ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 466

[WH FRL 1719-7]

Porcelain Enameling; Point Source Category Effluent Limitations Guidelines, Pretreatment Standards, and New Source Performance Standards

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed regulation.

SUMMARY: EPA proposes regulations to limit effluent discharges to waters of the United States and introductions of pollutants into publicly owned treatment works from facilities engaged in porcelain enameling. The purpose of this proposal is to provide effluent limitation guidelines for "best practicable technology," "best available technology," and "best conventional technology," and to establish new source performance standards and pretreatment standards under the Clean Water Act. After considering comments received in response to this proposal, EPA will promulgate a final rule.

DATES: Comments on this proposal must be submitted on or before April 27, 1981.

ADDRESS: Send comments to: Mr. Ernst P. Hall, Effluent Guidelines Division (WH-552), Environmental Protection Agency, 401 M St. SW., Washington, D.C. 20460, Attention: EGD Docket Clerk, Proposed Porcelain Enameling Rules (WH-552). The supporting information and all comments on this proposal will be available for inspection and copying at the EPA Public Information Reference Unit, Room 2404 (EPA Library Rear) PM-213. The EPA information regulation (40 CFR Part 2) provides that a reasonable fee may be charged for copying.

FOR FURTHER INFORMATION CONTACT: Technical information may be obtained from Mr. Ernst P. Hall, at the address listed above, or call (202) 426-2726. Copies of technical documents may be obtained from Distribution Officer at the above address or call (202) 426-2724. The economic analysis may be obtained from Ms. Debra Maness, Economic Analysis Staff (WH-586), Environmental Protection Agency, 401 M St. SW., Washington, D.C. 20460, or call (202) 426-2617.

SUPPLEMENTARY INFORMATION:

Overview

This preamble described the legal authority and background, the technical and economic bases, and other aspects of the proposed regulations. That section also summarizes comments on a draft technical document circulated in September, 1979, and solicits comments on specific areas of interest. The abbreviations, acronyms, and other terms used in the Supplementary Information section are defined in Appendix A to this notice.

The proposed regulation is supported by three major documents available from EPA. 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 Proposed Effluent Limitations Guidelines, New Source Performance Standards and Pretreatment Standards for the Porcelain Enameling Point Source Category.* The Agency's economic analysis is found in *Economic Impact Analysis of Proposed Effluent Standards and Limitations for the Porcelain Enameling Industry.*

Organization of this Notice

I. Legal Authority

The regulations described in this notice are proposed under 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 USC 1251 *et seq.*, as amended by the Clean Water Act of 1977, P.L. 95-217) (the "Act"). These regulations are also proposed in response to the Settlement Agreement in *Natural Resources Defense Council, Inc.* v. *Train,* 8 ERC 2120 (D.D.C. 1976), as modified March 9, 1979, 12 ERC 1833.

II. Background

A. The Clean Water Act

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 waters." Section 101(a). By July 1, 1977, existing industrial dischargers were required to achieve "effluent limitations requiring the application of the best practicable control technology currently available" ("BPT"), Section 301(b)(1)(A). By July 1, 1983, these dischargers were required to achieve "effluent limitations requiring the application of the best available technology economically achievable * * * which will result in reasonable further progress toward the national goal of eliminating the discharge of all pollutants" ("BAT"), Section 301(b)(2)(A). New industrial direct dischargers were required to comply with Section 306 new source performance standards ("NSPS"), based on best available demonstrated technology; and new and existing dischargers to publicly owned treatment works ("POTWs") were subject to pretreatment standards under Section 307 (b) and (c) of the Act. The requirements for direct dischargers were to be incorporated into National Pollutant Discharge Elimination System (NPDES) permits issued under Section 402 of the Act. Pretreatment standards were made enforceable directly against dischargers to POTWs (indirect dischargers).

Although Section 402(a)(1) of the 1972 Act authorized the setting of requirements for direct dischargers on a case-by-case basis, Congress intended that, for the most part, control requirements would be based on regulations promulgated by the Administrator of EPA. Section 304(b) of the Act required the Administrator to

promulgate regulations providing guidelines for effluent limitations setting forth the degree of effluent reduction attainable through the application of BPT and BAT. Moreover, Sections 304(c) and 306 of the Act required promulgation of regulations for NSPS, and Sections 304(f), 307(b), and 307(c) required promulgation of regulations for pretreatment standards. In addition to these regulations for designated industry categories, Section 307(a) of the Act required the Administrator to promulgate effluent standards applicable to all dischargers of toxic pollutants. Finally, Section 501(a) of the Act authorized the Administrator to prescribe any additional regulations "necessary to carry out his functions" under the Act.

The EPA was unable to promulgate many of these regulations by the dates contained in the Act. In 1976, EPA was sued by several environmental groups, and in settlement of 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 promulgating for 21 major industries BAT effluent limitations guidelines, pretreatment standards, and new source performance standards for 65 "priority" pollutants and classes of pollutants. See *Natural Resources Defense Council, Inc.* v. *Train*, 8 ERC 2120 (D.D.C. 1976), modified March 9, 1979.

On December 27, 1977, the President signed into law the Clean Water Act of 1977. Although this law makes several important changes in the Federal water pollution control program, its most significant feature is its incorporation into the Act of several of the basic elements of the Settlement Agreement program for toxic pollution control. Sections 301(b)(2)(A) and 301(b)(2)(C) of the Act now require the achievement by July 1, 1984 of effluent limitations requiring application of BAT for "toxic" pollutants, including the 65 "priority" pollutants and classes of pollutants which Congress declared "toxic" under Section 307(a) of the Act. Likewise, EPA's programs for new source performance standards and pretreatment standards are now aimed principally at toxic pollutant controls. Moreover, to strengthen the toxics 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 form 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.

In keeping with its emphasis on toxic pollutants, the Clean Water Act of 1977 also revises the control program for non-toxic pollutants. Instead of BAT for "conventional" pollutants identified under Section 304(a)(4) (including biochemical oxygen demand, suspended solids, fecal coliform, oil and grease, and pH), the new Section 301(b)(2)(E) requires achievement by July 1, 1984, of "effluent limitations requiring the application of the best conventional pollutant control technology" ("BCT"). The factors considered in assessing BCT for an industry include the costs of attaining a reduction in effluents and the effluent reduction benefits derived compared to the costs and effluent reduction benefits from the discharge of publicly owned treatment works (Section 304(b)(4)(B)). For non-toxic, nonconventional pollutants, Sections 301(b)(2)(A) and (b)(2)(F) require achievement of BAT effluent limitations within three years after their establishment or July 1, 1984, whichever is later, but not later than July 1, 1987.

The purpose of these proposed regulations is to provide effluent limitations guidelines for BPI, BAT and BCT, and to establish NSPS, pretreatment standards for existing sources (PSES), and pretreatment standards for new sources (PSNS), under Sections 301, 304, 306, 307, and 501 of the Clean Water Act.

B. Prior EPA Regulations

EPA has not previously promulgated regulations for the porcelain enameling point source category.

C. Overview of the Industry

The porcelain enameling industry is generally included within SIC 3479, 3431, 3469, 3631, 3632, 3633, and 3639 of the U.S. Department of Commerce Census Standard Industrial Classifications.

Porcelain enameling is the application of glass-like coatings to metals such as steel, cast iron, aluminum or copper. The purpose of the coating is to improve resistance to chemicals, abrasion and water and to improve thermal stability, electrical resistance and appearance. The coating applied to the workpiece is a water based slurry called a "slip" and is composed of one of many combinations of frit (glassy like material), clays, coloring oxides, water and special additives such as suspending agents. These vitreous inorganic coatings are applied to the metal by a variety of methods such as spraying, dipping, and flow coating, and are bonded to the base metal at temperatures in excess of 500 degrees C (over 1000F). At these temperatures, finely ground enamel frit particles fuse and flow together to form the permanently bonded, hard porcelain coating.

There are two major groups of standard process steps used in manufacturing porcelain enameled materials. These are: (1) surface preparation and (2) coating which includes both ball milling and enamel application. Surface preparation is for removal of soil, oil, corrosion and similar dirt from the basis material. The clean surface allows the porcelain enamel to bond well with the basis material. Ball milling is performed to mix and grind frit and other raw materials, forming an enamel slip of appropriate consistancy for a particular application.

Water is used through the various porcelain enameling process steps. The cleaning processes for removing oil and dirt employ water based alkaline cleaners. Acid pickling solutions are used to remove oxides and corrosion and to etch the surface of the workpiece. Water is also used to rinse the basis material after it has been cleaned by the above listed processes.

A water solution of nickel salts is used in nickel flash operations in the steel subcategory. Here the steel is dipped in a nickel solution, and nickel is allowed to replace iron in the surface of the steel. The nickel layer in the steel surface enables the porcelain enamel to bond well to the basis material.

The ball milling operation uses water for washing out the ball mills between mixing batches and for cooling the ball mills. During application of the porcelain enamel slip, water may be used as a curtain device for entrapping waste slip from overspray.

The characteristics of the wastewater generated by a porcelain enameling facility may vary depending on basis material cleaning and coating.

The most important pollutants or pollutant parameters are: (1) toxic metal pollutants—antimony, arsenic, cadmium, chromium, copper, lead, nickel, selenium and, zinc; (2) conventional pollutants—suspended solids, pH, and oil and grease, and (3) unconventional pollutants—aluminum, cobalt, fluoride, iron, manganese, phosphorus and titanium. Toxic organic pollutants, however, were not found in large quantities and are most notable by their absence. Because of the amount of toxic metals present, the sludges generated during wastewater treatment generally contain substantial amounts of toxic metals.

EPA estimates that there are approximately 130 porcelain enameling

plants in the United States; the majority are located east of the Mississippi River. The basic porcelain enameling process has been in existence for thousands of years. Porcelain enameling began in the United States in the late 1800's. Following the Depression, the manufacture of porcelain enamel refrigerators, stoves, and other household items expanded many times. After World War II, application techniques changed greatly, and porcelain enamel use increased as the demand for housing grew. The demand for porcelain enamel products and finishes remained at a peak until the early 1960's, when substitute finishes began to replace many uses of the more costly enamel surfaces.

III. Scope of this Rulemaking and Summary of Methodology

This proposed regulation is a part of a new chapter in water pollution control requirements. The 1973–1976 round of rulemaking, emphasized the achievement of best practicable technology (BPT) by July 1, 1977. In general, this technology level represented the average of the best existing performances of well known technologies for control of familiar (or "classical") pollutants.

In this round of rulemakings, in contrast, EPA's emphasis is directed toward insuring the achievement by July 1, 1984, of the best available technology economically achievable (BAT), which will result in reasonable further progress toward the national goal of eliminating the discharge of all pollutants. In general, this technology level represents the very best economically achievable performance in any industrial category or subcategory. Moreover, as a result of the Clean Water Act of 1977, the emphasis of EPA's program has shifted from "classical" pollutants to the control of a lengthy list of toxic substances.

In its 1977 legislation, Congress recognized that it was dealing with areas of scientific uncertainty when it delcared the 65 "priority" pollutants and classes of pollutants "toxic" under Section 307(a) of the Act. The "priority" pollutants have been relatively unknown outside of the scientific community. Those engaged in wastewater sampling and control have had little experience dealing with these pollutants. Additionally, these pollutants often appear at and have toxic effects at concentrations which severely tax current analytical techniques. Even though Congress was aware of the state-of-the-art difficulties and expense of "toxics"-control and detection, it directed EPA to act quickly and decisively to detect, measure and regulate these substances.

In developing this regulation, EPA studied the porcelain enameling category to determine whether differences in raw materials, final products, manufacturing processes, equipment, age and size of plants, water use, wastewater constituents, or other factors required the development of separate effluent limitations and standards for different segments of the industry. This study included the identification of raw waste and treated effluent characteristics, including: (1) the sources and volume of water used, the processes employed, and the sources of pollutants and wastewaters in the plant, and (2) the constituents of wastewaters. Such analysis enabled EPA to determine the presence and concentration of priority pollutants in wastewater discharges.

EPA also identified both actual and potential control and treatment technologies, including both in-plant and end-of-process technologies. The Agency analyzed both historical and newly generated data on the performance of these technologies including performance, operational limitations, and reliability. In addition, EPA considered the non-water quality environmental impacts of these technologies on air quality, solid waste generation, water scarcity, and energy requirements.

The Agency then estimated the costs of each control and treatment technology using a computer program developed by standard engineering analysis. EPA derived unit process costs for each of 98 plants using data and characteristics (production and flow) applied to each treatment process (i.e., hexavalent chromium reduction, metals precipitation, sedimentation, granular bed—multi-media filtration, etc.). These unit process costs were added to yield total cost at each treatment level. After confirming the reasonableness of this methodology by comparing EPA cost estimates to treatment system costs supplied by the industry, the Agency evaluated the economic impacts of these costs.

On the basis of these factors, EPA identified various control and treatment technologies as BPT, BAT, BCT, NSPS, PSES and PSNS. The proposed regulation, however, does not require the installation of any particular technology. Rather, it requires achievement of effluent limitations equivalent to those achieved by the proper operation of these or equivalent technologies.

The effluent limitations for BPT, BAT, BCT and NSPS are expressed as mass limitations (mg/m^2) and are calculated by combining three figures: (1) effluent concentrations determined from analysis of control technology performance data; (2) wastewater flow for each subcategory; and (3) any relevant process or treatment variability factor (e.g., maximum month vs. maximum day). This basic calculation was performed for each regulated pollutant or pollutant parameter for each subcategory of the industry. Effluent limitations for PSES and PSNS are also expressed as mass limitations rather than concentration limits to assure achieving the benefits of quantification of pollutant reduction.

IV. Data Gathering Efforts

The data gathering program is described in brief summary in Section III and in substantial detail in Section V of the Development Document. At the start of the study, the Porcelain Enameling Institute was contacted and meetings were held with their technical committee and others to review the data collection program and gain from the experience and insight of the industry. A data collection portfolio (dcp) was developed to collect information about the industry and was mailed, under the authority of section 308, to each company known or believed to perform porcelain enameling in the United States. The list of companies was developed from Dunn & Bradstreet listings, from a previous study done for the Agency, and from discussions with the industry association. Data were received from 116 porcelain enameling plants. In addition to previous studies and the data collection effort for this study, supplemental data were obtained from NPDES permit files and engineering studies on treatment technologies used in porcelain enameling and other categories with similar wastewater characteristics. The data gathering effort solicited all known sources of data. All available pertinent data were used in developing these limitations.

V. Sampling and Analytical Program

As Congress recognized in enacting the Clean Water Act of 1977, the state-of-the-art ability to monitor and detect toxic pollutants is limited. Most of the toxic pollutants were relatively unknown until a few years ago. Only on rare occasions had these unusual pollutants been regulated. Nor had industry monitored or developed methods to monitor most of these pollutants. As a result, analytical methods for many of the toxic pollutants under section 304(h) of the Act are not commonly available and the toxic

organics can often be monitored only by using state-of-the-art analytical procedures.

