ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 468

[OW-FRL-2401-3]

Copper Forming Point Source Category; Effluent Limitations Guidelines, Pretreatment Standards, and New Source Performance Standards

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: This regulation establishes effluent limitations guidelines and standards limiting the discharge of pollutants into navigable waters and into publicly owned treatment works (POTW) by existing and new sources that conduct copper forming operations. The Clean Water Act and a consent decree require EPA to issue this regulation.

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

DATES: In accordance with 40 CFR 100.01 (45 FR 26048), this regulation shall be considered issued for purposes of judicial review at 1:00 p.m. Eastern time on August 26, 1983. This regulation shall become effective September 26, 1983.

The compliance date for the BAT regulations is as soon as possible, but in any event, no later than July 1, 1984. The compliance date for new source performance standards (NSPS) and pretreatment standards for new sources (PSNS) is the date the new source begins operations. The compliance date for pretreatment standards for existing sources (PSES) is three years after date of publication in the **Federal Register.**

Under Section 509(b)(1) of the Clean Water Act, judicial review of this regulation can be made only by filing a petition for review in the United States Court of Appeals within 90 days after the regulation is considered issued for purposes of judicial review. Under Section 509(b)(2) of the Clean Water Act, the requirements in this regulation may not be challenged later in civil or criminal proceedings brought by EPA to enforce these requirements.

The Record will be available for public review not later than 65 days after publication in the **Federal Register** in EPA's Public Information Reference Unit, Room 2404 (Rear) (EPA Library), 401 M Street, SW., Washington, D.C. The EPA public information regulation (40 CFR Part 2) provides that a reasonable fee may be charged for copying.

ADDRESSES: The basis for this regulation is detailed in four major documents. See Supplementary Information (under "XIV. Availability of Technical Information") for a description of each document. Copies of the technical and economic documents may be obtained from the National Technical Information Service, Springfield, Virginia 22161 (703/487-4600). For additional technical information, contact Mr. David Pepson, Effluent Guidelines Division, U.S. Environmental Protection Agency, 401 M Street, SW., Washington, D.C. 20460 (Phone (202) 382-7126). For additional economic information contact Ms. Ann Watkins, Economic Analysis Staff (WH-586), U.S. Environmental Protection Agency, 401 M Street, SW., Washington, D.C. 20460 (Phone (202) 382-5387).

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

SUPPLEMENTARY INFORMATION:

Organization of This Notice

I. Legal Authority

This regulation is being promulgated under the authority of sections 301, 304, 306, 307, 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, Pub. L. 95-217), also called "the Act". It is also being promulgated in response to the Settlement Agreement in *Natural Resources Defense Council, Inc.* v. *Train*, 8 ERC 2120 (D.D.C. 1976), *modified*, 12 ERC 1833 (D.D.C. 1979), modified by Order dated October 26, 1982.

II. Scope of This Rulemaking

This final regulation, which was proposed on November 12, 1982 (47 FR 51278) and corrected on January 14, 1983 (48 FR 1769), establishes effluent limitations guidelines and standards for existing and new copper forming facilities. Copper forming consists of the five basic processes used to form copper or copper alloys: hot rolling, cold rolling, extrusion, drawing, and forging. Casting of copper and copper alloys, even when conducted in conjunction with copper forming, is not covered by this regulation; it is regulated under the metal molding and casting regulation. The manufacture of copper powders and the forming of parts from copper or copper alloy powders is to be regulated under the nonferrous metals forming regulation.

EPA is promulgating BPT, BAT, new source performance standards (NSPS), and pretreatment standards for existing and new sources (PSES and PSNS, respectively) for the copper forming category.

III. Summary of Legal Background

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

The Act included a timetable for issuing these standards. However, EPA was unable to meet many of the deadlines and, as a result, in 1976, it was sued by several environmental groups. In settling this lawsuit, EPA and the plaintiffs executed a "Settlement Agreement" which was approved by the court. This agreement required EPA to develop a program and adhere to a schedule for controlling 65 "priority" pollutants and classes of pollutants. In carrying out this program, EPA must promulgate BAT effluent limitations guidelines, pretreatment standards, and new source performance standards for 21 major industries. See *Natural Resources Defense Council, Inc.* v. *Train,* 8 ERC 2120 (D.D.C. 1976), *modified,* 12 ERC 1833 (D.D.C. 1979), modified by Order dated October 26, 1982.

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

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

1. Best Practicable Control Technology (BPT)

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

In establishing BPT limitations, we consider the total cost in relation to the age of equipment and facilities involved, the processes employed, process changes required, engineering aspects of the control technologies, and nonwater quality environmental impacts (including energy requirements). We balance the total cost of applying the technology against the effluent reduction.

2. Best Available Technology (BAT)

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

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

3. Best Conventional Pollutant Control Technology (BCT)

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

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

EPA published its methodology for carrying out the BCT analysis on August 29, 1979 (44 FR 50732). In the case mentioned above, the Court of Appeals ordered EPA to correct data errors underlying EPA's calculation of the first test, and to apply the second cost test. (EPA argued that a second cost test was not required.)

A revised methodology for the general development of BCT limitations was proposed on October 29, 1982 (47 FR 49176). BCT limits for this industry are accordingly deferred until promulgation of the final methodology for BCT development.

4. New Source Performance Standards (NSPS)

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

5. Pretreatment Standards for Existing Sources (PSES)

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

6. Pretreatment Standards for New Sources (PSNS)

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

IV. Methodology and Data Gathering Efforts

The methodology and data gathering efforts used in developing the proposed regulations were summarized in the "Preamble to the Proposed Copper Forming Point Source Category Effluent Limitations Guidelines, Pretreatment Standards, and New Source Performance Standards" (47 FR 51278, November 12, 1982), and described in detail in the *Development Document for Effluent Limitations Guidelines and Standards for the Copper Forming Point Source Category.* Since proposal, the

Agency has gathered some additional data and performed additional statistical and engineering analyses of new and existing data. These activities are discussed briefly below and in substantial detail in the appropriate sections of the development document. These additional data are in the public record supporting this rule.

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

EPA also collected discharge monitoring reports (DMR) for 19 discharges from 15 copper forming plants from state and regional EPA offices. Discharge monitoring reports provide monthly average effluent concentrations of copper and some other metals. These data were not used in the actual development of the final limitations but were used as a check on the validity of the treatment effectiveness values estimated by the Agency. In general, the agreement between EPA estimated values and the DMR concentrations was good.

EPA conducted an engineering site visit to a forging plant in order to gather information regarding water use for both baths and rinses of forged parts. In addition, two plants submitted production normalized flow data for pickling and alkaline cleaning rinsing of forged parts. The Agency relied upon these data to reevaluate regulatory flows for these processes when performed on forged parts.

Additional data were obtained from plants as to the disposal of wastewater from drawing operations. We contacted 28 drawing plants to confirm, and if appropriate, update the information provided in the Agency's 1978 data collection requests on their disposal methods for drawing spent lubricant. In addition, we contacted a number of states to determine whether they require disposal of drawing spent lubricants as hazardous wastes.

Data relating to waste streams for which flow allowances were not provided by the proposed regulation were obtained from industry. These data consist of production normalized flow data for tumbling or burnishing, surface coating, hydrostatic testing, sawing, surface milling, and maintenance.

Additional data were provided by two plants to support their individual comments on the nature of wastewater sludges. These data consist of the results of EP toxicity testing performed in accordance with federal hazardous waste regulations (40 CFR 261.24).

Subsequent to proposal, the Agency revised its analysis of the cost of model treatment systems used as the basis for limitations and standards. As a consequence, estimated costs of compliance were increased. Section VIII of the technical development document and related documents in the record explain the basic for the revised costs estimates.

EPA received economic surveys, since proposal from two plants that had not returned them prior to proposal and identified one other copper former that was not in EPA's economic data base prior to proposal. Also, a plant which was not a copper former has been excluded from the economic data base. Thus, EPA's estimated number of copper formers remains the same: 176.

V. Control Treatment Options and Technology Basis for Final Regulations

A. Summary of Category

Copper forming is a term used to describe five basic operations used to form copper and copper alloys: hot rolling, cold rolling, extrusion, drawing, and forging. In addition to these forming operations, there are nine surface cleaning and heat treatment processes which impart desired surface and physical properties to the metal. These ancillary operations are annealing with oil, annealing with water, pickling bath and rinse, pickling fume scrubber, alkaline bath and rinse, extrusion press solution heat treatment, and solution heat treatment. In addition, copper forming facilities may perform tumbling or burnishing, surface coating, hydrotesting, surface milling, and sawing.

The Agency considered a number of factors to determine whether subcategorization is needed in the copper forming category. After consideration of these factors, the Agency has determined that the copper forming category is most appropriately regulated as a single subcategory.

Raw materials used by copper forming plants originate in the casting processes of copper refineries and are commonly in the form of wire bars, cakes or slabs, and billets. In some instances they take the form of rod, wire, or strip obtained from another copper former. Copper alloys are frequently employed by the copper forming industry. For the purposes of this regulation, copper alloys include any alloy in which copper is the major constituent. Principal alloys processed by copper formers include brass, bronze, leaded brass, leaded brone, nickel silvers, phosphor bronze, aluminum bronze, silicon bronze, beryllium copper, and cupronickel.

Wastewater at copper forming plants is generated from both the forming and ancillary operations. Hot rolling, cold rolling, and drawing utilize water, oil-water emulsions, or soluble oil-water mixtures as lubricants to reduce frictional forces in the metal deformation process. These waste streams are termed hot rolling spent lubricant, cold rolling spent lubricant, and drawing spent lubricant, respectively. After being hot rolled, cold rolled, drawn, or extruded, copper products can be cooled in a water bath. This practice is termed solution heat treatment and is considered an ancillary operation. Some extrusion operations utilize emulsified or soluble oils to quench extruded parts, particularly during submerged extrusion press operations. This waste stream is termed extrusion solution heat treatment wastewater and is also considered an ancillary waste stream.

The remaining ancillary operations use water for cooling, cleaning, and rinsing. Annealing operations involve heating copper or a copper alloy to an elevated temperature in order to reduce stresses within the metal. The annealing process generally includes a water, oil, or oil-water quench to cool the annealed product. When the quench is comprised predominantly of water, the operation is termed annealing with water; whereas, when the quench is predominantly oil, it is termed annealing with oil. Pickling baths and rinses are used after forming operations to remove oxidized metal from the copper surfaces. These baths and rinse tanks are periodically batch dumped or continuously discharged, resulting in pickling bath and pickling rinse waste streams. In addition, some plants use wet scrubbers to control the release of pickling fumes resulting in a fume scrubber wastewater stream. Alkaline cleaning is not widely practiced. When found, it precedes or follows annealing and is used to remove oil, tarnish, and smut from the copper surface. It may also precede pickling operations. Alkaline cleaning baths and rinses are periodically batch dumped or continuously discharged resulting in wastewater discharges.

A number of other waste streams can be generated at copper forming facilities. Tumbling or burnishing is used to polish, debur, remove sharp corners, and generally smooth parts for cosmetic and functional purposes. Water or oil-water lubricants are sometimes used to lubricate and cool the process which generally is done in vibrating trays or rotating drums. In addition, water is used to rinse the finished parts and clean the abrasive media. Surface coating involves coating a newly formed copper sheet in a bath of molten metal. Waste streams associated with this operation include a flux bath used to prepare the sheet for coating, emission scrubbing water generated by controlling vapors over the flux bath, and spent abrasive used to finish the surface of the coated sheet. Hydrotesting operations are used to check copper parts for surface defects or subsurface imperfections. Parts are submerged in a water bath and subjected to ultrasonic signals, high pressure, or air pressure. Such baths are periodically discharged. Sawing is performed on copper parts to remove defects and for cutting to size. Milling is used to remove surface irregularities and oxidation from copper and brass sheet. Sawing and milling operations use water soluble oil lubricants to provide cooling and lubrication. Maintenance operations such as machinery repair may generate a variety of wastewaters, usually associated with the removal of production related soils and dirt so that the maintenance functions can be performed.

Pollutants found in significant amounts in copper forming waste streams include: chromium, copper, lead, nickel and zinc; toxic organics; and suspended solids, pH, and oil and grease. In addition, the sludges generated by treatment of these wastewaters usually contain large quantities of toxic metals.

There are 176 facilities in the copper forming category; these facilities employ a total of 43,000 people. Total production capacity is approximately 3.5 million kkg/yr. Within the category, 37 facilities discharge to navigable wastewaters, 45 facilities discharge to POTW's, and 94 plants do not discharge wastewater.

B. Control and Treatment Technologies

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

In-process controls include a variety of flow reduction techniques and process changes such as countercurrent cascade rinsing, spray rinsing, recycle of treated lubricants and cooling water, and recycle of bath and rinse water.

End-of-pipe treatment includes: Chemical reduction of chromium; chemical precipitation of metal ions using hydroxides or carbonates; removal of precipitated metals by settling; pH control; oil skimming; chemical emulsion breaking; and filtration. These treatment technologies are described in detail in Section VII of the development document.

The treatment effectiveness of the above treatment technologies has been evaluated by observing the performance of these technologies on copper forming and other similar wastewaters.

The data base for the performance of hydroxide precipitation—sedimentation technology is a composite of data drawn from EPA sampling and analysis of copper forming, aluminum forming, battery manufacturing, porcelain enameling, and coil coating wastewaters. These data, collectively called the combined metals data base, report influent and effluent concentrations for nine pollutants. The wastewaters are judged to be similar for treatment in all material respects because they contain a range of dissolved metals which can be removed by precipitation and solids removal.

We regard the combined metals data base as the best available measure for establishing the concentrations attainable with hydroxide precipitation and sedimentation. Our determination is based on the similarity of the raw wastewaters as generally determined by statistical analysis for homogeneity (a separate study of statistical homogeneity of these wastewaters is part of the record of this rulemaking), the larger number of plants used (20 plants versus four copper forming plants available), and the larger number of data points available for each pollutant. The larger quantity of data in the combined metals data base, as well as a greater variety of influent concentrations, enhances the Agency's ability to estimate long-term performance and variability through statistical analysis.

