysis and firm failure analysis addressed several issues. For example, depreciation is no longer annualized in the Altman's Z" analysis. These changes do not affect the economic results in any significant way. See the Comment Response Document for additional detail on these changes.
- Based on public comment describing industry experience with buyouts, EPA now estimates 75 percent of a facility's employees will lose their jobs if that facility's parent company is predicted to be a firm failure. EPA believes this estimate reflects a reasonable upper-bound estimate of

short-term potential employment losses due to firm failure.

III. Decision Not To Regulate Industrial Laundries

A. Summary of Options Considered

EPA considered various options prior to taking this final action. Among the final options EPA considered were "no regulation" and a number of regulatory options.

For the regulatory options, EPA evaluated various options using two major technologies as bases for the standards: chemical precipitation and dissolved air flotation. EPA also evaluated several exclusions within the towel only option discussed in detail in the NODA and mentioned above. In evaluating these options, EPA considered the total pounds and toxic pound equivalents removed by any economically achievable option, the degree to which these pollutants pass through the POTW and the extent to which POTWs can adequately treat these pollutants. To mitigate disproportionately adverse economic impacts of a rule, EPA considered excluding the following facilities from the scope of the regulation:

- Option CP-1: facilities that launder less than one million pounds of incoming laundry (total) and less than 255,000 pounds of shop and/or printer towels per calendar year (i.e., the exclusion in the proposed rule);
- Option CP-2: facilities that launder between one and three million pounds of incoming laundry (total) and less than 120,000 pounds of shop and/or printer towels per calendar year, in addition to those facilities that launder less than one million pounds of incoming laundry (total) and less than 255,000 pounds of shop and/or printer towels per calendar year; or
- Option CP-3: facilities that launder less than five million pounds of incoming laundry (total) and less than 255,000 pounds of shop and/or printer towels per calendar year.

EPA also considered and analyzed additional exclusions; descriptions and results are discussed in further detail in the Economic Assessment.

B. Pretreatment Standards for Existing Sources (PSES)

1. Selected Option

After considering all of the information collected and analyzed, EPA has selected the "no additional regulation" option as its final action. In other words, EPA has decided not to establish categorical pretreatment standards for existing dischargers in this industry.

2. Rationale for Selected Option

After careful consideration of all of the information in the record for this rulemaking, EPA has decided not to promulgate national categorical pretreatment standards for the industrial laundries point source category because industrial laundry discharges to publicly owned treatment works (POTWs) do not present a national problem warranting additional national regulation under the Clean Water Act. In making a final decision, EPA identified various technologies as candidate PSES technologies. EPA determined that some of these technology options are not economically achievable due to the number of plant closures and firm failures estimated. After determining what options would be economically achievable, EPA estimated the total pounds of pollutant discharges that would be removed by the rule. One measure of the toxic and nonconventional pounds of pollutant discharges that would be removed by the rule results from assigning pollutants a "toxic weighting factor" based on the pollutant's relative toxicity to copper. Measured this way, EPA determined that the rule would remove only 32 toxic pound equivalents per facility per year, depending on the option. This is a relatively small total amount of toxic and nonconventional pollutant reductions, as confirmed by comparison with other industries for which effluent limitations guidelines have been promulgated. The details of this assessment are found in the Technical Development Document and EA and are summarized below.

EPA examined the economic achievability of a wide array of options for the rule. This included varying the technology basis for the rule, i.e., chemical precipitation (CP), dissolved air flotation (DAF); requiring treatment of only shop and/or printer towels; and various regulatory exclusions or "cutoffs" based on total production and amount of shop and/or printer towels laundered. For the reasons noted in Section II.E., EPA decided not to pursue the towel only options. In evaluating the options based upon DAF, EPA found that these options removed fewer toxic pound equivalents than the comparable options based upon CP, but at higher cost and comparable impact. For this reason, EPA focuses on the CP options only in this preamble, but makes the same conclusions for the comparable DAF options.

EPA determined that looking at impacts on the industry as a whole, an economically achievable option (referred to as CP-2) is based on CP with

production cutoffs that exclude facilities with between one and three million total pounds of incoming laundry and less than 120,000 pounds of shop and/or printer towels and facilities with up to 1 million total pounds of incoming laundry and less than 255,000 pounds of shop and/or printer towels. This option would result in 44 facility closures (2.5 percent of the total industry) and no firm failures, with resulting direct employment losses of 2,261 jobs. The exclusion is justified because the facilities excluded would have suffered a disproportionate closure rate of 12 percent and disproportionate failure rate of 20 percent under the rule.

EPA rejected Option CP-1 (i.e., CP with production cutoffs only to 1 million total pounds of incoming laundry and less than 255,000 pounds of shop and/or printer towels) due not only to the number of facility closures (61) and employment losses (2,684 jobs) that would result, but also due to the number of firm failures (72) and resulting employment losses (1,721 jobs) under this option. The 61 facility closures represent about 3.5 percent of all facilities and the 72 firm failures represent 8 percent of firms. These firm failures are in addition to the facility closures. Firm failures would result in additional employment loss because in the industrial laundry industry, when a facility is bought by a firm already in the industry, it is likely that the facility would no longer be a production facility, but instead be turned into a depot or transfer station which based on examples of recent buyouts, results in an estimated 75 percent loss of employment. Thus, under this option, that EPA rejects as not economically achievable, the closures and firm failures would have resulted in direct employment losses of 4,405 jobs, or 3.4 percent of the industry's employment. While EPA does not have a bright line for determining what level of impact is economically achievable for the industry as a whole, EPA looked for a breakpoint that would mitigate adverse economic impacts without greatly affecting the toxic pound equivalents being removed under a rule. Here, by moving from the first option to the second option, that is, by adding an additional production cut-off of one to three million total pounds of incoming laundry and less than 120,000 pounds of shop and/or printer towels, EPA was able to reduce employment losses by almost half, from 4,405 to 2,261 while only losing about 8.7 percent toxic pound equivalents that would be removed under the first option. Thus, EPA rejected the first option (option

CP-1) that would result in 61 facility closures and 72 additional firm failures as not economically achievable.

If EPA had chosen a greater exclusion (Option CP-3 with production cutoffs of up to five million total pounds of incoming laundry and less than 255,000 pounds of shop and/or printer towels) there would be two closures and no firm failures. Under this option, EPA projected only 235 job losses, but would have lost a greater percentage of toxic pound equivalents. Although EPA identified both option 2 and option 3 as the economically achievable options, EPA rejected option 3 as not the "best" technology since EPA believes that for BAT or PSES the term "economic achievability" contemplates acceptance of some adverse economic impacts.

For Option CP-2, which EPA found to be economically achievable for the industry as a whole, EPA estimates average removals of only 32 toxic pound equivalents per facility per year. These reductions are much lower than any other categorical pretreatment standards promulgated by EPA. For example, for Organic Chemicals, Plastics, and Synthetic Fibers (OCPSF), Electroplating, Battery Manufacturing, and Porcelain Enameling, toxic pound equivalents removed per facility per year range from 6,747 to 14,960. For some of the more recently proposed rules the reductions are lower, but not nearly as low as projected for industrial laundries. For example, for Transportation Equipment Cleaning and Metal Products and Machinery Proposals the toxic pound equivalents removed per facility per year would range from 492 to 693.

POTWs are effective at treating industrial laundry effluent. EPA estimates POTW removal efficiency of SGT-HEM (TPH) to be greater than 74 percent. Because the actual percent removal could not be calculated and could be much higher (i.e., 95-99 percent), EPA believes that SGT-HEM (TPH) does not pass through. Although EPA does not have data showing how much greater than 74 percent is the treatment efficiency, EPA expects that the treatment is significantly more effective because all of the POTW effluent data are below the analytical detection limit. For the individual toxic and nonconventional pollutants, EPA determined that POTW removal efficiencies ranged from 18 to 99 percent. A rule based on the economically achievable option would remove only a total of 39,000 toxic pound equivalents nationwide per year; or 32 toxic pounds per facility per year on average. With respect to conventional pollutants, POTWs are

designed to treat and can effectively treat these pollutants. Thus, EPA has determined that there is insignificant pass through of total pounds or toxic pound equivalents of pollutants discharged to POTWs by industrial laundries such that national categorical pretreatment standards are not warranted. EPA also examined the total pounds and total pound equivalents removed under a rule with the first cutoff and determined that the amount of pounds removed is also insignificant and does not warrant national regulation. This analysis is discussed in the Development Document for the final action.

