**ENVIRONMENTAL PROTECTION AGENCY**

**40 CFR Part 465**

**[WH-FRL-2459-2]**

# Coil Coating Point Source Category, Canmaking Subcategory; Effluent Limitations Guidelines, Pretreatment Standards, and New Source Performance Standards

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Final rule.

**SUMMARY:** This regulation establishes effluent limitations and standards limiting the discharge of pollutants into navigable waters and into publicly owned treatment works by existing and new plants engaged in the manufacturing of cans. The Clean Water Act and a consent decree require EPA to promulgate this regulation.

This regulation establishes specific effluent limitations based on "best practicable technology," "best available technology," new source performance standards based on "best demonstrated technology" and pretreatment standards for existing and new indirect dischargers.

**DATES:** This regulation shall become effective on January 2, 1984.

The compliance date for the BAT regulations is as soon as possible, but in any event, no later than July 1, 1984. The compliance date for new source performance standards (NSPS) and pretreatment standards for new sources (PSNS) is the date the new source begins operations. The compliance date for pretreatment standards for existing sources (PSES) is as soon as possible but in no case later than November 17, 1986.

Under Section 509(b)(1) of the Clean Water Act, judicial review of this regulation can be made only by filing a petition for review in the United States Court of Appeals within 90 days after the regulation is considered issued for purposes of judicial review. Under Section 509(b)(2) of the Clean Water Act, the requirements in this regulation may not be challenged later in civil or criminal proceedings brought by EPA to enforce these requirements. In accordance with 40 CFR 100.01 (45 FR 26048), this regulation shall be considered issued for purposes of judicial review at 1:00 p.m. Eastern time on December 1, 1983.

The information requirements contained in 40 CFR 465.03(d) have not been approved by the Office of Management and Budget (OMB) and they are not effective until OMB has approved them.

The Record will be available for public review not later than January 23, 1984, in EPA's Public Information Reference Unit, Room 2404 (Rear) (EPA Library), 401 M Street, SW., Washington, D.C. The EPA public information regulation (40 CFR Part 2) provides that a reasonable fee may be charged for copying.

**ADDRESSES:** The basis for this regulation is detailed in four major documents. See Section XIV, Availability of Technical Information, for a description of each document. Copies of the technical and economic documents may be obtained from the National Technical Information Service, Springfield, Virginia 22161; (703/487-4600). For additional technical information, contact Ms. Mary L. Belefski, Effluent Guidelines Division, U.S. Environmental Protection Agency, 401 M Street, SW., Washington, D.C. 20460 (Phone (202) 382-7126). For additional economic information contact Ms. Josette Bailey, Economic Analysis Staff (WH-586), U.S. Environmental Protection Agency, 401 M Street, SW., Washington, D.C. 20460 (Phone (202) 382-5382).

**FOR FURTHER INFORMATION CONTACT:** Ernst P. Hall (202) 382-7126.

**SUPPLEMENTARY INFORMATION:**

## Organization of this notice



## I. Legal Authority

This regulation is being promulgated under the authority of Sections 301, 304, 306, 307, 308, and 501 of the Clean Water Act (the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. 1251 et seq., as amended by the Clean Water Act of 1977, Pub. L. 95-217), also called "the Act." It is also being promulgated in response to the Settlement Agreement in *Natural Resources Defense Council, Inc.* v. *Train*, 8 ERC 2120 (D.D.C. 1976), modified by Orders dated August 26, 1982, October 26, 1982 and August 2, 1983.

## II. Scope of This Rulemaking

This final regulation, which was proposed on February 10, 1983 (48 FR 6268), establishes effluent limitations guidelines and standards for existing and new canmaking facilities. Canmaking consists of the process or processes used to manufacture a can from a basis metal, including aluminum and steel. In this regulation, only seamless cans made from uncoated stock are regulated, since no process wastewater is generated from the manufacture of seamed cans or seamless cans made from coated stock.

EPA is promulgating BPT, BAT, new source performance standards (NSPS), and pretreatment standards for existing and new sources (PSES and PSNS, respectively) for the canmaking subcategory of the coil coating point source category.

## III. Summary of Legal Background

The Federal Water Pollution Control Act Amendments of 1972 established a comprehensive program to "restore and maintain the chemical, physical, and biological integrity of the Nation's Water," (Section 101(a)). To implement the Act, EPA was to issue effluent limitations guidelines, pretreatment standards, and new source performance standards for industrial dischargers.

The Act included a timetable for issuing these standards. However, EPA was unable to meet many of the deadlines and, as a result, in 1976, it was sued by several environmental groups. In settling this lawsuit, EPA and the plaintiffs executed a "Settlement Agreement" which was approved by the Court. This agreement required EPA to develop a program and adhere to a schedule for controlling 65 "priority" pollutants and classes of pollutants. In carrying out this program, EPA must promulgate BAT effluent limitations guidelines, pretreatment standards, and new source performance standards for 21 major industries. See *Natural Resources Defense Council, Inc.* v. *Train,* 8 ERC 2120 (D.D.C. 1976), modified, 12 ERC 1833 (D.D.C. 1979), modified by Order dated August 2, 1983.

Many of the basic elements of the Settlement Agreement were incorporated into the Clean Water Act of 1977. Like the Agreement, the Act stressed control of toxic pollutants, including the 65 "priority" pollutants. In addition to strengthening the toxic control program, Section 304(e) of the Act authorizes the Administrator to prescribe "best management practices" (BMPs) to prevent the release of toxic and hazardous pollutants from plant site runoff, spillage or leaks, sludge or waste disposal, and drainage from raw material storage associated with, or ancillary to, the manufacturing or treatment process.

Under the Act, the EPA is to set a number of different kinds of effluent limitations. These are discussed in detail in the preamble to the proposed regulation and in the development document. They are summarized briefly below:

*1. Best Practicable Control Technology (BPT)*

BPT limitations are generally based on the average of the best existing performance by plants of various sizes, ages, and unit processes within the industry or subcategory for control of familiar (i.e. classical) pollutants.

In establishing BPT limitations, EPA considers the total cost in relation to the age of equipment and facilities involved, the processes employed, process changes required, engineering aspects of the control technologies, and nonwater quality environmental impacts (including energy requirements). The Agency balances the industry-wide cost of applying the technology against the effluent reduction.

*2. Best Available Technology (BAT)*

BAT limitations, in general, represent the best existing performance in the industry subcategory or category. The Act establishes BAT as the principal national means of controlling the direct discharge of toxic and nonconventional pollutants to navigable waters.

In arriving at BAT, the Agency considers the age of the equipment and facilities involved, the process employed, the engineering aspects of the control technologies, process changes, the cost of achieving such effluent reduction, and nonwater quality environmental impacts. The Agency retains considerable discretion in assigning the weight to be accorded these factors.

*3. Best Conventional Pollutant Control Technology (BCT)*

The 1977 Amendments to the Clean Water Act added Section 301(b)(2)(E), establishing "best conventional pollutant control technology" (BCT) for discharge of conventional pollutants from existing industrial point sources. Section 304(a)(4) designated the following as conventional pollutants: BOD TSS, fecal coliform, pH, and any additional pollutants defined by the Administrator as conventional. The Administrator designated oil and grease "conventional" on July 30, 1979 (44 FR 44501).

BCT is not an additional limitation but replaces BAT for the control of conventional pollutants. In addition to other factors specified in Section 304(b)(4)(B), the Act requires that the BCT limitations be assessed in light of a two part "cost-reasonableness" test. *American Paper Institute* v. *EPA,* 660 F.2d 954 (4th Cir. 1981). The first test compares the cost for private industry to reduce its conventional pollutants with the costs to publicly owned treatment works for similar levels of reduction in their discharge of these pollutants. The second test examines the cost-effectiveness of additional industrial treatment beyond BPT. EPA must find that limitations are "reasonable" under both tests before establishing them as BCT. In no case may BCT be less stringent than BPT.

EPA published its methodology for carrying out the BCT analysis on August 29, 1979 (44 FR 50732). In the case mentioned above, the Court of Appeals ordered EPA to make certain revisions. A revised methodology for the general development of BCT limitations was proposed on October 29, 1982 (47 FR 49176). BCT limits for this industry are deferred until promulgation of the final methodology for BCT development.

Until the Agency has promulgated BCT limitations for this subcategory, permit writers should incorporate into permits BCT limitations for oil and grease, TSS, and pH based upon best professional judgment. Since BCT limitations cannot be less stringent than BPT limitations, permit writers should regard the BPT limitations promulgated now as minimum BCT requirements.

*4. New Source Performance Standards (NSPS)*

NSPS are based on the best available demonstrated technology (BDT). New plants have the opportunity to install the best and most efficient production processes and wastewater treatment technologies.

*5. Pretreatment Standards for Existing Sources (PSES)*

PSES are designed to prevent the discharge of pollutants that pass through, interfere with, or are otherwise incompatible with the operation of publicly owned treatment works (POTW). They must be achieved within three years of promulgation. The Clean Water Act of 1977 requires pretreatment for toxic pollutants that pass through the POTW in amounts that would violate direct discharger effluent limitations or interfere with the POTW's treatment process or chosen sludge disposal method. The legislative history of the 1977 Act indicates that pretreatment standards are to be technology-based, analogous to the best available technology for removal of toxic pollutants. EPA has generally determined that there is pass through of pollutants if the nationwide average percentage of pollutants removed by a well operated POTW achieving secondary treatment is less then the percent removed by the BAT model treatment system. The General Pretreatment Regulation, which serves as the framework for categorical pretreatment regulations, is found at 40 CFR Part 403.

*6. Pretreatment Standards for New Sources (PSNS)*

Like PSES, PSNS are designed to prevent the discharge of pollutants which pass through, interfere with, or are otherwise incompatible with the operation of a POTW. PSNS are to be issued at the same time as NSPS. New indirect dischargers, like new direct dischargers, have the opportunity to incorporate in their plant the best available demonstrated technologies. The Agency considers the same factors in promulgating PSNS as it considers in promulgating PSES.

*IV. Methodology and Data Gathering Efforts*

The methodology and data gathering efforts used in developing the proposed regulation were summarized in the "Preamble to the Proposed Canmaking Point Source Subcategory Effluent Limitations Guidelines, Pretreatment Standards, and New Source Performance Standards" (48 FR 6268, February 10, 1983), and described in detail in the *Development Document for Effluent Limitations Guidelines and Standards for the Coil Coating Point Source Category (Canmaking Subcategory)* EPA 440/1-83/071-b (referred to as development document). Since proposal and in response to comments, the Agency has gathered additional data and performed additional statistical and engineering analyses of new and existing data. These activities are discussed briefly below and in substantial detail in the appropriate sections of the development document. These additional data were summarized in a **Federal Register** notice (48 FR 43195, September 22, 1983) made available for public comment, and are in the public record supporting this rule.

The treatment effectiveness data base was reviewed thoroughly following proposal in order to respond to comments and assure that all relevant data were properly considered. As a result of this review, several additions and deletions were made to the Agency's treatment effectiveness data base. These changes are documented in the record along with responses to comments. Following the changes, statistical analyses performed prior to proposal were repeated. Conclusions reached at proposal were largely unchanged and little or no changes in the final limitations occurred as a result of changes in the data.

EPA conducted engineering site visits to seventeen canmaking plants in order to gather information regarding water use and in place treatment systems for wastewater discharges. In addition, EPA solicited data and clarifications of comments from eleven companies, to confirm the information provided in the Agency's 1978 and 1982 data collection portfolios regarding flow, production, and treatment systems in place. The data supplied was used to update the data base for the subcategory.

Additional data were provided by the industry on the characteristics of untreated wastewaters and on treated wastewaters discharged from canmaking operations. In addition, EPA conducted sampling and analysis for metals at seven plants and for toxic organic pollutants at five of these seven plants to further characterize wastewaters discharged from the subcategory.

Comments on the proposal criticized the Agency's estimate of compliance costs. Following proposal, the Agency revised its analysis of the cost of model treatment systems used as the basis for limitations and standards to take into account better data on treatment equipment in place and restructured the equipment costing methodology. Section VIII of the development document and related documents in the record explain the basis for the revised costs estimates.

**V. Control Treatment Options and Technology Basis for Final Regulations**

*A. Summary of Subcategory*

Can manufacturing is included within the U.S. Department of Commerce Census Standard Industrial Classification (SIC) 3411—Metal Cans, and includes about 425 manufacturing plants.

Canmaking covers all of the manufacturing processes and steps involved in the manufacturing of various shaped metal containers which are subsequently used for storing foods, beverages and other products. Two major types of cans are manufactured: Seamed cans and seamless cans.

Seamed cans (primarily three-piece cans) are manufactured by forming a flat piece or sheet of metal into a container with a longitudinal or side seam which is clinched, welded, or soldered, and attaching formed ends to one or both ends of the container body. About 300 plants in the United States manufacture seamed cans.

Seamless cans (primarily two-piece cans) consist of a can body formed from a single piece of metal and usually a top, or two ends, that are formed from sheet metal and attached to the can body. There are several forming methods which may be used to shape the can bodies including simple drawing, drawing and redrawing, drawing and ironing (D&I), extruding, spinning, and others. About 125 plants in the United States manufacture seamless cans.

In the manufacture of seamless cans, oil is used frequently as a lubricant during the forming of the seamless body and must be removed before further processing can be performed. Typically, this is accomplished by washing the can body in a continuous canwasher using water based cleaners. This step is followed by metal surfacing steps to prepare the can for painting.

In the manufacture of seamed cans, can ends and tops, and seamless cans from coated (e.g., coil coated) stock, no oil is used and the cans do not need to be washed after forming. These canmaking process segments are excluded from regulation because they generate no process wastewater. (See Section VIII of this preamble.)

Pollutants or pollutant parameters generated in canmaking wastewaters and regulated are: (1) Toxic metals—chromium, copper and zinc; (2) toxic organics listed as total toxic organics (TTO) (TTO is the sum of all toxic organic compounds detected in quantifiable amounts—See Appendix F of this preamble); (3) nonconventional pollutants—aluminum, manganese, fluoride, and phosphorus; and (4) conventional pollutants and pollutant parameters—oil and grease, TSS, and pH. Because of the toxic metals present, the sludges generated during wastewater treatment generally contain toxic metals.

EPA estimates that 86 of the approximately 425 can manufacturing plants in the United States generate wastewater. Three of these plants are direct dischargers, 80 are indirect dischargers, and the remaining three plants dispose of wastewaters by land application. These plants are scattered geographically throughout the United States.