Faced with these problems, EPA developed a sampling and analytical protocol. This protocol is set forth in "*Sampling and Analysis Procedures for Screening of Industrial Effluents for Priority Pollutants*", revised April, 1977. Validated section 304(h) (40 CFR Part 136) methods were available for most toxic metals, pesticides, cyanides, and phenols. The new and relatively untried methods were applied largely to toxic organics while the more tested methods were used for toxic metals. It was presumed at the outset of the study that the pollutants of greatest concern in porcelain enameling would be toxic metals rather than organics. This has been borne out by the findings of the study.

The sampling and analysis program was carried out in two stages. First, screen sampling was performed at one plant in each subcategory, and this sample was analyzed (screened) for the presence and magnitude of each of the 129 specific toxic pollutants (which are included within the 65 categories of pollutants referred to by the Congress and NRDC) plus conventional and selected non-conventional pollutants. Second, additional samples at the same and other plants were analyzed to determine more precisely the magnitude, presence and process source of pollutants determined to be present or believed to be present on the basis of screening analysis and engineering evaluations. Five plants were selected for screening and a total of 16 plants were sampled and analyzed during verification. Full details of the sampling and analysis program and the water and wastewater data derived from that program are presented in Section V of the Development Document.

Analysis for the toxic pollutants is both expensive and time consuming, costing between $650 and $1,000 per sample for a complete analysis. The cost in dollars and time tended to limit the amount of sampling and chemical analysis performed. Although EPA fully believes that the available data support the limitations proposed, the Agency would, off course, have preferred a larger data base and will continue to seek additional data. EPA will periodically review these limitations as required by the act and make any revisions supported by new data.

VI. Industry Subcategorization

In developing this regulation, it was necessary to determine whether different effluent limitations and standards were appropriate for different segments (subcategories) of the industry. The major factors considered in identifying subcategories included: waste characteristics, basis material used, manufacturing processes, products manufacturing, water use, water pollution control technology, treatment costs, solid waste generation, size of plant, age of plant, number of employees, total energy requirements, non-water quality characteristics, and unique plant characteristics. Section IV of the Development Document contains a detailed discussion of these factors and the rationale for subcategorization.

EPA has subcategorized the porcelain enameling industry based on the basis material coated. The subcategories are defined as porcelain enameling on: steel, cast iron, aluminum, and copper.

VII. Available Wastewater Control and Treatment Technology

A. Status of In-Place Technology

Current wastewater treatment practices in the porcelain enameling category range from no treatment by about 26 percent of the plants to a high level of physical chemical treatment combined with water conservation practices. Of the 116 plants for which data are available, 48 percent have sedimentation or clarification devices, 16 percent have alkaline pH adjust systems, and 10 percent have acid pH adjust systems. There is no apparent difference between direct or indirect dischargers in the nature or degree of treatment employed.

B. Control Technologies Considered

The control and treatment technologies available for this category include both in-process and end-of-pipe treatments. In-process treatment includes a variety of water flow reduction steps and major process changes such as cascade rinsing to reduce the amount of water used to remove unwanted materials from the workpiece surface, the use of flow control equipment and the recycle of treated coating wastewaters. End-of-pipe treatment includes: hexavalent chromium reduction (where applicable), chemical precipitation of metals using hydroxides or carbonates and removal of precipitated metals and other materials using settling, sedimentation, filtration, and combinations of these technologies.

The effectiveness of these treatment technologies has been evaluated and established by examining the performance of these technologies on porcelain enameling and other similar wastewaters. The data base for hydroxide precipitation—sedimentation technology is a composite of data drawn from EPA sampling and analysis of copper and aluminum forming, battery manufacturing, porcelain enameling, electroplating, metal finishing and coil coating. These wastewaters are judged to be similar in all material respects for treatment because they contain similar ranges of dissolved metals which can be removed by precipitation and solids removal. Similarly, precipitation—sedimentation and filtration technology performance is based on the performance of full scale commercial systems treating multicategory wastewaters which also are essentially similar to porcelain enameling wastewaters. This is discussed fully in Section VII of the development document.

VIII. Best Practicable Technology (EPT) Effluent Limitations

The factors considered in defining best practicable control technolgy currently available (EPT) include the total cost of applying technology in relation to the effluent reduction benefits derived, the age of equipment and facilities involved, the process employed, non-water quality environmental impacts (including energy requirements) and other factors the Administrator considers appropriate. In general, the BPT level represents the average of the best existing performances of plants of various ages, sizes, processes or other common characteristics. Where existing performance is uniformly inadequate, BPT may be transferred from a different subcategory or category. Limitations based on transfer technolgy must be supported by a conclusion that the technology is, indeed, transferable and a reasonable prediction that it will be capable of achieving the prescribed effluent limits. See *Tanners' Council of America* v. *Train*, (540 F.2d 1188, 4th Cir. 1976). BPT focuses on end-of-pipe treatment rather than process changes or internal controls, except where such are common industry practice.

The cost-benefit inquiry for BPT is a limited balancing, committed to EPA's discretion, which does not require the Agency to quantify benefits in monetary terms. See, e.g. *American Iron and Steel Institute* v. *EPA*, 526 F.2d 1027 (3rd Cir. 1975). In balancing costs in relation to effluent reduction benefits, EPA considers the volume and nature of existing discharges, the volume and nature of discharges expected after application of BPT, the general environmental effects of the pollutants, and cost and economic impacts of the required pollution control level. The Act does not require or permit consideration

of water quality problems attributable to particular point sources or industries, or water quality improvements in particular water bodies. Therefore, EPA has not considered these factors. See *Weyerhaeuser Company* v. *Costle*, 11 ERC 2149 (D.C. Cir. 1978).

In developing the proposed BPT limitations, the Agency considered the amount of water used per unit area of material enameled at each visited plant. The mean water use was determined for surface preparation based on surface area prepared and for coating based on the total area coated. Production normalized water use is reported as liters per square meter of metal area prepared or of porcelain enaneled area, respectively. The metal area prepared is the actual area of metal exposed to cleaning or other preparation solutions while the area coated is the area(s) actually covered by each coat of porcelain enamel. The mean water use for each stream was adjusted by eliminating those facilities with unacceptably high water use from statistical calculations. Unacceptably high water use was determined by observation of substantial water waste such as badly leaking tanks and hoses left running when not in use. Next, treatment technology appropriate for BPT level treatment and which was practiced in some plants throughout the industry was selected. This treatment consists of hexavalent chromium reduction (for facilities which perform porcelain enameling on aluminum), oil skimming, pH adjustment, and sedimentation to remove the resultant precipitate and other suspended solids. The effluent which would be expected to result from the application of these technologies was evaluated against the known peformance of some of the best plants in the subcategory.

The BPT technology outined above applies to all four of the porcelain enameling subcategories and the effluent concentrations resulting from the application of the technology are identical. However, the mass limitations vary due to different water uses among the subcategories and the absence of some pollutants in some subcategories.

Twenty-eight plants (including the two plants discharging both directly and indirectly) are direct dischargers. The Agency estimates that investment costs for these plants would be $5.1 million. Total annual costs were projected to be $2.0 million, including depreciation and interest. If all costs were passed on to consumers, price increases would range from 0.1 to 2.8 percent. EPA expects that these costs may result in three potential plant closures and 270 job losses.

IX. Best Available Technolgy (BAT) Effluent Limitations

The factors considered in assessing best available technology economically achievable (BAT) include the age of equipment and facilities involved, the process employed, process changes, non-water quality environmental impacts (including energy requirements) and the costs of applying such technology (Section 304(b)(2)(B)). At a minimum, the BAT technology level represents, the best economically achievable performance of plants of various ages, sizes, processes or other shared characteristics. As with BPT, where existing performance is uniformly inadequate, BAT may be transferred from a different subcategory or category. BAT may include feasible process changes or internal controls, even when not common industry practice.

The required assessment of BAT "considers" costs, but does not require a balancing of costs against effluent reduction benefits (see *Weyerhaeuser* v. *Costle, supra*). In developing the proposed BAT, however, EPA has given substantial weight to the reasonableness of costs. The Agency has considered the volume and nature of discharges, the volume and nature of discharges expected after application of BAT, the general environmental effects of the pollutants, and the costs and economic impacts of the required pollution control levels.

Despite this expanded consideration of costs, the primary determinant of BAT is still effluent reduction capability. As a result of the Clean Water Act of 1977, the achievement of BAT has become the principal national means of controlling toxic water pollution. The porcelain enameling process discharges approximately fifteen different toxic pollutants and EPA has selected BAT technology options which will reduce this toxic pollution by a significant amount.

The Agency has considered three major sets of technology options which might be applied at the BAT level. Each of these options would substantially reduce the discharge of toxic pollutants. These options, which were set forth in a draft development document and presented to the technically interested public for preliminary comment, are described in detail in Section X of the Development Document and are outlined below.

Option 1—BAT Option 1 requires the same level of in-process wastewater flow control and end-of-pipe treatment technology required for BPT. In addition, a polishing filter such as a granular bed—mixed media filter is added to remove additional metals and incidentally remove more suspended solids from the clarifier overflow.

Twenty-eight plants (including the two plants discharging both directly and indirectly) are direct dischargers. These plants are expected to move to BAT treatment without first installing BPT treatment. The compliance costs and resulting impacts are based on that determination. Compliance with BAT Option 1 would require investment costs of $6.0 million and annual costs of $2.3 million. EPA projects three potential plant closures as a result of the compliance costs associated with this option. In terms of unemployment, 270 job losses are expected as a result of these closures.

Option 2—BAT Option 2 requires separate treatment of metal preparation and coating wastewaters. The same level of inprocess wastewater flow control and end-of-pipe treatment system of BAT Option 1 are required for the metal preparation wastewaters. For the coating stream, in-process controls would substantially reduce the discharge of pollutants. These in-process technology changes would include the recirculation and reuse of the treated coating waste stream (with the exception of the wastewater generated from washing the ball milling apparatus).

Twenty-eight plants (including the two plants discharging both directly and indirectly) are direct dischargers. These plants are expected to move to BAT treatment without first installing BPT treatment. The compliance costs and resulting impacts are based on that determination. Compliance with BAT Option 2 would require investment costs of $10.7 million and annual costs of $3.6 million. EPA projects six potential plant closures as a result of the compliance costs associated with this option. In terms of unemployment, 380 job losses are expected as a result of these closures.

Option 3—BAT Option 3 builds on BAT Option 2, and incorporates countercurrent rinsing in the metal preparation operations to reduce wastewater volume and pollutant discharge. The installation of countercurrent rinsing would require rebuilding of the surface preparation process line and would require the line to be shut down for a substantial period with resultant production loss and costs. The costs associated with extended process shutdown cannot be precisely estimated but are believed to be quite high.

The effectiveness and costs of BPT and the BAT options were evaluated and considered in making a selection of

BAT. BPT applies only minimal treatment—lime and settle—to the combined waste streams but removes 23,000 kkg (25,000 tons) of pollutants, including 346 kkg (318 tons) per year of toxic metals from an estimated 7,646 million 1/yr (2,020 million gal) of raw waste. BAT–1 does not reduce the wastewater flow but removes an additional 7.22 kkg (7.96 tons) per year of toxic metals by adding filtration to the BPT treatment. BAT–2 reduces the wastewater flow to 4,100 million 1/yr (1,100 million gal) by recycling the coatings wastewater and separate treatment of each wastewater stream and thus reduces the discharge of toxic metals by 10.7 kkg/yr (11.8 tons) (beyond BPT). BAT–3 reduces the discharge of toxic metals by 12.7 kkg/yr (14 tons) (beyond BPT).

The development of these costs is detailed in Section VIII of the development document and treatment effectiveness is displayed in Section X. The high cost of BAT Option 3 plus the low additional removal of toxic metals contributed to the EPA decision that BAT Option 3 was inappropriate.

(E) *Bat Selection and decision criteria*—Initially, EPA made a determination to select Option 2 as the technical basis for proposed BAT effluent limitations. This option still appears to be technically operational and it removes significant amounts of the toxic pollutants of concern in this category (primarily toxic metals) by in-process control, pretreatment, and end-of-pipe treatment of separate streams. Although the Act does not require a balancing of costs against effluent reduction benefits, the costs of the technology options were weighed in this decision. As discussed above EPA estimates that imposition of option 2 would result in 6 plant closures and 380 job losses. Due to these projected economic impacts, BAT option 1 was selected as the basis for the proposed BAT effluent limitations (see Section X of the Development Document for detailed discussion).

The Agency rejected Option 3 because the installation of countercurrent rinsing would require rebuilding of the surface preparation process line and would require the line to be shut down for a substantial period with resultant production loss and costs. The costs associated with extended process shutdown cannot be precisely estimated but are believed to be quite high.

The Agency also rejected option 2 after careful consideration of the economic impacts projected at the BAT 2 level. The separation of streams and reuse of ball mill wash water will provide the most effective pollutant removal. Since the majority of the pollutant load comes from the coating waste stream, while metal preparation provides the larger flow, there is an environmental disbenefit as a result of combined treatment. (See Section X Environmental Benefit tables in the development document).

While the Agency has selected BAT option 1 for proposal, EPA is also considering an additional option which is intermediate between BAT options 1 and 2. Option 2 varies from option 1 in two ways; separate treatment systems are required for both wastewater streams, and the coating operation wastewater stream is reduced by reuse. The additional option adds the flow reduction of option 2 to option 1. Flow reduction has some offsetting cost savings to apply against the added cost of water recirculation. The Agency has not fully evaluated the costs of this option but preliminary indications are that recirculation costs are at least equaled by savings in the smaller size of the final filter. The recycled water can be used to cool ball mills, wash rejected ware, clean up mill room floors and for other water uses which do not require the high quality that ball mill wash out demands. Comments are being requested on this intermediate option.

X. New Source Performance Standard (NSPS)

The basis for new source performance standards (NSPS) under Section 306 of the Act is the best available demonstrated technology. New plants have the opportunity to design and use the best and most efficient porcelain enameling processes and wastewater treatment technologies, without facing the added costs and restrictions encountered in retrofitting an existing plant. Therefore, Congress directed EPA to consider the best demonstrated process changes, inplant controls, and end-of-pipe treatment technologies which reduce pollution to the maximum extent feasible. EPA considered three options for selection of NSPS technology.

Originally, NSPS options were identical to the three options set forth for BAT. The Agency has selected a modified Option 3 as NSPS. This option relies upon the achievement of no discharge of process wastewater pollutants from coating operations through the use of electrostatic dry powder application. By eliminating the use of water in the coating operation, wastewater discharges are also eliminated.

The Agency projects little need for additional porcelain enamel capacity, and expects that regardless of the NSPS selected, few new sources will be built. The cost savings resulting from improved operating efficiencies are expected to more than offset the costs associated with installing NSPS. Thus, no significant impact is foreseen from these new source standards.