The Agency also examined the performance of lime, settle, and filter technology based on the performance of full-scale commercial systems treating porcelain enameling and nonferrous wastewaters. Two copper forming plants reported that they are using a filter. Thus this technology is demonstrated on copper forming wastewaters. The Agency made the determination that wastewaters from porcelain enameling and copper forming are similar in all material respects based on engineering considerations and the analysis of the combined data set for lime and settle treatment. Similarly, the Agency determined that the wastewater from one nonferrous metals plant that uses lime, settle and filter is similar in all material respects to the raw wastewaters in the combined metals data base. Therefore, the performance of lime, settle, and filter technology can be applied to copper forming wastewaters. The combined metals data is discussed in more detail in Section IX, Public Participation and Response to Comments, in Section VII of the development document and in the document "A Statistical Analysis of the Combined Metals Industries Effluent Data" in the administrative record.

Flow reduction is a significant part of the overall pollutant reduction technology. Because of this the Agency is promulgating mass-based limitations and standards which take into account significant flow reduction thereby ensuring that adequate pollution control is achieved. The limitations and standards established for this category are mass-based (mass of pollutant allowed to be discharged per unit of production) and are derived as the product of the regulatory flow and the overall treatment effectiveness. The regulatory flows are based on flow data, normalized to production, supplied by the industry.

C. Technology Basis for Final Regulations

A brief summary of the technology basis for the regulation is presented below. A more detailed summary is presented in the "Preamble to the Proposed Copper Forming Point Source Category Effluent Limitations Guidelines, Pretreatment Standards, and New Source Performance Standards" (47 FR 51278 (November 12, 1982)) and the *Development Document for Effluent Limitations Guidelines and Standards for the Copper Forming Point Source Category.*

BPT: EPA is promulgating BPT mass limitations based on end-of-pipe treatment, which consists of lime precipitation and settling, and, where necessary, preliminary treatment consisting of chemical emulsion breaking, oil skimming, and chemical reduction of chromium. The end-of-pipe treatment technology basis for the BPT limitations being promulgated is the same as that for the proposed limitations.

In developing BPT limitations, the Agency considered the amount of water used per unit of production (liters per metric ton) for each wastewater stream. The regulatory flow allowances for BPT remain the same as those proposed with the exception of the regulatory flow allowances for pickling and alkaline rinse waters for forged parts and drawing spent lubricant. In addition, we are adding discharge allowances for six copper forming operations which generate small amounts of wastewater. These flow allowances are discussed briefly below and in more detail in Section IX of this preamble and in Section IX of the development document. The limitations presented in the final BPT regulation reflect these changes.

The flow allowances for pickling and alkaline rinse waters were increased over the proposed allowances in the case of forged parts. These changes are made because these parts have cavities which trap and carry significant amounts of pickling and alkaline cleaning bath to the rinse stage. This added carry out requires more rinse water to achieve required product cleanliness than that required for flat and simple shapes of parts.

Two plants submitted production normalized flow data which we averaged to obtain the BPT regulatory flows for pickling and alkaline cleaning for forged parts. These flows are 3,918 1/kkg and 12,642 1/kkg, respectively. The technology basis for these flows is equivalent to the technology which these plants presently employ; spray rinsing and recirculation for pickling rinse and flow normalization for alkaline cleaning rinse. Our review of all flow data for these operations shows that these flow allowances represent the average of the best.

The final rule provides a regulatory flow allowance and discharge limitations for drawing spent lubricant. At proposal, EPA established a zero discharge flow allowance for drawing spent lubricant based on the industry reported practice of contract hauling. Commenters requested that a flow allowance be established, as an alternative to contract hauling, so that drawing spent lubricant could be treated and discharged. The commenters asserted, among other things, that zero discharge for this stream based on contract hauling may not provide any environmental benefit and only requires copper formers to pay for a service they can in many instances provide for themselves. The basis for their assertion is that contract haulers merely transfer the waste to a waste treatment facility or an oil reclaimer who in turn processes the waste by recovering the oil component and discharging the water fraction either with or without treatment. The commenters further point out that the model treatment technologies used to establish BPT limits would effectively treat drawing spent lubricants. The oil-water mixture is separated by chemical emulsion breaking. The oil fraction is then removed by skimming, while the remaining water fraction is discharged to lime and settle treatment for toxic metals removal. Any remaining pollutant discharged would be approximately the same as ultimately discharged by a reclaimer or treatment facility.

We believe that these comments support a flow allowance and that a discharge limitation for drawing spent lubricant is justified for all plants that actually treat and discharge this stream. The BPT regulatory flow for drawing spent lubricant is 85 1/kkg. This flow is based on the average of all plants which reported a discharge for their drawing operation in EPA's 1978 data gathering effort. The regulatory flow is based on recycle because this in-process control was reported by all of the plants. A further discussion of the drawing spent lubricant flow allowance can be found in Section IX of this preamble, Section IX of the development document, and in EPA's response to comment document.

The Agency is also providing flow allowances for some waste streams which were not covered in the proposed copper forming regulation. These flow allowances are being made in response to comments that these wastewater streams result from copper forming processes and therefore should be given flow allowances to ensure that mass-based effluent limitations and standards equitably reflect the amount of water required by a plant for its manufacturing operation. The technology basis for each of the flows is flow normalization and the regulatory flows for each are based on plant data submitted in support of comments.

Flow allowances for tumbling and burnishing and surface coating are established at 583 1/kkg and 743 1/kkg, respectively. Hydrotesting, sawing, surface milling, and maintenance are covered under a miscellaneous waste stream allowance of 21.8 1/kkg. Since maintenance covers a wide range of operations or functions which are not and probably can not be specifically enumerated in all cases, we intend the miscellaneous allowance to include any maintenance related wastewaters not specifically regulated in other specific wastewater streams. This miscellaneous allowance is applicable to any plant with any or all of the four operations.

The pollutants selected for limitation at BPT are: chromium, copper, lead, nickel, zinc, oil and grease, total suspended solids (TSS), and pH. These are the same pollutants that were selected for regulation in the proposed rule.

Implementation of the BPT limitations will remove annually an estimated 27,000 kg of toxic pollutants (metals and organics) and 56,000 kg of conventional pollutants (from estimated current discharge) at a capital cost, above equipment in place, of $6.4 million and a total annual cost of $6.6 million. The Agency estimates that 11 of the 37 direct dischargers presently or would with minor modifications meet the BPT limitations. The Agency has determined that the effluent reduction benefits associated with compliance with BPT limitations justify the costs.

BAT: EPA is promulgating BAT mass limitations based on the BPT model end-of-pipe treatment and flow reduction by approximately 60 percent of the BPT flow. The treatment technology basis for the promulgated BAT is the same as that for the proposed limitation.

In developing BAT limitations, the Agency considered the amount of water used per unit of production (liters per metric ton) for each wasterwater stream. The BAT regulatory flow allowances reflect those changes made since proposal for BPT as discussed in the preceding section.

In the case of pickling and alkaline cleaning rinse allowances for forged parts, the Agency considered the option of countercurrent rinsing at BAT for additional reduction of the BPT flow. However, as discussed in the proposed rule, most existing plants that perform forging operations do not have sufficient space to install countercurrent rinse tanks. Therefore the BAT regulatory flow allowances for these streams are equivalent to those provided at BPT.

The BPT regulatory flow allowance provided for drawing spent lubricants is based on extensive recycle. The Agency has no data available to support flow reduction beyond that required at BPT. Accordingly, the BAT regulatory flow allowance for drawing spent lubricant is equivalent to the BPT regulatory flow allowance.

Tumbling or burnishing, surface coating, and miscellaneous waste stream allowances are based on current reported industry practice and do not require in process flow reduction controls. These streams have low flows and will only increase BAT pollutant discharges above proposed levels by less than 2 percent. We have no data to support reduction of these flows and believe that further flow reduction would not significantly affect pollutant removal. Therefore BAT flows are equivalent to BPT. The limitations presented in the final BAT regulation reflect these changes.

The pollutants selected for regulation are: chromium, copper, lead, nickel, and zinc. These are the same pollutants that were selected for regulation in the proposed rule. Toxic organics are not regulated at BAT because the oil and grease limitation at BPT should provide adequate removal (approximately 97 percent). Similarly, the toxic metals antimony, arsenic, beryllium, cadmium, silver, and selenium will be adequately controlled when the regulated toxic metals are treated to the levels achievable by the model treatment technology.

Implementation of the BAT limitations will remove annually an estimated 31,000 kg of toxic metal and organic pollutants (from estimated current discharge) at a capital cost, above equipment in place, of $6.5 million and a total annual cost of $6.3 million.

BAT will remove 4,000 kg/yr of toxic pollutants (metals and organics) incrementally above BPT; the incremental investment cost is $0.1 million. Total annual costs for BAT are less than BPT because the lower flows allow for smaller equipment and thereby smaller operating and maintenance costs. The Agency projects no plant or line closures as a result of these costs. Therefore, the BAT limitations are economically achievable.

The Agency has decided not to include filtration as part of the model BAT technology. We estimate that 8,000 kg/yr of toxic pollutants will be discharged after the installation of BPT treatment technology; the model BAT treatment technology is estimated to remove an additional 4,000 kg/yr of toxic pollutants. The total removal after BAT is 89 percent of the total current discharge. The addition of filtration would remove approximately 5,000 kg/yr of toxic pollutants discharged after BPT or a total removal of 91 percent of the total current discharge. This additional removal of 1000 kg per year achieved by filtration is equal to an additional removal of approximately 0.1 kg of toxic pollutants per day per discharger. The incremental costs of these effluent reductions are $1.4 million in capital cost and $1.1 million in total annual costs for all direct dischargers. The Agency received four comments on BAT technology option selection all of which opposed the inclusion of filtration as part of the BAT model technology. Commenters urged the Agency not to include filtration as the basis for BAT because of the costs and the small incremental pollutant removal. The Agency believes that given all of these factors, the costs involved do not warrant selection of filtration as a part of the BAT model treatment technology.

NSPS: EPA is promulgating NSPS based on end-of-pipe treatment which consists of lime precipitation, settling, and filtration, and, where necessary, preliminary treatment consisting of chemical emulsion breaking, oil skimming, and chromium reduction. This is identical to BAT with the addition of a polishing filter and is the same as the end-of-pipe model treatment technology proposed. The Agency has determined that these technologies are the best demonstrated technologies for this industrial category.

In developing NSPS, the Agency considered the amount of water used per unit of production for each wastewater stream. We have made three changes to the NSPS flow allowances since proposal; these include drawing spent lubricant, additional flow allowances, and pickling and alkaline cleaning rinse following forged parts. With the exception of pickling rinse for forged parts, the NSPS regulatory flows for these streams are the same as those at BPT and BAT discussed in preceding sections of this preamble. The pickling rinse flow allowance for forged parts has been increased to 1,755 1/kkg for the reasons presented in the BPT and BAT discussions. The technology basis is the same as proposed, countercurrent rinsing. The revised flow allowances are described in Section IX of this preamble and in Section XI of the development document. The NSPS presented in the final regulation reflect these changes.

Filtration has been retained in the NSPS model technology because the additional cost of filtration will be offset by the lower treatment costs associated with smaller waste water flows based on countercurrent rinsing. As discussed in proposal, countercurrent rinsing is included in NSPS because, unlike existing plants, new plants will be able to design plants with countercurrent rinse tanks and will therefore not encounter space or retrofit difficulties.

The pollutants selected for regulation are: chromium, copper, lead, nickel, zinc, oil and grease, TSS, and pH. These are the same pollutants that were selected for regulation in the proposed rule. Specific toxic organics are not being regulated because, as discussed under BAT, the removal of oil and grease to meet the oil and grease limit will adequately control the toxic organic found in copper forming wastewaters. Similarly, the toxic metals antimony, arsenic, beryllium, cadmium, silver, and selenium will be adequately controlled when the regulated toxic metals are treated to the levels achievable by the model treatment technology.

In order to estimate pollutant removals and costs for new sources, the Agency developed a "normal" plant. A normal plant is a theoretical plant which has each of the manufacturing operations covered by the category and production that is the average level of the industry as a whole. Section VIII of the development document presents in detail the composition of the copper forming normal plant. A new direct discharge normal plant having the industry average annual production level would generate a raw waste of 1,837 kg per year of toxic metal and organic pollutants. The NSPS technology would reduce these pollutant levels to 75 kg per year of these same toxic pollutants. The total capital investment cost for a new normal plant to install NSPS technology is estimated to be $1.23 million, compared with investment costs of $1.18 million to install technology equivalent to BAT. Similar figures for total annual costs are $1.05 million for NSPS and $1.02 million for BAT. As NSPS costs are approximately the same as BAT costs for existing sources, the new source performance standards will not pose a barrier to entry.

PSES: In the copper forming category, the Agency has concluded that the toxic metals regulated under these standards (chromium, copper, lead, nickel, and zinc) pass through the POTW. The nationwide average percentage of these same toxic metals removed by a well-operated POTW meeting secondary treatment requirements is about 50 percent (ranging from 20 to 70 percent), whereas the percentage that can be removed by a copper forming direct discharger applying the best available technology economically achievable is about 90 percent. Accordingly, these pollutants pass through a POTW.

To regulate the toxic metals that pass through a POTW, EPA is promulgating PSES based on the application of technology equivalent to BAT, which consists of end-of-pipe treatment comprised of lime precipitation and settling, flow reduction, and preliminary treatment, where necessary, consisting of chromium reduction, chemical emulsion breaking, and oil skimming. In the proposed rule we stated that if BAT was promulgated with filters, then PSES would need to include filtration to prevent "pass through." Because this is not the case, PSES does not include filtration.