EPA has little, if any, record evidence that POTWs are currently having pass through or interference problems due to industrial laundry effluent. In the event that a particular industrial laundry could create a local problem, EPA believes the existing pretreatment program is fully adequate to control these discharges at the local level.

The small total removals achieved by the rule are reflected in the cost-effectiveness results. Cost-effectiveness is expressed as the ratio of costs to toxic pound equivalent pollutant removals achieved by a regulatory option. While EPA is not required to consider cost-effectiveness in establishing BAT, new source standards or pretreatment standards, EPA typically estimates the cost-effectiveness of its options particularly to determine which option along a spectrum of options is most efficient. For this rule, all of the regulatory options considered have high average cost-effectiveness values (\$2,360/toxic pound equivalent for the economically achievable option) resulting from the very small removals that occur under that option.

EPA further believes that the most effective way to address organic wastes from certain solvents in the discharges to POTWs is reduce their use or toxicity in the customer facilities in the first place or to remove them before washing, either at the customer's facility or at the laundry. EPA's Office of Solid Waste (OSW) is planning to conduct rulemaking to address certain organic solvents found mainly in shop and/or printer towels before they are washed. EPA expects to propose this rulemaking in the **Federal Register** in the first quarter of the year 2000.

EPA believes that the decision not to promulgate national categorical pretreatment standards for industrial laundries is the most reasonable decision based on the record. While EPA has broad discretion to promulgate such standards, EPA retains discretion not to do so where the total pounds

removed do not warrant national regulation and there is not a significant concern with pass through and interference at the POTW. Further, although not a decision factor for the final action, EPA expects that the industry's commitment to a pollution prevention program will be beneficial. The program projects reductions of 20,000 toxic pound equivalents per year to water, and includes non-water quality benefits, as well. For example, EPA estimates that a 10-25 percent reduction in energy use would save 3.1 trillion to 7.8 trillion BTUs, reducing air emissions of carbon dioxide by up to 900 million pounds per year, if natural gas is the fuel source. Reduced use of other fuels would also result in reduced emissions of sulfur dioxide and particulates. (See Section 16 of the record for EPA's assessment of the environmental benefits of the pollution prevention goals).

EPA recognizes this final decision reflects a significant shift from the preferred option at proposal. As described in the preceding paragraphs, this shift reflects the new information and revised analysis that EPA presented in the notice of data availability, 63 FR 71054, and discussed above. First, POTW removal of SGT-HEM (TPH) is greater than thought at proposal. Second, the constituents of TPH that have been identified are not as toxic as previously believed. Both of these factors have resulted in reduced projections of the toxic pound equivalents annually removed by the rule from about 407,000 down to less than 39,000 toxic pound equivalents. In addition, the projected economic impacts of the proposal option are greater than originally estimated. Finally, EPA's record demonstrates that the occurrence of individual local problems from laundry discharges are not as prevalent as EPA thought at the time of proposal.

C. Pretreatment Standards for New Sources (PSNS)

The options considered for PSNS are similar to those considered for PSES. After considering all of the information in the record, EPA has determined not to require pretreatment standards for new sources because as is the case for existing sources, discharges from new sources do not present a national problem warranting national regulation.

EPA estimates that there will be at most 27 new sources each year. (In fact the number is likely to be lower since it is based on the number of new entities that started in a three year period, some of which likely were existing facilities with new ownership.) Under a rule with

the same small production threshold as would have been chosen for existing sources, EPA estimates that new sources would discharge about 1,040 pounds of pollutants and 51 toxic pound equivalents per facility per year, or a total of about 19,740 total pounds of pollutant and 945 toxic pounds per year. Because the total pounds and pound equivalents per facility that would be removed by PSES are comparable to those for existing sources, the same reasons for not issuing pretreatment standards for existing sources also apply to new sources. This is true not only for the option selected as economically achievable, but also under a rule that would apply the first cutoff. This analysis is discussed in the Development Document for the final action.

In developing estimates of total pounds of pollutants that would be reduced by the rule, EPA determined what option would not present a barrier to entry for new sources. Here, EPA considered whether a small production exclusion should apply for new sources equivalent to the one that would have applied to existing sources. EPA determined that it would be appropriate to apply the same production threshold for PSNS because for this industry, the costs of the rule are similar regardless of whether a facility is a new source or an existing source and thus new smaller facilities would likely suffer the same disproportionate impacts that existing smaller facilities would suffer under a rule. For example, under the costs of a rule, all of the new sources projected to close would have been under the threshold for the exclusion. This represents a disproportionate impact on those smaller facilities. Also, EPA was concerned that it would not provide a level playing field to require a new smaller facility to compete with an existing smaller facility that would be excluded under the production threshold for the rule, and this competitive disadvantage could be a barrier to entry if the production threshold for new and existing sources were not the same.

IV. Costs and Economic Impacts for the Regulatory Options

A. Introduction

This section describes the capital investment and annualized costs of compliance of the three regulatory options outlined in Section III and the potential economic impacts of these compliance costs on current and future facilities and firms in the industry. EPA's economic assessment is presented in detail in the Economic Assessment

for the Final Action Regarding Pretreatment Standards for the Industrial Laundries Point Source Category (EA). The EA estimates the economic effect of compliance costs on facilities, firms, employment, domestic and international markets, inflation, distribution, industry consolidation, environmental justice and industrial laundries customers. The EA covers various regulatory options in addition to the three summarized in this notice. EPA also conducted an analysis equivalent to a Final Regulatory Flexibility Analysis under the Regulatory Flexibility Act (RFA) as amended by the Small Business Regulatory Enforcement Act (SBREFA), which estimates effects on small entities. EPA also prepared an analysis of pollutant removals and average cost-effectiveness of all options.

B. Economic Impact Methodology

1. Introduction

Section IV.B.2 (and, in more detail, the EA and record) summarizes the methodology EPA used to estimate the economic impacts that result from compliance costs associated with the regulatory options. The analysis in the EA consists of eight major components: (1) An assessment of the number of facilities that could have been affected by pretreatment standards; (2) an estimate of the annual aggregate cost for these facilities to comply with pretreatment standards using facility-level capital and operating and maintenance (O&M) costs; (3) an evaluation of potential facility closures, using a financial model that projects impacts on facilities' cash flow (closure analysis); (4) an evaluation of potential firm failures; (5) an evaluation of potential secondary impacts such as those on employment, markets, inflation, distribution, industry consolidation, environmental justice and industrial laundry customers; (6) an assessment of the potential for impact on new sources (barrier to entry); (7) an analysis of the effects of potential compliance costs on small entities; and (8) a cost-benefit analysis.

All costs in today's notice are reported in 1998 dollars, with the exception of average cost-effectiveness results, which, by convention, are reported in 1981 dollars. The EA presents costs in 1993 dollars. The Engineering News Record Construction Cost Index was used to inflate costs to 1998 dollars. The sources of data for the economic analysis are the same as reported in the preamble to the proposed rule (62 FR 66182) with updates to the profile, costs, and

removals as reported in the Technical Development Document. The primary source of data for the economic analysis is the 1994 Industrial Laundries Industry Detailed Questionnaire (Section 308 Survey). Other sources include comments to the proposal and NODA, government data from the Bureau of the Census, industry trade journals, and several preliminary surveys of the industry, including the 1989 Preliminary Data Summary for Industrial Laundries, the 1993 Industrial Laundries Industry Screener Questionnaire, and the 1994 Industrial Laundries Supplemental Screener Questionnaire.