XI. Pretreatment Standards For Existing Sources (PSES)

Section 307(b) of the Act requires EPA to promulgate pretreatment standards for existing sources (PSES), which must be achieved within three years of promulgation. PSES are designed to prevent the discharge of pollutants which pass through, interfere with, or are otherwise incompatible with the operation of POTWs. The Clean Water Act of 1977 adds a new dimension by requiring pretreatment for pollutants, such as toxic metals, that pass through the POTW in amounts that would violate direct discharger effluent limitations or that limit POTW sludge management alternatives, including the beneficial use of sludges on agricultural lands. The legislative history of the 1977 Act indicates that pretreatment standards are to be technology-based and analogous to the best available technology for removal of toxic pollutants. The general pretreatment regulations served as the framework for these proposed pretreatment standards for porcelain enameling. They can be found at 43 FR 27736 (June 26, 1978) (40 CFR Part 403).

The four pretreatment options considered parallel BPT and the BAT 1, 2, and 3 options previously described. Most of the pollutants regulated are toxic metals which are not degraded in POTW. These metals either pass through a POTW or are concentrated in the sludge, thereby limiting sludge management alternatives. The rationales for the selection of BAT Option 1 as pretreatment, and the rejection of BAT Options 2 and 3 as pretreatment are identical to the rationale set forth in the BAT Options discussion.

The equipment required for the selected pretreatment option is of reasonable size and appropriate for installation within an urban plant which discharges to POTW. The mass limitations set forth for BAT Option 1 have been presented here as the only method of designating pretreatment standards. To regulate on the basis of concentration would not be adequate because it would not adequately control the release of toxic pollutants. Dischargers could merely dilute the waste stream (or avoid recycle) and meet the limitations. Yet this greater mass of pollutants would pass through

the POTW and possibly interfere with sludge disposal options. The Agency has considered the possible complications which mass based limitations might cause when applied as pretreatment standards. Since porcelain enameling production records are routinely maintained the complications of applying a mass based standard appear to be minimal. Therefore, the policy that concentration be used to express pretreatment standards (40 CFR Part 403.6(c) Appendix A, E.2.e) as it applies to PSES in this part is set aside. The Agency will be proposing minimum requirements for pretreatment self monitoring to insure compliance with the standards.

Eighty-eight plants (76 percent of all plants in the industry) are indirect dischargers. The impacts associated with pretreatment standards are discussed below for each option.

PSES Option 1 corresponds to BPT level of treatment. Investment costs for this option are $21.1 million with annual costs of $8.2 million. EPA projects seven plant closures and 430 job losses as a result of PSES Option 1. This option would remove 17,608 kkg of pollutants per year, including 263 kkg of toxic pollutants.

PSES Option 2 corresponds to BAT Option 1. Investment costs for this option are $24.0 million with annual costs of $9.6 million. EPA projects eight plant closures and 450 job losses as a result of PSES Option 2. This option would remove 17,674 kkg of pollutants per year, including 268 kkg of toxic pollutants.

PSES Option 3 corresponds to BAT Option 2. Investment costs for this option are $34.5 million with annual costs of $11.3 million. EPA projects twenty plant closures and over 2,000 job losses as a result of PSES Option 3. This option would remove 17,685 kkg of pollutants per year, including 271 kkg of toxic pollutants.

XII. Pretreatment Standards For New Sources (PSNS)

Section 307(c) of the Act requires EPA to promulgate pretreatment standards for new sources (PSNS) at the same time that it promulgates NSPS. New indirect discharges will produce wastes having the same pass through problems that existing dischargers have. New indirect dischargers, like new direct dischargers, have the opportunity to incorporate the best available demonstrated technologies including process changes, in-plant controls, and end-of-pipe treatment technologies, and to use plant site selection to ensure adequate treatment system installation.

The PSNS treatment options considered are identical to the NSPS options. As in the case of existing sources, the majority of pollutants regulated are toxic metals which are not degraded in a POTW. NSPS Option 3 (as modified by requiring dry porcelain enamel application) is selected as the most appropriate pretreatment technology option for PSNS. This option encourages new plants to treat their own watewaters, thereby reducing the hydraulic loading on POTW and limiting the amount of toxic metals which would be introduced to a POTW.

The mass limitations set forth as NSPS Option 3 are presented here as the only method of designating pretreatment standards. The water flow reductions specified at NSPS are the major features of the treatment and control system. Thus, to regulate on the basis of concentration only is not adequate because it will not adequately control the release of toxic pollutants. Therefore, policy that concentration be used to express pretreatment standards (40 CFR Part 403 6(c); and Appendix A, B.2.e) is waived as it applies to PSNS in this part. The Agency is considering establishing minimum requirements for monitoring to insure compliance with the standards, but no requirements are proposed at this time.

The Agency projects little need for additional porcelain enamel capacity, and expects that regardless of the PSNS selected, few new sources will emerge. For the new plants that are built, the costs savings resulting from improved operating efficiencies are expected to more than offset the costs associated with PSNS. Thus, no significant impact is foreseen from new source standards.

XIII. Best Conventional Technology (BCT) Effluent Limitations

The 1977 amendments added Section 301(b)(4)(E) to the Act, establishing "best conventional pollutant control technology" (BCT) for discharges of conventional pollutants from industrial point sources. Conventional pollutants are those defined in Section 304(b)(4)—BOD, TSS, fecal coliform and pH—and any additional pollutants defined by the Administrator as "conventional." On July 30, 1979, EPA added oil and grease, to the conventional pollutant list (44 FR 44501).

BCT is not an additional limitation, but replaces BAT for the control of conventional pollutants. BCT requires that limitations for conventional pollutants be assessed in light of a new "cost-reasonableness" test, which involves a comparison of the cost and level of reduction of conventional pollutants from the discharge of publicly owned treatment works to the cost and level of reduction of such pollutants from a class or category of industrial sources. In its review of BAT for "secondary" industries, the Agency will propose BCT levels based on a methodology described at 44 FR 50732 (Aug. 29, 1979). A BCT option will be considered "cost reasonable" under this methodology if its incremental cost (dollars per pound of pollutant, measuring from BPT to BCT) is less than or equal to the costs for an average POTW. In 1978 dollars the POTW comparison figure is $1.27 per pound.

Only three conventional pollutant parameters—pH, oil and grease and TSS are considered under the BCT limitation. the pH limitation is the same as required at BPT and need not be further considered. The quantity of oil and grease plus TSS removed by BAT (Option 1 as selected) above BPT was calculated and compared with the total cost of technology above BPT to achieve BAT. This comparison showed that the BCT costs for the steel subcategory would be $20.17 per pound of conventional pollutant removed, $1,020.73 for the cast iron subcategory, $40.35 for the aluminum subcategory and $347.46 for the copper subcategory. All of these costs substantially exceed $1.27 per pound which has been established as the level of cost reasonableness for BCT. Therefore the BCT limitations for oil and grese, and TSS are set at the same level as at BPT.

XIV. Regulated Pollutants

The basis upon which the controlled pollutants were selected, as well as the general nature and environmental effects of these pollutants, is set out in Sections V, VI, IX and X of the Development Document. Some of these pollutants are designated toxic under Section 307(a) of the Act, and no evidence has been found to warrant removal of any pollutant from the toxics list.

A. BPT—The pollutants controlled by the BPT limitations are antimony, arsenic, cadmium, chromium, copper, lead, nickel, selenium, zinc, aluminum, cobalt, fluoride, iron, manganese, titanium, oil and grease, TSS, and pH. The discharge is controlled by maximum daily and monthly average mass effluent limitations stated in milligrans per square meter of metal processed or area coated.

B. BAT and NSPS—The list of toxic and unconventional pollutants specifically limited by BAT and NSPS is the same as those limited by BPT. Oil and grease, pH and TSS are limited by BCT rather than BAT.

C. PSES and NSPS—The list of toxic and unconventional pollutants expressly controlled for indirect dischargers is the same as those limited by BPT except that aluminum, iron, oil and grease, TSS and pH are not limited.

Appendix B to this notice contains a tabulation for each subcategory of the toxic pollutants which were considered for specific limitation.

XV. Pollutants and Subcategories Not Regulated

The Settlement Agreement contains provisions authorizing the exclusion from regulation, in certain instances, of toxic pollutants and industry subcategories. These provisions have been re-written in a Revised Settlement Agreement which was approved by the District Court for the District of Columbia on March 9, 1979, 12 ERC 1833.

A. Exclusion of Pollutants

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

Paragraph 8(a)(iii) also allows the Administrator to exclude from regulation toxic pollutants detected in the effluent in only trace quantities and neither causing nor likely to cause toxic effects. Appendix D to this notice lists the toxic pollutants in each subcategory which were detected in the effluent in trace amounts, at or below the nominal limit of analytical quantification, which are not likely to cause toxic effects and which, therefore, are excluded from regulation.

Paragraph 8(a)(iii) also allows the Administrator to exclude from regulation toxic pollutants detectable in the effluent from only a small number of sources within the subcategory which are uniquely related to those sources. Appendix E to this notice lists for each subcategory the toxic pollutants which were detected in the effluents of only one plant are uniquely related to that plant, and are not related to the manufacturing process under study.

Paragraph 8(a)(iii) also allows the Administrator to exclude from regulation, toxic pollutants present in amounts too small to be effectively reduced by technologies considered applicable to the industry. Appendix E lists those toxic pollutants which are not treatable using technologies considered.

B. Exclusion of Subcategories

Paragraph 8(a)(i) of the Settlement Agreement authorizes the Administrator to exclude from regulation industry categories or subcategories for which equal or more stringent limitations are already provided by existing effluent guidelines and standards. Additionally, paragraph 8(a)(iv) of the Settlement Agreement authorizes the exclusion of subcategories in which the amount and toxicity of each pollutant in the discharge does not justify developing national regulations.

No subcategories or subsets of the porcelain enameling industry meet these criteria. Thus none are excluded from this regulation.

XVI. Monitoring Requirements for Indirect Dischargers

Background

The Agency is not now proposing specific self-monitoring requirements for pretreaters in this category. Such requirements may be promulgated when this regulation is promulgated or may be promulgated separately.

Reporting Requirements

The reporting requirements for indirect dischargers are governed by the General Pretreatment Regulations found at 40 CFR, Part 403. Amendments to these regulations will be promulgated in the near future. Specifically, 40 CFR, Part 403.12 establishes a six (6) month reporting requirement and outlines general responsibilities of the POTW and industrial users of POTW's with respect to reporting requirements.

XVII. Costs, Effluent Reduction Benefits, and Economic Impacts

Executive Order 12044 requires EPA and other agencies to perform regulatory analyses of certain regulations. 43 FR 12661 (March 23, 1978). EPA's plan for implementing Executive Order 12044 requires a regulatory analysis for major significant regulations involving annualized compliance costs greater than $100 million or meeting other specified criteria. 44 FR 30988 (May 29, 1979). Where these criteria are met, EPA's implementation plan requires a formal regulatory analysis, including an economic impact analysis and an evaluation of regulatory alternatives. The proposed regulations for the porcelain enameling industry do not require a formal regulatory analysis. Nonetheless, this proposed rulemaking satisfies the formal regulatory analysis requirements.

EPA's economic impact assessment is set forth in *Economic Impact Analysis of Proposed Effluent Standards and Limitations for the Porcelain Enameling Industry*, EPA 440/2-80-082. This report details the investment and annual costs for the industry as a whole and for typical plants covered by the proposed porcelain enameling regulation. The report also assesses the impact of compliance costs in terms of plant closures, production changes, price changes, employment changes, local community impacts, and balance of trade effects.

EPA has identified 116 plants that perform porcelain enameling operations. Total investment for BPT, BAT and PSES is estimated to be $30.0 million with annual costs of $11.9 million, including depreciation and interest. These costs are in 1978 dollars and are based on the determination that plants will move from existing treatment to either BAT or PSES. Eleven potential plant closures (9 percent of the industry) are projected as a result of this regulation. In terms of unemployment, the potential closures will result in approximately 720 job losses—about one percent of total employment for porcelain enameling. Maximum price increases if all costs were passed on to consumers would range from 0.2 to 3.3 percent. Balance of trade effects are insignificant.

The impacts of the regulations were estimated on a plant-by-plant basis for a sample of 80 plants, with results projected to all 116 plants that EPA has identified. For purposes of measuring the potential economic impacts, the industry was subcategorized by the type of product being enameled (e.g. ranges, sanitary ware, architectural panels). A financial profile was developed for each of the 80 sample plants. The financial variables contained in the profiles were used to calculate return on investment and an assets to capital investment ratio. These two ratios indicate profitability or capital availability problems faced by the plants. Plant closure determinations were based on threshold levels that were established for evaluating the financial ratios.

BPT: Twenty-eight plants (including the two plants discharging both directly and indirectly) are direct dischargers. The BPT regulation requires $5.1 million in investment costs and $2.0 million in annual costs. There are three potential plant closures associated with the BPT treatment option—representing 11 percent of the direct dischargers and 3 percent of all plants in the industry. In terms of unemployment, the potential closures will affect 270 employees. If all costs were passed on to consumers, price increases would range from 0.1 to 2.8 percent.

BAT: Porcelain enameling plants that do not have BPT installed and discharge directly are expected to move to BAT technology without first installing BPT technology. The compliance costs and resulting impacts discussed below are based on the total effects of going from existing treatment to installing BAT. Investment costs are $6.0 million, with annual costs of $2.3 million, including depreciation and interest. This option does not result in any additional closures beyond those associated with BPT. Thus, there are three potential plant closures representing 11 percent of the direct dischargers and 3 percent of all plants in the industry. If all costs were passed on to consumers, price increases would range from 0.2 to 3.3 percent.

PSES: Eighty-eight plants (76 percent of the industry) are identified as indirect dischargers. There were 67 indirect dischargers in the 80-plant sample, accounting for approximately 80 percent of the industry's annual production. The pollution control technology for the proposed pretreatment standards is identical to the BAT treatment technology. Annual costs for indirect dischargers are $906 million; investment costs are $24.0 million. There are eight potential plant closures associated with PSES—representing 9 percent of the indirect dischargers and 7 percent of all plants in the industry. In terms or unemployment, the potential closures will affect 450 employees.

NSPS–PSNS: The declining trend in the use of porcelain enamel is expected to continue. The slow growth rate for most end-products, and the expected substitution for porcelain enamel suggests little need for additional porcelain enamel capacity. Thus, it is expected that few new sources will emerge. Any new plants are likely to be replacements or modernizations of older ones. A new facility would most likely be associated with cost savings that result from improved operating efficiencies. These factors are expected to more than offset the costs associated with new source performance standards. Thus, no significant economic impact is foreseen from new source standards.

Regulatory Flexibility Analysis

Pub. L. 96–354 requires that EPA prepare an Initial Regulatory Flexibility Analysis for all proposed regulations that heve a significant impact on a substantial number of small entities. This analysis must:

- Describe the reasons, objectives, and legal basis for the proposed rule;
- Describe, and where feasible, estimate the number of small entities, as (in most cases) defined by Small Business Administration (SEA), affected by the proposed rule;
- Describe the reporting, recordkeeping, and other compliance requirements;
- Identify any Federal rules that may duplicate, overlap, or conflict with the proposed rule;
- Describe any significant alternatives that would accomplish the stated objectives, and minimize any significant economic impacts of the proposed rules on small entities.