In addition to pass through of toxic metals, available information from an EPA study on POTWs shows that many of the toxic organics from copper facilities will pass through a POTW. Removal of those toxic organic pollutants by well operated POTW achieving secondary treatment averaged 62 percent, while the oil skimming component of the BPT technology basis achieves removals ranging from 85 to 97 percent. Accordingly, EPA is promulgating a pretreatment standard for toxic organics.

At proposal, we stated that toxic organic pollutants would be regulated as total toxic organics (TTO) and defined TTO as 12 specific compounds which were found at the sampled copper forming plants at concentrations greater than the quantification level of 0.01 mg/l. Appendix F of this preamble and Section 468.02 of the regulation lists those toxic organics which comprise TTO. The list of TTO presented in this regulation reflects all the toxic organic pollutants found at concentrations above the quantification level at sampled plants. However, other toxic organics may be found in copper forming wastewaters even though they were not found in the sampled waste streams. This is because toxic organic compounds originate in lubricants and these compounds can vary depending upon the formulation of the lubricant. Many polyaromatic hydrocarbons and organic solvents can be substituted for one another to perform the same function. If substitution does occur, the Agency believes that these other toxic organics are likely to be adequately controlled by the PSES model treatment technology and that the same pretreatment standards on TTO should apply. However, toxic organics not covered by this regulation at copper forming facilities should be considered by the control authority on a case-by-case basis.

The analysis of wastewaters for toxic organics is costly and requires sophisticated equipment. Therefore the Agency is establishing as an alternative to monitoring for TTO a monitoring parameter for oil and grease. Data indicate that the toxic organics are in the oil and grease and by removal of the oil and grease, the toxic organics should also be removed. All comments received in response to this issue support the establishment of the alternative monitoring parameter for oil and grease.

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

The pollutants selected for regulation are: chromium, copper, lead, nickel, zinc, and TTO. Six toxic metals, antimony, arsenic, beryllium, cadmium, silver and selenium, which are not specifically regulated will be adequately controlled when the regulated metals are treated to the levels achievable by the model treatment technology.

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

Implementation of the PSES will remove annually an estimated 18,700 kg of toxic metal and organic pollutants (from estimated current discharge) at a capital cost, above equipment in place, of $9.2 million and a total annual cost of $7.7 million. The Agency believes that implementation of PSES will not result in any plant closures or job losses.

The Agency has considered the deadline for compliance for PSES. Few if any of the copper forming plants have installed and are properly operating the treatment technology for PSES. Additionally, the readjustment of internal processing conditions to achieve reduced wastewater flows may require more time than for only the installation of end-of-pipe treatment equipment. Additionally, many plants in this and other industries will be installing the treatment equipment suggested as model technologies for this regulation and this may result in delays in engineering, ordering, installing, and operating this equipment. For all these reasons, the Agency has decided to set the PSES compliance date at three years after promulgation of this regulation.

PSNS: EPA is promulgating PSNS based on end-of-pipe treatment and in-process controls equivalent to that used as the basis for NSPS. The flow allowances for PSNS are also the same as those for NSPS. As discussed under PSES, pass through of the regulated pollutants will occur without adequate pretreatment and, therefore, pretreatment standards are required.

The pollutants regulated under PSNS are chromium, copper, lead, nickel, zinc, and TTO. Six toxic metals, antimony, arsenic, beryllium, cadmium, silver and selenium, which are not specifically regulated will be adequately controlled when the regulated metals are treated to the levels achievable by the model treatment technology. Monitoring for oil and grease has been established as an alternative to monitoring for TTO as discussed under PSES.

In order to estimate costs and pollutant removals for new sources, the Agency used the "normal plant" as discussed in this preamble under NSPS. A new indirect discharge normal plant having the industry average annual production level would generate a raw waste of 1,837 kg per year of toxic metal and organic pollutants. The PSNS technology would reduce these pollutant levels to 75 kg per year of these same toxic pollutants. The total capital investment cost for a new normal plant to install PSNS technology estimated to be $1.23 million, compared with investment costs of $1.18 million to install technology equivalent to PSES. Similar figures for total annual costs are $1.05 million for PSNS and $1.02 million for PSES. As PSNS costs are approximately the same as PSES costs for existing sources, the new source performance standards will not pose a barrier to entry.

VI. Economic Consideration

A. Costs and Economic Impact

The Agency's economic impact assessment of this regulation is presented in the report entitled *Economic Impact Analysis of Effluent Standards and Limitations for the Copper Forming Industry*. This report details the investment and annual costs for the copper forming category. Compliance costs are based on engineering estimates of capital requirements for the effluent control systems described earlier in this preamble. The report assesses the impact of effluent control costs in terms of price changes, production changes, plant closures, employment effects, and balance of trade effects. The impacts for each of the regulatory model treatment technologies are discussed in the report.

The economic analysis also reflects other industry comments, additional information provided since proposal, and the use of current information on financial and economic characteristics of the industry. Since proposal, compliance costs have been revised as discussed in Section IX of this preamble and in Section VIII of the development document. As a consequence, estimated costs of compliance have increased.

Since proposal, economic surveys were received from two additional plants. Data from these plants have been added to our data base and incorporated into our economic analysis.

EPA has identified 176 plants in the copper forming category that are covered by this regulation. Of these 176 plants, 37 are direct dischargers and 45 are indirect dischargers. The remaining 94 plants do not discharge wastewater. Total investment for combined BAT and PSES is estimated to be $15.7 million with annual costs of $14.0 million, including depreciation and interest. These costs are expressed in 1982 dollars as are all the following costs.

No plant closures or job losses are projected as a result of compliance costs for this regulation. If all costs were passed on to consumers, price increases would be less than one percent. The above costs reflect EPA's estimate of required monitoring, i.e., 12 days per month for large plants and one day per month for small plants. If all plants are required either by their control authority or their permit writer to monitor at least 10 days per month, then total annual costs would increase by 0.8 million, from $14.0 million to $14.8 million. No closures or unemployment effects are projected to result from this level of monitoring; the average increase in the cost of production would be negligible. Our analysis shows that changes in price due to changes in cost would be very small because of the demand and supply elasticities for copper forming products. No measurable balance-of-trade effect is expected from this regulation due to the insignificance of the estimated change in the price of copper forming products, and due to the absence of projected plant closures. EPA has determined this regulation is economically achievable.

The methodology for the economic analysis is the same as that used at proposal. It is detailed in Chapter II of the Economic Impact Analysis. Using revised compliance costs and financial information for each plant, we performed a capital availability analysis and plant closures analysis.

The capital availability analysis uses a capital budgeting approach. Given the profitability of the plant and the cost of pollution control, if the plant has a positive cash flow after investment, it can afford the pollution control. Implicitly, then, that plant can obtain financing for the pollution control investment. In the plant closure analysis, plants are assumed to close if the expected discounted cash return of the plant, less the investment costs of the pollution control equipment, is less than the salvage value of the plant. The results of the closure analysis were extrapolated to include all 82 copper forming plants that discharge wastewater..

BPT: the BPT regulation is expected to affect all 37 direct discharging plants. BPT for these 37 plants is projected at $6.4 million in investment costs and $6.6 million in annual costs (including depreciation and interest). These costs are the engineering compliance cost estimates presented earlier in the preamble and are conservative because they are based on the assumption that all plants not presently in compliance will install BPT technology without flow reduction, even in cases where it may be less expensive to reduce flows prior to end-of-pipe treatment. According to the analysis of economic impact, no plant closures or job losses are associated with the BPT treatment option. If all costs were passed on to consumers, price increases would be 0.2 percent.

We believe facilities will choose the most economical means of compliance with BPT and, if going directly to BAT is less expensive, will choose to install BAT technology with flow reduction. The reduced BAT regulatory flows allow installation of smaller treatment systems with less capital expenditures and annual cost. These costs are projected to be $5.8 million in investment costs and $6.1 million in annual costs (including depreciation and interest). Again, no plant closures or job losses are projected. If all costs were passed on to consumers, price increases would be 0.2 percent. The Agency has determined that the effluent reduction benefits associated with compliance with BPT justify the costs.

BAT: Compliance costs and resulting economic impacts for BAT are based on going from existing treatment to installing BAT. All 37 direct dischargers will be affected by the BAT limitations. These 37 plants would share investment costs estimated at $6.5 million and total annual costs of $6.3 million, including depreciation and interest. The Agency believes that this option will not result in any plant closures or job losses. If all costs were passed on to consumers, price increases would be 0.2 percent. Therefore, the Agency believes that compliance with BAT will be economically achievable.

PSES: All 45 indirect dischargers will incur costs to comply with this regulation. These 45 plants will share investment costs of $9.2 million and annual costs of $7.7 million, including depreciation and interest. The Agency believes that this option will not result in any closures on job losses. If all costs were passed on to consumers, price increases would be 0.7 percent. Therefore, the Agency believes that compliance with PSES will be economically achievable.

NSPS–PSNS: The copper forming category is a very mature industry and has not grown rapidly during the last decade. This trend is expected to continue. The copper forming category is also very sensitive to the behavior of the U.S. economy. The demand for copper products has declined during the current recession during which all copper forming major end-use markets have been depressed, including construction, transportation, and electrical and electronic products. According to EPA's analysis, this is a temporary condition and the demand for copper formed products will recover. The baseline supply and demand forecasts are based upon empirical models developed over the 1960 to 1979 historical period. While growth in the demand for copper formed products is projected during the next decade, it is expected to be met through expanded capacity at domestic plants and from overseas operations. During the next decade, some existing plants may be modified or replaced and some new plants may be built. The total number of copper forming plants in the U.S. are projected to be the same.

The Agency has estimated that the per plant costs associated with NSPS and PSNS will be approximately equal to those for BAT and PSES as previously discussed in Section V. BAT and PSES are based on technology consisting of flow reduction, lime and settle, and, where necessary, preliminary treatment with chromium reduction, chemical emulsion breaking, and oil skimming. NSPS adds filtration and greater flow reduction achieved by countercurrent rinsing of the pickling rinse stream. The Agency believes that the additional costs of filtration for NSPS will be offset by the lower treatment costs associated with smaller wastewater flows using countercurrent rinsing. Therefore, new sources, regardless of whether they result from major modifications of existing facilities or are constructed as greenfield sites, will have costs approximately equivalent to the costs existing sources will incur in achieving BAT and PSES. The Agency believes that neither NSPS nor PSNS will deter entry into copper forming. The Agency requested but received no comment on the conclusions that costs for PSNS and NSPS are approximately equal to BAT and PSES costs and that greenfield and major modification plants will incur similar costs.

B. Executive Order 12291

Executive Order 12291 requires EPA and other agencies to perform regulatory impacts analyses of major regulations. Major rules are those which impose a cost on the economy of $100 million a year or more or have certain other economic impacts. This regulation is not a major rule because its annualized cost of $14.0 million is less than $100 million and it meets none of the other criteria specified in Section I paragraph (b) of the Executive Order. The economic impact analysis prepared for this proposed rulemaking meets the requirements for non-major rules.

C. Regulatory Flexibility Analysis

Pub. L. 96-354 requires EPA to prepare an Initial Regulatory Flexibility Analysis for all proposed regulations that have a significant impact on a substantial number of small entities. This analysis may be done in conjunction with or as a part of any other analysis conducted by the Agency. The economic impact analysis described above indicates that there will not be a significant impact on any segment of the regulated population, large or small. Therefore, a formal regulatory flexibility analysis is not required.

D. SBA Loans

The Agency is continuing to encourage copper formers to use Small Business Administration (SBA) financing as needed for pollution control equipment. The three basic programs are: (1) The Guaranteed Pollution Control Bond Program, (2) the Section 503 Program, and (3) the Regular Guarantee Program. All the SBA loan programs are only open to businesses that have: (a) Net assets less than $6 million, (b) an average annual after-tax income of less than $2 million, and (c) fewer than 250 employees. The estimated economic impacts for this category do not include consideration of financing available through these programs.

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

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

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

VII. Nonwater Quality Environmental Impacts

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

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

A. Air Pollution

Imposition of BPT, BAT, NSPS, PSES, and PSNS will not create any substantial air pollution problems because the wastewater treatment technologies required to meet these limitations and standards do not cause air pollution.

B. Solid Waste

EPA estimates that copper forming facilities generated 39,000 metric tons of solid wastes (wet basis) in 1978 as a result of wastewater treatment in place. These wastes were comprised of treatment system sludges containing toxic metals, including chromium, copper, lead, nickel, and zinc; and oil removed during oil skimming and chemical emulsion breaking that contains toxic organics.

EPA estimates that BPT will contribute an additional 13,000 metric tons per year of solid wastes over that which is currently being generated by the copper forming industry. BAT and PSES will increase these wastes by approximately 11,000 metric tons per year beyond BPT levels. These sludges will necessarily contain additional quantities (and concentrations) of toxic metal pollutants. The normal plant was used to estimate the sludge generated at NSPS and PSNS and we estimate that NSPS and PSNS will generate 10 percent more sludge over BAT and PSES. The final rule provides a flow allowance for drawing spent lubricant, in contrast to the proposed rule which was based on contract hauling of this wastewater stream. The decrease in the total amount of sludge generated from this change will not be significant.

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

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

If these wastes are identified as hazardous, they will come within the scope of RCRA's "cradle to grave" hazardous waste management program, requiring regulation from the point of generation to point of final disposition. EPA's generator standards would require generators of hazardous copper forming wastes to meet containerization, labeling, recordkeeping, and reporting requirements. In addition, if copper formers dispose of hazardous wastes off-site, they would have to prepare a manifest which would track the movement of the wastes from the generator's premises to a permitted off-site treatment, storage, or disposal facility. See 40 CFR 262.20 (45 FR 33142 (May 19, 1980)). The transporter regulations require transporters of hazardous wastes to comply with the manifest system to assure that the wastes are delivered to a permitted facility. See 40 CFR 263.20 (45 FR 33151 (May 19, 1980)), as amended at 45 FR 86973 (December 31, 1980)). Finally, RCRA regulations establish standards for hazardous waste treatment, storage, and disposal facilities allowed to receive such wastes. See 40 CFR Part 464 (46 FR 2802 (January 12, 1981), 47 FR 32274 (July 26, 1982)).