2. Methodology Overview

Central to the EA is the cost annualization model, which uses facility-specific cost data and other inputs (discussed in Chapter 11 of the Technical Development Document) to determine the annualized capital and operating and maintenance (O&M) costs of improved wastewater treatment. This model uses these costs along with an annual compliance monitoring cost with the facility-specific real cost of capital (discount rate) over a 16-year analytic time frame to generate the annual cost of compliance for each option. EPA chose the 16-year time frame for analysis based on the depreciable life for equipment of this type, 15 years according to Internal Revenue Service (IRS) rules, plus approximately one year for purchasing and installing the equipment. As an alternative to installing wastewater treatment, the cost model also generates the annualized cost of hauling wastewater offsite. The cost model compares the treatment costs to the hauling costs (where this alternative is available), and selects the lower of the two.

EPA then converts the annual cost for each facility into a present value change in cash flow, which is subtracted from the estimated baseline present value of facility cash flow. EPA estimated baseline present value of facility cash flow based on the average of three years of financial data from each facility in the Section 308 survey under an assumed no-growth scenario (i.e., the annual cash flow, calculated as the 3-year average, is expected to remain the same over the 16-year period of analysis). If the change in present value of cash flow (which is derived from the annualized costs of compliance of a regulatory option) causes a facility's estimated cash flow to change from positive in the baseline to zero or negative, over the 16-year period of analysis, EPA considers the facility likely to close (i.e., liquidate) as a result

of that regulatory option. Salvage value, as at proposal, was not used in the closure analysis, although EPA did perform sensitivity analyses, which are presented in an appendix in the EA. For reasons discussed in the EA and the Comment Response Document, salvage value was either considered inappropriate or did not substantially change the outcome of the analysis.

Note that facilities that reported negative cash flow over the 3-year period of the survey are considered baseline closures and are not considered affected by the regulatory options for several reasons: (1) Many of these facilities are owned by multifacility firms. These facilities may be transferring production (laundering services at or near cost) from other facilities owned by the same parent company, or otherwise not expected to be self-supporting by the parent. EPA analyzes the parent firms of these facilities in the firm-level analysis. (2) OMB guidance suggests that agencies develop a baseline that is "the best assessment of the way the world would look absent the proposed regulation. That assessment may consider a wide range of factors, including the likely evolution of the market * * *." EPA's best assessment is that some facilities currently operating may not remain in business to install and operate the pollution control equipment. EPA cannot say for certain which facilities these may be, but can assert that those facilities that are currently considered not financially viable because their cash flow is zero or negative (among those not owned by multifacility firms) are the likeliest facilities to close without ever installing and operating pollution control equipment. It is possible that a facility estimated to be a baseline closure may remain open, but the converse is also true—a facility projected to remain open until it is subject to a regulatory option may actually close independently of the effects of the regulatory options. Thus, EPA believes it is consistent with OMB guidance to estimate postcompliance closures by counting closures that are projected to close solely due to the effect of compliance costs.

In the firm failure analysis, EPA uses the capital costs, O&M costs, and an early-year depreciation figure to compute a change in earnings, assets, liabilities, and working capital at the firm level (accounting for costs for multiple facilities, where applicable). These postcompliance financial figures are used in a computerized model of financial health on a firm-by-firm basis. The model uses an equation known as Altman's Z", which was developed

based on empirical data to characterize the financial health of firms. This equation calculates one number, based on the financial data, that can be compared to index numbers that define "good" financial health, "indeterminate" financial health, and "poor" financial health. All firms whose Altman's Z" number changes such that the firm goes from a "good" or "indeterminate" baseline category to a "poor" postcompliance category are classified as likely to have significant difficulties raising the capital needed to comply with a regulatory option, which can indicate the likelihood of firm bankruptcy, or loss of financial independence.

EPA estimated direct employment impacts associated with both the facility closure and firm failures. In addition, EPA took the extra steps to consider and estimate national and regional level employment impacts. These extra steps provide EPA with additional information and analysis about the potential effects on the national economy. For example, closures and failures of industrial laundry facilities or firms could lead to economic and financial impacts in other sectors of the economy. These economic impacts could potentially affect suppliers or customers that are in other sectors of the economy. Moreover, these impacts could be positive or negative, e.g., jobs could be created for installing pollution control equipment or jobs could be lost with a decrease in business from the industrial laundries industry. This additional comprehensive analysis of impacts at the national level relied upon procedures known as input-output analysis. These analyses are discussed fully in the EA.

Another key analysis EPA performs is an analysis to determine impacts on new sources, which is primarily a "barrier-to-entry analysis" to determine whether the compliance costs would have prevented a new source from entering the market. This analysis also looks at whether new industrial laundries would have been at a competitive disadvantage compared with existing sources. Market effects and barriers to entry associated with the small source exclusion also are qualitatively investigated.

C. Summary of Costs and Economic Impacts

1. Number of Facilities and Costs of the Regulatory Options

This section presents the costs for the three regulatory options outlined in Section III. The costs for other options are presented in the EA. EPA estimates

that there are 1,742 industrial laundries facilities. Of these, 136 to 953 facilities would have been excluded from the regulation, depending on the production cutoff. As described in Section III, EPA considered three primary exclusions in addition to analyzing the impacts with no cutoff. To summarize, the exclusions are (1) All facilities laundering less than 1 million pounds of incoming laundry per calendar year and less than 255,000 pounds of shop and/or printer towels per calendar year (abbreviated as the 1MM/255K cutoff, which was the cutoff originally proposed by EPA, and which would have excluded 136 facilities or 8 percent of all facilities), (2) all facilities laundering between 1 and 3 million pounds of total laundry per year and less than 120,000 pounds of shop towels, in addition to those excluded above under the 1MM/255K cutoff (abbreviated as the 3MM/120K cutoff, which would exclude 518 facilities or 30 percent of all facilities), and (3) all facilities laundering less than 5 million pounds of total laundry and less than 255,000 pounds of shop towels (abbreviated as the 5MM/255K cutoff, which would have excluded 953 facilities or 55 percent of all facilities). There are 903 firms owning the 1,742 facilities. A total of 837 of the 903 firms (93 percent) are "small businesses" according to SBA definitions (revenues less than \$10.5 million per year). The analysis looks separately at single-facility firms (those firms where the firm and the facility are a single entity) and multifacility firms (firms that own more than one facility; generally, these firms are larger than single facility firms). There are a total of 830 single-facility firms in the industry (92 percent), the vast majority of which meet the SBA definition of small.

The total cost of each regulatory option is based on engineering cost estimates. The Technical Development Document describe EPA's development of these cost estimates (EPA 821-R-99-010). Briefly, EPA developed cost equations for capital and O&M costs (including monitoring and recordkeeping) for the wastewater treatment technologies. For the CP options, the components of the cost estimates include screen, stream splitting, equalization, chemical precipitation, pH adjustment, sludge dewatering, building and monitoring.

Table IV.C.2.1. presents a summary of the total annualized costs for the various production cutoffs associated with CP. A parallel set of results for DAF is presented in the EA. The costs of the regulatory options are estimated to range from \$61.3 million for the option with the 5MM/255K cutoff to \$145.8

million under the option with no cutoff. The 3MM/120K cutoff is estimated to cost \$103.2 million per year.

TABLE IV.C.2.1.—COSTS OF REGULATORY OPTIONS CONSIDERED [1998]

Option and cutoff considered (Production/Shop Towels)	Total annualized post tax cost (\$Millions, 1998)
CP Options	
No cutoff	145.8
1MM/255K	137.4
3MM/120K	103.2
5MM/255K	61.3

2. Economic Impacts of the Regulatory Options

a. Impacts From Regulatory Options for Existing Sources

Table IV.D.2.2 summarizes the closure and employment impacts of the CP options. Closure and firm failure impacts from the DAF options are identical and are reported in an Appendix to the EA. EPA estimates that the CP options would have resulted in closures of from 2 facilities under the 5MM/255K cutoff to 106 facilities under no cutoff (0.1 to 6.1 percent of all 1,742 facilities). Under the 3MM/120K cutoff,

EPA estimates that 44 facilities would have closed (2.5 percent of all facilities). In addition to these closures, EPA predicts firm failures for 72 firms under no cutoff and under the 1MM/255K cutoff. EPA estimated no firm failures for the 3MM/120K cutoff and the 5MM/255K cutoff.