*B. Control and Treatment Technologies*

Prior to proposal of the canmaking regulation, EPA considered a wide range of control and treatment options including both in-process changes and end-of-pipe treatment. These options are discussed in detail in the preamble to the proposed canmaking regulation and in the development document. No major changes have been made to the end-of-pipe technology options considered for the final rule from those considered for the proposed rule, although some changes have been made in the recommended flow reduction techniques and in the pollutant parameters regulated for pretreatment. The control and treatment technologies used as the basis for the final limitations and standards are described below.

In-process controls include flow reduction techniques utilizing reuse and recycle of canwasher rinse wastewaters. Numerous plumbing and water reuse configurations are used in canwashers, but the most frequently observed method involves the reuse of stage five sump water overflow as make-up to stage three rinsing. In some cases, stage three sump water overflow is in turn used as make-up to stage one rinsing. This technique is referred to as counterflow rinsing. Counterflow rinsing (which for this regulation is defined as having all of the makeup water for stage

3—the rinse following etching or cleaning the can—taken from the overflow from stage five—the rinse following metal surface treatment) is the model flow reduction technology for BAT, PSES, NSPS and PSNS.

Countercurrent cascade rinsing (adding cascaded rinse stages to increase rinsing efficiency) is an alternate approach to reducing water use as are other methods. These methods are described in more detail in Sections III and VII of the development document.

The model end-of-pipe treatment for BPT, BAT, NSPS, PSES and PSNS includes removal of oil and grease and toxic organic pollutants by oil skimming, chemical emulsion breaking, dissolved air flotation or a combination of these technologies; lime precipitation of metal ions, fluoride, and phosphorus; removal of precipitated solids by Stokes law sedimentation; and pH adjustment of the final effluent. Chromium reduction may also be necessary. Although not specifically included in the model end-of-pipe treatment system, cyanide precipitation may be necessary if plants use cyanide as a process chemical additive in the canmaking process. When used, cyanide should be removed and regulated. These treatment technologies are described in detail in Section VII of the development document.

The treatment effectiveness of the model treatment technologies has been evaluated by observing the performance of these technologies on canmaking and other similar wastewaters.

The data base for the performance of precipitation and sedimentation technology ("lime and settle") in reducing concentrations of chromium, copper, manganese, zinc, and TSS in canmaking wastewaters is a composite of data drawn from EPA sampling and analysis of effluents from well-operated lime and settle treatment systems at 18 plants in the copper forming, aluminum forming, battery manufacturing, porcelain enameling, and coil coating (including one canmaking plant) categories. These data, referred to as the combined metals data base (CMDB), consist of influent and effluent concentration measurements for nine pollutants. The wastewaters of these categories and canmaking wastewaters were found to be similar for treatment since they contain comparable levels of dissolved metals which can be removed by lime precipitation and solids removal.

The Agency regards the combined metals data base as the best available measure for establishing the concentrations of TSS, chromium, copper, zinc, and manganese attainable with lime and settle treatment technology. Our determination is based on the similarity of raw and treated wastewaters of the canmaking subcategory with the raw and treated wastewaters of the categories whose data comprise the CMDB. After removal of oil, canmaking raw wastewaters contain TSS, chromium, copper, zinc, and manganese in concentrations comparable to those in the CMDB categories. The similarity of raw wastewaters is supported by a statistical analysis for homogeneity which is part of the record of this rulemaking.

The Agency had few data on achievable effluent concentrations from optimally operated lime and settle treatment systems in canmaking plants. These data were useful for confirming the applicability of achievable effluent concentrations from the CMDB to canmaking plants. The CMDB was used to establish regulatory concentrations because of the larger number of plants and data points and because of the greater sampling reliability of the data available in the CMDB in comparison to the few effluent data available from post proposal sampling. The larger data base enhanced the Agency's ability to estimate long-term performance and variability through statistical analysis.

The CMDB is discussed in more detail in this preamble in Section IX, Public Participation and Response to Comments, in Section VII of the development document, in the document "A Statistical Analysis of the Combined Metals Industries Effluent Data" and in the memorandum "Revisions to Data and Analysis of the Combined Metals Data Base" which are both in the administrative record.

Maximum concentration levels for aluminum for BPT, BAT, and NSPS were proposed on the basis of data from the coil coating and aluminum forming categories. EPA judged that the raw wastewaters of canmaking plants were similar to those of coil coating and aluminum forming plants, and that the model lime and settle treatment technology could reduce the concentrations of aluminum in canmaking plants to levels comparable to those achieved in coil coating and aluminum forming plants. Since proposal of the aluminum forming regulation, the Agency gathered additional data on aluminum from two aluminum forming plants that have well operated lime and settle end-of-pipe treatment. The Agency also analyzed data on aluminum submitted by the Can Manufacturers Institute (CMI) and United States Brewers Association (USBA) in their comments on the canmaking proposal. The CMI and USBA data confirmed that canmaking plants' raw wastewaters contained concentrations of aluminum comparable to those found in aluminum forming wastewaters. When adjusted to exclude plants which do not employ or optimally operate the model end-of-pipe technology (lime and settle), six of eight data days of the treated effluent data submitted by CMI and USBA confirm that the concentration for aluminum used in the final regulations is achievable in canmaking plants that optimally operate the model technology. Further, we obtained Discharge Monitoring Report (DMR) data for one of the three direct dischargers in the subcategory. This plant employs and optimally operates the model end-of-pipe treatment technology (lime and settle). The DMR data show that this plant consistently met the concentration for aluminum used in the final regulation for all but two months in the past two years. Consequently, the concentrations for aluminum used in the final canmaking regulation for BPT, BAT, and NSPS are the same as those used in the final aluminum forming regulation. These concentrations are higher than those used for the proposed canmaking regulation.

Maximum concentrations for aluminum were also proposed for PSES and PSNS as an indicator to assure removal of chromium, zinc, and other metals and optimal operation of the model treatment system. Following proposal, a number of commenters pointed out that aluminum is often added by POTW and suggested that aluminum need not be regulated as an indicator since specific standards could be set for particular pollutant parameters of concern. In response to these comments, the Agency substituted PSES for manganese and copper in place of standards for aluminum. This results in an approach to aluminum in wastewaters in the canmaking subcategory which is consistent with the approach used in regulations for such sources as the aluminum forming and coil coating categories. In comments, industry has assured the Agency that making seamless cans from low manganese aluminum alloy was quite unlikely, increasing the Agency's confidence that manganese could be relied upon to assure the optimal

operation of the model (L&S) end-of-pipe treatment. In the event that a low manganese content can alloy is used, the Agency is requiring notification by each discharger of the intended use of a low manganese alloy and the composition of such low manganese alloy. The Agency will evaluate the potential impact of the use of any new alloy on pollutant discharge and will propose any appropriate revisions to these limitations and standards.

Aluminum was retained as a pollutant parameter for direct dischargers in the canmaking subcategory to assure removal of other pollutants and because aluminum appears at elevated concentrations in wastewaters and since aluminum is known to cause adverse effects in receiving waters at concentrations that would be discharged from canmaking plants. See Section VI of the development document for more details.

The lower end of the pH range in the final regulation has been lowered from 7.5 at proposal to 7.0, in order to allow optimal removal of aluminum from canmaking wastewaters. This change is also based on data obtained from the aluminum forming category, and is explained in more detail in Section IX of this preamble.

Manganese and copper appear in wastewaters in the canmaking subcategory as a consequence of their use as alloying agents in the aluminum stocks used in canmaking. These pollutants are removed by the model end-of-pipe treatment technology. The achievable concentrations of manganese and copper are based upon the performance of properly operated lime and settle treatment systems as documented in the combined metals data base.

Maximum concentration values for oil and grease are the same as proposed. The Agency judged that oil skimming, chemical emulsion breaking, dissolved air flotation devices or a combination of these technologies could reduce concentrations of oil and grease in canmaking effluents to the regulated levels. Following proposal, CMI and USBA jointly submitted treated effluent data for fourteen canmaking plants, ten of which employ and optimally operate these recommended treatment technologies for the removal of oil and grease. The Agency found that the data submitted by CMI and USBA for these ten plants consistently met the proposed concentration values for oil and grease. As a result, the final achievable concentration values for oil and grease are the same as proposed.

Maximum concentration values for TTO were proposed for PSES and PSNS, based on the application of the model treatment technologies for oil and grease removal. Because CMI and USBA claimed that process changes had eliminated toxic organics from canmaking wastewaters, after proposal, the Agency conducted sampling for toxic organic pollutants at five plants, and confirmed the presence of the six of the seven toxic organic compounds found before proposal in untreated raw effluents, plus seven additional toxic organics. These compounds were found in process wastestreams and are generally associated with natural lubricants, solvents and surface coatings. All are removed by oil and grease removal technologies. As a result, the proposed achievable treatment levels for TTO are retained in the final regulation. A definition of TTO has been added to the final regulation, which includes all fourteen toxic organic pollutants identified before and after proposal in untreated raw wastewater streams in the canmaking subcategory.

For direct dischargers, TTO is not regulated since the BPT/BCT oil and grease limitation will remove TTO. For BAT permits that are issued before BCT limitations are promulgated, permit writers should regard the BPT oil and grease limits as minimum loads for best professional judgment oil and grease limitations (see Section III of this preamble).

The final regulation includes a method to be used for the analysis of the concentration of oil and grease in wastewater samples from all subcategories of coil coating, which includes the canmaking subcategory. This method, which is described more fully in Section IX of this preamble, was presented for public comment in the September 22, 1983 **Federal Register** notice (48 FR 43195). No adverse comments were received.

Flow reduction is a significant part of the overall pollutant reduction technology. To assure that flow reduction is practiced, the Agency is promulgating mass-based limitations and standards. The Agency was able to establish production normalized flows so that mass-based limitations and standards could be developed. The numerical limitations and standards are expressed as a mass of pollutant allowed to be discharged per unit of production and are derived as the product of the regulatory flow and the overall treatment effectiveness. The regulatory flows are based on flow data, normalized to production, supplied by the industry. Concentration-based standards do not limit the quantity of pollutants discharged.

*C. Technology Basis for Final Regulation*

A brief summary of the technology basis for the regulation is presented below. A more detailed summary is presented in the "Preamble to the Proposed Canmaking Subcategory of the Coil Coating Point Source Category Effluent Limitations Guidelines, Pretreatment Standards, and New Source Performance Standards" (48 FR 6268 (February 10, 1983)), and the development document.

*BPT:* EPA is promulgating BPT mass limitations based on end-of-pipe treatment, which consists of removal of oil and grease by skimming, chemical emulsion breaking, dissolved air flotation or a combination of these technologies, and removal of metal ions, fluoride and phosphorus by lime and settle treatment technology. Chromium reduction may also be necessary in some cases. The model end-of-pipe treatment technology basis for the BPT limitations being promulgated is the same as that for the proposed limitations.

In developing BPT limitations, the Agency considered the amount of water used per unit of production (liters per 1000 cans produced). Comments on the proposed regulation criticized the flow estimates EPA used to set mass-based limitations. The regulatory flow used as the basis for BPT (referred to as regulatory flow or BPT flow) changed from the proposal to reflect updated information on plant flows and production and to reflect a more accurate assessment of flow reduction practices within the industry. The BPT flow is discussed briefly below and in more detail in Section IX of this preamble and in Section IX of the development document. The limitations presented in the final BPT regulation reflect these changes.

The flow basis for BPT is established at 215.0 1/1000 cans. Production normalized flows for plants in the subcategory range from 20.3 1/1000 cans to 964 1/1000 cans, representing a continuum from highly efficient water reuse and recycle practices to once-through rinsing at very high flows. The proposed BPT flow was based on the average production normalized wastewater flow of the 32 plants in the subcategory which EPA believed practice reuse of process wastewater within the canwasher. Commenters asserted that much of the data used to estimate flow was inaccurate. The Agency updated and verified its data for flow and recalculated flows based on the new data. The BPT flow is based on

the performance of the median plant among the 62 plants in the data base for which we have complete flow data. The median plant was chosen in preference to the mean because the industry presents a skewed distribution of flow values. For instance, five percent of the 62 plants for which we have date account for 16 percent of the total flow. The use of the median prevents a few extreme values from exerting an undue influence on the value used to characterize the industry.

Canmaking plants employ a variety of methods for reducing flow. These methods include recycle, reuse, or water-conservation practices. All plants in the subcategory can achieve the BPT flow through use of one or more of these methods. As explained in more detail in Section IX of this preamble, some commenters asserted that plant-specific factors prevent some plants from achieving reductions in flow. The Agency analyzed these factors in detail and concluded that commenters assertions are not supported by the record.

The pollutant parameters selected for limitation at BPT are: Chromium, zinc, aluminum, fluoride, phosphorus, oil and grease, total suspended solids (TSS), and pH. These are the same pollutants that were selected for regulation in the proposed regulation.

Implementation of the BPT limitations will remove annually an estimated 2,234 kg of toxic pollutants (metals and organics), 3.71 million kg of conventional pollutants and 3.79 million kg of total pollutants (from estimated current discharge) at a capital cost, above equipment in place, of $0.743 million and a total annual cost of $0.645 million. (These costs assume plants will install BPT systems at the BPT regulatory flow). The Agency has determined that the effluent reduction benefits associated with compliance with BPT limitations justify the costs.

*BAT:* EPA is promulgating BAT mass-Based limitations based on the BPT model end-of-pipe treatment technology and flow reduction to approximately 60 percent of the BPT flow. The model end-of-pipe treatment technology basis for the promulgated BAT is the same as that for BPT and is the same as that which was proposed. As discussed in the proposed regulation filtration at BAT was not selected because the additional pollutant removals are small. (If a polishing filter were added to a normal plant after the application of the model BAT technology, the filter would remove 24.9 kg/yr toxic pollutants at a capital cost of $0.017 million and a total annual cost of $0.011 million.) The Agency received no adverse comments on this issue.

In developing BAT limitations, the Agency considered the amount of water used per unit of production (liters per 1000 cans) for each wastewater stream. Following an examination of several objective factors, including age, water use, manufacturing processes, final products, equipment, and characteristics of wastewater and make-up water, EPA also determined that wastewater reuse, recycle, and conservation practices can be uniformly adopted throughout the subcategory. To determine the best performing plants in the subcategory we evaluated the various available water reuse techniques currently used in the canmaking subcategory.