This analysis may be done in conjunction with or as a part of any other analysis conducted by the Agency. This proposed rulemaking and the economic impact analysis supporting the proposal satisfy the requirements of the Regulatory Flexibility Act.

Many of the provisions of the Initial Regulatory Flexibility Analysis have been addressed in detail in other sections of this preamble. Sections I, IIA, and III discuss the legal authority and objectives of the proposed rule. Sections XXIII and XXIV discuss the public participation procedures. Section XVI discusses the reporting requirements. The Agency is not aware of any other Federal rules that may overlap or conflict with this proposed rule.

The economic impact analysis outlines the impacts associated with this proposed rule and with the other regulatory options the Agency considered. Over 40 percent of this industry, or 50 plants, have fewer than 250 employees. (The SBA uses 250 employees as the definition for small business when an industry-specific size definition is not available, 13 CFR 121.3. Since the porcelain enameling industry covers a number of Standard Industrial Classification codes used by SBA to define size, EPA feels that the general size definition is most appropriate.) The Agency estimates that at BAT option 2 (pretreatment option 3), 23 plants, or 22 percent of the 50 plants, would close. To reduce this level of impact, the Agency chose a less stringent option, BAT option 1 (pretreatment option 2), as the basis for setting the effluent limitations. The Agency estimates that eleven plants, or 22 percent of the 50 plants, would close at this option.

The analysis also indicates that the economic impact may be concentrated on the smallest plants in this industry. At the selected option, BAT option 1, approximately three-quarters of the closures (eight out of eleven plants) would occur among plants with less than 100 employees. Therefore, EPA will evaluate the possibility of setting less stringent standards for the smallest plants. In this evaluation, EPA will consider various criteria, such as production volume or flow, as the basis for defining small plants. The Agency solicits comments on this issue in this proposal, and will decide at promulgation whether to set less stringent standards for small plants.

XVIII. Non-Water Quality Aspects of Pollution Control

The elimination or reduction of one form of pollution may aggravate other environmental problems. Therefore, Sections 304(b) and 306 of the Act require EPA to consider the non-water quality environmental impacts (including energy requirements) of certain regulations. In compliance with these provisions, EPA has considered the effect of this regulation on air pollution, solid waste generation, water scarcity, and energy consumption. This proposal was circulated to and reviewed by EPA personnel responsible for non-water quality environmental programs. While it is difficult to balance pollution problems against each other and against energy utilization, EPA is proposing regulations which it believes best serve often competing national goals.

The following are the non-water quality environmental impacts (including energy requirements) associated with the proposed regulations:

A. Air Pollution—Imposition of BPT, BAT, BCT, NSPS, PSES, and PSNS will not create any substantial air pollution problems.

B. Solid Waste—EPA estimates that porcelain enameling facilities generated 30,000 kkg of solid wastes (wet basis) per year in 1976. These wastes were comprised of treatment system sludges containing toxic metals, including chromium, copper, lead, nickel and zinc.

EPA estimates that the proposed BPT limitations will contribute an additional 48,500 kkg per year of solid wastes. Proposed BAT and PSES will increase these wastes by approximately 360 kkg per year beyond BPT levels. These sludges will necessarily contain additional quantities (and concentrations) of toxic metal pollutants.

On the other hand, EPA estimates that implementation of proposed pretreatment standards will result in POTW sludges having commensurately lesser quantities and concentrations of toxic pollutants. POTW sludges will become more amenable to a wider range of disposal alternatives, possibly including beneficial use on agricultural lands. Moreover, disposal of these vastly greater quantities of adulterated POTW sludges would be significantly more difficult and costly than disposal

of smaller quantities of wastes generated at individual plant sites.

These wastewater treatment sludges may furthermore be identified as hazardous under the regulations implementing subtitle C of the Resource Conservation and Recovery Act (RCRA). Under those regulations, generators of these wastes must test the wastes to determine if the wastes meet any of the characteristics of hazardous waste (see 40 CFR § 262.11, 45 FR at 12732–12733 (Feb. 26, 1980)). The Agency may also list these sludges as hazardous pursuant to 40 CFR § 261.11 (45 FR at 33121 (May 19, 1980), and is likely to do so based upon high concentrations of cadmium in these wastes and the large quantity of wastes generated.

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 porcelain enameling wastes to meet containerization, labeling, recordkeeping and reporting requirements; if porcelain enamelers 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 45 FR 12722, 12733–12734 (Feb. 26, 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 45 FR 12737, 12743–12744 (Feb. 26, 1980). Finally, RCRA regulations establish standards for hazardous waste treatment, storage and disposal facilities allowed to receive such wastes. Final standards for permitted hazardous waste disposal are expected to be promulgated during the fall of 1980. See 45 FR 33154 (May 19, 1980).

Even if these wastes are not identified as hazardous, they still must be disposed of in compliance with the subtitle D open dumping standards, implementing § 4004 of RCRA. See 44 FR 53438 (Sept. 13, 1979).

The costs of compliance with proposed RCRA regulations were not specifically included in the economic impact analysis for these proposed regulations. However, EPA considered estimated RCRA compliance costs for porcelain enameling when it selected the technology options for these proposed regualtions. The Agency plans to incorporate costs of compliance with RCRA regulations in its final economic impact analysis for this regulation.

C. Energy Requirements—EPA estimates that the achievement of proposed BPT effluent limitations will result in a net increase in electrical energy consumption of approximately 18 million kilowatt-hours per year. Proposed BCT and BAT limitations are projected to add another 16.2 million kilowatt-hours to electrical energy consumption. To achieve the proposed BPT, BCT and BAT effluent limitations, a typical direct discharger will increase total energy consumption by less than 1 percent of the energy consumed for production purposes.

The Agency estimates that proposed PSES will result in a net increase in electrical energy consumption of approximately 12.1 million kilowatt-hours per year. To achieve proposed PSES, a typical existing indirect discharger will increase energy consumption less than 1 percent of the toal energy consumed for production purposes.

XIX. Best Management Practices (EMPs)

Section 304(e) of the Clean Water Act authorizes the Administrator to prescribe "best management practices" ("BMP"), described under AUTHORITY AND BACKGROUND. EPA intends to develop BMPs which: (1) are applicable to all industrial sites; (2) are applicable to a designated industrial category; and (3) offer guidance to permit authorities in establishing BMPs required by unique circumstances at a given plant.

EPA is not now considering promulgating BMPs specific to porcelain enameling.

XX. Upset and Bypass Provisions

An issue of recurrent 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 unintentional noncompliance occurring for reasons beyond the reasonable control of the permittee. Industry argues that an upset provision in EPA's effluent limitations guidelines is necessary because such upsets will inevitably occur due to limitations in even properly operated control equipment. Because technology-based limitations are to require only what technology can achieve, they claim that liability for such situations is improper. When confronted with this issue, courts have been divided on the question of whether an explicit upset or excursion exemption is necessary or whether upset or excursion incidents may be handled through EPA's exercise of enforcement discretion. Compare *Marathon Oil Co.* v. *EPA*, 564 F.2d 1253 (9th Cir. 1977) with *Weyerhaeuser* 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).

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

EPA has determined that both upset and bypass provisions should be included in NPDES permits, and has recently promulgated NPDES regulations which include upset and bypass permit provisions (40 CFR 122.60 45 FR 33290 May 19, 1980). 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. Permittees in porcelain enameling will be entitled to upset and bypass provisions in NPDES permits. Thus these proposed regulations do not address these issues.

XXI. Variances and Modifications

Upon the promulgation of the final regulation, the numerical effluent limitations for the appropriate subcategory must be applied in all federal and state NPDES permits thereafter issued to porcelain enameling direct dischargers. In addition, on promulgation, the pretreatment standards are directly applicable to indirect dischargers.

For the BPT and BCT effluent limitations, the only exception to the binding limitations is EPA's "fundamentally different factors" variance. See *E. I. duPont de Nemours and Co.* v. *Train*, 430 U.S. 112 (1977); *Weyerhaeuser Co.* v. *Costle, supra*. This variance recognizes factors concerning a particular discharger which 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*,— U.S.—(No. 79–770, decided Dec. 2, 1980), and *Consolidation Coal Co.* v. *Costle*, 604 F.2d 239 (4th Cir. 1979), *cert. granted* 48 U.S.L.W. 3513 (Feb. 19, 1980). This

variance clause was originally set forth in EPA's 1973–1976 industry regulations. It is now included in the general NPDES regulations and will not be included in the porcelain enameling or other specific industry regulations. See the NPDES regulations at 40 CFR Part 122 Subparts A & D, 45 FR 33290 et. seq. (May 19, 1980) for the text and explanation of the "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 non-toxic and nonconventional pollutants* are subject to modifications under Sections 301(c) and 301(g) of the Act. According to Section 301(j)(1)(B), applications for these modifications must be filed within 270 days after promulgation of final effluent limitations guidelines. See 43 FR 40859 (Sept. 13, 1978). Under Section 301(1) of the Act, these statutory modifications are not applicable to "toxic" pollutants.

Pretreatment standards for existing sources are subject to the "fundamentally different factors" variance and credits for pollutants removed by POTWs. See 40 CFR 403.7, 403.13; 43 FR 27736 (June 26, 1978). Pretreatment standards for new sources are subject only to the credits provision in 40 CFR 403.7. New source performance standards are not subject to EPA's "fundamentally different factors" variance or any statutory or regulatory modifications. See *duPont* v. *Train, supra.*

XXII. Relationship To NPDES Permits

The BPT, BAT, BCT, and NSPS limitations in this regulation will be applied to individual porcelain enameling plants through NPDES permits issued by EPA or approved state agencies under Section 402 of the Act. The preceding section of this preamble discussed the binding effect of this regulation on NPDES permits, except to the extent that variances and modifications are expressly authorized. This section describes several other aspects of the interaction of these regulations and NPDES permits.

One matter which has been subject to different judicial views is the scope of NPDES permit proceedings in the absence of effluent limitations, guidelines and standards. Under currently applicable EPA regulations, states and EPA Regions issuing NPDES permits prior to promulgation of this regulation must do so on a case-by-case basis. This regulation provides a technical and legal base for new permits.

Another noteworthy topic 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 permit-issuing authority to act in any manner not inconsistent with law or these or any other EPA regulations, guidelines or policy. For example, the fact that this regulation does not control a particular pollutant does not preclude the permit issuer from limiting such pollutant on a case-by-case basis, when 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 regulation (or require more stringent limitations on covered pollutants), such limitations *must* be applied by the permit-issuing authority.

One additional topic that warrants discussion is the operation of EPA's NPDES enforcement program, many aspects of which have been considered in developing this regulation. The Agency wishes to emphasize that, although the Clean Water Act is a strict liability statute, the initiation of enforcement proceedings by EPA is discretionary (*Sierra Club* v. *Train,* 557 F. 2d 485, 5th Cir. 1977). EPA has exercised and intends to exercise that discretion in a manner which recognizes and promotes good faith compliance efforts and conserves enforcement resources for those who fail to make good faith efforts to comply with the Act.

XXIII. Summary of Public Participation

In September 1979, EPA circulated a draft technical development document to a number of interested parties, including the Porcelain Enameling Institute and member firms, the Natural Resources Defense Council (NRDC), and affected state and municipal authorities. This document did not include recommendations for effluent limitations and standards, but rather presented the technical basis for this proposed regulation. A meeting was held in Washington, D.C. on October 26, 1979, for public discussion of comments on this document. A brief summary of these comments follows:

1. Comment: Porcelain enamel on sheet steel constitutes 70% of the Porcelain Enameling category, yet actual sampling percentages and plant visits were so few that it seems impossible to establish an effective and representative cross section of this segment of the industry.

Response: Visited plant selection is based upon data collected in the dcp. Plant selection includes consideration of large and small facilities and those that have different processes and waste treatment. The Agency does not necessarily include a one-for-one proportion of sampled plants and percentage of category.

2. Comment: Numerous comments were received questioning why a mean value was used for water use (liters per square meter) yet median data were also used for other flows.

Response: The Agency is now relying almost exclusively on mean values for treatment and production purposes. The major exception to this is that median values are used for raw waste concentrations when calculating environmental benefits.

3. Comment: Cost data are incomplete. Costs for separating streams, flow equalization, piping, and installation are very real and could add more costs than those suggested for individual process costs.

Response: The Agency has revised the format of Section VIII of the development document to make it more understandable and easily followed. Because industry has complained vigorously about the EPA engineering costs for treatment facilities, the basic costing factors were reviewed and some adjustments made resulting in somewhat different costs than those shown in the draft development document. Industry has presented EPA with detailed construction costs for 5 porcelain enameling waste treatment plants and has indicated an intention to supply detailed costs on a total of about 10 plants. We expect to make a full examination of these industry supplied costs to resolve or highlight differences in estimated costs for treatment. Our initial review of the industry supplied costs indicates that some items included in industry costs are not directly necessary to the construction of the facility and that the facilities are designed to treat flows substantially larger than necessary from porcelain enameling operations. When these major causes of cost differences are factored out, the Agency and industry are within a range of about 30 percent variance. The Agency is continuing to analyze the cost problem and expects to compare the costs supplied by the industry with cost estimates used by three outside contractors. Any further correction of Agency cost estimates indicated by this further analysis will be taken into consideration at promulgation of this regulation.

The Agency is also evaluating the application of package type wastewater treatment facilities in this industry segment. These treatment facilities are shop fabricated and can be installed for

less than present cost estimates (about ⅓). Preliminary information indicates that the package type facilities can meet the BAT limitations at substantially lower costs. Comment on the use of package type wastewater treatment facilities is specifically requested.

4. Comment: Recycle of acid rinse waters to cleaner tanks is not good practice. Acid, iron and iron salts can react with soils and residues in cleaner rinse tanks.

Response: The Agency has reconsidered the recommended practice of resuing acid rinse waters in cleaner rinse tanks and has deleted the recommendation from the document.

5. Comment: BAT and NSPS in-plant technologies list reverse osmosis and reuse or recirculation of process water. This may not be possible in porcelain enameling due to the inefficiency of reverse osmosis equipment and the deterimental effect of recirculated contaminants on the surface quality of fired ware.

Response: Reverse osmosis treatment, which was outlined in one BAT option has not been selected as a basis for establishing BAT limitations as is discussed in Section X of the development document. As discussed elsewhere in this notice, the reuse of water in most of the coating operations appears to be feasible and reasonable.

6. Comment: A few commenters questioned the regulation of this industry by area processed.

Response: The Agency has considered several alternatives and has concluded that regulation of total discharge of specific pollutants is most equitable by basing it on area processed. The relation of the pollution generation rate to spent solution and slip generation rates is directly dependent on the amount of porcelain enameling performed, i.e., the processed area. This leads naturally to the selection of processed area as a production related pollutant discharge rate parameter. Processed area might be different for surface preparation operations and enamel application. This results from the application of multiple coats of porcelain enamel to a part, or enamel application on only one side of a part that has had both sides prepared by a dip operation. Therefore, area processed must consider both the area prepared (each side) and the area(s) coated.