EPA estimates that a total direct job loss of 235 to 3,318 full-time equivalents (1 FTE=2,080 hours of labor) would have occurred as a result of the facility closures projected under the various CP options, depending on cutoff. The 3MM/120K cutoff is associated with a loss of 2,261 FTEs due to closures. These losses would have contributed to losses elsewhere in the economy, because a closure can affect other parts of the economy as inputs to the closed facility are no longer needed and demand for products by laid off workers is reduced. The sum of the direct losses from closures and these other indirect and induced losses range from 404 to 5,707 FTEs, depending on cutoff. The 3MM/120K cutoff is associated with nationwide losses of 3,889 FTEs due to closures. The employment losses associated with closures overstate actual net losses to the industry and to the economy, because some employment gains in the industry and throughout the economy would have occurred (although the gains might not have occurred in the same geographic

location or at the same time as the losses). The gains to the industrial laundries industry would have included operators of pollution control systems that might be hired by facilities and additional workers hired to expand some production at facilities located in market areas with facility closures. In the economy as a whole, gains due to increased production and installation of pollution control devices would have occurred.

Employment losses from closures might not be the only losses that could occur. Employment losses might have occurred as a result of firm failures. When 75 percent of the employment at these failing firms are added to the employment losses that might have occurred under the various cutoffs, EPA estimates that the direct employment losses associated with the CP option would have been 235 FTEs (note that no failures were estimated under the 5MM/255K cutoff) to as high as 5,039 FTEs under no cutoff. The 3MM/120K cutoff is associated with no additional losses of employment due to failures. When direct and indirect employment effects are estimated, total losses associated with both closures and failures are estimated to be as high as 404 to 8,667 FTEs, depending on cutoff. The 3MM/120K cutoff is associated with total nationwide losses of 3,889 FTEs due to both closures and failures.

TABLE IV.D.2.2—SUMMARY OF OPTION IMPACTS

Impact	No cutoff	1MM/255K	3MM/120K	5MM/255K
Facility Closures	106	61	44	2
Direct Employment Losses from Closures	3,318	2,684	2,261	235
Economy-Wide Employment Losses Due To Closures	5,707	4,617	3,889	404
Firm Failures	72	72	0	0
Direct Employment Losses from Closures Plus Failures	5,039	4,405	2,261	235
Economy-Wide Employment Losses from Closures Plus Failures	8,667	7,576	3,889	404

Losses due to closures are not the only losses to the national economy, nor are those losses net losses (after accounting for gains). EPA predicts employment impacts to the national-level economy on the basis of the output losses calculated for the U.S. economy using the input-output analysis described in Section IV.A.2. Based on this analysis, which estimates both national employment losses stemming from decreased output in the industrial laundries industry and offsetting gains stemming from increased output of pollution control equipment, the CP options would have resulted in a net loss of employment at the national level in all industry sectors of 3,389 to 7,900 FTEs, which is less than 0.01 percent of the U.S. labor force in 1998. Net output

loss would have been \$62.6 million to \$149.9 million per year at most, which is about 0.001 percent of Gross Domestic Product in 1998. Thus EPA expects, at the national level, that the CP options would have had negligible impact on U.S. employment and output.

EPA also investigated employment impacts driven by output reductions in the industrial laundries industry alone. Within the industrial laundries industry, nonclosing facilities could have experienced gains in production (and thus gains in output and employment) or losses in production, depending on how many facilities were expected to close and whether the loss of production to the economy represented by closing facilities exceeded or fell short of production

losses that would have occurred when market equilibrium was achieved. Although the CP options are estimated to have produced a short-term employment loss to the industrial laundries industry of 235 to 5,039 FTEs based on closures and failures, this is less than the long-term net direct employment losses that would be calculated on the basis of output losses assuming no costs could be passed through to customers. Assuming no cost passthrough, as many as 2,884 to 6,692 FTEs (2.2 percent to 5.2 percent of total employment in the industry) might have been lost over the long term (inclusive of closure- and failure-based losses, but net of gains in employment due to hiring of pollution control system operators) in the industrial laundries

industry under the CP option, depending on cutoff. The 3MM/120k cutoff is associated with a loss of 4,897 FTEs. This worst-case estimate shows greater losses than those estimated using the production losses calculated using EPA's market model (and assuming costs are passed through to customers), which projects that, in fact, very small net gains might have occurred over time (from 30 to 87 FTEs gained, depending on cutoff). Thus, the 3MM/120K cutoff would be expected to result in net employment losses ranging from 2,520 to 4,897 FTEs.

For the community-level analysis, under the conservative approach for estimating community employment impacts described above, EPA determined that closures and failures would have resulted in a maximum change in a community's unemployment rate of less than one percent under all cutoffs considered.

EPA considers the options likely to have had a minimal impact on international markets. Under the higher cutoffs such as the 5MM/255K cutoff (which would have excluded 55 percent of the 1,742 facilities, the options might have had some effect on the ability of larger facilities to compete. These larger facilities generally, however, have a competitive advantage over the smaller excluded facilities. Most are owned by large multifacility firms that benefit from economies of scale not available to the smaller, single-facility firms. For the most part, the nonexcluded facilities have greater financial resources and could have better absorbed the costs of compliance. All analyses have been run under the assumption that no costs are passed through to customers, thus the analysis shows that the vast majority of these larger facilities would have been able to compete on the basis of price. Furthermore, as discussed below in the Small Business Analyses section, EPA believes that any potential adverse impacts to the facilities not excluded under the various options would have been far outweighed by the benefits of reducing adverse economic impacts on the most vulnerable firms in the industry.

EPA also estimates that the options considered would have had minimal impacts on inflation and insignificant distributional effects. The no regulation decision will not change the status quo and this will not affect industrial laundry competitors, such as the disposable industry. The options also would have had minimal impacts on industrial laundries customers. EPA investigated the impact on customers in the unlikely event that most costs of the options considered could have been

passed through to customers. A realistic estimate of the cost increase at a typical medium size printer (a key industrial laundry customer industry) would be about \$200 per year, or about a 0.6 percent increase in laundry costs. EPA believes this level of impact is representative at most sizes and types of industrial laundry customers. Therefore, EPA does not expect price increases, should they have occurred, to have had a major impact on customers.

EPA also investigated the likelihood that customers might substitute disposable items for laundered items or begin operating on-site laundries under the various regulatory options. Both the substitution of disposable items for laundered items and the installation and operation of on-site laundries are associated with potential negative impacts on customers that might deter them from choosing these potential substitutes. Disposable items can be more expensive to use than laundered items, may not meet quality requirements (e.g., disposable printer towels tend to be linty) and are, in certain circumstances, regulated under other environmental statutes. Lint-free disposable wipers (such as those used in clean rooms) are very expensive, and currently are only used in situations where even reusable wipers provided by industrial laundries are not sufficiently lint-free. Meanwhile because of the high initial costs to install equipment on-site and the likelihood that any price increase associated with industrial laundry service would have been small, on-site laundries could have required years before any cost savings might be realized. Given the disincentives towards those substitutes indicated above, particularly under the higher cutoffs (e.g., the 5MM/255K cutoff), prices would have been unlikely to rise noticeably. EPA does not believe that the options considered would have had a substantial effect on substitution of disposable items for laundered items or caused an increase in industrial laundering on-site for industrial laundries services in any major way as a result of price increases. Furthermore, since EPA has assumed for these analyses that no costs are passed through to customers, under the cutoffs considered, most firms and facilities would have been able to absorb the cost of the options if they felt their customers would have switched to substitutes had price increased.