The model flow reduction technology basis for BAT at proposal was countercurrent cascade rinsing (partitioning within a rinse stage to increase rinsing efficiency and to reduce water use). In response to comments and following a reevaluation of current practices in the industry, the model flow reduction technology basis in the final regulation is changed to counterflow rinsing, which has been defined in Section V of this preamble. The Agency used this model technology as a basis for calculating the BAT regulatory flow since it is fully demonstrated in at least fourteen plants, but notes that other flow reduction techniques, including countercurrent cascade rinsing, different counterflow configurations, and water conservation practices can also be employed to achieve comparable results. Because of anomalies at two of the fourteen plants which are known to practice counterflow rinsing, twelve plants were used to establish the BAT flow.

The regulatory flow for BAT is 83.9 1/1000 cans, based on the production normalized performance of 50 percent of the plants among the twelve plants without anomalies which practice counterflow rinsing. This BAT flow represents an increase of approximately 50 percent from the proposed BAT flow and reflects updated flow and production data provided by the industry and other changes made since proposal for BPT as discussed in the preceding section. The Agency notes that plants are achieving flow reduction to the BAT level or below using techniques other than counterflow rinsing as we have defined it. The flow reduction technology basis for BAT and alternate flow reduction practices which can be used to achieve similar results are discussed in more detail in Sections III, VII, and X of the development document. The Agency has determined that all plants in the subcategory can achieve the BAT flow by the model flow reduction technology or by alternate technologies or practices.

The pollutants selected for regulation are: Chromium, zinc, aluminum, fluoride and phosphorus. These are the same pollutants that were selected for regulation in the proposed rule. Toxic organics are not regulated at BAT because the oil and grease limitation at BPT effectively controls these organics.

Implementation of the BAT limitations will remove annually an estimated 2,369 kg of toxic pollutants (from estimated current discharge) at a capital cost, above equipment in place, of $0.646 million and a total annual cost of $0.594 million. For costing purposes, the Agency retained the in-process costs based on the proposed technology because the cost difference between the proposed technology and counterflow rinsing was considered insignificant.

BAT will remove 135 kg/yr of toxic pollutants incrementally above BPT. The Agency projects no plant closures, employment impacts or foreign trade effects and has determined that the BAT limitations are economically achievable.

The date for compliance with the BAT limitations for aluminum, fluoride and phosphorus is the same as for toxic pollutants regulated, since the model technology for controlling the toxic pollutants will control these nonconventional pollutants.

*NSPS:* EPA is promulgating NSPS based on end-of-pipe treatment which is the same as the BPT and BAT end-of-pipe technology. Alternative end-of-pipe technologies which could be used for NSPS in the canmaking subcategory, including polishing filters, ultrafiltration, and reverse osmosis, were considered and rejected for NSPS since the use of these technologies would result in little incremental pollutant reduction benefits. (If a polishing filter were added to a normal plant after the application of the model NSPS technology, the filter would remove 26.40 kg/yr toxic pollutants at a capital cost of $0.017 million and a total annual cost of $0.009 million.)

In developing NSPS, the Agency considered the amount of water used per unit of production. Comments on the proposed regulation criticized the proposed flow of 14 1/1000 cans used for new sources, which was based upon what the Agency believed to be the performance of a 9-stage canwasher or its equivalent. As a result of comments, the Agency reevaluated the issue. The Agency evaluated verified flows of the best performing canmaking plants for which information was available. Following an evaluation of factors

which could affect achievable flow rates, including age, water use, manufacturing processes, final products, equipment, and characteristics of wastewater and make-up water, EPA established the basis for the NSPS flow upon the lowest generally applicable demonstrated plant flow in the subcategory.

The regulatory flow for NSPS is 63.6 1/1000 cans. The NSPS flow, which represents a 70 percent reduction from the BPT flow, is substantially increased from the proposed flow for NSPS to reflect updated flow and production data provided by the industry. The model plant achieves this flow by using counterflow rinsing. Other methods such as the addition of additional stages of countercurrent cascade rinsing can be used to achieve NSPS flow. (See Sections III, VII and XI of the development document.)

The pollutants selected for regulation are the same as those proposed: Chromium, zinc, aluminum, flouride, phosphorus, oil and grease, TSS, and pH. Specific toxic organics are not being regulated because, as previously discussed the removal of oil and grease to meet the BPT oil and grease limit will adequately control the toxic organics found in canmaking wastewaters.

EPA estimates that a new direct discharge canmaking plant having the industry average annual production level would generate a raw waste of 856 kg per year of toxic pollutants. The NSPS technology would reduce these pollutant levels to 60 kg per year of these same toxic pollutants. Because the technology on which the new source flow is based is same as for BAT there would be no incremental cost above BAT. However, the Agency considered that some new sources might install additional technology to meet the new source flows. For a worst case evaluation the Agency considered that three additional stages of countercurrent cascade rinsing might be added beyond BAT. The total capital investment cost for a new model canmaking plant to install NSPS technology for a worst case situation is estimated to be $0.493 million, compared with investment costs of $0.382 million for a model plant to install technology equivalent to BAT. Similar figures for total annual costs are $0.302 million for NSPS, compared with $0.267 million for BAT. If the more expensive technology were used, NSPS investment and annual costs would be about ten percent greater than BAT costs for existing sources. These incremental costs for NSPS over BAT represents less than 0.1 percent of expected revenues for a new source model plant. The Agency has determined that the new source performance standards will not pose a barrier to entry.

For costing, the proposed in-process costing model (installation of three additional stages to a six stage canwasher) was retained because plants can achieve the new source flow using this technique. There would be no additional costs above BAT for a new source to achieve NSPS using counterflow rinsing technology, which is used at the plant used as the basis for new sources.

*PSES:* In the canmaking subcategory of the coil coating category, the Agency has concluded that the following metals regulated under these standards (chromium, copper, zinc and manganese) pass through the POTW. The nationwide average percentage of these same metals removed by a well-operated POTW meeting secondary treatment requirements is about 58 percent to 65 percent, whereas the percentage that can be removed by a canmaking direct discharger applying the best available technology economically achievable is about 92 percent. Accordingly, these pollutants pass through a POTW.

In addition to pass through of metals, fluoride and phosphorus pass through POTW. Phosphorus removal in POTW is 10–20 percent while fluoride is not removed; BAT treatment achieves more than 90 percent removal of both, clearly indicating pass through of these pollutants.

Available information from an EPA study on POTW shows that many of the toxic organics from canmaking facilities will pass through a POTW. Removal of those toxic organic pollutants by well-operated POTW achieving secondary treatment averaged about 70 percent, while the oil skimming component of the BPT technology basis achieves removals of about 97 percent. Accordingly, EPA is promulgating a pretreatment standard for toxic organics.

To regulate the pollutants that pass through a POTW, EPA is promulgating PSES based on the application of technology equivalent to BAT, which consists of flow reduction, model end-of-pipe treatment comprised of lime and settle technology following preliminary treatment, where necessary, consisting of chromium reduction, chemical emulsion breaking, oil skimming, dissolved air flotation, or a combination of these technologies.

The Agency proposed to regulate aluminum for pretreatment as an indicator to assure that other toxic metals would be removed prior to discharge. Commenters pointed out that aluminum is sometimes added by POTW and is largely removed by POTW. Commenters suggested that aluminum need not be regulated as an indicator for indirect dischargers since specific regulations could be set for particular pollutant parameters of concern. As a result, the Agency is promulgating PSES standards for manganese and copper in place of the proposed standard for aluminum. This decision is consistent with the approach used for regulating indirect sources in the coil coating and aluminum forming categories. The Agency is also promulgating standards for chromium, zinc, fluoride and phosphorus.

At proposal, we stated that toxic organic pollutants would be regulated as total toxic organics (TTO) and defined TTO as seven specific compounds which were found at the sampled canmaking plants at concentrations greater than the quantification level of 0.01 mg/1. Appendix F of this preamble and § 465.02 of the regulation lists those toxic organics which comprise TTO. The list of TTO presented in this regulation reflects all the toxic organic pollutants found at concentrations above the quantification level at sampled plants, including seven additional organic compounds found in wastestreams of sampled canmaking plants following proposal. However, other toxic organics may be found in canmaking wastewaters even though they were not found in the sampled wastestreams. This is because toxic organic compounds originate in lubricants, solvents and surface coatings and these compounds can vary depending upon the formulation.

Many polyaromatic hydrocarbons and organic solvents can be substituted for one another to perform the same function. If substitution does occur, the Agency believes that these other toxic organics are likely to be adequately controlled by the PSES model treatment technology and that the same pretreatment standards on TTO should apply. However, toxic organics not covered by this regulation at canmaking facilities should be considered for regulation by the control authority on a case-by-case basis.

The analysis of wastewaters for toxic organics is costly and requires sophisticated equipment. Therefore the Agency proposed to establish as an alternative to monitoring for TTO a monitoring parameter for oil and grease. Data indicate that the toxic organics are in the oil and grease and by removal of the oil and grease, the toxic organics will also be removed.

In developing these standards, the amount of water used per unit of production is considered for each waste stream. The flow basis is the same as for BAT.

The pollutants selected for regulation are: Chromium, copper, zinc, fluoride, manganese, phosphorus, and TTO.

The PSES set forth in this final rule are expressed in terms of mass per unit of production rather than concentration standards. Regulation on the basis of concentration is not appropriate because concentration-based standards do not restrict the total quantity of pollutants discharged. Flow reduction is a significant part of the model technology for pretreatment because it reduces the amount of toxic pollutants introduced into a POTW. For this reason and because production normalized flows could be established, no alternative concentration standards are promulgated for indirect dischargers.

The Agency estimates that implementation of the PSES will remove annually an estimated 63,174 kg of toxic pollutants (from estimated current discharge) at a capital cost, above equipment in place, of $21.29 million and a total annual cost of $17.13 million. These costs are based on the application of the model end-of-pipe treatment technology, which includes lime and settle technology for the removal of metal ions, fluoride and phosphorus, to each plant in the subcategory which does not now employ such technology. Data submitted by CMI and USBA indicate that some plants can meet PSES with existing technologies other than lime and settle. The Agency has no firm data on the number of these plants that can meet the limits with existing technology. Therefore, we have included the cost of clarifiers for these plants in subcategory PSES costs. Thus the total cost probably are overstated.

The Agency believes that one two-piece can manufacturing line is expected to close as a result of this regulation and will result in 26 job loses among indirect dischargers. The PSES standards are economically achievable for the subcategory.

The Agency has considered the deadline for compliance for PSES. Although a number of canmaking plants have installed and are properly operating the treatment technology for PSES, many have not. The installation of end-of-pipe treatment equipment may require several years in some instances. Additionally, many plants in this and other industries will be installing the treatment equipment suggested as model technologies for this regulation, which may result in delays in engineering, ordering, installing, and operating this equipment. For all these reasons, the Agency has decided to set the PSES compliance date to be as soon as possible, but in no case later than the three years after promulgation of this regulation.

*PSNS:* EPA is promulgating PSNS based on end-of-pipe treatment and in-process controls equivalent to that used as the basis for NSPS. The regulatory flow for PSNS is also the same as that for NSPS. As discussed under PSES, pass through of the regulated pollutants will occur without adequate pretreatment and, therefore, pretreatment standards are required. Alternative end-of-pipe technologies which could be used for PSNS in the canmaking subcategory including polishing filters, ultrafiltration, and reverse osmosis, were considered and rejected for PSNS as well as NSPS since the use of these technologies would result in little incremental pollutant reduction benefits.

The pollutants regulated under PSNS are chromium, zinc, copper, manganese, fluoride, phosphorus, and TTO. The Agency has substituted manganese and copper for aluminum, as was done for PSES. Monitoring for oil and grease has been established as an alternative to monitoring for TTO as discussed under PSES.

EPA estimates that a new indirect discharge plant having the industry average annual production level would generate a raw waste of 856 kg per year of toxic metal and organic pollutants. The PSNS technology would reduce these pollutant levels to 60 kg per year of these same toxic pollutants. Because the technology on which the new source flow is based is same as for PSES there would be no incremental cost above PSES. However, the agency considered that some new sources might install additional technology to meet the new source flows. For a worst case evaluation, the Agency considered that three additional stages of counter current cascade rinsing might be added beyond PSES. The total capital investment cost for a new model canmaking plant to install the PSNS technology for a worst case situation is estimated to be $0.493 million, compared with investment costs of $0.382 million for a model plant to install the treatment technology equivalent to PSES. Similar figures for total annual costs are $0.302 million for PSNS and $0.267 million for PSES. If the more expensive technology were used, PSNS investment and annual costs would be about ten percent greater than PSES costs for existing sources. These incremental costs over PSES represent less then 0.1 percent of expected revenues for a new source model plant, the Agency has determined that the new source performance standards will not pose a barrier to entry.

## VI. Economic Considerations

### *A. Costs and Economic Impact*

The Agency's economic impact assessment of this regulation is presented in the report entitled *Economic Impact Analysis of Effluent Standards and Limitations for the Canmaking Industry* (EPA–440/2–83–011). This report details the investment and annual costs for the canmaking subcategory. Compliance costs are based on engineering estimates of capital requirements for the model treatment systems described earlier in this preamble. The report assesses the impact of effluent control costs in terms of price changes, production changes, plant closures, employment effects, and balance of trade effects. The impacts for each of the regulatory model treatment technologies are discussed in the report.

The economic analysis also reflects other industry comments, additional information provided since proposal, and the use of current information on financial and economic characteristics of the industry. Since proposal, the price of cans has been reduced to $60/1000 cans in response to industry comments and compliance costs have been revised as discussed in Section IX of this preamble and in Section VIII of the development document. As a consequence, estimated plant revenues and investment costs have decreased.

EPA estimates that of the approximately 425 can manufacturing plants in the United States 86 manufacture cans that are washed (primarily two-piece cans) and are the subject of this regulation. Of these 86 plants, three are direct dischargers and 80 are indirect dischargers. The remaining three plants dispose of process wastewaters by land application. Total investment for combined BAT and PSES is estimated to be $21.97 million with annual costs of $17.74 million, including depreciation and interest. These costs are expressed in 1982 dollars as are all the following costs. The Economic Impact Analysis projects one indirect discharge 2–piece can line closure, causing 26 job losses. We project no changes in price nor significant changes in production and no foreign trade impacts.

The above costs reflect EPA's estimate of required monitoring, ranging from 12 days per month for large plants to one day per month for small plants. If all plants are required either by their

control authority or their permit writer to monitor 10 days per month, then total annual costs would increase by less than $0.90 million. One additional closure may result from this level of monitoring; the average increase in the cost of production would be negligible.

The methodology for the economic analysis is the same as that used at proposal. It is detailed in Chapter II of the economic impact analysis. Using revised compliance costs for each plant, we performed a capital requirements analysis and a profitability analysis.