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

C. Consumptive Water Loss

Treatment and control technologies that require extensive recycling and reuse of water may require cooling mechanisms. Evaporative cooling mechanisms can cause water loss and contribute to water scarcity problems—a primary concern in arid and semi-arid regions. While this regulation assumes water reuse, the quantity of water involved is not regionally significant. We conclude that the pollution reduction benefits of recycle technologies outweigh their impact on consumptive water loss.

D. Energy Requirements

EPA estimates that the achievement of BAT effluent limitations will result in a net increase of electrical energy consumption of approximately 0.6 million kilowatt-hours per year. To achieve the BAT effluent limitations, a typical direct discharger will increase total energy consumption by less than 1 percent of the energy consumed for production purposes. NSPS will not significantly add to total energy consumption since new source equipment and pumps will be smaller and therefore use less energy due to the decreased flows resulting from flow reduction. A normal plant was used to estimate the energy requirements for a new source. A new source wastewater treatment system will add 122,000 kilowatt-hours per year to the total industry energy requirements.

The agency estimates that PSES will result in a net increase in electrical energy consumption of approximately 0.5 million kilowatt-hours per year. To achieve PSES, an indirect discharger will increase energy consumption by less than 2 percent of the energy consumed for production purposes. PSNS, like NSPS, will not significantly add to total energy consumption based on a normal plant calculation.

VIII. Pollutants Not Regulated

The Settlement Agreement in *NRDC* v. *Train, supra* contains provisions authorizing the exclusion from regulation in certain instances of toxic pollutants and industry subcategories. These provisions have been rewritten in a Revised Settlement Agreement which was approved by the District Court for the District of Columbia on March 9, 1979. See *NRDC* v. *Costle,* 12 ERC 1833 (D.D.C. 1979). Because the Agency is regulating the copper forming industry as a single category, no subcategories are excluded from regulation. Data supporting exclusion of the pollutants identified below are presented in Sections V and IX of the development document.

The Agency has deleted the following three pollutants from the toxic pollutant list: Dichlorofluoromethane (50) and trichlorofluoromethane (49), 46 FR 79692 (January 8, 1981); and bis (chloromethyl)ether (17), 46 FR 10723 (February 4, 1981).

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 Appendix B to this preamble.

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

Paragraph 8(a)(iii) also allows the Administrator to exclude from regulation toxic pollutants which will be effectively controlled by the technologies used as the basis for other effluent limitations guidelines, standards of performance, or pretreatment standards. Appendix D list those toxic pollutants which will be effectively controlled by the other limitations or standards being promulgated even though they are not specifically regulated.

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 because they are uniquely related to those sources. Appendix E to this notice lists for the toxic pollutant which was detected in the effluents of only one plant, is uniquely related to that plant, and is not related to the manufacturing processes under study.

IX. Public Participation and Response to Major Comments

Industry and government groups have participated during the development of these effluent guidelines and standards. Following the publication of the proposed rule on November 12, 1982 in the **Federal Register**, we provided the development document and the economic impact analysis supporting the proposed rule to industry, government agencies, and the public sector. On January 14, 1983, corrections to the proposed rule were published in the **Federal Register** and the comment period was extended until February 14, 1983. A permit writers workshop was held on the copper forming rulemaking in Boston, Massachusetts on January 4, 1983. On January 10, 1983 in Washington, D.C., a public hearing was held on the proposed pretreatment standards at which one person presented testimony. Twenty-two commenters submitted a total of approximately 125 individual comments on the proposed regulation.

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

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

1. *Combined Metals Data Base* (CMDB). The Agency received several comments on the copper forming proposal relating to the use of the CMDB to determine treatment effectiveness for lime and settle treatment. Comments on the CMDB also were submitted on other proposed regulations. The Agency has considered all the comments submitted on the copper forming proposal and comments on other proposals that are relevant to copper forming. Summaries of specific comments submitted on copper forming proposal and the Agency's responses are set forth below. Other comments and responses on the CMDB can be found in the *Response to Public Comments, Proposed Copper Forming Effluent Limitations and Standards.*

a. *Comment:* One commenter complained about the small size of the data base and the statistical methods used in analyzing it. Specifically, the commenter stated that the data base was too limited to reflect the effectiveness of lime and settle treatment and that variability was ill-defined by the available data and asserted that the statistical methods were too complicated.

Response: The CMDB includes 162 data points from 20 plants in five industrial categories with similar wastewaters. All plants in the data base have the recommended end-of-pipe treatment technology. Four of the plants in the data base are copper forming plants. These data were evaluated and analyzed to establish comparability of wastewater characteristics across categories and establish effluent limitations on the basis of data that represent good operation of the recommended technology. The use of comparable data from several categories enhances the estimates of treatment effectiveness and variability over those that would be obtained from data from any one category alone. The statistical methods used to assess homogeneity among the categories in the CMDB and to determine limitations are appropriate and are well known to statisticians.

The methods used to analyze homogeneity are known generally as analysis of variance. Effluent limitations were determined by fitting the data to a lognormal distribution and using estimation techniques that possess desirable statistical properties. These methods are described in detail in the document entitled *A Statistical Analysis of the Combined Metals Industries Effluent Data* which includes appropriate references to statistical texts, journal articles and monographs.

The Agency confirmed that copper forming plants were achieving results that were consistent with the values determined from the CMDB by examining discharge monitoring reports (DMR) from 19 discharge points in 15 copper forming plants. Although reported in summary forms (usually as monthly averages), DMR data can be used to construct annual average effluent concentration values.

The DMR's provided sufficient data to construct 42 annual average values for copper from the 19 discharge points. From one to four annual averages from each discharge point were available; most supplied three annual averages. These 42 averages were compared to the copper mean of 0.58 mg/l calculated from the CMDB.

Thirty-three of these 42 copper averages were less than the CMDB long-term average of 0.58 mg/l. All of the available annual averages for 11 of the discharge points were lower than the CMDB long-term average. The remaining eight discharge points had annual averages lower than the CMDB average in some years: of the eight discharge points, seven had only one year in which the annual average was greater than the CMDB average and the other discharge point reported two of four annual averages only slightly greater than the CMDB average.

In a similar manner, we compared DMR data on four other regulated pollutants and found that the annual averages are generally smaller than the values estimated from the CMDB for chromium, nickel, zinc, and TSS. This supports the use of the CMDB as the basis for treatment effectiveness of lime and settle technology in the copper forming category.

b. *Comment:* One commenter recommended that EPA use the electroplating (metal finishing) data base to establish limitations and standards.

Response: The Agency at one time considered including electroplating data in the CMDB, however, statistical analysis indicated that these data were not homogeneous with other metals industries data including copper forming data. Therefore, electroplating data were removed from the CMDB. Consistent with this analysis, the use of these data alone is not an appropriate means of determining lime and settle treatment effectiveness for the copper forming category.

C. *Comment:* Another commenter criticized the inclusion of certain data points in the CMDB because they did not meet the Agency's pH criteria. Other effluent data points were criticized because the corresponding influent to treatment concentration was lower than the treated effluent.

Response: The Agency carefully reexamined the specific data points identified in comments as being incorrectly included in the combined metals data base. Of the four copper forming plants in the combined metals data base, four data days show a pH below 7.0. In eliminating data from use in the data base, EPA used a pH editing rule which generally excludes data in cases where the pH is below 7.0 for extended periods of time (i.e., over two hours). The rationale for this rule was that low pH over a long period of time often indicates improper functioning of the treatment system. The time periods of low pH for the points in question cannot be determined from existing data; however, because large amounts of metals were removed and low effluent concentrations were being achieved, the pH at the point of precipitation necessarily had to be well above pH 7.0. The reason for the effluent pH falling below 7.0 cannot be determined from the available data, but it is presumed to be a pH rebound. This phenomenon is ofter encountered where a slow reacting acidic material is neutralized or reacts late in the treatment cycle. The Agency believes that the data in question are representative of a lime and settle treatment process which is being operated in an acceptable manner. Accordingly, the data have been retained in the CMDB.

The commenter states that two effluent data points should have been excluded because the corresponding influent concentration was lower. In the case of one of the points, the commenter apparently made an error since the influent concentration listed by the commenter as 0.0 mg/l was listed as 60.0 mg/l in both the development document and the statistical analysis report. This data point is, accordingly, properly included. With regard to the second point, the effluent value for copper referred to by the commenter is larger than the influent value recorded on the same day. There was, however, no indication of treatment malfunction and/or mislabelling of the sample. The value was left in the data base because such values can occur in the course of normal operation. Deletion of the copper effluent value referred to by the commenter would result in a more stringent limitation for copper which the Agency does not believe would appropriately reflect treatment of copper. Other comments on the CMDB raised the issue of the use of effluent measurements that were larger than influent measurements taken on the same day. In general, where there was no indication of treatment malfunction and/or mislabelling of the sample the values were retained in the data base.

d. *Comment:* One commenter questioned the achievability of specific metal concentrations considering the spread of minimum solubilities for different metals at a range of pH values.

Response: The treatment effectiveness values derived from the CMDB are based on observed performance of treatment systems rather than theoretical calculations. Use of theoretical solubility of pollutants alone is not appropriate for determining actual treatment effectiveness. We believe that the actual performance data in the CMDB reflect these theoretical considerations.

2. *Comment:* The Agency received 13 comments criticizing the zero discharge allowance for drawing spent lubricant. All of these commenters requested that the Agency provide a flow allowance as an alternative to zero discharge, so that plants could treat their waste using lime and settle technology.

Response: As discussed in Section V of this preamble, the Agency is promulgating a flow allowance for the drawing spent lubricant operation. For a detailed discussion on this and our response see the Agency's Response to Comments Document.

3. *Comment:* Several commenters objected to the use of filtration in the model technology used as a basis for BAT and PSES. They stated that the addition of filtration to the treatment train would not substantially reduce the metals content of the effluent and that the cost of filtration is not justified by the additional pollutant removal it provides.

Response: The Agency is not promulgating BAT and PSES based on model treatment technology including filtration for the reasons stated earlier in Section V of this preamble.

4. *Comment:* Two commenters assert that the proposed pickling and alkaline cleaning rinse allowances were inadequate for forged parts. They stated that these regulatory flows are almost entirely based on data from other forming operations and that these other operations do not accurately reflect the amount of water needed for adequate rinsing of forged parts. The basis for their assertions is that forged parts are often small with intricate shapes. As a result, these parts have cavities and other configurational peculiarities that trap and carry significant amounts of the pickling and alkaline cleaning bath water to the rinse stage. To offset the additional "drag-out" and thereby maintain the same degree of product cleanliness for forged parts as with other formed products, plants need to use and discharge greater quantities of rinse water.

Response: The Agency agrees with the commenters that rinsing of forged parts requires a greater amount of water and is promulgating larger flow allowances for pickling and alkaline cleaning rinse. See Section V of this preamble for additional discussion.

5. *Comment:* The Agency received seven comments from four commenters criticizing the use of mass-based limitations and standards. The commenters stated that: (a) mass-based controls could require disclosure of confidential information; (b) they are not enforceable by a POTW because production data are needed; (c) they cannot be reconciled with concentration-based limitations and standards under the combined waste stream formula; and (d) concentration only standards rather than mass-based standards are adequate because plants are forbidden to use dilution to comply with the concentration-based standards.

Response: The Agency is promulgating mass-based limitations and standards because flow reduction is an integral part of the treatment technology which must be included to reduce the quantity of pollutants discharged to the required level. In developing the copper forming regulation, the Agency examined the sources and amounts of water used in the various manufacturing operations. EPA found that for all process operations a significant number of plants used more water than the process required, and further, that for a number of processes, water was being recycled by many plants in the category. Accordingly, flow reduction was incorporated as an integral part of the model treatment technology for copper forming. Mass-based limitations are necessary for this category to adequately control the total discharge of pollutants. With respect to specific comments above:

(a) A company may have to provide the POTW production information that it may wish to have considered confidential. Such information is generally reported in a manner not readily usable by competing companies. More importantly, this information is necessary to calculate the individual discharge limits and to determine compliance with the regulation.

(b) The standards are independently enforceable. Pretreatment standards are calculated using the average rate of production for each operation. See 40 CFR 403.12(b)(3). The average rate of production should represent a reasonable measure of actual facility production.

(c) The combined waste stream formula as described in the General Pretreatment Standards (40 CFR Part 403) provides for the calculation of limitations for combined streams for both mass-based and concentration-based standards.

If an integrated plant is required to comply with a categorical pretreatment standard expressed only in mass-based limits and another categorical pretreatment standard expressed only in concentration-based limits, a mass-based limit should be applied to the combined flow. To accomplish this under the formula, the concentration limit may be converted to a mass limit by multiplying the concentration limit by the average or other appropriate flow of the regulated stream to which the limit applies.

(d) Mass-based standards incorporate technology which reduces the amount of process wastewater discharged from certain manufacturing operations. While plants are forbidden to use dilution to comply with pretreatment standards, the mass-based standards are intended to further ensure that the Agency's standards are met.

6. *Comment:* Four commenters responded to the Agency's request for comments on whether copper forming wastewater treatment sludges are hazardous as defined under RCRA. One commenter expressed agreement with EPA that these wastes are not hazardous. One commenter estimated that 50 percent of these sludges would be hazardous with respect to the EP Toxicity Test outlined in the federal hazardous waste regulations.

Response: The Agency contacted the commenter who asserted that copper forming wastewater treatment sludges would be hazardous and requested that this commenter submit data supporting this assertion. The commenter submitted information pertaining to the toxicity of sludges from four plants; only one of which was shown to be hazardous with respect to the RCRA EP Toxicity Test outlined at 40 CFR Part 261. This sludge was generated by a plant processing leaded brass. Of the remaining three plants, the sludges from one are considered hazardous by the state, while sludges from the other two plants are not presently considered hazardous.