Any cost of compliance that is not passed through to customers, however, would have resulted in some reduction in production (assuming no other factors in the industrial market changed) as firms attempted to maximize profits,

but this reduction must be compared to the approximate 6 percent per year growth in revenues seen in recent years. This growth in revenues appears to be driven by increasing production (to meet new demands for industrial laundry services), while increasing productivity and declining costs of production (in the baseline), combined with revenue growth, have contributed to higher profitability. EPA expects that the options would have had a one-time effect on revenue and profit growth, but in actuality, with a continuing economic boom, the overall effect might have been only a reduction in the increase in production. In a downturn, however, EPA recognizes that output losses due to a downturn might have been greater than they would be without a regulation.

b. Impacts From Regulatory Options for New Sources

EPA's decision not to promulgate pretreatment standards applies to new sources as well. This section presents EPA's assessment of what impacts on new sources might have been had EPA decided to promulgate pretreatment standards for new sources under the same option and exclusion selected for existing sources (CP-IL under the 3MM/120K cutoff). EPA assessed impacts on new sources by determining whether the regulatory options would have resulted in a barrier to entry into the market.

EPA has found that overall impacts from either the CP-IL or DAF-IL options would not have been any more severe on new sources than those on existing sources as long as both are subject to the same cutoff, since the costs faced by new sources generally will be similar to those faced by existing sources. Because most new sources and existing sources would have faced similar costs, EPA has determined that the CP-IL option under the 3MM/120K cutoff for new sources would not have posed a barrier to entry on the basis of competitiveness.

EPA also examined whether there would be a barrier to entry for small new sources based on disproportionate impacts measured as closures or failures. EPA investigated facilities in the Section 308 Survey that indicated they were new or relatively new at the time of the survey. Using the Section 308 Survey data, EPA expects that new sources would generally have exceeded most of the threshold size cutoffs that EPA considered for existing sources. Sixty percent of facilities identified as new exceed the 5MM/255K cutoff. The number of new source facilities coming on line each year is extremely small.

Over a three year period (1991, 1992, and 1993), according to Section 308 Survey data, laundry operations began at about only 80 facilities (and it is not absolutely clear from the data whether these facilities were actually new dischargers or were existing dischargers acquired in that year by a different firm). Over the 3-year period, this amounts to 27 new sources a year at most, or only 1.5 percent of existing facilities. Given the small level of growth in the industrial laundries industry, EPA believes that new sources are primarily replacing production from closing facilities that exit the market.

Of these facilities identified as new or relatively new facilities, EPA determined that the average revenues of this group exceeded \$4 million per year, and the amount of laundry processed averaged over 5 million pounds per year. Only 24 to 32 facilities out of 80 total newer facilities (weighted), or 30 to 40 percent, would meet the size threshold for the exclusions EPA investigated for existing sources. On a yearly basis (given that these facilities started up over the 3 years of the survey) EPA estimates that 8 to 11 facilities of the size, on average, that would meet an exclusion similar to those investigated for existing sources might be started up each year. Under the 3MM/120K cutoff, 30 facilities total, or 10 per year, on average, would meet this exclusion. Overall, in the group of 80 facilities, 6 facilities (weighted), or 7.5 percent, were identified as postcompliance closures (based on a closure by one surveyed nonindependent facility). These facilities would have been exempted under all cutoffs considered. Given the above results, EPA finds that had new sources been regulated under the 3MM/120K cutoff, the rule for new sources would have been economically achievable and no barriers to entry would have occurred.

Furthermore, because both new sources and existing sources would have been provided the same exclusion, EPA avoids a situation where a level playing field would not be provided for new sources relative to existing sources. This could occur when a new smaller facility that was not excluded from the rule must compete with an existing smaller facility that was excluded under the production threshold for the rule. This competitive disadvantage could be a barrier to entry if the production threshold for new and existing source were not the same.

3. Small Business Analysis

There are 903 firms owning the 1,742 facilities. A total of 837 out of the 903 firms or 93 percent are "small business"

according to SBA Guidelines (revenues less than \$10.5 million per year). The analysis looks separately at single-facility firms (those firms where the firm and the facility are a single entity) and multifacility firms (firms that own more than one facility; generally, these firms are larger than single facility firms). There are a total of 830 single-facility firms out of 903 total firms in the industry (92 percent), the vast majority of which (812) meet the SBA definition of small. Only 25 multifacility firms meet this definition. Under the 3MM/120K cutoff, 363 small, single-facility firms (45 percent of small, single facility firms) would have been excluded.

Had EPA promulgated a rule, no small firms would have closed or failed under the 5MM/255K cutoff, but 126 small, single-facility firms would have closed or failed under the 1MM/255K cutoff (54 closures and 72 failures, or 18.4 percent of all small firms in the postcompliance analysis). Under the 3MM/120K cutoff, 39 small, single-facility firms would have closed or failed (39 closures and no failures, or 5.7 percent of the 684 small firms in the postcompliance analyses).

4. Cost-Benefit Comparison

EPA estimates that the pretax costs of compliance, as can be seen in the EA for the proposal, generally make up nearly all of the monetizable social costs of pretreatment standards. Additional very small costs are associated with costs to permitting authorities and the administrative costs of providing unemployment benefits.

EPA thus approximates the social costs of a rule using the pretax compliance costs of the option and cutoff. EPA would have selected had the Agency promulgated a rule. The pretax cost of the CP-IL option under the 3MM/120K cutoff is \$149.1 million per year in 1998 dollars. This figure can be compared with the monetized benefits of \$0.16 to \$0.79 million in 1998 dollars. The components of these benefits and their value are summarized in detail in Section VIII of this final action.

V. Total Toxic and Nonconventional Pounds Reduced by Options Considered for the Final Action

In addition to the foregoing analyses, EPA has estimated toxic and nonconventional pollutant reductions for all options and cutoffs considered for the final action. These results are expressed in terms of the "pound equivalent" (PE) removed. PE is a measure that addresses differences in the toxicity of pollutants removed. Total PEs are derived by taking the number of

pounds of a pollutant removed and multiplying this number by a toxic weighting factor (TWF). EPA calculates TWFs for priority pollutants and some additional nonconventional pollutants using ambient water quality criteria and toxicity values. The TWFs are then standardized by relating them to a particular pollutant at a certain point in time, in this case, copper. As of 1985 the water quality criterion for copper was revised, thus the TWF for copper also has been revised. PEs are calculated only for pollutants for which TWFs have been estimated, thus they do not reflect potential toxicity of some nonconventional and, to date, any conventional pollutants. EPA does not include pollutant removals to the extent that those pollutants are reliably removed at the POTW, but only includes the removal of pollutants that would not be removed by the POTW.

As noted earlier, based on new data and as discussed in the NODA, EPA estimated toxic weighting factors for the individual components of SGT-HEM (TPH), such as certain alkanes and naphthalene, bis(2-ethylhexyl) phthalate and 2-methylnaphthalene to estimate toxic pound equivalent removals for the decision.

TABLE IV.E.1.—POLLUTANT REMOVALS OF CP OPTIONS AND CUTOFFS CONSIDERED

Option/Cutoff	Pounds removed	Toxic pound equivalents removed
CP		
No Cutoff	891,572	43,013
1MM/255K	871,422	42,249
3MM/120K	794,448	38,566
5MM/255K	636,660	31,469

As noted above, EPA also estimated the toxic pound equivalent removed by the rule using a toxic weighting factor for the bulk parameter TPH (SGT-HEM). This analysis was not EPA's primary analysis because EPA historically assigns TWFs to the individual constituents and because EPA only identified a very small percentage (approximately two percent) of the constituents comprising TPH (SGT-HEM). To derive a toxic weighting factor for the bulk parameter TPH (SGT-HEM) in this case, EPA extrapolated the toxic weighting factor from the identified constituents to all of the TPH pounds. While EPA thinks that this approach for estimating the toxic pound equivalents for a bulk parameter may be reasonable where a large percentage of constituents can be identified, EPA was not able to do so here. The uncertainty inherent in

extrapolating the toxicity of so minuscule a fraction of TPH constituents to the entire TPH parameter is too great for EPA to use for its primary analysis. Nevertheless, EPA would not have made a different decision based on this alternative analysis.