The capital requirements analysis was used to assess a company's ability to make the initial capital investment needed to construct and install the required treatment systems. The analysis is based on the ratio of compliance capital investment requirements to plant annual revenues (CCI/R). This ratio provides an indication of the relative magnitude of the compliance capital investment requirements. Return on investment (ROI) (pre-tax profits as a percent of revenues) was used to assess the impact of the effluent regulations on the profitability of individual plants. The use of this technique involves a comparison of the return on investment after compliance with a threshold required return on investment. EPA expects some plants will experience slight decreases in ROI. No price increases are expected. Changes in production costs are expected to be less than 0.1 percent. No measurable balance of trade effect is expected. The Agency expects one 2-piece can production line closure with 26 job losses to result from this regulation. EPA has determined that this regulation is economically achievable.

*BPT:* The BPT regulation is expected to affect all three direct discharging plants. BPT for these three plants is projected at $0.644 million in investment costs and $0.591 million in annual costs (including depreciation and interest). These costs are different from the engineering compliance cost estimates presented in Section V of this preamble. The Agency believes facilities will choose the most economical means of complying with BPT and, if going directly to BAT is less expensive, will choose to install BAT technology with flow reduction in order to meet the BPT limits. This assumption was not made for purposes of Section V of this preamble. The Agency has determined that the effluent reduction benefits associated with compliance with BPT justify the costs. According to the analysis of economic impacts, no plant closures or job losses are associated with complying with the BPT limitations.

*BAT:* All three direct dischargers will be affected by the BAT limitations. These three plants would incur investment costs estimated at $0.646 million and total annual costs of $0.594 million, including depreciation and interest. The incremental cost above BPT is estimated to be $2,000 and $3,000 in investment and annual costs respectively. These costs will not result in any plant closures or job losses. We project no changes in price, therefore, the Agency believes that compliance with BAT will be economically achievable.

*PSES:* Many of the 80 indirect dischargers will incur costs to comply with this regulation. Based upon the application of in process controls and end-of-pipe model treatment technology at all plants which do not currently utilize such technology, the Agency estimates that these 80 plants will share investment costs of $21.32 million and annual costs of $17.14 million, including depreciation and interest. The Agency believes that only one 2-piece can production line is expected to close and will result in twenty-six job losses. Thus the PSES are economically achievable for the subcategory.

*NSPS–PSNS:* The two-piece segment of the canmaking industry is relatively profitable and has fared well during recessionary periods. Beverage can shipments, by far the largest market for seamless cans, have generally outperformed growth in real GNP since 1972. There is presently excess capacity in certain segments of the industry but growth is expected over the next five years. EPA believes this growth trend will continue and expects new plants and major modifications to existing plants will be built in this subcategory.

EPA is promulgating NSPS and PSNS based on flow reductions beyond the BAT level, in addition to the BAT model end-of-pipe treatment technology. The model in-process technology used as a basis for NSPS and PSNS is the same as the BAT model technology. Therefore, we estimate that there is essentially zero incremental cost for NSPS and PSNS above the cost incurred for existing sources. However, the Agency has performed a sensitivity analysis assuming that the new source would use an alternate (more expensive) technology for achieving NSPS and PSNS regulatory flows: Three additional stages of countercurrent cascade rinsing. The Agency analyzed a "normal" plant and estimated compliance costs above the BAT level, comparing estimated costs for the additional treatment technology to expected revenues. The incremental costs over the cost estimates for the BAT and PSES technologies are less than 0.1 percent of expected revenues for a normal plant. Investment costs for a new source are projected to be no more than 10 percent above BAT, and annual costs are projected to be 4 percent above BAT. Even considering the costs for the additional flow reduction technology, EPA does not believe that NSPS and PSNS will constitute a barrier to entry for new sources, nor prevent major modifications to existing sources nor produce other adverse economic effects.

*B. Executive Order 12291*

Executive Order 12291 requires EPA and other agencies to perform regulatory impact analyses of major regulations. Major rules are those which impose a cost on the economy of $100 million a year or more or have certain other economic impacts. This regulation is not a major rule because its annualized cost of $17.73 million is less the $100 million and it meets none of the other criteria specified in Section I paragraph (b) of the Executive Order. The economic impact analysis prepared for this proposed rulemaking meets the requirements for non-major rules.

*C. Regulatory Flexibility Analysis*

Pub. L. 96–354 requires EPA to prepare an Initial Regulatory Flexibility Analysis for all proposed regulations that have a significant impact on a substantial number of small entities. This analysis may be done in conjuction with or as a part of any other analysis conducted by the Agency. The economic impact analysis for this regulation discusses possible impacts upon small entities. The regulatory requirements are projected to cause one product line closure. This product line is part of a larger canmaking plant. The Agency estimates that the percentage change in production costs for small plants (defined as producing less than 500 million cans per year) is less than one percent. The Agency does not believe that small entities will be disproportionately impacted by this regulation.

*D. SBA Loans*

The Agency is continuing to encourage canmakers to use Small Business Administration (SBA) financing as needed for pollution control equipment. The three basic programs are: (1) The Guaranteed Pollution Control Bond Program, (2) the Section 503 Program, and (3) the Regular Guarantee Program. All the SBA loan

programs are only open to businesses that have: (a) Net assets less than $6 million, (b) an average annual after-tax income of less than $2 million, and (c) fewer than 250 employees. The estimated economic impacts for this category do not include consideration of financing available through these programs.

The Section 503 Program, as amended in July 1980, allows long-term loans to small and medium sized businesses. These loans are made by SBA approved local development companies. For the first time, these companies are authorized to issue Government-backed debentures that are bought by the Federal Financing Bank, an arm of the U.S. Treasury.

Through SBA's Regular Guarantee Program, loans are made available by commercial banks and are guaranteed by the SBA. This program has interest rates equivalent to market rates.

For additional information on the Regular Guarantee and Section 503 Programs contact your district or local SBA Office. The coordinator at EPA headquarters is Ms. Frances Desselle who may be reached at (202) 382–5373. For further information and specifics on the Guaranteed Pollution Control Bond Program contact: U.S. Small Business Administration, Office of Pollution Control Financing, 4040 North Fairfax Drive, Rosslyn, Virginia 22203 (703) 235–2902.

## VII. Nonwater Quality Environmental Impacts

Eliminating or reducing one form of pollution may cause other environmental problems. Sections 304(b) and 306 of the Act require EPA to consider the nonwater quality environmental impacts (including energy requirements) of certain regulations. In compliance with these provisions, we considered the effect of this regulation on air pollution, solid waste generation, water scarcity, and energy consumption. This regulation was circulated to and reviewed by EPA personnel responsible for nonwater quality programs. While it is difficult to balance pollution problems against each other and against energy use, we believe that this regulation will best serve often competing national goals.

The following nonwater quality environmental impacts (including energy requirements) are associated with the final regulation. The Administrator has determined that the impacts identified below are justified by the benefits associated with compliance with the limitations and standards.

### *A. Air Pollution*

Imposition of BPT, BAT, NSPS, PSES, and PSNS will not create any substantial air pollution problems because the wastewater treatment technologies required to meet these limitations and standards do not cause air pollution, with the possible exception of dissolved air flotation treatment systems. In EPA's judgment, the possible air pollution problems created by the use of such systems on canmaking wastewaters are not significant.

### *B. Solid Waste*

EPA estimates that canmaking facilities generated 7,100 kkg of solid wastes (wet basis) in 1978 from manufacturing process operations as well as a result of sludge wastewater treatment in place. These wastes consisted of treatment system sludges containing precipitated pollutants, including chromium, copper, zinc, aluminum, fluoride, manganese, and phosphorus; and oil containing toxic organics removed during oil skimming, chemical emulsion breaking, and dissolved air flotation or a combination of these technologies.

EPA estimates that BPT will contribute an additional 13,600 kkg per year of solid wastes over that which is currently being generated by the canmaking industry. BAT and PSES will increase these wastes by approximately 562,000 kkg per year beyond BPT levels. These sludges will necessarily contain additional quantities (and concentrations) of toxic metal pollutants. We estimate that NSSP and PSNS will generate approximately 6,950 kkg per year for a model plant.

The Agency examined the solid wastes that would be generated at canmaking plants by the model treatment technologies and believes they are not hazardous under Section 3001 of the Resource Conservation and Recovery Act (RCRA). This judgment is made based on the model technology of lime and settle. By the addition of a small excess of lime or other source of hydroxide ion during treatment, similar sludges, specifically toxic metal bearing sludges, generated by other industries such as the iron and steel industry passed the EPA toxicity test. See 40 CFR 261.24 (45 FR 33084 (May 19, 1980)). Thus, the Agency believes that canmaking wastewater sludges will similarly be found not hazardous if the recommended technology is applied. Since the canmaking solid wastes are not believed to be hazardous, no estimates were made of costs for disposing of hazardous wastes in accordance with RCRA requirements.

Although it is the Agency's view that solid wastes generated as a result of these guidelines are not expected to be classified as hazardous under the regulations implementing Subtitle C of the Resource Conservation and Recovery Act, generators of these wastes must test the waste to determine if the wastes meet any of the characteristics of hazardous waste. See 40 CFR 262.11 (45 FR 12732–12733 (February 26, 1980)). The Agency may also list these sludges as hazardous pursuant to 40 CFR 261.11 (45 FR 33121 (May 19, 1980), as amended at 45 FR 76624 (November 19, 1980)).

If these wastes are identified as hazardous, they will come within the scope of RCRA's "cradle to grave" hazardous waste management program, requiring regulation from the point of generation to point of final disposition. EPA's generator standards would require generators of hazardous canmaking wastes to meet containerization, labeling, recordkeeping, and reporting requirements. In addition, if canmakers dispose of hazardous wastes off-site, they would have to prepare a manifest which would track the movement of the wastes from the generator's premises to a permitted off-site treatment, storage, or disposal facility. See 40 CFR 262.20 (45 FR 33142 (May 19, 1980)). The transporter regulations require transporters of hazardous wastes to comply with the manifest system to assure that the wastes are delivered to a permitted facility. See 40 CFR 263.20 (45 FR 86973 (December 31, 1980)). Finally, RCRA regulations establish standards for hazardous treatment, storage, and disposal facilities allowed to receive such wastes. See 40 CFR Part 464 (46 FR 2802 (January 12, 1981), 47 FR 32274 (July 26, 1982)).

Wastes which are not hazardous must be disposed of in a manner that will not violate the open dumping prohibition of section 4005 of RCRA. See 44 FR 53438 (September 13, 1979). The Agency has calculated as part of the costs for wastewater treatment the cost of hauling and disposing of these wastes in accordance with these requirements. For more details, see Section VIII of the development document.

### *C. Consumptive Water Loss*

Treatment and control technologies that require extensive recycling and reuse of water may require cooling mechanisms. Evaporative cooling mechanisms can cause water loss and contribiute to water scarcity problems—a primary concern in arid and semi-arid regions. While this regulation assumes

water reuse, the quantity of water involved is not regionally significant. We conclude that the pollution reduction benefits of recycle and reuse technologies outweigh their impact on consumptive water loss.

*D. Energy Requirements*

EPA estimates that the achievement of BPT and BAT effluent limitations will result in a net increase of electrical energy consumption of approximately 0.11 million kilowatt-hours per year. To achieve the BAT effluent limitations, a typical direct discharger will increase total energy consumption by less than 1 percent of the energy consumed for production purposes. NSPS will not significantly add to total energy consumption since new source equipment and pumps will be smaller and therefore use less energy due to the decreased flows resulting from flow reduction. New source wastewater treatment systems will have energy requirements similar to BAT.

The agency estimates that PSES will result in a net increase in electrical energy consumption of approximately 2.93 million kilowatt-hours per year. To achieve PSES, an indirect discharger will increase energy consumption by less than 1 percent of the energy consumed for production purposes. PSNS, like NSPS, will not significantly add to total energy consumption based on a normal plant calculation.

## VIII. Pollutants and Subcategory Segments Not Regulated

The Settlement Agreement in *NRDC* v. *Train, supra* authorizes the exclusion from regulation in certain instances of toxic pollutants and industry subcategories. These provisions have been rewritten in a Revised Settlement Agreement which was approved by the District Court for the District of Columbia on March 9, 1979. See *NRDC* v. *Costle,* 12 ERC 1833 (D.C.C. 1979).

Paragraph 8(a)(iii) of the Revised Settlement Agreement allows the Administrator to exclude from regulation specific pollutants not detectable by Section 304(h) analytical methods or other state-of-the-art methods. The toxic pollutants not detected in this subcategory and therefore, excluded from regulation are listed in Appendix B to this notice.

Paragraph 8(a)(iii) of the Revised Settlement Agreement allows the Administrator to exclude from regulation toxic pollutants detected in amounts too small to be effectively reduced by technologies known to the Administrator. Appendix C to this notice lists the toxic pollutants in this subcategory that were detected in the effluent in amounts that are at or below the nominal limit of analytical quantification which are too small to be effectively reduced by technologies and that are therefore excluded from regulations.

Paragraph 8 (a)(iii) of the Revised Settlement Agreement allows the Administrator to exclude from regulation toxic pollutants present in amounts too small to be effectively reduced by technologies considered applicable to the subcategory. Appendix D lists those toxic pollutants which are not treatable using technologies considered applicable to the subcategory.

Paragraph 8(a)(iii) also allows the Administrator to exclude from regulation specific pollutants which will be effectively controlled by the technologies upon which are based other effluent limitations and guidelines, standards of performance or pretreatment standards. The toxic pollutants considered for regulation, but excluded from BPT, BAT limitations and NSPS because adequate control of these pollutants is now provided by this regulation through the control of other pollutants, are listed for this subcategory in Appendix E of this preamble.

Paragraph 8(a)(iv) and 8(b)(ii) of the Revised Settlement Agreement allow the Administrator to exclude from regulation subcategory segments for which the amount and the toxicity of pollutants in the discharge does not justify developing national regulations. Some segments of the canmaking subcategory meet this provision and are excluded from this regulation because there is no discharge of process wastewater. These segments are listed in Appendix G to this preamble.

## IX. Public Participation and Response to Major Comments

Industry groups, individual can companies, and municipalities participated during the development of these effluent guidelines and standards. Following the publication of the proposed rule on February 10, 1983 in the **Federal Register,** we provided the development document and the economic impact analysis supporting the proposed rule to industry, government agencies, and the public sector. On April 27, 1983 in Washington, D.C., a public hearing was held on the proposed pretreatment standards at which one person presented testimony. Fourteen commenters submitted a total of approximately 330 individual comments on the proposed regulation. In addition, additional information that became part of the record was summarized in a **Federal Register** notice (48 FR 43195, September 22, 1983), and made available for public comment. The September 22, 1983 **Federal Register** notice also described the Agency's preliminary analyses of data submitted by commenters and collected by the Agency between proposal and promulgation of this rule. Six commenters submitted about 50 comments on the data and issues raised in the September 22, 1983 notice.