7. Comment: The porcelain enameling industry uses insoluble salts, not soluble salts as in the paint industry.

Response: The Agency recognizes that the salts used by the porcelain enameling industry are different from salts used in other industries such as the paint industry. However, the toxic metal salts used have a measurable solubility which is in the toxic range. when the coating wastewaters are combined with acidic metal preparation wastewaters the solubility is increased.

8. Comment: Why were some data not used in determining median water use levels?

Response: During sampling visits to various facilities, practices causing excess water use were noted. The normalized water use ($1/\pi^2$) at these known water wasting plants was used to define excess water use. Plants using excess water were deleted prior to calculating the mean water use for each subcategory. The median water use approach used in the draft development document is not used as a basis of this proposal.

9. Comment: Numerous commenters stated that BAT Alternative II is not achievable.

Response: The Agency has considered this industry comment and determined that BAT III was not achievable as originally displayed. Therefore, BAT option III no longer requires a zero discharge but allows a small but sufficient quantity of water for ball mill clean cut and a substantially reduced water flow for the metal preparation stream. Even so, it was not selected as the regulatory option.

10. Comment: A few commentors doubted the reliability and accuracy of data from the 308 questionnaire.

Response: The Agency is using the 308 data directly as submitted. Contact with individual companies has not substantiated the allegation that the data is unreliable.

11. Comment: Numerous comments were received indicating that many parts of the draft development document were difficult to follow and understand. Many typographical and minor errors were pointed out as well.

Response: The Agency has substantially modified the development document to improve its clarity and to present technical data and information in a logical and understandable fashion. Many changes were made to correct typographical and other minor errors. These changes are not specifically addressed in this summary of comments.

XXIV. Solicitation of Comments

EPA invites and encourages public participation in this rulemaking. The Agency asks that any deficiencies in the record of this proposal be specifically addressed and that suggested revisions or corrections be supported by data.

EPA is particularly interested in receiving additional comments and information on the following issues:

1. EPA considered a variety of control technologies when developing these guidelines. The Agency was not able to identify control technologies less stringent than the option selected as the basis for BPT. Comments are solicited on the availability of other technology options not identified by the Agency.

2. Even though the Agency has selected BAT option 1 for proposal, the Agency is also considering an additional option. The option being considered is intermediate between BAT options 1 and 2. Option 2 varied from option 1 in two ways: separate treatment systems are required for both wastewater streams and the coating operations wastewater stream was reduced by reuse. Flow reduction has some offsetting cost savings to apply against the added cost of water recirculation. The Agency has not fully evaluated this balancing of costs against savings, but preliminary indications are that recirculation costs are at least equaled by savings in the smaller size of the final filter. The recycled water can be used to cool ball mills, wash rejected ware, clean up mill room floors and for other water uses which do not require the high quality that ball mill wash out demands. Comments are specifically requested on the feasibility and cost of this type of system so that a proper evaluation may be made by the Agency.

3. The Agency is also evaluating the application of package type wastewater treatment facilities in this industry segment. These treatment facilities are shop fabricated and can be installed for less than present cost estimates (about ⅓). Preliminary information indicates that the package type facilities can meet the BAT limitations at substantially lower costs than conventionally constructed facilities. Comments on the use of package type wastewater treatment facilities and the reduced cost of wastewater treatment are specifically requested.

4. EPA's economic impact analysis indicates that eleven plant closures may result from the proposed regulation; many of these closures are predicted for small porcelain enamel plants. The Agency is considering either adjusting or eliminating limitations for small porcelain enameling plants in order to minimize closures. Comments on this issue are invited.

5. EPA invites comments on the effect of Resource Conservation and Recovery Act (RCRA) requirements on the porcelain enameling effluent guidelines. RCRA requirements influence the disposal costs for solid wastes generated by these guidelines and the costs of constructing wastewater treatment surface impoundments. The

economic impact analysis of the proposed guidelines does not include some of these RCRA costs. EPA will adjust the economic impact analysis before promulgation to reflect the impact of these RCRA requirements on solid waste disposal costs for this industry. The promulgated porcelain enameling effluent guidelines will take into account any changes in economic impact caused by this adjustment. EPA specifically requests information regarding: volume, characteristics, and current disposal practices for wastewater treatment sludges.

6. Several cost elements associated with compliance with effluent regulations could not be estimated for each plant. While these special site-specific costs may in some cases involve a significant added cost, the plant-by-plant variation in these costs prevented EPA from being able to address these factors in its generic cost estimation procedure. Therefore, because of this problem, sensitivity analyses were conducted on the compliance cost estimates used in the economic impact analysis. EPA solicits comments on alternative methods of assessing these site-specific costs.

Dated: January 19, 1981.

Douglas M. Costle,

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)(E) of the Act

BCT—The best conventional pollutant control technology; under Section 304(b)(4) 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 (Public Law 95-217)

dcp—Data collection portfolio

Direct discharger—A factility which discharges or may discharge pollutants into waters of the United States

Indirect discharger—A facility which introduces or may introduce 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 (PL 94-580) of 1976, as amended

Appendix B—Toxic Pollutants Considered for Specific Limitation

(a) Subpart A—Steel Basis Material
Subcategory
114 Antimony
115 Arsenic
118 Cadmium
119 Chronium
120 Copper
122 Lead
124 Nickel
125 Selenuim
128 Zinc

(b) Subpart B—Cast Iron Basis Material
Subcategory
114 Antimony
115 Arsenic
118 Cadmium
119 Chronium
120 Copper
121 Cyanide
124 Nickel
125 Selenuim
128 Zinc

(c) Subpart C—Aluminum Basis Material
Subcategory
114 Antimony
115 Arsenic
118 Cadmium
119 Chronium
120 Copper
122 Lead
124 Nickel
125 Selenuim
128 Zinc

(d) Subpart D—Copper Basis Material
114 Antimony
115 Arsenic
118 Cadmium
119 Chronium
120 Copper
122 Lead
124 Nickel
125 Selenuim
128 Zinc

Appendix C—Toxic Pollutants Not Detected

(a) Subpart A—Steel Basis Material
Subcategory
001 Acenaphthene
002 Acrolein
003 Acrylonitrile
004 Benzene
005 Benzidine
006 Carbon tetrachloride (tetrachloromethane)
007 Chlorobenzene
008 1,2,4,-tricholrobenzene
009 Hexachlorobenzene
010 1,2-dichloroethane
011 1,1,1-trichlorethane
012 Hexachloroethane
013 1,1-dichloroethane
014 1,1,2-trichlorethane
015 1,1,2,2-trichlorethane
016 Chloroethane
017 Bis (chloromethyl) ether
018 Bis (2-chloroethyl) ether
019 2-chloroethyl vinyl ether (mixed)
020 2-chloronaphthalene
021 2,4,6-trichlorophenol
022 Parachlorometa cresol
023 Chloroform (trichloromethane)
024 2-chlorophenol
025 1,2-dichlorobenzene
026 1,3-dichlorobenzene
027 1,4-dichlorobenzene
028 3,3-dichlorobenzidine
029 1,1-dichloroethylene
030 1,2-trans-dichloroethylene
031 2,4-dichlorophenol
032 1,2-dichloropropane
033 1,2-dichloropropylene (1,3-dichloropropene)
034 2,4-dimethylphenol
035 2,4-dinitrotoluene
036 2,6-dinitrotoluene
037 1,2-diphenylhydrazine
038 Ethylbenzene
039 Fluoranthene
040 4-chlorophenyl phenyl ether
041 4-bromophenyl phenyl ether
042 Bis (2-chloroisopropyl) ether
043 Bis (2-chloroethoxy) methane
044 Methylene chloride (dichloromethane)
045 Methyl chloride (dichloromethane)
046 Methyl bromide (bromomethane)
047 Bromoform (tribromomethane)
048 Dichlorobromomethane
049 Trichlorofluoromethane
050 Dichlorodifluoromethane
051 Chlorodibromomethane
052 Hexachlorobutadiene
053 Hexachloromyclopentadiene
054 Isophorone
055 Naphthalene
056 Nitrobenzene
057 2-nitrophenol
058 4-nitrophenol
059 2,4-dinitrophenol
060 4,6-dinitro-o-cresol
061 N-nitrosodimethylamine
062 N-nitrosodiphenylamine
063 N-nitrosodi-n-propylamine
064 Pentachlorophenol
065 Phenol
066 Bis (2-ethylhexyl) phthalate
067 Butyl benzyl phthalate
068 Di-N-Butyl Phthalate
069 Di-n-cctyl phthalate
070 Diethyl Phthalate
071 Dimethyl phthalate
072 1,2-benzanthracene (benzo (a) anthracene)
073 Benzo (a) pyrene (3,4-benzo-pyrene)
074 3,4-Benzofluoranthene (benzo (b) fluoranthene)
075 11,12-benzofluoranthene (benzo (b) fluoranthene)
076 Chrysene
077 Acenaphthylene
078 Anthracene
079 1,12-benzoperylene (benzo (ghi) perylene)
080 Fluorene
081 Phenanthrene
082 1,2,5,6,-dibenzanthracene (dibenzo(,h) anthracene)
083 Indeno(1,2,3-cd) pyrene(2,3-o-pheynylene pyrene)
084 Pyrene
085 Tetrachloroethylene
086 Toluent
087 Trichloroethylene
088 Vinyl chloride (chloroethylene)

089 Aldrin
090 Dieldrin
091 Chlordane (technical mixture and metabolites)
092 4,4-DDT
093 4,4-DDE (p,p-DDX)
094 4,4-DDD (p,p-TDE)
095 Alpha-endosulfan
096 Beta-endosulfan
097 Endosulfan sulfate
098 Endrin
099 Endrin aldehyde
100 Heptachlor
101 Heptachlor epoxide (BHC-hexachlorocyclohexane)
102 Alpha-BHC
103 Beta-BHC
104 Gamma-BHC (lindane)
105 Delta-BHC (PCB polychlorinated biphenyls)
106 PCB–1242 (Arochlor 1242)
107 PCB–1254 (Arochlor 1254)
108 PCB–1221 (Arochlor 1221)
109 PCB–1232 (Arochlor 1232)
110 PCB–1248 (Arochlor 1248)
111 PCB–1260 (Arochlor 1260)
112 PCB–1016 (Arochlor 1016)
113 Toxaphene
116 Asbestos
121 Cyanide
123 Mercury
126 Silver
127 Thallium
129 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD)

(b) Subpart B—Cast Iron Basis Material Subcategory

001 Acenaphthene
002 Acrolein
003 Acrylonitrile
004 Benzene
005 Benzidine
006 Carbon tetrachloride (tetrachloromethane)
007 Chloroenzene
008 1,2,4-trichlorobenzene
009 Hexachlorobenzene
010 1,2-dichloroethane
011 1,1,1-trichlorethane
012 Hexachloroethane
013 1,1-dichloroethane
014 1,1,2-trichloroethane
015 1,1,2,2-tetrachloroethane
016 Chloroethane
017 Bis (chloromethyl) ether
018 Bis (2-chloroethyl) ether
019 2-chloroethyl vinyl ether (mixed)
020 2-chloronaphthalene
021 2,4,6-trichlorophenol
022 Parachlorometa cresol
023 Chloroform (trichloromethane)
024 2-chlorophenol
025 1,2-dichlorobenzene
026 1,3-dichlorobenzene
027 1,4-dichlorobenzene
028 3,3-dichlorobenzidine
029 1,1-dichloroethylene
030 1,2-trans-dichloroethylene
031 2,4-dichlorophenol
032 1,2-dichloropropane
033 1,2-dichloropropylene (1,3-dichloropropene)
034 2,4-dimethylphenol
035 2,4-dinitrotoluene
036 2,6-dinitrotoluene
037 1,2-diphenylhydrazine
038 Ethylbenzene
039 Fluoranthene
040 4-chlorophenyl phenyl ether
041 4-bromophenyl phenyl ether
042 Bis (2-chloroisopropyl) ether
043 Bis (2-chloroethoxy) methane
044 Methylene chloride (dichloromethane)
045 Methyl chloride (dichloromethane)
046 Methyl bromide (bromomethane)
047 Bromoform (tribromomethane)
048 Dichlorobromomethane
049 Trichlorofluoromethane
050 Dichlorodifluoromethane
051 Chlorodibromomethane
052 Hexachlorobutadiene
053 Hexachloromyclopentadiene
054 Isphorone
055 Naphthalene
056 Nitrobenzene
057 2-nitrophenol
058 4-nitrophenol
059 2,4-dinitrophenol
060 4,6-dinitro-o-cresol
061 N-nitrosodimethylamine
062 N-nitrosodimethylamine
063 N-nitrosodi-n-propylamine
064 Pentachlorophenol
065 Phenol
066 Bis(2-ethylhexyl) phthalate
067 Butyl benzyl phthalate
068 Di-n-butyl phthalate
069 Di-n-cctyl phthalate
070 Diethyl Phthalate
071 Dimethyl phthalate
073 Benzo(a)pyrene (3,4-benzopyrene)
074 3,4-Benzofluoranthene (benzo(b)fluoranthene)
075 11,12-benzofluoranthene (benzo(b)fluoranthene)
076 Chrysene
077 Acenaphthylene
078 Anthracene
079 1,12-benzoperylene (benzo(qhi)perylene)
080 Fluorene
081 Phenanthrene
082 1,2,5,6-dibenzanthracene(dibenzo(,h)anthracene)
083 Indeno(1,2,3-cd) pyrene (2,3-o-pheynylene pyrene)
084 Pyrene
085 Tetrachloroethylene
086 Toluene
087 Trichoroethylene
088 Vinyl chloride (chloroethylene)
089 Aldrin
090 Dieldrin
091 Chlordane (technical mixture and metabolites)
092 4,4-DDT
093 4,4-DDE (p,p-DDX)
094 4,4-DDD (p,p-TDE)
095 Alpha-endosulfan
096 Beta-endosulfan
097 Endosulfan sulfate
098 Endrin
099 Endrin aldehyde
100 Heptachlor
101 Heptachlor epoxide (BHC-hexachlorocyclohexane)
102 Alpha-BHC
103 Beta-BHC
104 Gamma-BHC (lindane)
105 Delta-BHC (PCB-polychlorinated biphenyls)
106 PCB–1242 (Arochlor 1242)
107 PCB–1254 (Arochlor 1254)
108 PCB–1221 (Arochlor 1221)
109 PCB–1232 (Arochlor 1232)
110 PCB–1248 (Arochlor 1248)
111 PCB–1260 (Arochlor 1260)
112 PCB–1216 (Arochlor 1016)
113 Toxaphene
116 Asbestos
117 Beryllum
121 Cyanide
123 Mercury
126 Silver
127 Thallium
129 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD)