VI. Pass Through Analysis

Categorical pretreatment standards are technology-based standards for indirect dischargers in an industrial category. Pretreatment Standards for Existing Sources (PSES) and Pretreatment Standards for New Sources (PSNS) are analogous to the BAT (Best Available Technology Economically Achievable) and best available demonstrated technology (BADT for NSPS) for existing and new source direct dischargers, respectively. For the development of the national categorical pretreatment standards, EPA determines whether pollutants discharged to POTWs pass through to waters of the U.S. by comparing the percentage of the pollutant removed by well-operated POTWs achieving secondary treatment with the percentage of the pollutant removed by the candidate BAT or pretreatment technologies. For this industry, there is no candidate BAT technology because there are no known direct dischargers in the industry so EPA has based the pass through analysis on a comparison of the candidate pretreatment technologies to POTW removals. EPA believes that the comparison of well-operated POTWs to the candidate pretreatment technologies instead of BAT is appropriate, since there are no direct dischargers in the

industry. In addition, EPA looks at the engineering design aspects of the candidate technologies and the ability of the POTW to treat pollutants to determine if certain pollutants pass through (e.g., soluble organic compounds exhibiting some degree of volatility).

By contrast, General Pretreatment Standards authorize POTWs to set local limits for individual indirect dischargers in order to prevent pass through or interference, or what is necessary for the POTW to meet its NPDES permit limit. Under the General Pretreatment Standards, pass through is defined as a discharge that exits the POTW into waters of the U.S. in quantities or concentrations, which alone or in conjunction with a discharge or discharges from other sources, cause a violation of any requirement of the POTW's NPDES permit.

Results of the pass through analysis show that there is not significant pass through, while pretreatment using CP would produce some additional removal of some pollutants, the removals associated with these pollutants are small in absolute pounds and toxic pound equivalents. For the economically achievable option (see sections IV and V) the removals for the pollutants would be 794,448 lbs/yr (38,566 pound equivalents) or 649 pounds (32 pound equivalents) per year per facility. A full description of the pass through analysis results is shown in the Technical Development Document.

Results of alternative methods for conducting the pass through analysis can be found in the record. The results

of conducting the pass through analysis using the other methodologies show only minor differences in pollutant removals.

VII. Cost-Effectiveness Analysis

In addition to calculating pound equivalent (PE) removals, the Agency also calculated the average cost-effectiveness of the various options and cutoffs considered. EPA calculates average cost-effectiveness on the basis of cost per toxic pound equivalent removed. For this rule, EPA did not perform an incremental cost-effectiveness analysis, which evaluates cost-effectiveness incrementally between options along the same treatment train. Average cost-effectiveness, which evaluates an option or cutoff relative to a baseline, or no regulation option, was calculated. The average cost-effectiveness ratio is calculated as the costs of an option at that cutoff in 1981 dollars (the standard year for all cost-effectiveness studies) divided by the total removals calculated under that option and cutoff. Costs evaluated include the pretax direct compliance costs, such as capital expenditures and O&M costs, including compliance monitoring. Table IV.E.1 shows the pollutant removals in pound equivalents and average cost-effectiveness of each regulatory option under each cutoff considered. EPA is showing the average cost-effectiveness results for the DAF options as well as the CP options to illustrate that these options removed less pound equivalents at greater cost than the comparable CP options.

TABLE IV.E.1.—POLLUTANT REMOVALS AND AVERAGE COST-EFFECTIVENESS OF OPTIONS AND CUTOFFS CONSIDERED

Option/Cutoff	Total annual		Average C-E (1981\$/lb. eq.)
	PE removed	Cost (\$mil. 1981)	
CP			
No Cutoff	43,013	121.5	2,824
1MM/255K	42,249	115.7	2,739
3MM/120K	38,566	88.3	2,290
5MM/255K	31,469	52.7	1,674
DAF			
No Cutoff	35,345	132.1	3,885
1MM/255K	34,640	126.5	3,652
3MM/120K	31,665	98.4	3,108
5MM/255K	25,844	60.1	2,327

As the table shows, the difference between the no cutoff scenario and the most inclusive cutoff (5MM/255K) is only 11,844 PEs under the CP option,

representing a 27 percent drop in removals (the results for DAF are similar). EPA considers the options and their cutoffs to be generally cost-

ineffective. EPA would expect this to be the case given the ability of POTWs to effectively treat industrial laundry effluent and the resulting small total

number of pound equivalents removed by the rule. Thus, while EPA does not base its decision regarding PSES or PSNS on cost-effectiveness, this analysis confirms that EPA's decision not to issue national categorical pretreatment standards is reasonable.

VIII. Environmental Benefits Analysis

A. Summary

Since EPA is not promulgating national categorical standards for the industrial laundries point source category, EPA estimates that there will be no environmental benefits associated with this action. If EPA were to promulgate national standards based upon the economically achievable CP treatment option presented above, the monetized human health benefits would be nominal. Projected cancer cases would be reduced by far less than one cancer case per year. (0.06 cancer cases from a baseline of 0.17 cancer cases.) EPA's use of a hazard ranking score to evaluate non-cancer effects found no non cancer effects would occur. In terms of other benefits, EPA estimates based on computer modeling, that a rule would remove 16 out of 38 exceedences of Ambient Water Quality Criteria (AWQC) for the protection of aquatic life and/or human health at 12 reaches nationwide, and biosolid quality at eight POTWs would be improved.

This section presents the estimated benefits due to implementation of the economically achievable CP and DAF options. For more details, see the Water Quality Benefits Analysis (WQBA). EPA estimates the monetized CP benefits, which consist of reduced cancer cases and improved biosolid quality to be small, from \$0.16 million to \$0.79 million (\$1998). These benefits are de minimis, and therefore, reinforce EPA's decision made above. Taken in context across all stream reaches nationwide, EPA does not believe that the benefits analysis indicates that industrial laundry discharges present a nationwide problem. Further, EPA expects that the benefits realized from the rule could be realized under the existing pretreatment program, where EPA will work with any POTW that is not meeting its water quality-based permit limit to impose controls as necessary to meet that permit limit. EPA also notes that efforts that would prevent pollution at the source, such as the voluntary program or the efforts of OSW could achieve these same benefits.

Thus, while EPA does not base its decision regarding PSES or PSNS on the benefits described above, EPA does not believe that the benefits of national

categorical pretreatment standards for this industry would justify their costs.

B. Changes Since the Proposal

In response to numerous comments received pertaining to the benefits analysis conducted for the Proposed Rule, for the NODA, EPA revised its analysis in two ways: (1) The aquatic life chronic toxicity value of TPH (1,145 µg/L), used to develop a recommended AWQC for TPH and also used to develop a toxic weighting factor for TPH, is based on a weighted average of the toxicity of 13 identified constituents of TPH (as compared to the 56 µg/L based on soluble hydrocarbons used for the proposal); (2) the POTW removal percentage of TPH was increased to 74% from 65%; and (3) the POTW removal percentages of other pollutants were updated.

The overall impact of the changes related to TPH is a decrease in the number of reaches with modeled baseline water quality criterion toxicity exceedences in the baseline from 78 at proposal to 12 at final. The water quality exceedences predicted for the final action are for five Pollutants Of Concern (POCs) (mercury, silver, tetrachloroethene, chloroform and bis (2-ethylhexyl) phthalate) rather than for TPH. These pollutants from industrial laundries are modeled to be present in POTW effluent in concentrations above recommended Water Quality Criteria (WQC) for either chronic toxicity to aquatic organisms or human health at baseline conditions for three sample reaches that represents 12 reaches nationwide.

C. Benefits of Action

1. Reduced Pollutant Discharges

EPA considered the benefits that could result from reductions in industrial laundry pollutant discharges to POTWs, including: improved quality of freshwater, estuarine, and marine ecosystems; reduced risks to human health through consumption of fish or water taken from affected waterways; reduced cost of disposal or use of municipal sewage sludge that is affected by industrial laundry pollutant discharges; and reduced occurrence of biological inhibition of activated sludge at POTWs.

For the industrial laundry industry, EPA evaluated the effects of POTW wastewater discharges of 72 pollutants on receiving stream water quality at current levels of treatment and at a number of proposed PSES limits. EPA assessed the benefits from the modeled pollutant reductions in three broad classes: human health, ecological, and

economic productivity benefits. However, because of data limitations and the understanding of how society values some of these benefit categories, EPA was not able to analyze all of these categories with the same level of rigor. At the highest level of analysis, EPA was able to quantify the expected effects for some benefit categories and attach monetary values to them, such as a nominal value for reduction in cancer risk from fish consumption and reduced costs of managing and disposing of POTW sewage sludge. For other benefit categories, EPA was able to quantify expected effects but not able to estimate monetary values for them. These benefit categories include reduced exceedences of biological inhibition criteria at POTWs and changes in human health and aquatic life risk indicators. Finally, non-quantified, non-monetized benefit categories include enhanced water-dependent recreation other than fishing.