All comments received have been carefully considered, and appropriate changes in the regulation have been made whenever available data and information supported those changes. Major issues raised by the comments are addressed in this section of the preamble. A summary of all comments received and detailed responses to these comments is included in a document entitled Response to Public Comments, Proposed Canmaking Effluent Limitations and Standards which has been placed in the public record for this regulation.

The following is a discussion of the Agency's responses to the principal comments.

*1. Inaccurate Flow and Production Data*

*Comment:* Several companies and two trade associations complained that the flow and production data used in the proposal to calculate production normalized wastewater flow were inaccurate or out of date.

*Response:* Each of these companies and trade associations provided updated flow and production figures, which have been incorporated into the data base used in the development of this regulation. In addition, eleven inquiries were sent under the authority of section 308 of the Act to obtain further updated flow and production information, and timely responses were included in the data base. All this information was made available for public comment in the September 22, 1983, **Federal Register** notice. In response to these comments, the Agency recalculated the flow figures.

*2. Factors Restricting Achievable Reductions in Flow*

*Comment:* Several commenters objected to the establishment of limitations and standards premised upon reductions in flow, asserting that at least thirteen factors relating to water quality and product quality affect achievable water flow reductions in canwashers. These factors include specific assertions that cans must be cleaner for beer than for soft drinks, that minerals in the intake water of some

plants in some parts of the country necessitate more or less water use, and that the geometry of the can affects water use requirements.

*Response:* The Agency analyzed each of these thirteen factors in detail, using data provided by commenters, data contained in the data collection portfolios for the industry, and data received on plant visits and in response to Agency requests for further information after proposal. EPA concluded that none of these thirteen factors will prevent the achievement of the estimated flow reductions for this regulation by any plant.

Perhaps the most strenuous objection was that the taste of beer and other malt beverages is more sensitive to contaminants than is the taste of soft drinks, and that additional rinse water is therefore required for beer cans than for soft drink cans. One commenter added that more water is necessary for light beers than for heavier pilsners, lagers, or ales for the same reason. The Agency examined canmaking plants of four companies which produce cans for both soft drinks and beer, and additional plants which produce cans for both light beer and other malt beverages. EPA found that on the basis of information supplied by the industry, wastewater flows in each plant do not vary with the intended use of the can. Further, a number of the lowest wastewater flow rates in the industry are found at plants which manufacture cans primarily intended for beer. As a result, we concluded that reduced flows are achievable regardless of whether cans are manufactured for beer or for soft drinks.

Other commenters asserted that the quality of fresh makeup water varies from location to location, and restrains the achievable flow reduction. The Agency examined supporting arguments that a high dissolved solids content requires a higher allowable flow, as well as arguments that a low dissolved solids content requires a higher allowable flow. The industry identified about three plants following proposal as experiencing product quality problems related to the quality of the fresh water supply. The Agency visited several of those plants and talked with company officials, and we do not believe that the specific product quality problems these plants are experiencing are due to an excess of dissolved solids in the fresh water supplied to the canwashers. In general, EPA concludes that while site-specific water quality factors could conceivably require additional water purification steps or the addition of water treatment chemicals in a few instances, data submitted by commenters and other data available in the record do not support a contention that quality of makeup water limits the degree of flow reduction achievable.

Another factor mentioned by commenters is that routine production stoppages restrict a company's ability to meet reduced water flow allowances, since water flow allowances are expressed as a function of production. The Agency found no support for this contention, since our observations at canplants confirmed that canplants can reduce the supply of water to the washer during production stoppages.

Commenters also mentioned canwasher age and design, canwasher mat width, and can geometry as factors which could affect a company's ability to achieve the reduced water flow. EPA found only one of these factors, age and design, to have any demonstrable relation to water use. Water use at canmaking tends to vary with age and design, but we visited several units of varying ages and designs and found no engineering reason why improved recycle, reuse, and water conservation practices cannot be implemented at these canwashers to achieve the reduced flows of this regulation.

Commenters also asserted that the type of organic coating to be applied, the type of lubricant to be washed off, the surface finish on can tooling, and the type of label used all affect achievable reductions in flow rates. Despite requests for industry to provide data to substantiate these claims, only general statements were provided for the record. In plant visits and in subsequent information requests sent by EPA under the authority of section 308 of the Act, attempts were made to determine the possible effects of these factors, but no specific data were obtained. As a result, the Agency concludes that based on the record, these factors do not appear to prevent any plant from achieving the flows used for calculating the limitations and standards in this regulation.

*3. Model Flow Reduction Technology for BAT and PSES*

*Comment:* The model flow reduction technology presented in the proposed regulation for BAT and PSES was countercurrent cascade rinsing within a six-stage canwasher. Commenters asserted that this technology has not been adequately demonstrated in the canmaking industry and that some of the plants used to calculate BAT and PSES flow allowances were not using countercurrent cascade rinsing or were not achieving the estimated flow reduction.

*Response:* The Agency reexamined the BAT and PSES model flow reduction technology and flow estimates in response to these comments. While countercurrent cascade rinsing is used in the industry in at least three instances to reduce flow, a more common flow reduction technique is counterflow rinsing, in which water from the fifth stage of the canwasher is reused in stage three, with no makeup water added to stage three. Counterflow rinsing is used in at least fourteen plants. In a change from the proposed regulation, the Agency bases the flow in the final regulation upon the production normalized performance of the median plant [1] among twelve of these fourteen plants. (Two of the fourteen plants were not used in establishing the BAT and PSES flows due to plant-specific anomalies at these two plants.)

The final development document presents a number of available flow reduction techniques as alternatives, which may be used singly or in combination to achieve BAT and PSES flows. Varying combinations of flow reduction techniques will be appropriate depending upon the particular configurations of individual canwashers. However, the Agency found no technological barriers for any plant to achieve water reuse and recycle at canwashers which now practice once-through washing, nor to reducing flows at all canmaking plants to achieve the BAT and PSES of 83.9 1/1000 cans.

*4. Combined Metals Data Base*

*Comment:* The Agency proposed limitations and standards for TSS, chromium, and zinc based on concentrations calculated from the "combined metals data base" (CMDB). Several commenters objected to the use of data from other industry categories to establish the treatment effectiveness of lime and settle technologies. Commenters argue that the primary metals being treated in the categories represented in the CMBD are different from those in canmaking wastewater and, therefore, the data cannot be transferred to establish the treatability of metals found in canmaking wastewaters. Commenters also contended that the data supplied by the industry should be used in place of the CMDB. This point is addressed below in Comment 5.

Comments specifically directed to the combined metals data base contend that: (1) The data base is too small; (2)

[1] We define the term median plant as the plant in an even numbered population of plants that will include one half of the population.

the statistical methodology used was too complex; (3) some data were improperly included and others improperly deleted; and (4) data were included which are not representative of lime and settle technology in canmaking plants, and (5) the data base used to establish the metal finishing limits should be used instead of the combined metals data base.

*Response:* (1) The CMDB (revised slightly following proposal of the canmaking regulation) includes 162 data points from 18 plants in five industrial categories with similar wastewaters (one of these is an aluminum canmaking plant). This is an ample data base. All plants in the data base have the model end-of-pipe treatment technology of lime and settle. These data were evaluated and analyzed to establish effluent limitations on the basis of data that represent good operation of the model technology. The use of comparable data from several categories enlarges the data base and enhances the estimates of treatment effectiveness and variability over those that would be obtained from data from any one category alone. The Agency believes that the CMDB contains a sufficient number of data points for determining the treatment effectiveness of lime and settle technology.

(2) The statistical methods used to assess homogeneity and determine limitations are well known. The methods used to analyze homogeneity are known generally as analysis of variance. Effluent limitations were determined by fitting the data to a lognormal distribution and using estimation techniques that possess desirable statistical properties. These methods are described in detail in the document entitled "A Statistical Analysis of the Combined Metals Industries Effluent Data" which includes appropriate references to statistical texts, journal articles, and monographs. Following proposal of the canmaking rule, data in the CMDB were reviewed. This resulted in minor additions, deletions and corrections to the data base used to assess homogeneity and to determine treatment effectiveness in the canmaking subcategory. The homogeneity analyses performed prior to proposal were repeated on the revised data base with the result that the earlier conclusions regarding homogeneity were unchanged. The changes in the data base resulted in slight changes in the final limitations. The revisions to the data base and analysis are described in the record of this rulemaking.

(3) The Agency carefully re-examined the specific data points that commenters identified as being improperly included in the CMDB. These data points fall into two categories, effluent points associated with low pH readings and influent points associated with larger effluent measurements made on the same day (so called "inverted values"). Detailed responses to each data point referred to by commenters are provided in the response to comments document. In eliminating data from use in the data base, EPA used a pH editing rule which generally excludes data in cases where the pH is below 7.0 for extended periods of time (i.e. over two hours). The rationale for this rule was that low pH over a long period of time often indicates improper functioning of the treatment system. The time periods of low pH for the points in question cannot be determined from existing data; however, because large amounts of metals were removed and low effluent concentrations were being achieved, the pH at the point of precipitation necessarily had to be well above pH 7.0. The reason for the effluent pH falling below 7.0 cannot be determined from the available data, but it is presumed to be a pH rebound. This phenomenon is often encountered when a slow reacting acidic material is neutralized or reacts late in the treatment cycle. The Agency believes that the data in question are representative of a lime and settle treatment process which is being operated in an acceptable manner. Accordingly, the data have been retained in the CMDB.

The occurrence of an influent value less than an effluent value measured on the same day may be an indication of system malfunction. However, such values can also occur in the course of normal operation. In general, where there was no indication of treatment malfunction or mislabeling of the sample the values were retained in the data base.

(4) The Agency carefully reexamined the specific data points in the CMDB to assure that each datum came from a plant with treatment that qualified as well-operated lime and settle technology. The discovery that one plant in the CMDB did not employ lime and settle technology caused the Agency to remove the data from that plant from the CMDB. This and other minor deletions and additions caused the chromium and zinc concentrations to be increased slightly from the concentrations used at proposal.

(5) The Agency at one time considered including metal finishing data in the CMDB, however, statistical analysis indicated that these data were not homogeneous with other metals industries' data. Differences between electroplating and the other categories were suspected on the basis of engineering assessment. The results of the statistical analysis showed there were statistically discernible differences among electroplating wastewaters and the wastewaters of other categories. Therefore, metal finishing data were removed from the CMDB.

*5. Treatability of Pollutants and New Treatment Effectiveness Data From Canmaking*

*Comment:* The proposed regulation specifically requested sampling and analytical data from the canmaking industry, especially paired influent and effluent data points. The CMI and USBA jointly submitted paired influent and effluent sample data from fourteen canmaking plants and requested that this data be used as the basis for the treatment effectiveness of the model technology in the final regulation.

*Response:* The information submitted by CMI and USBA was carefully reviewed to evaluate: (1) The final effluent concentration values achievable for oil and grease; (2) The final effluent concentration values achievable for metals, fluoride, phosphorus, TSS, and pH; and (3) the comparability of pollutant characteristics of untreated waste streams in the canmaking industry data base with the characteristics of such waste streams used in the combined metals data base.

With respect to oil and grease, the Agency found that twelve of these fourteen plants employ the model end-of-pipe BPT technology of oil skimming, chemical emulsion breaking, dissolved air flotation, or some combination of these technologies. The remaining two plants dispose of oily wastes by contract hauling, without prior treatment. Of the twelve plants employing oil removal treatment technology, two do not properly operate these treatment facilities, as observed first-hand by EPA during plant visits. Without exception, each of the ten remaining plants with properly operated oil removal treatment technology met the proposed one-day maximum concentration values for oil and grease on all days when the treatment technology was operating well. The proposed one-day maximum concentration value for oil and grease is also consistent with the performance of oil and grease removal technologies in numerous other categories, including aluminum forming, copper forming, and coil coating. As a result, the proposed

concentration value for oil and grease is retained in the final regulation.

With respect to removal of metals, fluoride, phosphorus, and TSS, we found that only three of the fourteen plants employ and optimally operate the model end-of-pipe BPT treatment technology of lime precipitation and settling. Seven of the remaining eleven plants use dissolved air flotation (DAF) in place of sedimentation technology as the principal method for removing TSS and other pollutants. The data supplied by CMI and USBA confirms the Agency's judgment that DAF is different from lime and settle which is the model technology for this subcategory. Of the other plants sampled by CMI and USBA, one uses an inadequately designed settling basin in place of a clarifier; one employs no precipitation technology at all; and two were not optimally operated and use caustic for pH adjustment, which is inappropriate for removal of fluoride. Of the three remaining plants, the Agency determined that a total of eight days of sampling data submitted by CMI and USBA was representative of optimally operated model end-of-pipe treatment technology for metals, fluoride, phosphorus and TSS.

The achievable concentration values for TSS, chromium, and zinc were based at proposal upon the combined metals data base. As described above in comment 4, this data base has been recently reviewed and updated which has resulted in slightly less stringent values for zinc and chromium. The Agency compared the one-day concentrations of TSS, chromium, and zinc at the eight data points for CMI and USBA described above with the CMDB, and found that the CMI and USBA data met the achievable values indicated by the CMDB for all eight data points. As a result, the CMDB has been retained as the basis for establishing achievable concentration values for chromium, copper, zinc, manganese and TSS in the final regulation. EPA notes that had concentrations for TSS, chromium and zinc been based in the final regulation upon the eight data days supplied by CMI and USBA, the final limitations and standards would have been more restrictive.

Prior to proposal of the canmaking regulation, a statistical analysis confirmed that the untreated wastewaters from canmaking plants were homogeneous with the untreated wastewaters of plants in the CMDB categories. Subsequently, the Agency performed additional statistical analyses of untreated and treated wastewaters using data supplied by CMI and USBA. These analyses confirmed the general homogeneity of canmaking wastewaters with the wastewaters of the CMDB categories.