(c) Subpart C—Aluminum Basis Material Subcategory

001 Acenaphthene
002 Acrolein
003 Acrylonitrile
004 Benzene
005 Benzidine
006 Carbon tetrachloride (tetrachloromethane)
007 Chlorobenzene
008 1,2,4-trichlorobenzene
009 Hexachlorobenzene
010 1,2-dichloroethane
011 1,1,1-trichlorethane
012 Hexachloroethane
013 1,1-dichloroethane
014 1,1,2-trichloroethane
015 1,1,2,2-tetrachloroethane
016 Chloroethane
017 Bis (chloromethyl) ether
018 Bis (2-chloroethyl) ether
019 2-chloroethyl vinyl ether (mixed)
020 2-chloronaphthalene
021 2,4,6-trichlorophenol
022 Parachlorometa cresol
023 Chloroform (trichloromethane)
024 2-chlorophenol
025 1,2-dichlorobenzene
026 1,3-dichlorobenzene
027 1,4-dichlorobenzene
028 3,3-dichlorobenzidine
029 1,1-dichloroethylene
030 1,2-trans-dichloroethylene
031 2,4-dichlorophenol
032 1,2-dichloropropane
033 1,2-dichloropropylene (1,3-dichloropropene)
034 2,4-dimethylphenol
035 2,4-dinitrotoluene
036 2,6-dinitrotoluene
037 1,2-diphenylhydrazine
038 Ethylbenzene
039 Fluoranthene
040 4-chlorophenyl phenyl ether
041 4-bromophenyl phenyl ether
042 Bis (2-chloroisopropyl) ether
043 Bis (2-chloroethoxy) methane
044 Methylene chloride (dichloromethane)
045 Methyl chloride (dichloromethane)
046 Methyl bromide (bromomethane)
047 Bromoform (tribromomethane)
048 Dichlorobromomethane
049 Trichlorofluoromethane
050 Dichlorodifluoromethane
051 Chlorodibromomethane
052 Hexachlorobutadiene
053 Hexachloromyclopentadiene
054 Isophorone
055 Naphthalene
056 Nitrobenzene
057 2-nitrophenol

058 4-nitrophenol
059 2,4-dinitrophenol
060 4,6-dinitro-o-cresol
061 N-nitrosodimethylamine
062 N-nitrosodiphenylamine
063 N-nitrosodi-n-propylamine
064 Pentachlorophenol
065 Phenol
067 Butyl benzyl phthalate
068 Di-N-Butyl Phthalate
070 Diethyl Phthalate
071 Dimethyl phthalate
072 1,2-benzanthracene (benzo (a) anthracene)
073 Benzo (a) pyrene (3,4-benzopyrene)
074 3,4-Benzofluoranthene (benzo (b) fluoranthene)
075 11,12-benzofluoranthene (benzo (b) fluoranthene)
076 Chrysene
077 Acenaphthylene
078 Anthracene
079 1,12-benzoperylene (benzo (ghi) perylene)
080 Fluorene
081 Phenanthrene
082 1,2,5,6-dibenzanthracene (dibenzo (h) anthracene)
083 Indeno (1,2,3-cd) pyrene (2,3-o-pheynylene pyrene)
084 Pyrene
085 Tetrachloroethylene
086 Toluene
087 Trichloroethylene
088 Vinyl chloride (chloroethylene)
089 Aldrin
090 Dieldrin
091 Chlordane (technical mixture and metabolites)
092 4,4-DDT
093 4,4-DDE (p,p-DDX)
094 4,4-DDD (p,p-TDE)
095 lpha-endosulfan
096 Beta-endosulfan
097 Endosulfan sulfate
098 Endrin
099 Endrin aldehyde
100 Heptachlor
101 Heptachlor epoxide (BHC-hexachlorocyclo-hexane)
102 Alpha-BHC
103 Beta-BHC
104 Gamma-BHC (lindane)
105 Delta-BHC (PCB-poly-chlorinated biphenyls)
106 PCB-1242 (Arochlor 1242)
107 PCB-1254 (Arochlor 1254)
108 PCB-1221 (Arochlor 1221)
109 PCB-1232 (Arochlor 1232)
110 PCB-1248 (Arochlor 1248)
111 PB-1260 (Arochlor 1260)
112 PCB-1016 (Arochlor 1016)
113 Toxaphene
116 Asbestos
123 Mercury
126 Silver
127 Thallium
129 2,3,7,ϵ-tetrachloro-dibenzo-p-dioxin (TCDD)

(d) Subpart D—Copper Basis Material Subcategory

001 Acenaphthene
002 Acrolein
003 Acrylonitrile
004 Benzene
005 Benzidine
006 Carbon Tetrachloride (tetrachloromethane)
007 Chlorobenzene
008 1,2,4-trichlorobenzene
009 Hexachlorobenzene
010 1,2-dichloroethane
011 1,1,1-trichlorethane
012 Hexachloroethane
013 1,1-dichloroethane
015 1,1,2,2-tetrachloroethane
016 Chloroethane
017 Bis (chloromethyl) ether
018 Bis (2-chloroethyl) ether
019 2-chloroethyl vinyl ether (mixed)
020 2-chloronaphthalene
021 2,4,6-trichlorophenol
022 Parachlorometa cresol
023 Chloroform (trichloromethane)
024 2-chlorophenol
025 1,2-dichlorobenzene
026 1,3-dichlorobenzene
027 1,4-dichlorobenzene
028 3,3-dichlorobenzidine
029 1,1-dichloroethylene
030 1,2-trans-dichloroethylene
031 2,4-dichlorophenol
032 1,2-dichloropropane
033 1,2-dichloropropylene (1,3-dichloropropene)
034 2,4-dimethylphenol
035 2,4-dinitrotoluene
036 2,6-dinitrotoluene
037 1,2-diphenylhydrazine
038 Ethylbenzene
039 Fluoranthene
040 4-chlorophenyl phenyl ether
041 4-bromophenyl phenyl ether
042 Bis (2-chloroisopropyl) ether
043 Bis (2-chloroethoxy) methane
044 Methylene Chloride (dichloromethane)
045 Methyl chloride (dichloromethane)
046 Methyl bromide (bromomethane)
047 Bromoform (tribromo-methane)
048 Dichlorobromomethane
049 Trichlorofluoromethane
050 Dichlorodifluoromethane
051 Chlorodibromomethane
052 Hexachlorobutadiene
053 Hexachloromyclopentadiene
054 Isophorone
055 Naphthalene
056 Nitrobenzene
057 2-nitrophenol
058 4-nitrophenol
059 2,4-dinitrophenol
060 4,6-dinitro-o-cresol
061 N-nitrosodimethylamine
062 N-nitrosodiphenylamine
063 N-nitrosodi-n-propylamine
064 Pentachlorophenol
065 Phenol
066 Bis(2-ethylhexyl)phthalate
067 Butyl benzyl phthalate
068 Di-N-Butyl Phthalate
069 Di-n-cctyl phthalate
070 Diethyl Phthalate
071 Dimethyl phthalate
072 1,2-benzanthracene (benzo(a)anthracene)
073 Benzo(a)pyrene (3,4-benzopyrene)
074 3,4-Benzofluoranthene (benzo(b)fluoranthene)
075 11,12-benzofluoranthene(benzo(b)fluoranthene)
076 Chrysene
077 Acenaphthylene
078 Anthracene
079 1,12-benzoperylene (benzo(ghi)perylene)
080 Fluorene
081 Phenanthrene
082 1,2,5,6-dibenzanthracene (dibenzo(,h)anthracene)
083 Indeno(1,2,3-cd) pyrene(2,3-o-pheynylene pyrene)
084 Pyrene
085 Tetrachloroethylene
088 Vinyl chloride (chloroethylene)
089 Aldrin
090 Dieldrin
091 Chlordane (technical mixture and metabolites)
092 4,4-DDT
093 4,4-DDE (p,p-DDX)
094 4,4-DDD (p,p-TDE)
095 Alpha-endosulfan
096 Beta-endosulfan
097 Endosulfan sulfate
098 Endrin
099 Endrin aldehyde
100 Heptachlor
101 Helptachlor epoxide (BHC-hexachlorocylohexane)
102 Alpha-BHC
103 Beta-BHC
104 Gamma-BHC (lindane)
105 Delta-BHC (PCB-polychlorinated biphenls)
106 PCB-1242 (Arochlor 1242)
107 PCB-1254 (Arochlor 1254)
108 PCB-1221 (Arochlor 1221)
109 PCB-1232 (Arochlor 1232)
110 PCB-1248 (Arochlor 1248)
111 PCB-1260 (Arochlor 1260)
112 PCB-1016 (Arochlor 1016)
113 Toxaphene
116 Asbestos
117 Beryllium
121 Cyanide
123 Mercury
126 Silver
127 Thallium
129 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD)

Appendix D—Toxic Pollutants Detected Below the Analytical Quantification Limit

(a) Subpart A—Steel Basis Material Subcategory

None

(b) Subpart B—Cast Iron Basis Material Subcategory

None

Subpart C—Aluminum Basis Material Subcategory Subcategory

None

(d) Subpart D—Copper Basis Material Subcategory

014 1,1,2-trichloroethane
086 Toluene
087 Trichloroethylene

Appendix E—Toxic Pollutants Detected in Amounts too Small to be Effectively Reduced by Technologies Considered in Preparing this Guideline

(a) Subpart A—Steel Basis Material Subcategory

117 Beryllium

(b) Subpart B—Cast Iron Basis Material Subcategory

None

(c) Subpart C—Aluminum Basis Material Subcategory
117 Beryllium
(d) Subpart D—Copper Basis Material Subcategory
None

Appendix F—Toxic Pollutants Present in Only Trace Amounts, Neither Causing nor Likely to Cause Toxic Effects In Humans

(a) Subpart A—Steel Basis Material Subcategory
None
(b) Subpart B—Cast Iron Basis Material Subcategory
None
(c) Subpart C—Aluminum Basis Material Subcategory
066 Bis(2-ethylhexyl) phthalate
069 Di-n-octyl phthalate
(d) Subpart D—Copper Basis Material Subcategory
None

EPA proposes to add a new Part 466 to read as follows:

PART 466—PORCELAIN ENAMELING POINT SOURCE CATEGORY

General Provisions

Sec.

Subpart A—Steel Basis Material Subcategory

Subpart B—Cast Iron Basis Material Subcategory

Subpart C—Aluminum Basis Material Subcategory

Subpart D—Copper Basis Material Subcategory

Authority: Sections 301, 304 (b), (c), (e), and (g), 306 (b) and (c), 307 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.

General Provisions

§ 466.01 Applicability.

This part applies to any porcelain enameling facility which discharges or may discharge pollutants to waters of the United States or which introduces or may introduce pollutants into a publicly owned treatment works.

§ 466.02 General definitions.

In addition to the definitions set forth in 40 CFR Part 401, the following definitions apply to this part:

(a) "Porcelain enameling" means the entire process of applying a fused viterous enamel coating to a metal basis material. Usually this includes metal preparation and coating operations.

(b) "Basis material" means the metal part or base onto which porcelain enamel is applied.

(c) "Area processed" means the total basis material area exposed to processing solutions.

(d) "Area coated" means the area of basis material covered by each coating of enamel.

(e) "Coating operations" means all of the operations associated with preparation and application of the viterous coating. Usually this includes ballmilling, slip transport, application of slip to the workpieces, cleaning and recovery of faulty parts, and firing (fusing) of the enamel coat.

(f) "Metal preparation" means any and all of the metal processing steps preparatory to applying the enamel slip. Usually this includes cleaning, pickeling and applying a nickel flash or chemical coating.

(g) "BPT" means the best practicable control technology currently available under Section 304(b)(1) of the Act.

(h) "BAT" means the best available technology economically achievable under Section 304(b)(2)(B) of the Act.

(i) "BCT" means the best conventional pollutant control technology, under Section 304(b)(4) of the Act.

(j) "NSPS" means new source performance standards under Section 306 of the Act.

(k) "PSES" means pretreatment standards for existing sources, under Section 306(b) of the Act.

(l) "PSNS" means pretreatment standards for new sources, under Section 306(c) of the Act.

(m) "Grab Sample" is a single sample which is collected at a time and place most representative of total discharge.

(n) "Composite Sample" is a sample composed of no less than 8 grab samples taken over the compositing period.

(o) "Flow Proportional Composite Sample" is composed of grab samples collected continuously or discretely in proportion to the total flow at time of collection or to the total flow since collection of the previous grab sample. The grab volume or frequency of grab collection may be varied in proportion to flow.

(p) The term "Control Authority" is defined as the POTW if it has an approved pretreatment program; in the absence of such a program, the NPDES State if it has an approved pretreatment program or EPA if the State does not have an approved program.

(q) "Continuous operations" means that the industrial user introduces regulated wastewaters to the POTW through the operating hours of the facility, except for infrequent shutdowns for maintenance, process changes or other similar activities.

(r) "Intermittent operations" means the industrial user does not have a continuous operation.

(s) The term "Indirect Discharge" or "Discharge" means the introduction of pollutants into a POTW from any non-domestic source regulated under 307 (b) (c) or (d) of the Act.

§ 466.03 Monitoring and Reporting Requirements. [Reserved]

Subpart A—Steel Basis Material Subcategory

§ 466.10 Applicability; description of the steel basis material subcategory.

This subpart applies to discharges to waters of the United States, and introduction of pollutants into publicly owned treatment works from porcelain enameling on steel basis material.