2. Reduced Human Health Risk

EPA projects that the CP and DAF options would eliminate far less than 1 cancer case per year (0.06 cancer cases from a baseline of 0.17 cancer cases). This translates into \$0.15 million to \$0.78 million (\$1998) in benefits. Further, based on risk reference doses in conjunction with in-stream pollutant concentrations, EPA modeled no non-cancer human health effects. Both of these analyses are based on exposure of recreational and subsistence anglers and their families to fish. With respect to ambient water quality criteria for human health, EPA modeled exceedences for three pollutants at 12 reaches nationwide.

To estimate the reduced risk of non-cancer health effects (e.g., systemic effects, reproductive toxicity, and developmental toxicity) from fish and water consumption for each option, EPA used risk reference doses, in conjunction with in-stream pollutant concentrations, to calculate a hazard score. A value of one or greater for a hazard score indicates the potential for non-cancer hazards to occur. The hazard score, which EPA calculated by summing over all pollutants, was less than one for baseline conditions as well as for all treatment options.

At current discharge levels, in-stream concentrations of bis(2-ethylhexyl)phthalate, chloroform, and tetrachloroethene are projected to exceed human health criteria (developed for consumption of water and organisms) in 12 receiving streams nationwide for a total of 21 exceedences. The CP (and DAF) option(s) would eliminate the occurrence of bis(2-ethylhexyl)

phthalate concentrations in excess of the human health-based AWQC in eight of the 12 affected streams.

3. Improved Recreational Fishing Opportunities

Although the rule would eliminate 16 out of 38 AWQC exceedences for the protection of human health and/or aquatic life, the rule would not eliminate all AWQC at any one reach. Currently EPA has no methodology to monetize the elimination of these AWQC unless they are entirely eliminated for a waterbody and thus EPA was not able to monetize these benefits.

4. Reduced Impacts on POTWs

EPA expects that reduced effluent discharges from the industrial laundries industry would have a minimal impact on POTWs. EPA estimates a \$0.006 million to 0.01 million (\$1998) annual benefit due to improved biosolids quality. Discussion with POTW operators support EPA's position that industrial laundry discharges usually are not problematic to POTWs.

a. Modeled POTW Impacts

EPA evaluated whether industrial laundry pollutants may interfere with POTWs by impairing their treatment effectiveness or causing them to violate applicable CWA sewage sludge requirements for their chosen sludge disposal method. For the POTW impact analysis, EPA analyzed two benefit categories: (1) Reduced costs to public sewage systems for managing and disposing of the sewage sludge that result from treatment of effluent discharges from industrial laundries; and (2) a reduction in risk of biological inhibition of activated sludge.

EPA has promulgated regulations establishing standards for sewage sludge when it is applied to the land, disposed of at dedicated sites (surface disposal), and incinerated (40 CFR Part 503). For a discussion of these requirements see the final WQBA.

EPA estimated sewage sludge concentrations of ten metals for sample facilities under baseline discharge levels. EPA compared these concentrations with the relevant metal concentration limits for the following sewage sludge management options: Land Application-High (Concentration Limits), Land Application-Low (Ceiling Limits), and Surface Disposal. In the cutoff 2 (3 mm/120K) baseline case, EPA estimated that concentrations of one pollutant (lead) at 10 POTWs would fail the Land Application-High limits while meeting the Land Application-Low limits. EPA estimated that no POTWs

would fail any of the Surface Disposal limits.

EPA estimated that both the CP and DAF options would permit 10 POTWs to meet the Land Application-High limits and that an estimated 6,100 dry metric tons (DMT) of annual disposal of sewage sludge would newly qualify for beneficial use under the Land Application-High limits. EPA estimated the reduced time required for record-keeping for sewage sludge meeting the more stringent Land Application-High Criteria, and, on this basis, developed a partial estimate of monetary benefits from reduced metals contamination of sewage sludge. For all options, the regulation is expected to result in benefits from sewage sludge quality improvements of \$0.006 to \$0.01 million (\$1998) annually.

EPA estimated potential inhibition of POTW operations by comparing predicted POTW influent concentrations to available inhibition levels for 45 pollutants. EPA based the POTW inhibition and sludge values upon engineering and health estimates contained in guidance or guidelines published by EPA and other sources. At current discharge levels, EPA estimates POTW concentrations of lead exceed biological inhibition criteria at two POTWs. Under both treatment options, these potential inhibition problems would not be eliminated. Note, however, that these are modeled potential instances of inhibiting, not actual documented cases. Whether inhibition at either of these facilities would actually occur depends on a variety of site specific factors.

b. Discussions with POTW Operators and Pretreatment Coordinators

To better understand the frequency and characteristics of problems to POTWs resulting from industrial laundry discharges, EPA obtained information from discussions with EPA regional staff and POTW operators. Of 37 operators at POTWs that receive discharges from industrial laundries, 11 POTW operators described their facilities as having encountered some difficulty in the past resulting from industrial laundry discharges, while the remaining 26 reported no problems from industrial laundry discharges. All the POTWs with reported past difficulties have solved their problems by setting local discharge limits.

IX. Non-Water Quality Environmental Impacts

EPA has considered the non-water quality environmental impacts associated with the various technology options considered as well as the

environmental improvement that could be realized through the industry voluntary program. Non-water quality environmental impacts are impacts (both good and bad) of the technology options on the environment that are not directly associated with wastewater. Non-water quality environmental impacts include changes in energy consumption, air emissions, and solid waste generation of oil and sludge. Based on these analyses, EPA finds that the non-water quality environmental impacts resulting from the regulatory options are acceptable.

A. Air Pollution

Industrial laundry facilities generate wastewater that contains significant concentrations of organic compounds, some of which are on the list of Hazardous Air Pollutants (HAPs) in Title 3 of the Clean Air Act Amendments (CAAA) of 1990. Atmospheric exposure of the organic-containing wastewater may result in volatilization of both volatile organic compounds (VOCs) and HAPs from the wastewater. VOCs and HAPs are emitted from the wastewater beginning at the point where the wastewater first contacts ambient air. Thus, VOCs and HAPs may be of concern immediately as the wastewater process is discharged from the process unit. Emissions occur from wastewater collection units such as process drains, manholes, trenches, and sumps, and from wastewater treatment units such as screens, equalization basins, DAF and CP units, and any other units where the wastewater is in contact with the air.

EPA believes that air emissions from industrial laundry wastewater would have been similar before and after implementation of a rule based on DAF or chemical precipitation technologies because the wastewater from all industrial laundries currently has contact with ambient air as it flows to the POTW. At facilities that do not currently have treatment on site, the wastewater typically flows from the washers to an open or partially open catch basin, then to the sewer and on to the POTW, where the wastewater is typically treated in open aerated basins or lagoons. Air emissions from the wastewater occur as the wastewater flows from the facility to the POTW. At a facility with treatment, the wastewater would have more contact with air while still at the facility, as it is treated in open units such as equalization basins and DAF or chemical precipitation units prior to flowing through the sewer to the POTW. Air emissions from the treated wastewater occur at the treatment units at the facility, as well as while the

wastewater flows to the POTW. Thus, EPA expects that the location of a portion of air emissions from industrial laundry wastewater would shift from the POTW collection and treatment system to the facility treatment system, but EPA believes that the overall amount of air emissions from industrial laundries wastewater would not change. Air emissions resulting from increased energy use are discussed in the Technical Development Document.

EPA believes that no adverse air impacts would have been expected to occur due to a rule based on CP or DAF. Thus, because EPA would not have expected an overall increase in the amount of air emissions as a result of an implemented rule and based on EPA's determination of the total emissions from one industrial laundry's untreated wastewater, EPA finds that the air emissions impacts of all of the regulatory options under consideration would not have been unacceptable.