The achievable concentration value for aluminum was based at proposal upon data from aluminum forming and coil coating. This data has recently been enlarged to include additional information received from the performance of lime and settle treatment systems at aluminum forming operations, which has resulted in a new less stringent value for aluminum in the final aluminum forming regulation. This value, 6.4 mg/l as a daily maximum, has also been used in this regulation. This new aluminum value was compared to the eight aluminum data points in the CMI and USBA submission described above, and we found that this new value for aluminum was met on six of the eight sampling days. The aluminum concentrations measured in the wastewaters of plants used for the development of the aluminum forming aluminum limitations were compared statistically with the eight aluminum effluent concentrations from the CMI and USBA data base and found not to be significantly different. Further, Discharge Monitoring Report (DMR) data for one direct discharger employing optimally operated lime and settle technology show that this plant met the concentration for aluminum used in the final regulation for all but two months in the past two years. As a result, the data on aluminum used in the final aluminum forming regulation has been used as the basis for achievable concentration values for aluminum in the final BPT, BAT, and NSPS regulations applicable to direct dischargers in the canmaking subcategory.

The lower end of the pH range in the final canmaking regulation has been lowered from 7.5 at proposal to 7.0 to allow greater flexibility for the optimal removal of aluminum from canmaking wastewaters. Data from the optimally operated lime and settle systems in the aluminum forming category show optimal aluminum removal in the range of pH 7.5 to 7.8, so that the lower end of the pH range in the final aluminum forming regulation was lowered to 7.0 in order to provide treatment plant operators with a reasonable operating range around the optimal pH level necessary to achieve removal of aluminum. The same approach has been adopted in the final canmaking regulation.

The achievable concentration values for phosphorus and fluoride were based at proposal upon data from the electroplating industry and the CMDB (for phosphorus) and the electrical components industry (for fluoride). These values have not changed since proposal. We found that the CMI and USBA data for the eight sampling days described above met the proposed values for phosphorus and fluoride without exception. As a result, we concluded that the concentrations for these two pollutants used at proposal should be retained in the final regulation.

As described more fully in Comment 6 below, pretreatment standards for manganese and copper are established in the final regulation for indirect dischargers in the canmaking subcategory. These two metals are constituents of the aluminum alloys used in canmaking processes, and are removed from wastewaters along with other metals by the model lime and settle treatment technology. The final regulation is based upon achievable reductions in concentrations of these two pollutants, as established by the combined metals data base.

In every case where the Agency transferred data from other categories to establish achievable concentrations, the Agency compared available data on raw untreated process wastewaters and the similarity of treatment systems. In each case, EPA concluded that untreated wastewaters were similar and that the effectiveness of lime and settle treatment systems in these other industries was a representative measure of the effectiveness of lime and settle treatment systems in the canmaking subcategory.

*6. Regulation of Aluminum for Indirect Dischargers*

*Comment:* A municipality criticized the proposed regulations for aluminum for indirect dischargers, asserting that aluminum is largely removed by POTW and thus should not be regulated. Following the September 22, 1983 **Federal Register** notice of the availability of new data, CMI stated that regulation of aluminum should be deleted in the final regulation in favor of regulation of the metals for which aluminum was intended to act as an indicator, particularly manganese.

*Response:* Aluminum was presented at proposal of PSES and PSNS as an indicator for the removal of other metals. The Agency evaluated all data in canmaking and other categories in which aluminum is regulated. For the aluminum forming and coil coating categories, alumimum was regulated for direct dischargers only. Regulation of aluminum for indirect dischargers in these two categories had appeared to be unnecessary because alum, an

aluminum sulfate, is often added as a treatment chemical in POTW.

Manganese and copper appear at treatable levels in effluents from the canmaking subcategory as a result of their presence as alloying agents in aluminum coil stocks used in canmaking processes. The Agency determined that regulation of manganese and copper in addition to chromium and zinc should adequately control all of the toxic metals in these effluents and assure operating effectiveness of the treatment system. As a result, the Agency agrees with commenters with regard to indirect dischargers and is promulgating PSES and PSNS for manganese and copper in place of the proposed standard for aluminum.

The regulation also requires reporting of any change to alloys with low concentrations of manganese. This information will enable the Agency to determine whether changes in this regulation are warranted. The Agency is retaining aluminum as a regulated pollutant for direct dischargers since aluminum appears at high concentrations in untreated wastewaters and has adverse impacts on receiving waters. The Agency is therefore promulgating BPT, BAT, and NSPS standards for aluminum in order to assure its removal.

*7. Pollutants Appearing at Treatable Levels*

*Comment:* CMI and several other commenters argued that chromium, zinc, phosphorus, and total toxic organics (TTO)) do not appear in waste streams at treatable levels, and should therefore not be regulated. In particular, commenters argued that chromating surface treatment is rarely used, so that chromium is not intentionally added to process wastewaters, and should therefore not be regulated.

*Response:* The sampling and analytical data supplied by CMI and USBA for untreated raw process wastewater at 14 plants for a total of 39 sampling days shows chromium appearing in treatable quantities on 36 of these sampling days, zinc in treatable quantities on seven sampling days, and phosphorus in treatable quantities on three sampling days. Phosphorus appears in process wastewaters as a consequence of the use of zirconium phosphate coatings, and zinc appears as a consequence of its use as an alloying agent in the aluminum strip used for forming cans. Chromium appears as a result of its continued use in chromating surface treatment in a few instances in the industry (including one of the fourteen plants for which CMI and USBA provided data), and as a result of its appearance at treatable levels in effluents of other canmaking plants, apparently as the result of dissolution of chrome-containing alloys in canwashers by acid baths. Since these three pollutants were found at treatable levels, limitations for these pollutants are retained in the final regulation.

In response to comments on TTO, the Agency conducted sampling for toxic organic pollutants at five plants and evaluated effluent data submitted by one commenter. In addition to the seven toxic organic pollutants found in wastestreams prior to proposal, seven new toxic organic pollutants were identified at treatable levels in the untreated canmaking process wastewater streams. In every instance, these organic compounds appear to be associated with oil and grease solvents or surface coatings, and can be removed with the model end-of-pipe treatment technology recommended for the removal of oil and grease. Thus, TTO are regulated at PSES and PSNS.

*8. Synthetic Lubricants, and Analytical Methodology for Oil and Grease*

*Comment:* Four commenters said that synthetic lubricants are supplanting natural lubricants in the industry, asserting that these synthetic lubricants are soluble rather than emulsifiable, which in turn implies a different degree of treatability. These commenters also asserted that synthetic lubricants are biodegradable and thus should not be regulated.

*Response:* Based on information supplied by one of these commenters, the Agency found that as of 1982, natural lubricants were still used on more than sixty percent of the bodymakers and on ninety percent of the cuppers on aluminum draw and iron can lines. As a result, we concluded that limitations for oil and grease are necessary in the final regulation.

Several commenters presented data indicating that the analytical method usually used for total oil and grease: (40 CFR 136.3(a) Parameter No. 90. Oil and Grease: 14th ed. *Standard Methods* Method 502 or 15th ed *Standard Methods* Method 503) is affected by fatty materials and the more polar hydrocarbons interferences which are peculiar to wastewaters in the coil coating category, including canmaking. These interferences are screened out when the method for a hydrocarbon oil and grease (Method 502E is used. EPA recognizes this interference problem and this regulation includes an oil and grease analytical method for hydrocarbon oil and grease equivalent to Method 502E.

*9. Mass-Based Limitations and Standards*

*Comment:* Several commenters opposed mass-based limitation and standards and recommended that the Agency establish concentration-based limits instead. These commenters contend the production normalized flows, necessary for mass-based limits, have not and cannot be properly established and therefore, the standards should be based on concentration alone. Additionally, commenters said that mass-based limits make compliance determinations unnecessarily complex if not impossible. One commenter recommended that representative values for flow and production be used in setting permit limits with revision for major process changes only; this would alleviate the problem of noncompliance due to minor variations in production and flow.

For pretreatment standards, commenters contended that mass-based limits are especially inappropriate as most POTW sewer ordinances are concentration-based and as compliance determinations will depend on industry supplied data.

*Response:* The Agency is promulgating mass-based limitations and standards because flow reduction is an effective and demonstrated technology for reducing the quantity of pollutants discharged from plants in the canmaking subcategory, and because the Agency found no difficulty in establishing production normalized flows. In developing the canmaking regulation, the Agency examined the sources and amounts of water used in can manufacturing operations. EPA found that recycle, reuse, and water conservation practices were used by many plants in the subcategory, and that such practices could be implemented at all plants in the subcategory. Accordingly, flow reduction was incorporated as an integral part of the final regulation for canmaking. The inclusion of flow reduction for this subcategory is consistent with EPA's normal practice of establishing such mass-based limitations where a quantitative flow basis can be established.

The Agency has established mass-based pretreatment standards for many other categories in the past. A company may have to provide the POTW with production information to enable the POTW to determine compliance with the regulation. Such information is generally reported in a manner not readily usable by competing companies.

*10. Compliance Costs*

*Comment:* Several commenters took issue with our cost figures, asserting that the correct costs are probably three or four times greater than EPA presented at proposal.

*Response:* The Agency evaluated information submitted by commenters, and ascertained that their estimates include the cost of ultrafiltration and reverse osmosis, which are not parts of the model end-of-pipe treatment system. When this additional treatment is excluded from CMI's calculation, their costs very nearly agree with the calculations the Agency used at proposal.

The estimated costs for the final regulation are slightly lower than at proposal, due to a revised analysis of the unit costs of end-of-pipe treatment operations. This revised analysis includes a change in the procedure for costing from the procedure used at proposal, in which oil removal technologies are now costed as a single unit rather than individually as sequential unit operations. Further, the treatment in place in the subcategory was reassessed based on new information provided by companies and industry groups, and the costs of sludge hauling were reassessed. These revisions indicate that the unit costs of treatment systems at canmaking plants are lower than originally believed, and the cost basis for the final regulation was revised accordingly. These costs are described more fully in Section VIII of the development document.

As a result, EPA believes that the revised costs are accurate and may even be overstated if, as the Agency believes, some indirect dischargers can comply with the regulation without installing lime and settle treatment technology.

*11. Economic Impacts*

*Comment:* Three commenters noted that EPA had overestimated the selling price of aluminum cans in the economic impact analysis by including the cost of can ends. Commenters suggested that the appropriate price was $60.00 per thousand cans.

*Response:* Since the manufacture of can ends is an independent production process which does not generate wastewater, the economic analysis was revised using a price of $60.00 per thousand cans instead of the $90.00 per thousand can price used for the proposal.

*12. Effects of Excess Capacity and Mandatory Deposit Legislation on the Canmaking Industry*

*Comment:* The commenters stated that the economic impact analysis did not address the effects of either excess production capacity or mandatory deposit legislation. They believed the economic analysis overestimated future demand for aluminum cans and therefore understated the regulatory impacts because the mandatory deposit legislation would increase the costs of handling aluminum cans. They asserted that excess capacity would be reflected in lower profit rates and inability on the part of 2-piece can manufacturers to withstand the impacts of the regulation.

*Response:* The Agency believes the growth for two-piece cans will remain strong and excess capacity will dwindle, improving the profit picture. EPA has projected an average annual growth rate of 4.3 percent for all beverage cans by 1985, which is higher than 3.6 percent GNP growth rate expected for the period 1982–1985. The Agency does not envision the occurrence of significant economic impacts.

Trade literature indicates that aluminum two-piece cans have done well in deposit law states. Since there are invariably mandatory deposit laws for glass containers as well, aluminum cans have an advantage over glass due to lower handling costs, greater recycling value, and easy storage. As a result, cans tend to gain market share at the expense of glass containers. Thus, the Agency expects no negative effects of mandatory deposit legislation on aluminum cans.

**X. Best Management Practices**

Section 304(e) of the Clean Water Act gives the Administrator authority to prescribe "best management practices" (BMP). EPA is not promulgating BMP specific to canmaking.

**XI. Upset and Bypass Provisions**

A recurring issue of concern has been whether industry guidelines should include provisions authorizing noncompliance with effluent limitations during periods of "upset" or "bypass." An upset, sometimes called an "excursion," is an unintentional non-compliance occurring for reasons beyond the reasonable control of the permittee. It has been argued that an upset provision in EPA's effluent limitations is necessary because such upsets will inevitably occur even in properly operated control equipment. Because technology-based limitations require only what technology can achieve, it is claimed that liability for such situations is improper. When confronted with this issue, courts have disagreed on whether an explicit upset or excursion exemption is necessary, or whether upset or excursion incidents may be handled through exercise of EPA's enforcement discretion. Compare *Marathon Oil Co.* v. *EPA* 564 F.2d 1253 (9th Cir. 1977) with *Weyerhaeuser Co.* v. *Costle, supra,* and *Corn Refiners Association, et al.* v. *Costle,* No. 78–1069 (8th Cir., April 2, 1979). See also *American Petroleum Institute* v. *EPA,* 540 F.2d 1023 (10th Cir. 1976); *CPC International, Inc.* v. *Train,* 540 F.2d 1320 (8th Cir. 1976); *FMC Corp.* v. *Train,* 539 F.2d 973 (4th Cir. 1976).

An upset is an unintentional episode during which effluent limits are exceeded; a bypass, however, is an act of intentional noncompliance during which waste treatment facilities are circumvented in emergency situations. We have, in the past, included bypass provisions in NPDES permits.

The Agency determined that both upset and bypass provisions should be included in NPDES permits and have promulgated permit regulations that include upset and bypass permit provisions (see 40 CFR 122.41, 45 FR 14166 (April 1, 1983)). The upset provision establishes an upset as an affirmative defense to prosecution for violation of technology-based effluent limitations. The bypass provision authorizes bypassing to prevent loss of life, personal injury, or severe property damage. Consequently, although permittees in the canmaking industry will be entitled to upset and bypass provisions in NPDES permits, this final regulation does not address these issues.

**XII. Variances and Modifications.**

Upon the promulgation of this regulation, the appropriate effluent limitations must be applied in all Federal and State NPDES permits thereafter issued to direct dischargers in the canmaking industry. In addition, on promulgation, the pretreatment limitations are directly applicable to any indirect discharger.

For the BPT effluent limitations, the only exception to the binding limitations is EPA's "fundamentally different factors" variance. See *E.I. duPont deNemours & Co.* v. *Train,* 430 U.S. 112 (1977); *Weyerhaeuser Co.* v. *Costle, supra.* This variance recognizes factors concerning a particular discharger that are fundamentally different from the factors considered in this rulemaking. However, the economic ability of the individual operator to meet the compliance cost for BPT standards is not a consideration for granting a

variance. See *National Crushed Stone Association* v. *EPA*, 449 U.S. 64 (1980). Although this variance clause was set forth in EPA's 1973 to 1976 industry regulations it is now included in the NPDES regulations and will not be included in the canmaking or other industry regulations. See the NPDES regulations at 40 CFR Part 122, Subparts A and D, 45 FR 14166 et seq. (April 1, 1983) for the text and explanation of "fundamentally different factors" variance.