In regard to the leaded brass facility, the Agency contacted the commenter by telephone in order to inquire whether excess of lime was employed in the chemical precipitation unit. The plant has been operating its treatment without excess lime in order to avoid exceeding the states' pH limitation of 9.0. The copper forming regulation establishes a higher pH limit for discharged waters. Should the permitting authority refuse to accept the higher pH waters, the copper former could add acid to reduce the pH before discharge at a substantially smaller cost than the added cost of disposal of the sludge as a hazardous material. Therefore, the hazardous nature of this sludge is a site-specific problem. The Agency does not believe it is necessary to cost leaded brass sludges or any copper forming sludges as hazardous.

a. *Comment:* Two comments were that these sludges would not be hazardous under RCRA, but would be considered hazardous by the states.

Response: The Agency is aware that some states have more stringent solid waste disposal laws than required by EPA and therefore, copper forming wastewater treatment sludges may be considered hazardous by these states even though they would not be considered hazardous under RCRA. The cost to dispose of such sludges as hazardous is a state-specific cost and is not a cost associated with this federal regulation.

b. *Comment:* One commenter asserted that the classification of copper forming treatment sludges as nonhazardous is in conflict with EPA's classification of battery and coil coating sludges as hazardous. Sludges from these categories should have the same classification because the Agency, in using data from all these categories in the CMDB, has claimed that these wastewaters are similar in all material respects.

Response: The commenter's statement that the nonhazardous classification of copper forming wastes is in conflict with other categories is an error. EPA points out that with the exception of a small segment of plants in the coil coating category (aluminum coil coating) and mercury containing battery wastewater sludges, sludges from these categories have also been determined to be non-hazardous.

7. *Comment:* Copper and Brass Fabricator's Council (CBFC) asserted that EPA did not provide flow allowances for all copper forming operations which generated wastewater. The specific operations described are hydrotesting, sawing, surface milling, surface coating, tumbling or burnishing, and maintenance.

Response: The Agency contacted all companies identified by CBFC as having data on these operations. After review of the data and information submitted, we agree with the comment that flow allowances should be established for the above operations. See BPT section of the preamble for a further discussion. The final regulation provides regulatory flows for these operations based on the data submitted in support of their comment. While the addition of these flow allowances is justified, this change has little impact on the overall regulation, in that, total pollutant discharges after BAT are only increased by less than 2 percent.

8. *Comment:* Copper and Brass Fabricator's Council (CBFC) criticized the Agency's estimate of compliance costs. They stated that the costs are not well founded and are based on limited data. Further, they asserted that the costs are underestimated. As an example, one of its members spent $2 million on a system comparable to PSES model technology while the Agency's estimated compliance costs for all indirect dischargers is $8.0 million for capital costs and $5.3 million for annual costs.

Response: Since proposal, the Agency expanded the number of plants costed from 16 to 31. We believe the number of plants is wholely adequate as a base for estimating compliance costs. BPT capital costs have increased from $2.4 to $6.4 primarily because we modified our engineering approach for estimating the additional wastewater treatment technology that a plant would need to comply with the regulation. At proposal, we adjusted costs for equipment in place and for specific process operating conditions which lowered overall treatment costs for a particular plant, but may not have been applicable to all plants in the category. Final compliance costs reflect adjustments made for equipment in place and so BPT costs estimates ae higher than they were at proposal. BAT and PSES costs did not increase as much from proposal ($0.3 for BAT and $1.2 million for PSES) because the site specific changes made at BPT were not used for BAT and PSES.

Annual costs for BPT, BAT and PSES are higher because the revised costs include operating and maintenance costs for equipment-in-place and not only costs for additional treatment as do the proposed annual costs. Annual costs have increased by $5.6 million for BPT, 4.3 for BAT, and $2.4 million for PSES. For a detailed discussion of the Agency's estimate of compliance costs see Section 8 of the development document.

We interpret CBFC's second comment to mean that since one plant incurred costs of $2.0 million, the total cost for all indirect dischargers should be $2.0 million multiplied by all indirect dischargers. This method of estimating compliance costs does not accurately reflect costs of compliance of this regulation because it does not take existing treatment in-place into account when the Agency considers capital costs associated with additional treatment equipment which must be installed to meet this regulation. The total costs of PSES is $9.2 million which we believe fairly represents the capital cost attributable to this regulation.

X. Best Management Practices

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

XI. Upset and Bypass Provisions

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

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

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

XII. Variances and Modifications

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

For the BPT effluent limitations, the only exception to the binding limitations is EPA's "fundamentally different factors" variance. See *E. I. duPont deNemours & Co.* v. *Train*, 430 U.S. 112 (1977); *Weyerhaueser Co.* v. *Costle, supra*. This variance recognizes factors concerning a particular discharger that are fundamentally different from the factors considered in this rulemaking. Although this variance clause was set forth in EPA's 1973 to 1976 industry regulations, it is now included in the NPDES regulations and will not be included in the copper forming or other industry regulations. See the NPDES regulations at 40 CFR Part 125, Subpart D.

The BAT limitations in this regulation are also subject to EPA's "fundamentally different factors" variance. In addition, BAT limitations for nonconventional pollutants are subject to modifications under Sections 301(c) and 301(g) of the Act; however, we are not regulating any nonconventional pollutants for the copper forming category.

Pretreatment standards for existing sources are subject to the "fundamentally different factors" variance and credits for pollutants removed by POTW. (See 40 CFR 403.7, 403.13.) Pretreatment standards for new sources are subject only to the credits provision in 40 CFR 403.7. NSPS are not subject to EPA's "fundamentally different factors" variance or any statutory or regulatory modifications. See *E. I. duPont DeNemours & Co.* v. *Train, supra*.

XIII. Implementation of Limitations and Standards

A. Relationship to NPDES Permits

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

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

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

B. Indirect Dischargers

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

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

A "request for fundamentally different factors variance" is a mechanism by which a categorical pretreatment standard may be adjusted on a case-by-case basis, making it more or less stringent. If an indirect discharger, a POTW, or any interested person believes that factors relating to a specific indirect discharger are fundamentally different from those factors considered during development of the relevant categorical pretreatment standard and that the existence of those factors justifies a different discharge limit from that specified in the categorical standard, then they may submit a request to EPA for such a variance. See 40 CFR 403.13.

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

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

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

INDIRECT DISCHARGERS SCHEDULE FOR SUBMITTAL AND COMPLIANCE

Item/event	Applicable sources	Date or time period	Measured—	Item submitted to—
Request for category determination.	Existing	60 days	From effective date of standard	Director.[1]
		Or 60 days	From FEDERAL REGISTER Development Document Availability.	
	New	Prior to commencement of discharge to POTW.		
Request for fundamentally different factors variance.	Existing	180 days	From effective date standard	Director.[1]
		Or 30 days	From final decision on category determination.	
Baseline monitoring report.	All	180 days	From effective date of standard or	Control authority.[2]
			Final decision on category determination.	
Report on compliance.	Existing	90 days	From date for final compliance	Control authority.[2]
	New	90 days	From commencement of discharge to POTW.	
Periodic compliance reports.	All	June and December		Control authority.[2]

[1] Director=(a) Chief Administrative Officer of a State water pollution control agency with an approved pretreatment program or (b) EPA Regional Water Division Director, if State does not have an approved pretreatment program.

[2] Control Authority=(a) POTW if its pretreatment program has been approved or (b) Director of State water pollution control agency with an approved pretreatment program or (c) EPA Regional Administrator, if State does not have an approved pretreatment program.

XIV. Availability of Technical Information

The basis for this regulation is detailed in four major documents. Analytical methods are discussed in "Sampling and Analysis Procedures for Screening of Industrial Effluents for Priority Pollutants." EPA's technical conclusions are detailed in "Development Document for Effluent Guidelines, New Source Performance Standards and Pretreatment Standards for the Copper Forming Point Source Category." The Agency's economic analysis is presented in "Economic Impact Analysis of Effluent Limitations and Standards for the Copper Forming Industry." A summary of the public comments received on the proposed regulation is presented in a report "Responses to Public Comments, Proposed Copper Forming Effluent Limitations Guidelines and Standards," which is a part of the public record for this regulation. Copies of the technical and economic documents may be obtained from the National Technical Information Service, Springfield, Virginia 22161, (703) 487-4600. Additional information concerning the economic impact analysis may be obtained from Ms. Ann Watkins, Economic Analysis Staff (WH-586), U.S. Environmental Protection Agency, 401 M Street, SW., Washington, D.C. 20460 or by calling (202) 382-5387. Technical information may be obtained by writing to David Pepson, Effluent Guidelines Division (WH-552), U.S. Environmental Protection Agency, 401 M Street, SW., Washington, D.C. 20460 or by calling (202) 382-7126.

This regulation was submitted to the Office of Management and Budget for review as required by Executive Order 12291.

This rule does not contain any information collection requirements subject to OMB review under the Paperwork Reduction Act of 1980, 44 U.S.C. 3501 *et seq.*

XV

List of Subjects in 40 CFR Part 468

Copper forming, Water pollution control, Waste treatment and disposal.

Dated: August 4, 1983.

William D. Ruckelshaus,

Administrator.

XVI. Appendices

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

Act—The Clean Water Act.

Agency—The U.S. Environmental Protection Agency.

BAT—The best available technology economically achievable under Section 304(b)(2)(B) of the Act.

BCT—The best conventional pollutant control technology under Section 304(b)(4) of the Act.

BMPs—Best management practices under Section 304(e) of the Act.

BPT—The best practicable control technology currently available under Section 304(b)(1) of the Act.

Clean Water Act—The Federal Water Pollution Control Act Amendments of 1972 (33 U.S.C. 1251 et. seq.), as amended by the Clean Water Act of 1977 (Pub. L. 95-217).

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

Indirect discharger—A facility which discharges or may discharge 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 indirect discharges under Section 307 (b) and (c) of the Act.

RCRA—Resource Conservation and Recovery Act (Pub. L. 94-580) of 1976, Amendments to Solid Waste Disposal Act.

Appendix B—Toxic Pollutants Excluded From Regulation Because They Were Not Detected in Copper Forming Wastewater

The following one hundred (100) pollutants are being excluded under Paragraph 8(a)(iii) because they were not detected in the effluent of sampled copper forming facilities:

1. acenaphthene
2. acrolein
3. acrylonitrile
5. benzidene
6. carbon tetrachloride
7. chlorobenzene
8. 1,2,4-trichlorobenzene
9. hexachlorobenzene
10. 1,2-dichloroethane
12. hexachloroethane
13. 1,1-dichloroethane
14. 1,1,2-trichloroethane
15. 1,1,2,2-tetrachloroethane
16. chloroethane
18. bis(2-chloroethyl) ether
19. 2-chloroethyl vinyl ether
20. 2-chloronaphthalene
21. 2,4,6-trichlorophenol
22. parachlorometa cresol
24. 2-chlorophenol
25. 1,2-dichlorobenzene
26. 1,3-dichlorobenzene
27. 1,4-dichlorobenzene
28. 3,3'-dichlorobenzidine
29. 1,1-dichloroethylene
30. 1,2-trans-dichloroethylene
31. 2,4-dichlorophenol
32. 1,2-dichloropropane
33. 1,3-dichloropropylene
34. 2,4-dimethylphenol
35. 2,4-dinitrotoluene
37. 1,2-diphenylhydrazine
39. fluoranthene
40. 4-chlorophenyl phenyl ether
41. 4-bromophenyl phenyl ether
42. bis(2-chloroisopropyl) ether
43. bis(2-choroethoxy) methane
45. methyl chloride
46. methyl bromide
47. bromoform
48. dichlorobromomethane
51. chlorodibromomethane
52. hexachlorobutadiene
53. hexachlorocyclopentadiene

54. isophorone
56. nitrobenzene
57. 2-nitrophenol
58. 4-nitrophenol
59. 2,4-dinitrophenol
60. 4,6-dinitro-o-cresol
61. N-nitrosodimethylamine
63. N-nitrosodi-n-propylamine
64. pentachlorophenol
65. phenol
66. bis(2-ethylhexyl) phthalate
67. butyl benzyl phthalate
68. di-n-butyl phthalate
69. di-n-octyl phthalate
70. diethyl phthalate
71. dimethyl phthalate
72. benzo(a)anthracene
73. benzo(a)pyrene
74. 3,4-benzofluoranthene
75. benzo(k)fluoranthane
76. chrysene
77. acenaphthylene
79. benzo(ghi)perylene
80. fluorene
82. dibenzo(a,h)anthracene
83. indeno(1,2,3-c,d)pyrene
84. pyrene
85. tetrachloroethylene
88. vinyl chloride
89. aldrin
90. dieldrin
91. chlorodane
92. 4,4'-DDT
93. 4,4'-DDE
94. 4,4'-DDD
95. alpha-endosulfan
96. beta-endosulfan
97. endosulfan sulfate
98. endrin
99. endrin aldehyde
100. heptachlor
101. heptachlor epoxide
102. alpha-BHC
103. beta-BHC
104. gamma-BHC
105. delta-BHC
106. PCB-1242(a)
107. PCB-1254(a)
108. PCB-1221(a)
109. PCB-1232(b)
110. PCB-1248(b)
111. PCB-1260(b)
112. PCB-1016(b)
113. toxaphene
116. asbestos
129. 2,3,7,8-tetrachlorodibenzo-p-dioxin

Appendix C—Pollutants Present in Amounts Too Small To Be Treated Using Technology Known to the Administrator

The following three (3) pollutants are being excluded under Paragraph 8(a)(iii) because they are present in amounts too small to be effectively reduced by technologies known to the Administrator:
123. mercury
127. thallium

Appendix D—Toxic Pollutants Controlled But Not Specifically Regulated

Toxic pollutants controlled but not specifically regulated at BPT, NSPS, PSES and PSNS.
114. antimony
115. arsenic
118. beryllium
119. cadmium
125. selenium
126. silver

Toxic pollutants controlled but not specifically regulated at BPT, BAT and NSPS.
4. benzene
11. 1, 1, 1-trichloroethane
23. chloroform
36. 2, 6-dinitrotoluene
38. ethylbenzene
44. methylene chloride
55. naphthalene
62. N-nitrosodiphenylamine
78. anthracene
81. phenanthrene
86. toluene
87. trichloroethylene

Appendix E—Toxic Pollutants Detected in the Effluents of Only One Plant, Uniquely Related to That Plant and Not Related to the Manufacturing Process Under Study

121. cyanide

Appendix F—List of Toxic Organics Comprising Total Toxic Organics (TTO):

These are the twelve (12) pollutants that comprise total toxic organics, or TTO:
4. benzene
11. 1, 1, 1-trichloroethane
23. chloroform
36. 2, 6-dinitrotoluene
38. ethylbenzene
44. methylene chloride
55. naphthalene
62. N-nitrosodiphenylamine
78. anthracene
81. phenanthrene
86. toluene
87. trichloroethylene

A new Part 468 is added in 40 CFR to read as follows:

PART 468—COPPER FORMING POINT SOURCE CATEGORY

General Provisions

Subpart A—Copper Forming Subcategory

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

§ 468.01 Applicability.