B. Solid Waste Generation

EPA considered regulatory options based on DAF and chemical precipitation technologies followed by dewatering of the sludge generated from these technologies. Based on information collected in the industrial laundries detailed questionnaires and from data submitted in comments, most industrial laundry sludge from CP or DAF treatment systems is disposed of in nonhazardous landfills.

EPA estimates that the incremental increase in sludge generation from the CP technology options (not including savings in the volume of sludge generated at POTWs that would have resulted from the implementation of the technology options) would have been a maximum of 173,000 tons per year of wet sludge, or 60,600 tons per year of dry solids. EPA estimates that the incremental increase in sludge generation from the DAF technology option would have been a maximum of 128,000 tons per year of wet sludge, or 70,600 tons per year of dry solids. For more details, see Chapter 10 of the Technical Development Document. Approximately 430 million tons (dry basis) of industrial nonhazardous waste was sent to landfills in the U.S. in 1986 (Subtitle D Study Phase I: Report EPA No. 530SW86-054). Implementation of these technology options would have resulted in at most only a 0.014% increase in sludge generation for CP and 0.016% for DAF. Data from the Waste Treatment Industry Phase II: Landfills effluent guidelines project suggest that current landfill capacity can accept this increase in solid waste generation. Further, the estimates presented here

are likely to significantly overstate any net increase in sludge generation since they do not factor in decreases in sludge generation at POTWs. In general, EPA would expect these decreases to partially offset increases at individual pretreatment locations. Therefore, EPA believes the solid waste impacts of all of the regulatory options under consideration would have been acceptable.

C. Energy Requirements

EPA estimates that implementation of a rule would have resulted in a net increase in energy consumption for the industrial laundries industry. The incremental increase is based on electricity used to operate wastewater treatment equipment at facilities that are not currently operating either DAF or chemical precipitation treatment systems.

EPA estimates that the incremental increase in electricity use for the industrial laundries industry as a result of an implemented rule would have been a maximum of 69.5 million kilowatt hours per year for CP and 82.8 million kilowatt hours per year for DAF. Based on a 1996 survey of industrial laundries conducted by industry, industrial laundries use 31.2 trillion BTUs per year, or 9.1 billion kilowatt hours per year. EPA estimates that the incremental energy increase for CP and DAF, respectively, would have been 0.76% and 0.91% of electricity currently used by the industrial laundries industry to operate all washing, drying, and treatment equipment. In addition, approximately 2,805 billion kilowatt hours of electric power were generated in the U.S. in 1990.

The incremental increase in energy use for the industrial laundries industry for CP and DAF, respectively, would have corresponded to 0.0025% and 0.0030% of the total national energy use. For these reasons, EPA believes that the energy impacts of all of the regulatory options under consideration would have been acceptable.

X. Related Acts of Congress and Executive Orders

EPA's final action not to establish national categorical pretreatment standards does not constitute a rule under section 551 of the Administrative Procedure Act, 5 U.S.C. § 551. Hence, requirements of other regulatory statutes and Executive Orders that generally apply to rulemakings (e.g., the Unfunded Mandate Reform Act) do not apply to this final action.

Dated: June 30, 1999.

Carol M. Browner,
Administrator.

Appendix A to the Notice—Lists of Abbreviations, Acronyms, Definitions and Other Terms Used in This Notice

- Administrator—The Administrator of the U.S. Environmental Protection Agency
 Agency—The U.S. Environmental Protection Agency
 BAT—Best Available Technology Economically Achievable
 BMPs—Best Management Practices—As authorized by sections 304 (e) and 402 of the CWA. Gives the Administrator the authority to publish regulations to control plant site runoff, spillage or leaks, sludge or waste disposal, and drainage from raw material storage.
 CBI—Confidential Business Information
 C-E—Cost-Effectiveness Analysis
 Cooperative—An enterprise or organization owned by and operated for the benefit of those using its services. For purposes of this rule, a laundry service like facilities owned by and/or operated for the benefit of those facilities.
 CP—Chemical Precipitation.
 CWA—Clean Water Act. The Federal Water Pollution Act, 33 U.S.C. 1251 *et seq.*
 DAF—Dissolved Air Flotation
 Dry Cleaning—The cleaning of fabrics using an organic-based solvent rather than water-based detergent solution.
 EA—Economic Assessment.
 Effluent—Wastewater discharges.
 EPA—The U.S. Environmental Protection Agency.
 E.O.—Executive Order.
 Facility—A facility is all contiguous property owned, operated, leased or under the control of the same person, or corporate or business entity. The contiguous property may be divided by public or private right-of-way.
 FTE—Full-time Equivalent.
 HEM—N-Hexane Extractable Material.
 Indirect Discharger—A facility that discharges or may discharge pollutants into a publicly owned treatment works.
 IL—Industrial Laundry.
 Industrial laundry facility—any facility that launders industrial textile items from off-site as a business activity. Either the industrial laundry facility or the off-site customer is may own the industrial laundered textile items. This includes textile rental companies that perform laundering operations.
 Industrial textile items—items such as, but are not limited to: shop towels, printer towels, furniture towels, rags, mops, mats, rugs, tool covers, fender covers, dust-control items, gloves, buffing pads, absorbents, uniforms, and filters.
 Laundering—washing items with water, including water washing following dry cleaning.

- Linens—items such as sheets, pillow cases, blankets, bath towels and washcloths, hospital gowns and robes, tablecloths, napkins, tableskirts, kitchen textile items, continuous roll towels, laboratory coats, family laundry, executive wear, mattress pads, incontinence pads, and diapers. This list is intended to be an inclusive list.
- LTA—Long Term Average. For purposes of the pretreatment standards, average pollutant levels achieved over a period of time by a facility, subcategory, or technology option.
- NTTAA—National Technology Transfer and Advancement Act.
- New Source—“New source” is defined in section 306 of the CWA and at 40 CFR 122.12 and 122.29(b).
- NODA—Notice of Data Availability
- Nonconventional pollutants—Pollutants that are neither conventional pollutants nor priority pollutants listed at 40 CFR part 401.
- Non-detect value—A concentration-based measurement reported below the sample specific detection limit that can reliably be measured by the analytical method for the pollutant.
- Non-water quality environmental impact—An environmental impact of a control or treatment technology, other than to surface waters (including energy requirements) or an environment improvement of a decision not to regulate.
- NPDES—The National Pollutant Discharge Elimination System authorized under section 402 of the CWA. NPDES requires permits for discharge of pollutants from any point source into waters of the United States.
- O&G—Oil and Grease
- OMB—Office of Management and Budget.
- Off-site—“Off-site” means outside the boundaries of a facility.
- On-site—“On-site” means within the boundaries of a facility.
- OSW—USEPA Office of Solid Waste.
- POTW/POTWs—Publicly owned treatment works, as defined at 40 CFR 403.3(o).
- Pretreatment standard—a regulation that establishes industrial wastewater effluent quality required for discharge to a POTW.
- Priority pollutants—The toxic pollutants designated by EPA as priority in 40 CFR part 423, Appendix A.
- PSES—Pretreatment Standards for Existing Sources on indirect discharges, under section 307(b) of the CWA.
- PSNS—Pretreatment Standards for New Sources of indirect discharges, under section 307(b) and (c) of the CWA.
- RFA—Regulatory Flexibility Act.
- SBA—Small Business Administration.
- SBREFA—Small Business Regulatory Enforcement Fairness Act.
- SGT-HEM—Silica Gel Treated N-Hexane Extractable Material.
- SIC—Standard Industrial Classification.
- Small Business—Businesses with annual revenues less than \$10.5 million. This is the higher of the two Small Business Administration definition of small business for SIC codes 7218 and 7213.
- TPH—Total Petroleum Hydrocarbons.
- TRSA—Textile Rental Services Association of America.
- TSS—Total suspended solids.
- TWF—Toxic weighting factor.
- UMRA—Unfunded Mandates Reform Act (PL 104-4), establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local and tribal governments and the private sector.
- UTSA—Uniform and Textile Service Association.

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