The BAT limitations in this regulation also are subject to EPA's "fundamentally different factors" variance. In addition, BAT limitations for nonconventional pollutants are subject to modifications under Sections 301(c) and 301(g) of the Act. Aluminum, fluoride, and phosphorus are nonconventional pollutants for which BAT limitations apply under this regulation. These Section 301(c) and 301(g) statutory modifications do not apply to toxic or conventional pollutants. According to section 301(j)(1)(B), applications for these modifications must be filed within 270 days after promulgation of final effluent (See 43 FR 40859 (September 13, 1978)).

Indirect dischargers subject to PSES and PSNS are eligible for credits for toxic pollutants removed by POTW. See 40 CFR 403.7 48 FR 9404 (January 28, 1981). New sources subject to NSPS are not eligible for any other statutory or regulatory modifications. See *E. I. duPont deNemours & Co.* v. *Train, supra.*

The economic modification section (301(c)) gives the Administrator authority to modify BAT requirememts for nonconventional pollutants [2] for dischargers who file a permit application after July 1, 1978, upon a showing that such modifled requirements will: (1) Represent the maximum use of technology within the economic capability of the owner or operator and (2) result in reasonable further progress toward the elimination of the discharge of pollutants. The environmental modification section 301(g) allows the Administrator, with the concurrence of the State, to modify BAT limitations for nonconventional pollutants from any point source upon a showing by the owner or operator of such point source satisfactory to the Administrator that:

(a) Such modified requirements will result at a minimum in compliance with BPT limitations or any more stringent limitations necessary to meet water quality standards;

(b) Such modified requirements will not result in any additional requirements on any other point or nonpoint source; and

(c) Such modification will not interfere with the attainment or maintenance of that water quality which shall assure protection of public water supplies, and the protection and propagation of a balanced population of shellfish, fish, and wildlife, and allow recreational activities, in and on the water and such modification will not result in the discharge of pollutants in quantities which may reasonably be anticipated to pose an unacceptable risk to human health or the environment because of bioaccumulation, persistency in the environment, acute toxicity, chronic toxicity (including carcinogenicity, mutagenicity or teratogenicity), or synergistic propensities.

Section 301(j)(1)(B) of the Act requires that application for modifications under Section 301 (c) or (g) must be filed within 270 days after the promulgation of an applicable effluent guideline. Initial applications must be filed with the Regional Administrator and, in those States that participate in the NPDES Program, a copy must be sent to the Director of the State program. Initial applications to comply with 301(j) must include the name of the permittee, the permit and outfall number, the applicable effluent guideline, and whether the permittee is applying for a 301(c) or 301(g) modification or both.

Indirect dischargers subject to PSES have, in the past been eligible for the "fundamentally different factors" variance. See 40 CFR 403.13. However, on September 20, 1983, the U.S. Court of Appeals for the Third Circuit held that "FDF variances for toxic pollutants are forbidden by the Act," and remanded 403.13 to EPA. *NAMF et al.* v. *EPA*, Nos. 79–2256 et al. (3rd Circuit, September 20, 1983). EPA is considering the effect of that decision. Since the opinion addressed only the availability of FDF variances for PSES toxic pollutants, however, "fundamentally different factors" variances for nonconventional pollutants remain available to indirect dischargers. The Agency will soon amend 40 CFR 403.13 in accordance with the court's opinion.

In a few cases, information which would affect these PSES may not have been available to EPA or affected parties in the course of this rulemaking. As a result it may be appropriate to issue specific categorical standards for such facilities, treating them as a separate subcategory with more, or less, stringent standards as appropriate. This will only be done if a different standard is appropriate because of aspects of the factors listed in section 301(b)(2)(A) of the Act: The age of equipement and facilities involved, the process employed, the engineering aspects of applying control techniques, nonwater quality environmental impacts (including energy requirements) or the cost of required effluent reductions (but not of ability to pay that cost).

Indirect dischargers and other affected parties may petition the Administrator to examine those factors and determine whether these PSES are properly applicable in specific cases or should be revised. Such petitions must contain specific and detailed support data, documentation, and evidence indicating why the relevant factors justify a more, or less, stringent standard, and must also indicate why those factors could not have been brought to the attention of the Agency in the course of this rulemaking. The Administrator will consider such rulemaking petitions and determine whether a rulemaking should be inititated.

## XIII. Implementation of Limitations and Standards

### *A. Relationship to NPDES Permits*

The BPT and BAT limitations and NSPS in this regulation will be applied to direct dischargers in the canmaking industry through NPDES permits issued by EPA or approved state agencies, under Section 402 of the Act. As discussed in the preceding section of this preamble, these limitations must be applied in all Federal and State NPDES permits except to the extent that variances and modifications are expressly authorized. Other aspects of the interaction between these limitations and NPDES permits are discussed below.

One issue that warrants consideration is the effect of this regulation on the powers of NPDES permit-issuing authorities. The promulgation of this regulation does not restrict the power of any permitting authority to act in any manner consistent with law or these or any other EPA regulations, guidelines, or policy. For example, even if this regulation does not control a particular pollutant, the permit issuer may still limit such pollutant on a case-by-case basis when limitations are necessary to carry out the purposes of the Act. In addition, to the extent that state water quality standards or other provisions of State or Federal law require limitation of pollutants not covered by this

[2] Section 301(e) precludes the Administrator from modifying BAT requirements for any pollutants which are on the toxic pollutant list under Section 307(l)(1) of the Act.

regulation (or require more stringent limitations on covered pollutants), such limitations must be applied by the permit-issuing authority.

A second topic that warrants discussion is the operation of EPA's NPDES enforcement program, many aspects of which were considered in developing this regulation. The Agency emphasizes that although the Clean Water Act is a strict liability statute, the initiation of enforcement proceedings by EPA is discretionary. EPA has exercised and intends to exercise that discretion in a manner that recognizes and promotes good-faith compliance efforts.

*B. Indirect Dischargers*

For indirect dischargers, PSES and PSNS are implemented under National Pretreatment Program procedures outlined in 40 CFR 403. The table below may be of assistance in resolving questions about the operation of that program. A brief explanation of some of the submissions indicated on the table follows:

A "request for category determination" is a written request, submitted by an indirect discharger or its POTW, for a determination of which categorical pretreatment standard applies to the indirect discharger. This assists the indirect discharger in knowing which PSES or PSNS limits it will be required to meet. See 40 CFR 403.6(a).

A "baseline monitoring report" is the first report an indirect discharger must file following promulgation of an applicable standard. The baseline report includes: an identification of the indirect discharger; a descirption of its operations; a report on the flows of regulated streams and the results of sampling analyses to determine levels of regulated pollutants in those streams; a statement of the discharger's compliance or non-compliance with the standard; and a description of any additional steps required to achieve compliance. See 40 CFR 403.12(b).

A "report on compliance" is required of each indirect discharger within 90 days following the date for compliance with an applicable categorical pretreatment standard. The report must indicate the concentration of all regulated pollutants in the facility's regulated process wastestreams; the average and maximum daily flows of the regulated streams; and a statement of whether compliance is consistently being achieved, and if not, what additional operation and maintenance or pretreatment is necessary to achieve compliance. See 40 CFR 403.12(d).

A "periodic compliance report" is a report on continuing compliance with all applicable categorical pretreatment standards. It is submitted twice per year (June and December) by indirect dischargers subject to the standards. The report shall provide the concentrations of the regulated pollutants in its discharge to the POTW; the average and maximum daily flow rates of the facility; the methods used by the indirect discharger to sample and analyze the data, and a certification that these methods conform to the methods outlined in the regulation. See 40 CFR 403.12(e).

Indirect dischargers subject to PSES may obtain "fundamentally different factors" variances for nonconventional pollutants. See Section XII of this preamble.

INDIRECT DISCHARGERS SCHEDULE FOR SUBMITTAL AND COMPLIANCE

| Item | Applicable sources | Date or time period | Measured from— | Submitted to— |
|---|---|---|---|---|
| Request for category determination. | Existing | 60 days | From effective date of standard | Director.[1] |
| | | 60 days | From Federal Register Development Document Availability. | |
| | New | Prior to commencement of discharge to POTW. | | |
| Baseline monitoring | All | 180 days | From effective date of standard or final decision on category determination. | Control Authority.[2] |
| Report on compliance | Existing | 90 days | From date for final compliance | Control Authority.[2] |
| | New | 90 days | From commencement of discharge to POTW. | |
| Periodic compliance reports. | All | June and December | | Control Authority.[2] |

[1] *Director* (a) Chief Administrative Officer of a state water pollution control agency with an approved pretreatment program, or (b) EPA Regional Water Division Director, if state does not have an approved pretreatment program.
[2] *Control Authority* (a) POTW if its pretreatment program has been approved, or (b) Director of state water pollution control agency with an approved pretreatment program, or (c) EPA Regional Administrator, if state does not have an approved pretreatment program.

## XIV. Availability of Technical Information

The basis for this regulation is detailed in four major documents. Analytical methods are discussed in "Sampling and Analysis Procedures for Screening of Industrial Effluents for Priority Pollutants." EPA's technical conclusions are detailed in the "Development Document for Effluent Guidelines, New Source Performance Standards and Pretreatment Standards for the Canmaking Subcategory of the Coil Coating Point Source Category." The Agency's economic analysis is presented in "Economic Impact Analysis of Effluent Limitations and Standards for the Canmaking Industry." A summary of the public comments received on the proposed regulation is presented in a report "Responses to Public Comments, Proposed Canmaking Effluent Limitations Guidelines and Standards," which is a part of the public record for this regulation. Copies of the technical and economic documents may be obtained from the National Technical Information Service, Springfield, Virginia 22161; (703) 487-4600. Additional information concerning the technical support documents may be obtained from the project officer Ms. Mary L. Belefski and additional information concerning the economic impact analysis may be obtained from Ms. Josette Bailey, Economic Analysis Staff at the addresses listed under **ADDRESSES** in this preamble.

The information collection requirements in this rule will be submitted for approval to the Office of Management and Budget (OMB) under the Paperwork Reduction Act of 1980, 44 U.S.C. 3501 *et seq.* They are not effective until OMB approves them and a technical amendment to that effect is published in the **Federal Register.**

## XV. List of Subjects in 40 CFR Part 465

Canmaking, Water pollution control, Metal coating and allied services, Waste treatment and disposal.

Dated: November 9, 1983.

**William D. Ruckelshaus,**

*Administrator.*

### Appendix A—Abbreviations, Acronyms and Other Terms Used in This Notice

*Act*—The Clean Water Act
*Agency*—The U.S. Environmental Protection Agency
*BAT*—The best available technology economically achievable under Section 304(b)(2)(B) of the Act
*BCT*—The best conventional pollutant control technology, under Section 304(b)(4) of the Act
*BDT*—The best available demonstrated control technology processes, operating methods, or other alternatives, including where practicable, a standard permitting no discharge of pollutants under section 306(a)(1) of the Act

*BMP*—Best management practices under Section 304(e) of the Act
*BPT*—The best practicable control technology currently available under Section 304(b)(1) of the Act
*Clean Water Act*—The Federal Water Pollution Control Act Amendments of 1972 (33 U.S.C. 1251 *et seq.*), as amended by the Clean Water Act of 1977 (Pub. L. 95-217)
*Direct discharger*—A plant that discharges pollutants into waters of the United States
*Indirect discharger*—A plant that introduces pollutants into a publicly owned treatment works
*NPDES permit*—A National Pollutant Discharge Elimination System permit issued under Section 402 of the Act
*NSPS*—New source performance standards under Section 306 of the Act
*POTW*—Publicly owned treatment works
*PSES*—Pretreatment standards for existing sources of indirect discharges under Section 307(b) of the Act
*PSNS*—Pretreatment standards for new sources of direct discharges under Section 307 (b) and (c) of the Act
*RCRA*—Resource Conservation and Recovery Act (Pub. L. 94-580) of 1976, as amended
*TTO*—Total Toxic Organics

**Appendix B—Toxic Pollutants Not Detected**

*(a) Subpart D—Canmaking Subcategory*

001 Acenaphthene
002 Acrolein
003 Acrylonitrile
005 Benzidine
008 1,2,4-trichlorobenzene
009 Hexachlorobenzene
010 1,2-dichloroethane
012 Hexachloroethane
014 1,1,2-trichloroethane
016 Chloroethane
017 [Deleted]
019 2-chloroethyl vinyl ether (mixed)
020 2-chloronaphthalene
021 2,4,6-trichlorophenol
022 Parachlorometa cresol
024 2-chlorophenol
025 1,2-dichlorobenzene
026 1,3-dichlorobenzene
027 1,4-dichlorobenzene
028 3,3-dichlorobenzidine
031 2,4-dichlorophenol
032 1,2-dichloropropane
033 1,2-dichloropropylene (1,3-dichlorpropene)
034 2,4-dimethylphenol
035 2,4-dinitrotoluene
036 2,6-dinitrotoluene
039 Fluoranthene
040 4-chlorophenyl phenyl ether
041 4-bromophenyl phenyl ether
042 Bis(2-chloroisopropyl) ether
043 Bis(2-chloroethoxy) methane
045 Methyl chloride (dichloromethane)
046 Methyl bromide (bromomethane)
049 [Deleted]
050 [Deleted]
052 Hexachlorobutadiene
053 Hexachloromyclopentadiene
054 Isophorone
056 Nitrobenzene
057 2-nitrophenol
058 4-nitrophenol
059 2,4-dinitrophenol
060 4,6-dinitro-o-cresol
061 N-nitrosodimethylamine
063 N-nitrosodi-n-propylamine
069 Di-N-octyl phthalate
073 Benzo(a)pyrene (3,4-benzopyrene)
074 3,4-Benzofluoranthene (benzo(b)fluoranthene)
075 11,12-benzofluoranthene (benzo(b)fluoranthene)
077 Acenaphthylene
079 1,12-benzoperylene (benzo(ghi) perylene)
082 1,2,5,6-dibenzanthracene dibenzo(a,h) anthracene
083 Ideno(1,2,3-cd) pyrene (2,3-o-pheynylene pyrene)
084 Pyrene
088 Vinyl chloride (chlorethylene)
089 Aldrin
090 Dieldrin
094 4,4-DDD (p,p-TDE)
095 Alpha-endosulfan
096 Beta-endosulfan
099 Endrin aldehyde
105 Delta-BHC (PCB=polychlorinated biphenyls)
106 PCB-1242 (Arochlor 1242)
108 PCB-1221 (Arochlor 1221)
109 PCB-1232 (Arochlor 1232)
111 PCB-1260 (Arochlor 1260)
112 PCB-1016 (Arochlor 1016)
113 Toxaphene
114 Antimony
116 Asbestos
117 Beryllium
125 Selenium
126 Silver
127 Thallium
129 2,3,7,8-tetrachloro-dibenzo-p-dioxin (TCDD)