The provisions of this subpart are applicable to discharges resulting from the manufacture of formed copper and copper alloy products. The forming operations covered are hot rolling, cold rolling, drawing, extrusion, and forging. The casting of copper and copper alloys is not controlled by this part. (See 40 CFR 451.)

§ 468.02 Specialized definitions.

In addition to the definitions set forth in 40 CFR Part 401 and the chemical analysis methods in 40 CFR Part 136, the following definitions apply to this part:

(a) The term "alkaline cleaning bath" shall mean a bath consisting of an alkaline cleaning solution through which a workpiece is processed.

(b) The term "alkaline cleaning rinse" shall mean a rinse following an alkaline cleaning bath through which a workpiece is processed. A rinse consisting of a series of rinse tanks is considered as a single rinse.

(c) The term "ancillary operation" shall mean any operation associated with a primary forming operation. These ancillary operations include surface and heat treatment, hydrotesting, sawing, and surface coating.

(d) The term "annealing with oil" shall mean the use of oil to quench a workpiece as it passes from an annealing furnace.

(e) The term "annealing with water" shall mean the use of a water spray or bath, of which water is the major constituent, to quench a workpiece as it passes from an annealing furnace.

(f) The term "cold rolling" shall mean the process of rolling a workpiece below the recrystallization temperature of the copper or copper alloy.

(g) The term "drawing" shall mean pulling the workpiece through a die or succession of dies to reduce the diameter or alter its shape.

(h) The term "extrusion" shall mean the application of pressure to a copper workpiece, forcing the copper to flow through a die orifice.

(i) The term "extrusion heat treatment" shall mean the spray application of water to a workpiece immediately following extrusions for the purpose of heat treatment.

(j) The term "heat treatment" shall mean the application or removal of heat to a workpiece to change the physical properties of the metal.

(k) The term "pickling bath" shall mean any chemical bath (other than alkaline cleaning) through which a workpiece is processed.

(l) The term "pickling fume scrubber" shall mean the process of using an air pollution control device to remove particulates and fumes from air above a pickling bath by entraining the pollutants in water.

(m) The term "pickling rinse" shall mean a rinse, other than an alkaline cleaning rinse, through which a workpiece is processed. A rinse consisting of a series of rinse tanks is considered as a single rinse.

(n) The term "off-kilogram (off-pound)" shall mean the mass or copper of copper alloy removed from a forming or ancillary operation at the end of a process cycle for transfer to a different machine or process.

(o) The term "rolling" shall mean the reduction in the thickness or diameter of a workpiece by passing it between rollers.

(p) The term "solution heat treatment" shall mean the process introducing a workpiece into a quench bath for the purpose of heat treatment following rolling, drawing or extrusion.

(q) The term "spent lubricant" shall mean water or an oil- water mixture which is used in forming operations to reduce friction, heat and wear and ultimately discharged.

(r) The term "Total Toxic Organics (TTO)" shall mean the sum of the masses or concentrations of each of the following toxic organic compounds which is found at a concentration greater than 0.010 mg/l.

benzene
1,1,1-trichloroethane
chloroform
2,6-dinitrotoluene
ethylbenzene
methylene chloride
napthalene
N-nitrosodiphenylamine
anthracene
phenanthrene
toluene
trichloroethylene

(s) The term "alkaline cleaning rinse for forged parts" shall mean a rinse following an alkaline cleaning bath through which a forged part is processed. A rinse consisting of a series of rinse tanks is considered as a single rinse.

(t) The term "pickling rinse for forged parts" shall mean a rinse, other than an alkaline cleaning rinse, through which forged parts are processed. A rinse consisting of a series of rinse tanks is considered as a single rinse.

(u) The term "tumbling or burnishing" shall mean the process of polishing, deburring, removing sharp corners, and generally smoothing parts for both cosmetic and functional purposes, as well as the process of washing the finished parts and cleaning the abrasion media.

(v) The term "surface coating" shall mean the process of coating a copper workpiece as well as the associated surface finishing and flattening.

(w) The term "miscellaneous waste stream" shall mean the following additional waste streams related to forming copper: hydrotesting, sawing, surface milling, and maintenance.

§ 468.03 Monitoring and reporting requirements.

The following special monitoring requirements apply to all facilities controlled by this regulation.

(a) The "monthly average" regulatory values shall be the basis for the monthly average discharge in direct discharge permits and for pretreatment standards. Compliance with the monthly discharge limit is required regardless of the number of samples analyzed and averaged.

(b) As an alternate monitoring procedure for TTO, indirect dischargers may monitor for oil and grease and meet the alternate monitoring standards for oil and grease established for PSES and PSNS. Any indirect discharger meeting the alternate monitoring oil and grease standards shall be considered to meet the TTO standard.

§ 468.04 Compliance date for PSES.

The compliance date for pretreatment standards for existing sources is August 15, 1986.[1]

Subpart A—Copper Forming Subcategory

§ 468.10 Applicability; description of the copper forming subcategory.

This subpart applies to discharges of pollutants to waters of the United States, and introduction of pollutants into publicly owned treatment works from the forming of copper and copper alloys.

[1] The Consent Decree in *NRDC* v. *Train*, 12 ERC 1833 (D.D.C. 1979) specifies a compliance date for PSES of no later than June 30, 1984, EPA has moved for a modification of that provision of the Decree. Should the Court deny that motion, EPA will be required to modify this compliance date accordingly.

§ 468.11 Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).

Except as provided in 40 CFR Part 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) Subpart A—Hot Rolling Spent Lubricant BPT Effluent Limitations.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy hot rolled	
	English units—pounds per 1,000,000 off-pounds of copper or copper alloy hot rolled	
Chromium	0.045	0.018
Copper	0.195	0.103
Lead	0.015	0.013
Nickel	0.197	0.130
Zinc	0.150	0.062
Oil and Grease	2.060	1.236
TSS	4.223	2.008
pH	(1)	(1)

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

(b) Subpart A—Cold Rolling Spent Lubricant BPT Effluent Limitations.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy cold rolled	
	English units—pounds per 1,000,000 off-pounds of copper or copper alloy cold rolled	
Chromium	0.168	0.068
Copper	0.720	0.379
Lead	0.056	0.049
Nickel	0.727	0.481
Zinc	0.553	0.231
Oil and Grease	7.580	4.548
TSS	15.539	7.390
pH	(1)	(1)

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

(c) Subpart A—Drawing Spent Lubricant BPT Effluent Limitations.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy drawn	
	English units—pounds per 1,000,000 off-pounds of copper or copper alloy drawn	
Chromium	0.037	0.015
Copper	0.161	0.085

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
Lead	0.012	0.011
Nickel	0.163	0.107
Zinc	0.124	0.051
Oil and grease	1.700	1.020
TSS	3.485	1.657
pH	(1)	(1)

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

(d) Subpart A—Solution Heat Treatment BPT Effluent Limitations.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy heat treated	
	English units—pounds per 1,000,000 off-pounds of copper or copper alloy heat treated	
Chromium	1.118	0.457
Copper	4.827	2.541
Lead	0.381	0.330
Nickel	4.878	3.227
Zinc	3.709	1.550
Oil and grease	50.820	30.492
TSS	104.181	49.549
pH	(1)	(1)

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

(e) Subpart A—Extrusion Heat Treatment BPT Effluent Limitations.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy heat treated on an extrusion press	
	English units—pounds per 1,000,000 off-pounds of copper or copper alloy heat treated on an extrusion press	
Chromium	0.00088	0.00036
Copper	0.003	0.002
Lead	0.0003	0.00026
Nickel	0.003	0.002
Zinc	0.002	0.001
Oil and grease	0.040	0.024
TSS	0.082	0.039
pH	(1)	(1)

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

(f) Subpart A—Annealing With Water BPT Effluent Limitations.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper annealed with water	
	English units—pounds per 1,000,000 off-pounds of copper or copper alloy annealed with water	
Chromium	2.493	1.020
Copper	10.767	5.667
Lead	0.850	0.736
Nickel	10.880	7.197

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
Zinc	8.273	3.456
Oil and grease	113.340	68.004
TSS	232.347	110.506
pH	(1)	(1)

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

(g) Subpart A—Annealing With Oil BPT Effluent Limitations.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy annealed with oil	
	English units—pounds per 1,000,000 off-pounds of copper or copper alloy annealed with oil	
Chromium	0	0
Copper	0	0
Lead	0	0
Nickel	0	0
Zinc	0	0
Oil and grease	0	0
TSS	0	0
pH	(1)	(1)

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

(h) Subpart A—Alkaline Cleaning Rinse BPT Effluent Limitations.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy alkaline cleaned	
	English units—pounds per 1,000,000 off-pounds of copper or copper alloy alkaline cleaned	
Chromium	1.854	0.758
Copper	8.006	4.214
Lead	0.632	0.547
Nickel	8.090	5.351
Zinc	6.152	2.570
Oil and grease	84.280	50.568
TSS	172.774	82.173
pH	(1)	(1)

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

(i) Subpart A—Alkaline Cleaning Rinse for Forged Parts BPT Effluent Limitations.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy forged parts alkaline cleaned	
	English units—pounds per 1,000,000 off-pounds of copper or copper alloy forged parts alkaline cleaned	
Chromium	5.562	2.275
Copper	24.019	12.642
Lead	1.896	1.643
Nickel	24.272	16.055
Zinc	18.457	7.711
Oil and grease	252.840	151.704

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
TSS	518.322	246.519
pH	(1)	(1)

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

(j) Subpart A—Alkaline Cleaning Bath BPT Effluent Limitations.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy parts alkaline cleaned	
	English units—pounds per 1,000,000 off-pounds of copper or copper alloy forged parts alkaline cleaned	
Chromium	0.020	0.0084
Copper	0.089	0.046
Lead	0.0070	0.0060
Nickel	0.089	0.059
Zinc	0.068	0.028
Oil and grease	0.93	0.56
TSS	1.91	0.91
pH	(1)	(1)

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

(k) Subpart A—Pickling Rinse BPT Effluent Limitations.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy pickled	
	English units—pounds per/1,000,000 off-pounds of copper or copper alloy pickled	
Chromium	1.593	0.651
Copper	6.881	3.622
Lead	0.543	0.470
Nickel	6.954	4.599
Zinc	5.288	2.209
Oil and Grease	72.440	43.464
TSS	148.502	70.629
pH	(1)	(1)

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

(l) Subpart A—Pickling Rinse for Forged Parts BPT Effluent Limitations.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy forged parts pickled	
	English units—pounds per/1,000,000 off-pounds of copper or copper alloy forged parts pickled	
Chromium	1.723	0.705
Copper	7.444	3.918
Lead	0.587	0.509
Nickel	7.522	4.975
Zinc	5.720	2.389
Oil and Grease	78.360	47.016
TSS	160.638	76.401

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
pH	(1)	(1)

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

(m) Subpart A—Pickling Bath BPT Effluent Limitations.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy pickled English units—pounds per 1,000,000 off-pounds of copper or copper alloy pickle	
Chromium	0.051	0.020
Copper	0.220	0.116
Lead	0.017	0.015
Nickel	0.222	0.147
Zinc	0.169	0.070
Oil and grease	2.320	1.392
TSS	4.756	2.262
pH	(1)	(1)

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

(n) Subpart A—Pickling Fume Scrubber BPT Effluent Limitations.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy pickled English units—pounds per 1,000,000 off-pounds of copper or copper alloy pickled	
Chromium	0.275	0.112
Copper	1.189	0.626
Lead	0.093	0.081
Nickel	1.201	0.795
Zinc	0.913	0.381
Oil and grease	12.520	7.512
TSS	25.666	12.207
pH	(1)	(1)

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

(o) Subpart A—Tumbling or Burnishing BPT Effluent Limitations.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy tumbled or burnished English units—pounds per 1,000,000 off-pounds of copper or copper alloy tumbled or burnished	
Chromium	0.256	0.104
Copper	1.107	0.583
Lead	0.087	0.075
Nickel	1.119	0.740
Zinc	0.851	0.355
Oil and grease	11.660	6.996
TSS	23.903	11.368
pH	(1)	(1)

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

(p) Subpart A—Surface Coating BPT Effluent Limitations.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy surface coated English units—pounds per 1,000,000 off-pounds of copper or copper alloy surface coated	
Chromium	0.326	0.133
Copper	1.411	0.743
Lead	0.111	0.096
Nickel	1.426	0.943
Zinc	1.084	0.453
Oil and grease	14.680	8.916
TSS	30.463	14.488
ph	(1)	(1)

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

(q) Subpart A—Miscellaneous Waste Streams BPT Effluent Limitations.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy formed English units—pounds per 1,000,000 off-pounds of copper or copper alloy formed	
Chromium	0.009	0.003
Copper	0.041	0.021
Lead	0.003	0.002
Nickel	0.041	0.027
Zinc	0.031	0.013
Oil and grease	0.436	0.261
TSS	0.893	0.425
pH	(1)	(1)