§ 466.11 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–.32, any existing point source subject to this subpart must achieve the following effluent limitations for metal preparation operations and for coating operations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available:

Subpart A.—*EPT Effluent Limitations*

Pollutant or pollutant property	Maximum for any 1 day		Average of daily values for 30 consecutive sampling days	
	Metal preparation	Coating operation	Metal preparation	Coating operation
Metric Units—mg/m² of Area Processed or Coated				
Antimony	5.48	1.09	2.40	0.48
Arsenic	5.48	1.09	2.40	.48
Cadmium	2.06	.41	1.03	.20
Chromium	62.7	12.5	7.01	1.39
Copper	66.8	13.3	27.08	5.38
Lead	3.43	.68	1.71	.34
Nickel	49.4	9.80	37.36	7.42
Selenium	1.03	.21	.34	.07
Zinc	51.4	10.21	22.28	4.42
Aluminum	21.9	4.36	8.91	1.77
Cobalt	7.54	1.50	3.08	.61
Fluoride	1,635	324.7	666.4	132.7
Iron	74.4	14.77	22.28	4.42
Manganese	12.0	2.38	4.80	.95
Titanium	1.02	.20	.34	.068
Oil and grease	686	136.1	342.8	68.1
TSS	1,200	238.2	857.0	170.1
pH	(1)	(1)	(1)	(1)
English Units—lbs/1 million ft² of Area Processed or Coated				
Antimony	1.12	0.22	0.49	0.098
Arsenic	1.12	.22	.49	.098
Cadmium	.42	.084	.21	.042
Chromium	12.8	2.55	1.44	.29
Copper	13.7	2.72	57.54	1.10
Lead	.70	.14	1.35	.07
Nickel	10.1	2.01	7.65	1.52
Selenium	.21	.042	.07	.14
Zinc	10.5	2.09	4.56	.91
Aluminum	4.49	.89	1.82	.36
Cobalt	1.54	.31	.63	.13
Fluoride	334.6	66.4	136.8	27.2
Iron	15.2	3.02	4.56	.91
Manganese	2.45	.49	.98	.20
Titanium	.21	.42	.07	.014
Oil and grease	140.3	27.9	7.01	13.9
TSS	245.5	48.8	175.3	34.8
pH	(1)	(1)	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

§ 466.12 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–.32, any existing point soource 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 A.—*BAT Effluent Limitations*

Pollutant or pollutant property	Maximum for any 1 day		Average of daily values for 30 consecutive sampling days	
	Metal preparation	Coating operation	Metal preparation	Coating operation
Metric Units—mg/m² of Area Processed or Coated				
Antimony	3.77	0.75	1.47	0.29
Arsenic	3.77	.75	1.47	.29
Cadmium	1.44	.29	.58	.12
Chromium	9.26	1.84	3.43	.68
Copper	44.9	8.92	18.2	3.61
Lead	3.43	.68	1.51	.30
Nickel	21.9	4.36	9.94	1.97
Selenium	.72	.14	.31	.06
Zinc	23.7	4.7	10.3	2.04
Aluminum	14.4	2.86	6.17	1.23
Cobalt	5.03	1.00	2.09	.415
Flouride	1,079.76	214.4	445.73	88.49
Iron	64.1	12.73	21.9	4.36
Manganese	7.92	1.57	3.26	.65
Titanium	.72	.14	.31	.06

Subpart A.—*BAT Effluent Limitations*—Continued

Pollutant or pollutant property	Maximum for any 1 day		Average of daily values for 30 consecutive sampling days	
	Metal preparation	Coating operation	Metal preparation	Coating operation
English Units—lbs/1 million ft² of Area Processed or Coated				
Antimony	0.77	0.153	0.30	0.06
Arsenic	.77	.153	.30	.06
Cadmium	.30	.059	.12	.024
Chromium	1.90	.376	.70	.14
Copper	9.19	1.82	3.72	.74
Lead	.71	.139	.31	.06
Nickel	4.49	.98	2.03	.40
Selenium	.15	.029	.06	.013
Zinc	4.84	.96	2.10	.42
Aluminum	2.95	.59	1.26	.25
Cobalt	1.03	.20	.43	.08
Flouride	221.0	43.88	91.2	18.11
Iron	13.2	2.60	4.49	.89
Manganese	1.62	.32	.67	.13
Titanium	.15	.029	.63	.01

§ 466.13 New source performance standards.

Any new source subject to this subpart must achieve the following performance standards:

(a) There shall be no discharge of wastewater pollutants from coating operations.

(b) The discharge of wastewater pollutants from all porcelain enameling operations other than coating operations shall not exceed the values set forth below:

Subpart A.—*NSPS*

Pollutant or pollutant property	Maximum for any 1 day		Average of daily values for 30 consecutive sampling days	
mg/m² (lb/1 million ft² of Area Processed				
Cadmium	0.06	(0.012)	0.025	(0.005)
Chromium	.39	(.080)	.144	(.029)
Copper	1.89	(.390)	.76	(.16)
Lead	.14	(.029)	.063	(.103)
Nickel	.92	(.190)	.42	(.085)
Zinc	.99	(.20)	.43	(.088)
Aluminum	.60	(.12)	.26	(.053)
Cobalt	.21	(.043)	.087	(.018)
Iron	2.69	(.55)	.92	(.19)
Manganese	.33	(.068)	.14	(.028)
Oil and grease	14.4	(2.95)	14.4	(2.95)
TSS	21.6	(4.42)	14.4	(2.95)
pH	(1)	(1)	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

§ 466.14 Pretreatment standards for existing sources.

Except as provided in 40 CFR § 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 existing sources. The provision of 40 CFR Part 403 Appendix A, B.2.e requiring that pretreatment standards be established as concentration is set aside for this subpart. The mass of wastewater pollutants in porcelain enameling process wastewater introduced into a POTW shall not exceed the following values:

Subpart A.—*PSES*

Pollutant or pollutant property	Maximum for any 1 day		Average of daily values for 30 consecutive sampling days	
	Metal preparation	Coating operation	Metal preparation	Coating operation
Metric Units—mg/m² of Area Processed or Coated				
Antimony	3.77	0.75	1.47	0.29
Arsenic	3.77	.75	1.47	.29

Subpart A.—*PSES*—Continued

Pollutant or pollutant property	Maximum for any 1 day		Average of daily values for 30 consecutive sampling days	
	Metal preparation	Coating operation	Metal preparation	Coating operation
Metric Units—mg/m²of Area Processed or Coated—Continued				
Cadmium	1.44	.29	.58	.12
Chromium	9.26	1.84	3.43	.68
Copper	44.9	8.92	18.2	3.61
Lead	3.43	.68	1.51	.30
Nickel	21.9	4.36	9.94	1.97
Selenium	.72	.14	.31	.06
Zinc	23.7	4.7	10.3	2.04
Aluminum	14.4	2.86	6.17	1.23
Cobalt	5.03	1.00	2.09	.415
Fluoride	1,079.76	214.4	445.73	88.49
Iron	64.1	12.73	21.9	4.36
Manganese	7.92	1.57	3.26	.65
Titanium	.72	.14	.31	.06
English Units—lbs/1 million ft² of Area Processed or Coated				
Antimony	0.77	0.153	0.30	0.06
Arsenic	.77	.153	.30	.06
Cadmium	.30	.059	.12	.024
Chromium	1.90	.376	.70	.14
Copper	9.19	1.82	3.72	.74
Lead	.71	.139	.31	.06
Nickel	4.49	.98	2.03	.40
Selenium	.15	.029	.06	.013
Zinc	4.84	.96	2.10	.42
Cobalt	1.03	.20	.43	.08
Fluoride	221.0	43.88	91.2	18.11
Manganese	1.62	.32	.67	.13
Titanium	.15	.029	.63	.01

§ 466.15 Pretreatment standards for new sources.

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. The provision of 40 CFR Part 403 Appendix A, B.2.e requiring that pretreatment standards be established as concentration is set aside for this subpart:

(a) There shall be no discharge of wastewater pollutants from coating operations.

(b) The mass of wastewater pollutants in all porcelain enameling process wastewater except coating operations introduced into a POTW shall not exceed the following values:

Subpart A.—*PSNS Effluent Limitations*

Pollutant or pollutant property	Maximum for any 1 day		Average of daily values for 30 consecutive sampling days	
mg/m² (lb/1 million ft² of Area Processed				
Cadmium	0.06	(0.012)	0.025	(0.005)
Chromium	.39	(.080)	.144	(.029)
Copper	1.89	(.390)	.76	(.16)
Lead	.14	(.029)	.063	(.103)
Nickel	.92	(.190)	.42	(.085)
Zinc	.99	(.20)	.43	(.088)
Cobalt	.21	(.043)	.087	(.018)
Fluoride	45.4	(9.28)	18.7	(3.83)
Manganese	.33	(.068)	.14	(.028)
Titanium	.03	(.006)	.013	(.003)

§ 466.16 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology.

Except as provided in 40 CFR §§ 125.30–.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 conventional pollutant control technology:

Subpart A.—*ECT Effluent Limitations*

Pollutant or pollutant property	Maximum for any 1 day		Average of daily values for 30 consecutive sampling days	
	Metal preparation	Coating operation	Metal preparation	Coating operation
Metric Units—Mg/m² of Area Processed or Coated				
Oil and grease	343	0.50	343	0.50
TSS	514	.75	343	.50
pH				
Within the range of 7.5 to 10.0 at all times.				
English Units—lbs/1 million ft² of Area Processed or Coated				
Oil and grease	70.1	0.102	70.1	0.102
TSS	105.2	.153	70.1	.102
pH	(1)	(1)	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

Subpart B—Cast Iron Basis Material Subcategory

§ 466.20 Applicability; description of the cast iron basis material subcategory.

This subpart applies to discharges to waters of the United States and introductions of pollutants into publicly owned treatement works from porcelain enameling of cast iron basis material.

§ 466.21 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–.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.

(a) There shall be no discharge of process wastewater pollutants from metal preparation operations.

(b) The discharge of process wastewater pollutants from all porcelain enameling coating operations shall not exceed the values set forth below:

Subpart B.—*BPT Effluent Limitations*

Pollutant or pollutant property	Maximum for any 1 day		Average of daily values for 30 consecutive sampling days	
	mg/m²(lb/1 million ft²) of area processed			
Antimony	0.11	(0.023)	0.048	(0.010)
Arsenic	.11	(.023)	.048	(.010)
Cadmium	.041	(.008)	.021	(.004)
Chromium	1.27	(.26)	.14	(.029)
Copper	1.35	(.28)	.55	(.11)
Lead	0.069	(.014)	.035	(.007)
Nickel	1.00	(.20)	.75	(.15)
Selenium	0.21	(.004)	.007	(.002)
Zinc	1.04	(.21)	.45	(.092)
Aluminum	0.44	(.090)	.18	(.037)
Cobalt	.15	(.031)	.062	(.013)
Fluoride	33.0	(6.76)	13.5	(2.76)
Iron	1.50	(0.31)	0.45	(0.092)
Manganese	0.24	(.050)	.097	(.020)
Titanium	.021	(.004)	.007	(.002)
Oil and grease	13.8	(2.83)	6.92	(1.42)
TSS	24.2	(4.96)	17.3	(.14)
pH	(1)	(1)	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

§ 466.22 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–.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.

(a) There shall be no discharge of process wastewater pollutants from metal preparation operations.

(b) The discharge of process wastewater pollutants from all porcelain enameling coating operations shall not exceed the values set forth below:

Subpart B.—*BAT Effluent Limitations*

Pollutant or pollutant property	Maximum for 1 one day		Average of daily values for 30 consecutive sampling days	
	mg/m²(lb/1 million ft²) of area processed			
Antimony	0.076	(0.016)	0.03	(0.006)
Arsenic	.076	(.016)	.03	(.006)
Cadmium	.029	(.006)	.012	(.002)
Chromium	.019	(.038)	.069	(.014)
Copper	.91	(.19)	.37	(.075)
Lead	.07	(.014)	.03	(.006)
Nickel	.44	(.09)	.20	(.04)
Selenium	.015	(.003)	.006	(.001)
Zinc	.48	(.098)	.21	(.04)
Aluminum	.29	(.059)	.12	(.025)
Cobalt	.102	(.02)	.042	(.009)
Fluoride	21.8	(4.46)	8.996	(1.84)
Iron	1.29	(0.26)	0.44	(0.09)
Manganese	0.16	(.03)	.07	(.01)
Titanium	.015	(.003)	.006	(.001)

§ 466.23 New source performance standards.

Any new source subject to this subpart must achieve the following performance standards:

There shall be no discharge of wastewater pollutants.

§ 466.24 Pretreatment standards for existing sources.

Except as provided in 40 CFR § 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 existing sources. The provision of 40 CFR Part 403 Appendix A, E.2.e requiring that pretreatment standards be established as concentration is set aside for this subpart. The mass of wastewater pollutants in porcelain enameling process wastewater introduced into a POTW shall not exceed the following values:

(a) There shall be no discharge of process wastewater pollutants from metal preparation operations.

(b) The discharge of process wastewater pollutants from all porcelain enameling coating operations shall not exceed the values set forth below:

Subpart B.—*PSES*

Pollutant or pollutant property	Maximum for any 1 day		Average of daily values for 30 consecutive sampling days	
	mq/m² (lb/1 ft²) of Area Processed			
Antimony	0.076	(0.016)	0.03	(0.006)
Arsenic	.076	(.016)	.03	(.006)
Cadmium	.029	(.006)	.012	(.002)
Chromium	.019	(.038)	.069	(.014)
Copper	.91	(.19)	.37	(.075)
Lead	.07	(.014)	.03	(.006)
Nickel	.44	(.09)	.20	(.04)
Selenium	.015	(.003)	.006	(.001)
Zinc	.48	(.098)	.21	(.04)
Cobalt	.102	(.02)	.042	(.009)
Fluoride	21.8	(4.46)	8.996	(1.84)
Manganese	.16	(.03)	.07	(.01)
Titanium	.015	(.003)	.006	(.001)

§ 466.25 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:

There shall be no process wastewater pollutants introduced into a POTW.

§ 466.26 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology.

Except as provided in 40 CFR §§ 125.30–.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 conventional pollutant control technology:

Subpart B.—*BCT Effluent Limitations*

Pollutant or pollutant property	Maximum for any 1 day		Average of daily values for 30 consecutive sampling days	
	mg/m² (lb/ million ft²of Area Processed			
TSS	0.50	(0.102)	0.50	(0.102)
Oil and grease	.75	(.153)	.50	(.102)

[1] Within the range of 7.5 to 10.0 at all times.

Subpart C—Aluminum Basis Material Subcategory

§ 466.30 Applicability; description of the aluminum basis material subcategory.

This subpart applies to discharges to waters of the United States and introductions of pollutants into publicly owned treatment works from porcelain enameling of aluminum basis material.

§ 466.31 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–.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 C.—*EPT Effluent Limitations*

Pollutant or pollutant property	Maximum for any 1 day		Average of daily values for 30 consecutive sampling days	
	Metal preparation	Coating operation	Metal preparation	Coating operation
Metric Units—mg/m² of Area Processed or Coated				
Antimony	5.61	1.77	2.46	0.77
Arsenic	5.61	1.77	2.46	.77
Cadmium	2.11	.66	1.05	.33
Chromium	64.2	20.1	7.18	2.27
Copper	68.4	21.6	27.7	8.75
Cyanide	7.72	2.44	3.16	1.00
Lead	3.51	1.11	1.75	.55
Nickel	50.5	15.9	38.2	12.1
Selenium	1.05	.33	.35	.11
Zinc	52.6	16.6	22.8	7.2
Aluminum	22.5	7.08	9.12	2.88
Cobalt	7.72	2.44	3.16	1.00
Fluoride	1,674	528	684	215.9
Iron	76.1	24.0	22.8	7.20
Manganese	12.3	3.87	4.91	1.55
Titanium	1.05	.33	.35	.11
Oil & Grease	701.8	221.4	351	110.7
TSS	1,228	388	877	276.8
pH	[1]	[1]	[1]	[1]
English Units—lbs/1 million ft² of Area Processed or Coated				
Antimony	1.15	0.36	0.50	0.158
Arsenic	1.15	.36	.50	.158
Cadmium	.43	.14	.22	.068
Chromium	13.1	4.15	1.47	.46
Copper	14.0	4.42	5.67	1.79
Cyanide	1.58	.50	.65	.20
Lead	.72	.23	.36	.11
Nickel	10.3	3.26	7.83	2.47
Selenium	.22	.68	.72	.23
Zinc	10.8	3.40	4.67	1.47
Aluminum	4.60	1.45	1.87	.59
Cobalt	1.58	.50	.65	.20
Fluoride	342.5	108.0	140.0	44.2
Iron	15.6	4.92	4.67	1.47
Manganese	2.51	.79	41.6	.32
Titanium	.22	.068	.072	.023
Oil & Grease	143.6	45.3	71.8	22.7
TSS	251.3	79.3	179.5	56.6
pH	[1]	[1]	[1]	[1]

[1] Within the range of 7.5 to 10.0 at all times.