**Appendix C—Toxic Pollutants Detected Below the Nominal Quantification Limit**

*(a) Subpart D—Canmaking Subcategory*

004 Benzene
006 Carbon tetrachloride (tetrachloromethane)
007 Chlorobenzene
030 1,2-trans-dichloroethylene
037 1,2-diphenylhydrazine
038 Ethylbenzene
047 Bromoform
048 Dichlorobromomethane
051 Chlorodibromomethane
055 Naphthalene
062 N-nitrosodiphenylamine
065 Phenol
070 Diethyl phthalate
071 Dimethyl phthalate
072 1,2-benzanthracene (benzo(a)anthracene)
076 Chrysene
078 Anthracene
080 Fluorene
087 Trichloroethylene
091 Chlordane (technical mixture and metabolites)
092 4,4-DDT
093 4,4-DDE (p,p-DDX)
097 Endosulfan sulfate
098 Endrin
100 Heptachlor
101 Heptachlor epoxide (BHC-hexachlorocyclohexane)
102 Alpha-BHC
103 Beta-BHC
104 Gamma-BHC (lindane)
107 PCB-1254 (Arochlor 1254)
110 PCB-1248 (Arochlor 1248)

**Appendix D—Toxic Pollutants Not Treatable Using Technologies Considered Applicable to the Subcategory**

*(a) Subpart D—Canmaking Subcategory*

115 Arsenic
118 Cadmium
121 Cyanide
123 Mercury

**Appendix E—Toxic Pollutants Controlled at BPT, BAT and NSPS but Not Specifically Regulated**

*(a) Subpart D—Canmaking Subcategory*

011 1,1,1-trichloroethane
013 1,1,-Dichloroethane
015 1,1,2,2,-Tetrachloroethane
018 Bis (2-chloroethyl) ether
023 Chloroform
029 1,1-dichloroethylene
044 Methylene chloride (dichloromethane)
064 Pentachlorophenol
066 Bis(2-ethylhexyl)phthalate
067 Butyl benzylphthalate
068 Di-N-butyl phthalate
081 Phenanthrene
085 Tetrachloroethylene
086 Toluene
120 Copper
122 Lead
124 Nickel

**Appendix F—List of Toxic Organics Comprising Total Toxic Organics (or TTO), Controlled at PSES and PSNS**

*(a) Subpart D–Canmaking Subcategory*

011 1,1,1-trichloroethane
013 1,1-Dichloroethane
015 1,1,2,2-Tetrachloroethane
018 Bis (2-chloroethyl) ether
023 Chloroform
029 1,1-dichloroethylene
044 Methylene chloride (dichloromethane)
064 Pentachlorophenol
066 Bis (2-ethylhexyl) phthalate
067 Butyl benzylphthalate
068 Di-N-butyl phthalate
081 Phenanthrene
085 Tetrachloroethylene
086 Toluene

**Appendix G—Segments Not Regulated**

(a) The manufacture of seamed cans (clinched, soldered or welded)
(b) The manufacture of seamless cans from coated stock
(c) The manufacture of can ends and can tops

1. The authority citation for these amendments is:

(Secs. 301, 304 (b), (c), (e), and (g), 306 (b) and (c), 307 (b) and (c), 308 and 501 of the Clean Water Act (the Federal Water Pollution Control Act Amendments of 1972, as amended by the Clean Water Act of 1977) (the "Act"); 33 U.S.C. 1311, 1314 (b), (c), (e), and (g), 1316 (b) and (c), 1317 (b) and (c), and 1361; 86 Stat. 816, Pub. L. 92-500; 91 Stat. 1567, Pub. L. 95-217)

2. Section 465.01 is revised to read as follows:

**§ 465.01 Applicability.**

This part applies to any coil coating facility or to any canmaking facility that discharges pollutants to waters of the United States or that introduces pollutants to a publicly owned treatment works.

3. Section 465.02 is amended by adding new paragraphs (h), (i) and (j) to read as follows:

**§ 465.02 General definitions.**

* * * * *

(h) the term "can" means a container formed from sheet metal and consisting of a body and two ends or a body and a top.

(i) The term "canmaking" means the manufacturing process or processes used to manufacture a can from a basic metal.

(j) The term "Total Toxic Organics (TTO)" shall mean the sum of the mass of each of the following toxic organic compounds which are found at a concentration greater than 0.010 mg/1.

1,1,1-trichloroethane
1,1-dichloroethane
1,1,2,2-tetrachloroethane
Bis (2-chloroethyl) ether
Chloroform
1,1-dichloroethylene
Methylene chloride (dichloromethane)
Pentachlorophenol
Bis (2-ethylhexyl) phthalate
Butyl benzyl-phthalate
Di-N-butyl phthalate
Phenanthrene
Tetrachloroethylene
Toluene

4. Section 465.03 is amended by adding new paragraphs (c) and (d) to read as follows:

**§ 465.03 Monitoring and reporting requirements.**

* * * * *

(c) The following determination method shall be used for the determination of the concentration of oil and grease in wastewater samples from all subcategories of coil coating (Based on Standard Methods, 15th Edition, Methods 503A and 503E). In this method, a partition gravimetric procedure is used to determine hydrocarbon (petroleum based) oil and grease (O&G–E).

(1) *Apparatus.* (i) Separatory funnel, 1 liter, with TFE [1] stopcock.

(ii) Glass stoppered flask, 125 ml.

(iii) Distilling flask, 125 ml.

(iv) Water bath.

(v) Filter paper, 11 cm diameter.[2]

(vi) Glass funnel.

(vii) Magnetic stirrer and Teflon coated stir bar.

(2) *Reagents.* (i) Hydrochloric acid, HCl, 1+1.

(ii) Trichlorotrifluoroethane.[3] (1,1,2-trichloro-1,2,2-trifluoroethane), boiling point 47°C. The solvent should leave no measurable residue on evaporation; distill if necessary. Do not use any plastic tubing to transfer solvent between containers.

(iii) Sodium sulfate, $Na_2SO_4$, anhydrous crystal.

(iv) Silica gel, 60 to 200 mesh.[4] Dry at 110°C for 24 hours and store in a tightly sealed container.

(3) *Procedure.* To determine hydrocarbon oil and grease, collect about 1 liter of sample and mark sample level in bottle for later determination of sample volume. Acidify to pH 2 or lower; generally, 5 ml HCl is sufficient. Transfer to a separatory funnel. Carefully rinse sample bottle with 30 ml trichlorotrifluoroethane and add solvent washings to separatory funnel. Preferably shake vigorously for 2 minutes. However, if it is suspected that a stable emulsion will form, shake gently for 5 to 10 minutes. Let layers separate. Drain solvent layer through a funnel containing solvent-moistened filter paper into a tared clean flask. If a clear solvent layer cannot be obtained, add 1g $Na_2SO_4$ to the filter paper cone and slowly drain emulsified solvent onto the crystals. Add more $Na_2SO_4$ if necessary. Extract twice more with 30 ml solvent each but first rinse sample container with each solvent portion. Combine extracts in tared flask and wash filter with an additional 10 to 20 ml. solvent. Add 3.0 g silica gel. Stopper flask and stir on a magnetic stirrer for 5 minutes. Filter solution through filter paper and wash silica gel and filter paper with 10 ml solvent and combine with filtrate in tared distilling flask. Distill solvent from distilling flask in a water bath at 70°C. Place flask on a water bath at 70°C for 15 minutes and draw air through it with an applied vacuum for the final 1 minute. Cool in a desiccator for 30 minutes and weigh.

(4) *Calculations.—Calculation of O&G-E*: If the organic solvent is free of residue the gain in weight of the tared distilling flask is due to hydrocarbon oil and grease. Total gain in weight, E, is the amount of hydrocarbon oil and grease in the sample (mg):

$$\text{mg (hydrocarbon oil and grease)/1} = \frac{E \times 1000}{\text{ml sample}}$$

(5) *Use of O&G-E*: The value, O&G-E shall be used as the measure of compliance with the oil and grease limitations and standards set forth in this regulation except where total O&G is specifically required.

[1] Teflon® or equivalent.
[2] Whatman No. 40 or equivalent.
[3] Freon or equivalent.
[4] Davidson Grade 950 or equivalent.

(d) The owner or operator of any canmaking facility subject to the provisions of this regulation shall advise the permit issuing authority or POTW authority and the EPA Office of Water Regulations and Standards, Washington, D.C. 20460 whenever it has been decided that the plant will manufacture cans from an aluminum alloy containing less than 1.0 percent manganese. Such notification shall be made in writing, not less than 30 days in advance of the scheduled production and shall provide the chemical analysis of the alloy and the expected period of use.

5. Section 465.04 is revised to read as follows:

**§ 465.04 Compliance date for PSES.**

(a) For Subparts A, B, and C the compliance date for Pretreatment Standards for Existing Source (PSES) is December 1, 1985.

(b) For Subpart D, the compliance date for Pretreatment Standards for Existing Sources will be as soon as possible, but in no case later than November 17, 1986.

6. 40 CFR Part 465 is amended by adding a new Subpart D to reasd as follows:

**Subpart D—Canmaking Subcategory**

Sec.
465.40 Applicability; description of the canmaking subcategory.
465.41 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.
465.42 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.
465.43 New source performance standards.
465.44 Pretreatment standards for existing sources.
465.45 Pretreatment standards for new sources.
465.46 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology. [Reserved]

## Subpart D—Canmaking Subcategory

### § 465.40 Applicability; description of the canmaking subcategory.

This subpart applies to discharges to waters of the United States, and introductions of pollutants into publicly owned treatment works from the manufacturing of seamless can bodies, which are washed.

### § 465.41 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

Except as provided in 40 CFR 125.30–125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available:

SUBPART D.—BPT EFFLUENT LIMITATIONS

| Pollutant or pollutant property | Maximum for any 1 day | | Maximum for monthly average | |
|---|---|---|---|---|
| | g (lbs)/1,000,000 cans manufactured | | | |
| Cr | 94.60 | (0.209) | 38.70 | (0.085) |
| Zn | 313.90 | (0.692) | 131.15 | (0.289) |
| Al | 1382.45 | (3.048) | 688.00 | (1.517) |
| F | 12790.00 | (28.197) | 5676.00 | (12.513) |
| P | 3590.50 | (7.916) | 1468.45 | (3.237) |
| O & G | 4300.00 | (9.480) | 2580.00 | (5.688) |
| TSS | 8815.00 | (19.434) | 4192.50 | (9.243) |
| pH | | [1] | | [1] |

[1]Within the range of 7.0 to 10 at all times.

### § 465.42 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable.

Except as provided in 40 CFR 125.30–125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable:

SUBPART D.—BAT EFFLUENT LIMITATIONS

| Pollutant or pollutant property | Maximum for any 1 day | | Maximum for monthly average | |
|---|---|---|---|---|
| | g (lbs)/1,000,000 cans manufactured | | | |
| Cr | 36.92 | (0.081) | 15.10 | (0.033) |
| Zn | 122.49 | (0.270) | 51.18 | (0.113) |
| Al | 539.48 | (1.189) | 268.48 | (0.592) |
| F | 4992.05 | (11.001) | 2214.96 | (4.883) |
| P | 1401.13 | (3.089) | 573.04 | (1.263) |

### § 465.43 New source performance standards.

The following standards of performance establish the quantity of pollutants or pollutant properties, controlled by this section, which may be discharged by a new source subject to the provisions of this subpart:

SUBPART D.—NSPS EFFLUENT LIMITATIONS

| Pollutant or pollutant property | Maximum for any 1 day | | Maximum for monthly average | |
|---|---|---|---|---|
| | g (lbs)/1,000,000 cans manufactured | | | |
| Cr | 27.98 | (0.062) | 11.45 | (0.025) |
| Zn | 92.86 | (0.205) | 38.80 | (0.086) |
| Al | 408.95 | (0.902) | 203.52 | (0.449) |
| F | 3784.20 | (8.343) | 1679.04 | (3.702) |
| P | 1062.12 | (2.342) | 434.39 | (0.958) |
| O & G | 1272.00 | (2.804) | 763.20 | (1.683) |
| TSS | 2607.60 | (5.749) | 1240.20 | (2.734) |
| pH | | [1] | | [1] |

[1]Within the range of 7.0 to 10 at all times.

### § 465.44 Pretreatment standards for existing sources.

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart which introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for exisitng sources.

SUBPART D.—PSES EFFLUENT LIMITATIONS

| Pollutant or pollutant property | Maximum for any 1 day | Maximum for monthly average |
|---|---|---|
| | g (lbs)/1,000,000 cans manufactured | |
| Cr | 36.92 (0.081) | 15.10 (0.033) |
| Cu | 159.41 (0.351) | 83.90 (0.185) |
| Zn | 122.49 (0.270) | 51.18 (0.113) |
| F | 4992.05 (11.001) | 2214.96 (4.883) |
| P | 1401.13 (3.089) | 573.04 (1.263) |
| Mn | 57.05 (0.126) | 24.33 (0.053) |
| TTO | 26.85 (0.059) | 12.59 (0.028) |
| O&G (for alternate monitoring) | 1678.00 (3.699) | 1006.80 (2.220) |

### § 465.45 Pretreatment standards for new sources.

Except as provided in § 403.7 any new source subject to this subpart which introduces pollutants into a publicly owned treatment works must comply with 40 CFR Part 403 and achieve the following pretreatment standards for new sources.

SUBPART D.—PSNS

| Pollutant or pollutant property | Maximum for any 1 day | Maximum for monthly average |
|---|---|---|
| | g (lbs)/1,000,000 cans manufactured | |
| Cr | 27.98 (0.0617) | 11.45 (0.025) |
| Cu | 120.84 (0.267) | 63.60 (0.140) |
| Zn | 92.86 (0.205) | 38.80 (0.086) |
| F | 3784.20 (8.345) | 1679.04 (3.702) |
| P | 1062.12 (2.342) | 434.39 (0.958) |
| Mn | 43.25 (0.095) | 18.44 (0.041) |
| TTO | 20.35 (0.045) | 9.54 (0.0210) |
| O&G (for alternate monitoring) | 1272.00 (2.804) | 763.20 (1.683) |

### § 465.46 [Reserved]

[FR Doc. 83-30860 Filed 11-16-83; 8:45 am]

BILLING CODE 6560-50-M