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

§ 468.12 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 Part 125.30–32, any existing point source subject to this subpart must achieve the following effluent reduction attainable by the application of the best available technology economically achievable (BAT):

(a) Subpart A—Hot Rolling Spent Lubricant BAT Effluent Limitations.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy hot rolled English Units—pounds per 1,000,000 off-pounds of copper or copper alloy hot rolled	
Chromium	0.045	0.018
Copper	0.195	0.103
Lead	0.015	0.013
Nickel	0.197	0.130
Zinc	0.150	0.062

(b) Subpart A—Cold Rolling Spent Lubricant BAT Effluent Limitations.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy cold rolled English units—pounds per 1,000,000 off-pounds of copper or copper alloy cold rolled	
Chromium	0.166	0.068
Copper	0.720	0.379
Lead	0.056	0.049
Nickel	0.727	0.481
Zinc	0.553	0.231

(c) Subpart A—Drawing Spent Lubricant BAT Effluent Limitations.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy drawn English units—pounds per 1,000,000 off-pounds of copper or copper alloy drawn	
Chromium	0.037	0.015
Copper	0.161	0.085
Lead	0.012	0.011
Nickel	0.163	0.107
Zinc	0.124	0.051

(d) Subpart A—Solution Heat Treatment BAT Effluent Limitations.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy heat treated English units—pounds per 1,000,000 off-pounds of copper or copper alloy heat treated	
Chromium	0.284	0.116
Copper	1.227	0.646
Lead	0.096	0.083
Nickel	1.240	0.820
Zinc	0.943	0.394

(e) Subpart A—Extrusion Heat Treatment BAT Effluent Limitations.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric Units—mg/off-kg of copper or copper alloy heat treated on an extrusion press English Units—pounds per/1,000,000 off-pounds of copper or copper alloy heat treated on an extrusion press	
Chromium	0.00088	0.00036
Copper	0.003	0.0020
Lead	0.0003	0.00026
Nickel	0.003	0.002
Zinc	0.002	0.001

(f) Subpart A—Annealing with Water BAT Effluent Limitations.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric Units—mg/off-kg of copper or copper alloy annealed with water	
	English Units—pounds per/1,000,000 off-pounds of copper or copper alloy annealed with water	
Chromium	0.545	0.223
Copper	2.356	1.240
Lead	0.186	0.161
Nickel	2.380	1.574
Zinc	1.810	0.756

(g) Subpart A—Annealing with Oil BAT Effluent Limitations.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy annealed with oil	
	English units—pounds per 1,000,000 off-pounds of copper or copper alloy annealed with oil	
Chromium	0	0
Copper	0	0
Lead	0	0
Nickel	0	0
Zinc	0	0

(h) Subpart A—Alkaline Cleaning Rinse BAT Effluent Limitations.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy alkaline cleaned	
	English units—pounds per 1,000,000 off-pounds of copper or copper alloy alkaline cleaned	
Chromium	1.854	0.758
Copper	8.006	4.214
Lead	0.632	0.547
Nickel	8.090	5.351
Zinc	6.152	2.570

(i) Subpart A—Alkaline Cleaning Rinse for Forged Parts BAT EFfluent Limitations.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric Units—mg/off-kg of copper or copper alloy forged parts alkaline cleaned	
	English Units—pounds per 1,000,000 off-pounds of copper or copper alloy forged parts alkaline cleaned	
Chromium	5.562	2.275
Copper	24.019	12.642
Lead	1.896	1.643
Nickel	24.272	16.055
Zinc	18.457	7.711

(j) Subpart A—Alkaline Cleaning Bath BAT Effluent Limitations.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric Units—mg/off-kg of copper or copper alloy alkaline cleaned	
	English Units—pounds per 1,000,000 off-pounds of copper or copper alloy alkaline cleaned	
Chromium	0.020	0.0084
Copper	0.088	0.046
Lead	0.0070	0.0060
Nickel	0.089	0.059
Zinc	0.068	0.028

(k) Subpart A—Pickling Rinse BAT Effluent Limitations.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric Units—mg/off-kg of copper or copper alloy pickled	
	English Units—pounds per 1,000,000 off-pounds of copper or copper alloy pickled	
Chromium	0.574	0.235
Copper	2.481	1.306
Lead	0.195	0.169
Nickel	2.507	1.658
Zinc	1.906	0.796

(l) Subpart A—Pickling Rinse for Forged Parts BAT Effluent Limitations.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric Units—mg/off-kg of copper or copper alloy forged parts pickled	
	English Units—pounds per 1,000,000 off-pounds of copper or copper alloy forged parts pickled	
Chromium	1.723	0.705
Copper	7.444	3.918
Lead	0.587	0.509
Nickel	7.522	4.975
Zinc	5.720	2.389

(m) Subpart A—Pickling Bath BAT Effluent Limitations.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy pickled	
	English units—pounds per 1,000,000 off-pounds of copper or copper alloy pickled	
Chromium	0.051	0.020
Copper	0.220	0.116
Lead	0.017	0.015
Nickel	0.222	0.147
Zinc	0.169	0.070

(n) Subpart A—Pickling Fume Scrubber BAT Effluent Limitations.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy pickled	
	English units—pounds per 1,000,000 off-pounds of copper or copper alloy pickled	
Chromium	0.275	0.112
Copper	1.189	0.626
Lead	0.093	0.081
Nickel	1.201	0.795
Zinc	0.913	0.381

(o) Subpart A—Tumbling or Burnishing BAT Effluent Limitations.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy tumbled or burnished	
	English units—pound per 1,000,000 off-pounds of copper or copper alloy tumbled or burnished	
Chromium	0.256	0.104
Copper	1.107	0.583
Lead	0.087	0.075
Nickel	1.119	0.740
Zinc	0.851	0.355

(p) Subpart A—Surface Coating BAT Effluent Limitations.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy surface coated	
	English units—pound per 1,000,000 off-pounds of copper or copper alloy surface coated	
Chromium	0.326	0.133
Copper	1.411	0.743
Lead	0.111	0.096
Nickel	1.426	0.943
Zinc	1.084	0.453

(q) Subpart A—Miscellaneous Waste Streams BAT Effluent Limitations.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy formed	
	English units—pounds per 1,000,000 off-pounds of copper or copper alloy formed	
Chromium	0.009	0.003
Copper	0.041	0.021
Lead	0.003	0.002
Nickel	0.041	0.027
Zinc	0.031	0.013

§ 468.13 New source performance standards (NSPS).

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

(a) Subpart A—Hot Rolling Spent Lubricant NSPS.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy hot rolled	
	English units—pounds per 1,000,000 off-pounds of copper or copper alloy hot rolled	
Chromium	0.038	0.015
Copper	0.131	0.062
Lead	0.010	0.0092
Nickel	0.056	0.038
Zinc	0.105	0.043
Oil and grease	1.030	1.030
TSS	1.545	1.236
pH	(1)	(1)

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

(b) Subpart A—Cold Rolling Spent Lubricant NSPS.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy cold rolled	
	English units—pounds per 1,000,000 off-pounds of copper or copper alloy cold rolled	
Chromium	0.140	0.056
Copper	0.485	0.231
Lead	0.037	0.034
Nickel	0.208	0.140
Zinc	0.386	0.159
Oil and grease	3.790	3.790
TSS	5.685	4.548
pH	(1)	(1)

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

(c) Subpart A—Drawing Spent Lubricant NSPS.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy drawn	
	English units—pounds per 1,000,000 off-pounds of copper or copper alloy drawn	
Chromium	0.031	0.012
Copper	0.108	0.051
Lead	0.0085	0.0076
Nickel	0.046	0.031
Zinc	0.086	0.035
Oil and grease	0.85	0.85
TSS	1.275	1.020
pH	(1)	(1)

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

(d) Subpart A—Solution Heat Treatment NSPS.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy drawn	
	English units—pounds per 1,000,000 off-pounds of copper or copper alloy heat treated	
Chromium	0.239	0.096
Copper	0.826	0.394
Lead	0.064	0.058
Nickel	0.355	0.239
Zinc	0.658	0.271
Oil and grease	6.460	6.460
TSS	9.690	7.752
pH	(1)	(1)

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

(e) Subpart A—Extrusion Heat Treatment NSPS.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy heat treated on an extrusion press	
	English units—pounds per 1,000,000 off-pounds of copper or copper alloy heat treated on and extrusion press	
Chromium	0.00074	0.00030
Copper	0.0020	0.0010
Lead	0.00020	0.00018
Nickel	0.0010	0.00074
Zinc	0.0020	0.00084
Oil and grease	0.020	0.020
TSS	0.030	0.024
pH	(1)	(1)

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

(f) Subpart A—Annealing with Water NSPS.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy annealed with water	
	English units—pounds per 1,000,000 off-pounds of copper or copper alloy annealed with water	
Chromium	0.458	0.186
Copper	10.587	0.756
Lead	0.124	0.111
Nickel	0.682	0.458
Zinc	0.264	0.520
Oil and grease	12.400	12.400
TSS	18.600	14.880
pH	(1)	(1)

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

(g) Subpart A—Annealing with Oil NSPS.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy annealed with oil	
	English units—pounds per 1,000,000 off-pounds of copper or copper alloy annealed with oil	
Chromium	0	0
Copper	0	0
Lead	0	0
Nickel	0	0
Zinc	0	0
Oil and grease	0	0
TSS	0	0
pH	(1)	(1)

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

(h) Subpart A—Alkaline Cleaning Rinse NSPS.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy alkaline cleaned	
Chromium	1.559	0.632
Copper	5.393	2.570
Lead	0.421	0.379
Nickel	2.317	1.559
Zinc	4.298	1.769
Oil and grease	42.140	42.140
TSS	63.210	50.568
pH	(1)	(1)

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

(i) Subpart A—Alkaline Cleaning Rinse for Forged Parts NSPS.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy forged parts alkaline cleaned English units—pounds per 1,000,000 off-pounds of copper or copper alloy forged parts alkaline cleaned	
Chromium	4.667	1.896
Copper	16.181	7.711
Lead	1.264	1.137
Nickel	6.953	4.677
Zinc	12.894	5.309
Oil and grease	126.420	126.420
TSS	189.630	151.704
pH	(1)	(1)

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

(j) Subpart A—Alkaline Cleaning Bath NSPS.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy alkaline cleaned English units—pounds per 1,000,000 off-pounds of copper or copper alloy alkaline cleaned	
Chromium	0.017	0.0070
Copper	0.059	0.028
Lead	0.0046	0.0042
Nickel	0.025	0.017
Zinc	0.047	0.019
Oil and grease	0.46	0.46
TSS	0.70	0.56
pH	(1)	(1)

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

(k) Subpart A—Pickling Rinse NSPS.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy pickled English units—pounds per/1,000,000 off-pounds of copper or copper alloy pickled	
Chromium	0.216	0.087
Copper	0.748	0.356
Lead	0.058	0.052
Nickel	0.321	0.216
Zinc	0.596	0.245
Oil and grease	5.850	5.850
TSS	8.775	7.020
pH	(1)	(1)

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

(l) Subpart A—Pickling Rinse for Forged Parts NSPS.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy forged parts pickled English units—pounds per/1,000,000 off-pounds of copper or copper alloy forged parts pickled	
Chromium	0.649	0.263
Copper	2.246	1.070
Lead	0.175	0.157
Nickel	0.965	0.649
Zinc	1.790	0.737
Oil and grease	17.550	17.550
TSS	26.325	21.060
pH	(1)	(1)

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

(m) Subpart A—Pickling Bath NSPS.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy pickled English units—pounds per 1,000,000 of-pounds of copper or copper alloy pickled	
Chromium	0.042	0.017
Copper	0.148	0.070
Lead	0.011	0.010
Nickel	0.063	0.042
Zinc	0.118	0.048
Oil and grease	1.160	1.160
TSS	1.740	1.392
pH	(1)	(1)

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

(n) Subpart A—Pickling Fume Scrubber NSPS.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy pickled. English units-pounds per 1,000,000 off-pounds of copper or copper alloy pickled	
Chromium	0.231	0.093
Copper	0.801	0.381
Lead	0.062	0.056
Nickel	0.344	0.231
Zinc	0.638	0.262
Oil and grease	6.260	6.260
TSS	9.390	7.512
pH	(1)	(1)

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

(o) Subpart A—Tumbling or Burnishing NSPS.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper tumbled or burnished English units—pounds per 1,000,000 off-pounds of copper or copper alloy tumbled or burnished	
Chromium	0.215	0.087
Copper	0.746	0.355
Lead	0.058	0.052
Nickel	0.320	0.215
Zinc	0.594	0.244
Oil and grease	5.830	5.830
TSS	8.745	6.996
pH	(1)	(1)

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

(p) Subpart A—Surface Coating NSPS.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy surface coated English units—pounds per 1,000,000 off-pounds of copper or copper alloy surface coated	
Chromium	0.274	0.111
Copper	0.951	0.453
Lead	0.074	0.066
Nickel	0.408	0.274
Zinc	0.757	0.312
Oil and grease	7.430	7.430
TSS	11.145	8.916
pH	(1)	(1)

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

(q) Subpart A—Miscellaneous Waste Streams NSPS.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy formed	
	English units—pounds/1,000,000 off-pounds of copper or copper alloy formed	
Chromium	0.008	0.003
Copper	0.027	1.013
Lead	0.0021	0.0019
Nickel	0.011	0.008
Zinc	0.022	0.009
Oil and grease	0.218	0.218
TSS	0.327	0.261
pH	(1)	(1)

Within the range of 7.5 to 10.0 at all times.

§ 468.14 Pretreatment standards for existing sources (PSES).

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

(a) Subpart A—Hot Rolling Spent Lubricant PSES.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy hot rolled	
	English units—pounds per 1,000,000 off-pounds of copper or copper alloy hot rolled	
Chromium	0.045	0.018
Copper	0.195	0.103
Lead	0.015	0.013
Nickel	0.197	0.130
Zinc	0.150	0.062
TTO	0.066	0.035
Oil and grease [1]	2.060	1.236

[1] For alternate monitoring.