§ 466.32 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–.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 C.—*BAT Effluent Limitations*

Pollutant or pollutant property	Maximum for any 1 day		Average of daily values for 30 consecutive sampling days	
	Metal preparation	Coating operation	Metal preparation	Coating operation
Metric Units—mg/m² of Area Processed or Coated				
Antimony	3.86	1.22	1.51	0.48
Arsenic	3.86	1.22	1.51	.48
Cadmium	1.47	.46	.60	.19
Chromium	9.47	2.99	3.51	1.11
Copper	45.97	14.50	18.6	5.87
Cyanide	5.26	1.66	2.11	.66
Lead	3.51	1.11	1.54	.49
Nickel	22.46	7.1	10.18	3.21
Selenium	.74	.23	.32	.10
Zinc	24.2	7.62	10.53	3.32
Aluminum	14.7	4.65	6.32	1.99
Cobalt	5.2	1.63	2.14	.68
Fluoride	1,105.3	348.7	456.17	143.91
Iron	65.6	20.7	22.46	7.08
Mananese	8.10	2.56	3.33	1.05
Titanium	.74	.23	.32	.10
English Units—lbs/1 million ft² of Area Processed or Coated				
Antimony	0.79	0.25	0.31	0.097
Arsenic	.79	.25	.31	.097
Cadmium	.30	.095	.12	.039
Chromium	1.94	.61	.72	.23
Copper	9.41	2.97	3.81	1.20
Cyanide	1.08	.34	.43	.14
Lead	.72	.23	.32	.10
Nickel	4.60	1.45	2.08	.66
Selenium	.15	.048	.065	.02
Zinc	4.95	1.56	2.15	.68
Aluminum	3.02	.95	1.29	.41
Cobalt	1.06	.33	.44	.14
Fluoride	226.2	71.36	93.35	29.45
Iron	13.42	4.24	4.60	1.45
Manganese	1.66	.52	.68	.22
Titanium	.15	.48	0.65	.20

§ 466.33 New source performance standards.

Any new source subject to this subpart must achieve the following performance standards.

(a) There shall be no discharge of wastewater pollutants from coating operations.

(b) The discharge of wastewater pollutants from all porcelain enameling operations other than coating operations shall not exceed the values set forth below:

Subpart C.—*NSPS*

Pollutant or pollutant property	Maximum for any 1 day		Average of daily values for 30 consecutive sampling days	
mg/m² (lb/1 million ft² of Area Processed				
Chromium	0.41	(0.16)	0.15	(0.06)
Cyanide	.23	(.09)	.09	(.04)
Lead	.15	(.06)	.07	(.026)
Zinc	1.06	(.38)	.46	(.18)
Aluminum	.64	(.25)	.28	(.11)
Oil & Grease	15.3	(6.0)	15.3	(6.0)
TSS	22.95	(9.0)	15.3	(6.0)
pH	(1)	(1)	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

§ 466.34 Pretreatment standards for existing sources.

Except as provided in 40 CFR 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 existing sources. The provision of 40 CFR Part 403 Appendix A, B.2.e requiring that pretreatment standards be established as concentration is set aside for this subpart. The mass of wastewater pollutants in porcelain enameling process wastewater introduced into a POTW shall not exceed the following values:

Subpart C.—*PSES*

Pollutant or pollutant property	Maximum for any one day		Average of daily values for 30 consecutive sampling days	
	Metal preparation	Coating operation	Metal preparation	Coating operation
Metric Units—mg/m² of Area Processed or Coated				
Antimony	3.86	1.22	1.51	0.48
Arsenic	3.86	1.22	1.51	.48
Cadmium	1.47	.46	.60	.19
Chromium	9.47	2.99	3.51	1.11
Copper	45.97	14.50	18.6	5.87
Cyanide	5.26	1.66	2.11	.66
Lead	3.51	1.11	1.54	.49
Nickel	22.46	7.1	10.18	3.21
Selenium	.74	.23	.32	.10
Zinc	24.2	7.62	10.53	3.32
Cobalt	5.2	1.63	2.14	.68
Fluoride	1,105.3	348.7	456.17	143.91
Manganese	8.10	2.56	3.33	1.05
Titanium	.74	.23	.32	.10
English Units—lbs/1 million ft² of Area Processed or Coated				
Antimony	0.79	0.25	0.31	0.097
Arsenic	.79	.25	.31	.097
Cadmium	.030	.095	.12	.039
Chromium	1.94	.61	.72	.23
Copper	9.41	2.97	3.81	1.20
Cyanide	1.08	.34	.43	.14
Lead	.72	.23	.32	.10
Nickel	4.60	1.45	2.08	.66
Selenium	.15	.048	.065	.02
Zinc	4.95	1.56	2.15	.68
Cobalt	1.06	.33	.44	.14
Fluoride	226.2	71.36	93.35	29.45
Manganese	1.66	.52	.68	.22
Titanium	.15	.48	.065	.020

§ 466.35 Pretreatment standards for new sources.

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. The provision of 40 CFR Part 403 Appendix A, B.2.e requiring that pretreatment standards be established as concentration is set aside for this subpart:

(a) There shall be no discharge of wastewater pollutants from coating operations.

(b) The mass of wastewater pollutants in porcelain enameling process wastewater introduced into a POTW shall not exceed the following values:

Subpart C.—*PSMS*

Pollutant or pollutant property	Maximum for any 1 day		Average of daily values for 30 consecutive sampling days	
mg/m² (1b/1 million ft² of Area Processed				
Chromium	0.41	(0.16)	0.15	(0.06)
Cyanide	.23	(.09)	.09	(.04)
Lead	.15	(.06)	.07	(.026)
Zinc	1.06	(.38)	.46	(.18)

§ 466.36 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology.

Except as provided in 40 CFR 125.30–.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 conventional pollutant control technology:

Subpart C.—*BCT Effluent Limitations*

Pollutant or pollutant property	Maximum for any 1 day		Average of daily values for 30 consecutive sampling days	
	Metal preparation	Coating operation	Metal preparation	Coating operation
Metric Units—mg/m² of Area Processed or Coated				
Oil and grease	71.8	0.102	71.8	0.102
TSS	107.7	.153	71.8	.102
pH	(1)	(1)	(1)	(1)
English Units—lbs/1 million ft² of Area Processed or Coated				
Oil and grease	351	0.50	351	0.50
TSS	526	.75	351	.50
pH	(1)	(1)	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

Subpart D—Copper Basis Material Subcategory

§ 466.40 Applicability: description of the copper basis material subcategory.

This subpart applies to discharges to waters of the United States and introductions of pollutants into publicly owned treatment works from porcelain enameling of copper basis material.

§ 466.41 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–.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.—*EPT Effluent Limitations*

Pollutant or pollutant property	Maximum for any one day		Average of daily values for 30 consecutive sampling days	
	Metal preparation	Coating operation	Metal preparation	Coating operation
Metric Units—mg/m² of Area Processed or Coated				
Antimony	10.8	.76	4.71	.33
Arsenic	10.8	.76	4.71	.33
Cadmium	4.04	.28	2.02	.14
Chromium	123.1	8.67	13.8	.97
Copper	131.2	9.24	13.8	3.74
Lead	6.73	.47	3.36	.24
Nickel	96.9	6.83	73.3	5.17
Selenium	2.02	.14	.67	.05
Zinc	100.9	7.11	43.7	3.08
Aluminum	43.1	2.03	17.5	1.23
Cobalt	14.8	1.04	6.06	.43
Fluoride	3,210	226	13.2	92.4
Iron	146	10.3	43.7	3.08
Manganese	23.6	1.66	9.42	.66
Titanium	2.02	.14	.67	.047
Oil & Grease	1,345	94.8	673	47.4
TSS	2.355	165.9	1,692	118.5
pH				
English Units—lbs/1 million ft² of Area Processed or Coated				
Antimony	2.20	.16	.96	.068
Arsenic	2.20	.16	.96	068
Cadmium	.83	.058	.41	.029
Chromium	25.2	1.78	2.82	.20
Copper	26.9	1.89	10.9	.77

[1] Within the range of 7.5 to 10.0 at all times.

Subpart D.—*EPT Effluent Limitations*—Continued

Pollutant or pollutant property	Maximum for any one day		Average of daily values for 30 consecutive sampling days	
	Metal[1] preparation	Coating operation	Metal preparation	Coating operation
English Units—lbs/1 million ft² of Area Processed or Coated—Continued				
Lead	1.38	.097	69	.049
Nickel	19.8	1.40	15	1.06
Selenium	.41	.03	.14	.010
Zinc	20.7	1.46	8.95	.63
Aluminum	8.81	.62	3.58	.25
Cobalt	3 03	.021	1.24	.087
Fluoride	656.9	46.3	269	18.9
Iron	30	2.10	8.95	0.63
Manganese	4.82	.34	1.93	.14
Titanium	.41	.029	.14	.010
Oil & Grease	275.4	19.4	138	9.7
TSS	482	34.	344	24.3
pH				

[1] Within the range of 7.5 to 10.0 at all times.

§ 466.42 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–.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.—*EAT Effluent Limitations*

Pollutant or pollutant property	Maximum for any one day		Average of daily values for 30 consecutive sampling days	
	Metal preparation	Coating operation	Metal preparation	Coating operation
Metric Units—mg/m² of Area Processed or Coated				
Antimony	7.4	.52	2.89	.20
Arsenic	7.4	.52	2.89	.20
Cadmium	2.83	.20	1.14	.08
Chromium	18.17	1.28	6.73	.08
Copper	88.1	6.21	35.7	2.51
Lead	6.73	.47	2.96	.21
Nickel	43.07	3.03	19.5	1.37
Selenium	1.41	.10	.61	.04
Zinc	46.4	3.27	20.2	1.42
Aluminum	28.46	1.99	12.1	.85
Cobalt	9.89	.697	4.1	.3
Fluoride	2,119.6	149.3	874.8	61.62
Iron	125.8	8.86	43.1	3.03
Manganese	15.5	1.09	6.39	.45
Titanium	1.4	.10	.61	.04
English Units—lbs/1 million ft² of Area Processed or Coated				
Antimony	1.51	.11	.59	.04
Arsenic	1.51	.11	.59	.04
Cadmium	.58	.04	.23	.016
Chromium	3.72	.26	1.38	.10
Copper	18	1.27	7.30	.51
Lead	1.38	.10	.61	.04
Nickel	8.81	.62	3.99	.28
Selenium	.29	.02	.12	.009
Zinc	9.50	.67	4.13	.29
Aluminum	5.78	.41	2.48	.17
Cobalt	2.02	.14	.84	.06
Fluoride	433.8	30.56	179.02	12.6
Iron	25.8	1.81	8.81	.62
Manganese	3.18	.22	1.31	.09
Titanium	.29	.02	.12	.009

§ 466.43 New source performance standards.

Any new source subject to this subpart must achieve the following performance standards.

(a) There shall be no discharge of wastewater pollutants from coating operations.

(b) The discharge of wastewater pollutants from all porcelain enameling operations other than coating operations shall not exceed the values set forth below:

Subpart D.—*NSPS*

Pollutant of pollutant property	Maximum for any one day		Average of daily values for 30 consecutive sampling days	
	mg/m² (lb/1 million ft²) of Area Processed			
Copper	3.83	(0.79)	1.55	(0.32)
Zinc	2.02	(.41	.88	(.18)
Iron	5.49	(1.12)	1.88	(.38)
Oil and grease	29.3	(6.0)	29.3	(6.0)
TSS	44.0	(9.0)	29.3	(6.0)
pH	[1]			

[1] Within the range of 7.5 to 10.0 at all times.

§ 466.44 Pretreatment standards for existing sources.

Except as provided in 40 CFR § 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 existing sources. The provision of 40 CFR Part 403 Appendix A, B.2.e requiring that pretreatment standards be established as concentration is set aside for this subpart. The mass of wastewater pollutants in porcelain enameling process wastewater introduced into a POTW shall not exceed the following values:

Subpart D.—*PSES*

Pollutant or pollutant property	Maximum for any one day		Average of daily values for 30 consecutive sampling days	
	Metal preparation	Coating operation	Metal preparation	Coating operation
	Metric Units—mg/m² of Area Processed or Coated			
Antomony	7.4	0.52	2.89	0.20
Arsenic	7.4	.52	2.89	.20
Cadmium	2.83	.20	1.14	.08
Chromium	18.17	1.28	6.73	.08
Copper	88.1	6.21	35.7	2.51
Lead	6.73	.47	2.96	.21
Nickel	43.07	3.03	19.5	1.37
Selenium	1.41	.10	.61	.04
Zinc	46.4	3.27	20.2	1.42
Cobalt	9.89	.697	4.1	.3
Fluoride	2,119.6	149.3	874.8	61.62
Manganese	15.5	1.09	6.39	.45
Titanium	1.4	.10	.61	.04
	English Units—lbs/1 million ft²of Area Processed or Coated			
Antomony	1.51	0.11	0.59	0.04
Arsenic	1.51	.11	.59	.04
Cadmium	.58	.04	.23	.016
Chromium	13.72	.26	1.38	.10
Copper	18.0	1.27	7.30	.51
Lead	1.38	.10	.61	.04
Nickel	8.81	.62	3.99	.28
Selenium	.29	.02	.12	.009
Zinc	9.50	.67	4.13	.29
Cobalt	2.02	.14	.84	.06
Fluoride	433.8	30.56	179.02	12.6
Manganese	3.18	.22	1.31	.09
Titanium	.29	.02	.12	.009

§ 466.45 Pretreatment standards for new sources.

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. The provision of 40 CFR Part 403 Appendix A, B.2.e requiring that pretreatment standards be established as concentration is set aside for this subpart:

(a) There shall be no discharge of wastewater pollutants from coating operations.

(b) The mass of wastewater pollutants in porcelain enameling process wastewater introduced into a POTW shall not exceed the following values:

Subpart D.—*PSNS*

Pollutant or pollutant property	Maximum for any 1 day		Average of daily values for 30 consecutive sampling days	
mg/m² (lb/1 million ft²) of Area Processed				
Copper	75.0	(15.3)	30.3	(0.70)
Zinc	39.5	(8.08)	17.2	(3.51)

§ 466.46 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology.

Except as provided in 40 CFR 125.30–.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 conventional pollutant control technology:

Subpart A.—*BCT Effluent Limitations*

Pollutant or pollutant property	Maximum for any 1 day		Average of daily values for 30 consecutive sampling days	
	Metal preparation	Coating operation	Metal preparation	Coating operation
Metric Units—mg/m² of Area Processed or Coated				
Oil and grease	673	0.50	673	0.50
TSS	1,009	.75	673	.50
pH	(1)	(1)	(1)	(1)
English Units—lbs/1 million ft² of Area Processed or Coated				
Oil and grease	138	0.102	138	0.102
TSS	207	.153	138	.102
pH	(1)	(1)	(1)	(1)

[1] Within the range of 7.5 to 10.0 at all times.

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