(b) Subpart A—Cold Rolling Spent Lubricant PSES.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy cold rolled	
	English units—pounds per 1,000,000 off-pounds of copper or copper alloy cold rolled	
Chromium	0.166	0.068
Copper	0.720	0.379
Lead	0.056	0.049
Nickel	0.727	0.481
Zinc	0.553	0.231
TTO	0.246	0.128
Oil and grease [1]	7.580	4.548

[1] For alternate monitoring

(c) Subpart A—Drawing Spent Lubricant PSES.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy drawn	
	English units—pounds per 1,000,000 off-pounds of copper or copper alloy drawn	
Chromium	0.037	0.015
Copper	0.161	0.085
Lead	0.012	0.011
Nickel	0.163	0.107
Zinc	0.124	0.051
TTO	0.055	0.028
Oil and grease [1]	1.700	1.020

[1] For alternate monitoring.

(d) Subpart A—Solution Heat Treatment PSES.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy heat treated	
	English units—pounds per 1,000,000 off-pounds of copper or copper alloy heat treated	
Chromium	0.284	0.116
Copper	1.227	0.646
Lead	0.096	0.083
Nickel	1.240	0.820
Zinc	0.943	0.394
TTO	0.419	0.219
Oil and grease [1]	12.920	7.752

[1] For alternate monitoring.

(e) Subpart A—Extrusion Heat Treatment PSES.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy heat treated on an extrusion press	
	English units—pounds per 1,000,000 off-pounds of copper or copper alloy heat treated on an extrusion press	
Chromium	0.00088	0.00036
Copper	0.0030	0.0020
Lead	0.00030	0.00026
Nickel	0.0030	0.0020
Zinc	0.0020	0.0010
TTO	0.0010	0.00068
Oil and grease [1]	0.040	0.024

[1] For alternate monitoring.

(f) Subpart A—Annealing with Water PSES.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy annealed with water	
	English units—pounds per 1,000,000 off-pounds of copper or copper alloy annealed with water	
Chromium	0.545	0.223
Copper	2.356	1.240
Lead	0.186	0.161
Nickel	2.380	1.574
Zinc	1.810	0.756
TTO	0.806	0.421
Oil and grease [1]	24.800	14.880

[1] For alternate monitoring.

(g) Subpart A—Annealing With Oil PSES.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy annealed with oil	
	English units—pounds per 1,000,000 off-pounds of copper or copper alloy annealed with oil	
Chromium	0	0
Copper	0	0
Lead	0	0
Nickel	0	0
Zinc	0	0
TTO	0	0
Oil and grease [1]	0	0

[1] For alternate monitoring.

(h) Subpart A—Alkaline Cleaning Rinse PSES.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy alkaline cleaned	
	English units—pounds per 1,000,000-off pounds of copper or copper alloy alkaline cleaned	
Chromium	1.854	0.758
Copper	8.006	4.214
Lead	0.632	0.547
Nickel	8.090	5.351
Zinc	6.152	2.570
TTO	2.739	1.432
Oil and grease [1]	84.280	50.568

[1] For alternate monitoring.

(i) Subpart A—Alkaline Cleaning Rinse for Forged Parts PSES.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy forged parts alkaline cleaned	
	English units—pounds per 1,000,000 off—pounds of copper or copper alloy forged parts alkaline cleaned	
Chromium	5.562	2.275
Copper	24.019	12.642
Lead	1.896	1.643
Nickel	24.272	16.055
Zinc	18.457	7.711
TTO	8.217	4.298
Oil and grease [1]	252.840	151.704

[1] For alternate monitoring.

(j) Subpart A—Alkaline Cleaning Bath PSES.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy alkaline cleaned	
	English units—pounds per 1,000,000 off—pounds of copper or copper alloy alkaine cleaned	
Chromium	0.020	0.0084
Copper	0.088	0.046
Lead	0.0070	0.0060
Nickel	0.089	0.059
Zinc	0.068	0.028
TTO	0.030	0.015
Oil and grease [1]	0.93	0.56

[1] For alternate monitoring.

(k) Subpart A—Pickling Rinse PSES.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy pickled	
	English units—pounds per 1,000,000 of pounds of copper or copper alloy pickled	
Chromium	0.574	0.235
Copper	2.481	1.306
Lead	0.195	0.169
Nickel	2.507	1.658
Zinc	1.906	0.796
TTO	0.848	0.444
Oil and grease [1]	26.120	15.672

[1] For alternate monitoring.

(l) Supart A—Pickling Rinse for Forged Parts PSES.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy forged parts pickled	
	English units—pounds per 1,000,000 off-pounds of copper or copper alloy forged parts pickled	
Chromium	1.723	0.705
Copper	7.444	3.918
Lead	0.587	0.509
Nickel	7.522	4.975
Zinc	5.720	2.389
TTO	2.546	1.332
Oil and grease [1]	78.360	47.016

[1] For alternate monitoring.

(m) Subpart A—Pickling Bath PSES.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy pickled	
	English units—pounds per 1,000,000 off-pounds of copper or copper alloy pickled	
Chromium	0.051	0.020
Copper	0.220	0.116
Lead	0.017	0.015
Nickel	0.222	0.147
Zinc	0.169	0.070
TTO	0.075	0.039
Oil and grease [1]	2.320	1.392

[1] For alternate monitoring.

(n) Subpart A—Pickling Fume Scrubber PSES

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy pickled	
	English units—pounds per 1,000,000 off-pounds of copper or copper alloy pickled	
Chromium	0.275	0.112
Copper	0.189	0.626
Lead	0.093	0.081
Nickel	1.201	0.795
Zinc	0.913	0.381
TTO	0.406	0.212
Oil and grease [1]	12.520	7.512

[1] For alternate monitoring.

(o) Subpart A—Tumbling or Burnishing PSES.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy tumbled or burnished	
	English units—pounds per 1,000,000 off-pounds of copper or copper alloy tumbled or burnished	
Chromium	0.256	0.104
Copper	1.107	0.583

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
Lead	0.087	0.075
Nickel	1.119	0.740
Zinc	0.851	0.355
TTO	0.378	0.198
Oil and grease [1]	11.660	6.996

[1] For alternate monitoring.

(p) Subpart A—Surface Coating PSES.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy surface coated	
	English units—pounds per 1,000,000 off-pounds of copper or copper alloy surface coated	
Chromium	0.326	0.133
Copper	1.411	0.743
Lead	0.111	0.096
Nickel	1.426	0.943
Zinc	1.084	0.453
TTO	0.482	0.252
Oil and grease [1]	14.860	8.916

[1] For alternate monitoring.

(q) Subpart A—Miscellaneous Waste Streams PSES.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy formed	
	English units—pounds per 1,000,000 off pounds of copper or copper alloy formed	
Chromium	0.009	0.003
Copper	0.041	0.021
Lead	0.003	0.002
Nickel	0.041	0.027
Zinc	0.031	0.013
TTO	0.014	0.007
Oil and grease [1]	0.436	0.261

[1] For alternate monitoring.

§ 468.15 Pretreatment standards for new sources (PSNS).

Except as provided in 40 CFR Part 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 sources for new sources:

(a) Subpart A—Hot Rolling Spent Lubricant PSNS.

Pollutant or pollutant property	Maximum for any one day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy hot rolled	
	English units—pounds per 1,000,000 off-pounds of copper or copper alloy hot rolled	
Chromium	0.038	0.015
Copper	0.131	0.062
Lead	0.010	0.0092
Nickel	0.056	0.038
Zinc	0.105	0.043
TTO	0.035	0.035
Oil and grease [1]	1.030	1.030

[1] For alternate monitoring.

(b) Subpart A—Cold Rolling Spent Lubricant PSNS.

Pollutant or pollutant property	Maximum for any one day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy cold rolled	
	English units—pounds per 1,000,000 off-pounds of copper or copper alloy cold rolled	
Chromium	0.140	0.056
Copper	0.485	0.231
Lead	0.037	0.034
Nickel	0.208	0.140
Zinc	0.386	0.159
TTO	0.128	0.128
Oil and grease [1]	3.790	3.790

[1] For alternate monitoring.

(c) Subpart A—Drawing Spent Lubricant PSNS.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy drawn	
	English units—pounds per 1,000,000 off-pounds of copper or copper alloy drawn	
Chromium	0.031	0.012
Copper	0.108	0.051
Lead	0.0085	0.0076
Nickel	0.046	0.031
Zinc	0.086	0.035
TTO	0.028	0.028
Oil and grease [1]	0.850	0.850

[1] For alternate monitoring.

(d) Subpart A—Solution Heat Treatment PSNS.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy heat treated	
	English units—pounds per 1,000,000 off—pounds of copper or copper alloy heat treated	
Chromium	0.239	0.096
Copper	0.826	0.394
Lead	0.064	0.058
Nickel	0.355	0.239
Zinc	0.658	0.271
TTO	0.219	0.219
Oil and grease [1]	6.460	6.460

[1] For alternate monitoring.

(e) Subpart A—Extrusion Heat Treatment PSNS.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy heat treated on an extrusion press	
	English units—pounds per 1,000,000 off-pounds of copper or copper alloy heat treated on an extrusion press	
Chromium	0.00074	0.00030
Copper	0.0020	0.0010
Lead	0.00020	0.00018
Nickel	0.0010	0.00074
Zinc	0.0020	0.00084
TTO	0.00068	0.00068
Oil and grease [1]	0.020	0.020

[1] For alternate monitoring.

(f) Subpart A—Annealing with Water PSNS.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy annealed with water	
	English units—pounds per 1,000,000 off-pounds of copper or copper alloy annealed with water	
Chromium	0.458	0.186
Copper	1.587	0.756
Lead	0.124	0.111
Nickel	0.682	0.458
Zinc	1.264	0.520
TTO	0.421	0.421
Oil and grease [1]	12.400	12.400

[1] For alternate monitoring.

(g) Subpart A—Annealing With Oil PSNS.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy annealed with oil	
	English units—pounds per 1,000,000 off-pounds of copper or copper alloy annealed with oil	
Chromium	0	0
Copper	0	0
Lead	0	0
Nickel	0	0
Zinc	0	0
TTO	0	0
Oil and grease [1]	0	0

[1] For alternate monitoring.

(h) Subpart A—Alkaline Cleaning Rinse PSNS.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy alkaline cleaned	
	English units—pounds per 1,000,000 off-pounds of copper or copper alloy alkaline cleaned	
Chromium	1.559	0.632
Copper	5.393	2.570
Lead	0.421	0.379
Nickel	2.317	1.559
Zinc	4.298	1.769
TTO	1.432	1.432
Oil and grease [1]	42.140	42.140

[1] For alternate monitoring.

(i) Subpart A—Alkaline Cleaning Rinse for Forged Parts PSNS.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy forged parts alkaline cleaned	
	English units—pounds per 1,000,000 off-pounds of copper or copper alloy forged parts alkaline cleaned	
Chromium	4.677	1.896
Copper	16.181	7.711
Lead	1.264	1.137
Nickel	6.953	4.677
Zinc	12.894	5.309
TTO	4.298	4.298
Oil and grease [1]	126.420	126.420

[1] For alternate monitoring.

(j) Subpart A—Alkaline Cleaning Bath PSNS.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy alkaline cleaned English units—pounds per 1,000,000 off-pounds of copper or copper alloy alkaline cleaned	
Chromium	0.017	0.0070
Copper	0.059	0.028
Lead	0.0046	0.0042
Nickel	0.025	0.017
Zinc	0.047	0.019
TTO	0.015	0.015
Oil and grease [1]	0.46	0.46

[1] For alternate monitoring.

(k) Subpart A—Pickling Rinse PSNS.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy pickled English units—pounds per 1,000,000 off-pounds of copper or copper alloy pickled	
Chromium	0.216	0.087
Copper	0.748	0.356
Lead	0.058	0.052
Nickel	0.321	0.216
Zinc	0.596	0.245
TTO	0.198	0.198
Oil and grease [1]	5.850	5.850

[1] For alternate monitoring.

(l) Subpart A—Pickling Rinse for Forged Parts PSNS.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy forged parts pickled English units—pounds per 1,000,000 off-pounds of copper or copper alloy forged parts pickled	
Chromium	0.649	0.263
Copper	2.246	1.070
Lead	0.175	0.157
Nickel	0.965	0.649
Zinc	1.790	0.737
TTO	0.596	0.596
Oil and grease [1]	17.550	17.550

[1] For alternate monitoring.

(m) Subpart A—Pickling Bath PSNS.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy pickled English units—pounds per 1,000,000 off-pounds of copper or copper alloy pickled	
Chromium	0.042	0.017
Copper	0.148	0.070
Lead	0.011	0.010
Nickel	0.063	0.042
Zinc	0.118	0.048
TTO	0.039	0.039
Oil and grease [1]	1.160	1.160

[1] For alternate monitoring.

(n) Subpart A—Pickling Fume Scrubber PSNS.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy pickled English units—pounds per 1,000,000 off-pounds of copper or copper alloy pickled	
Chromium	0.231	0.093
Copper	0.801	0.381
Lead	0.062	0.056
Nickel	0.344	0.231
Zinc	0.638	0.262
TTO	0.212	0.212
Oil and grease [1]	6.260	6.260

[1] For alternate monitoring.

(o) Subpart A—Tumbling or Burnishing PSPS.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy tumbled or burnished English units—pounds per 1,000,000 off-pounds of copper or copper alloy tumbled or burnished	
Chromium	0.215	0.087
Copper	0.746	0.355
Lead	0.058	0.052

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
Nickel	0.320	0.215
Zinc	0.594	0.244
TTO	0.198	0.198
Oil and grease [1]	5.830	5.830

[1] For alternate monitoring.

(p) Subpart A—Surface Coating PSNS.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy surface coated English units—pounds per 1,000,000 off-pounds of copper or copper alloy surface coated	
Chromium	0.274	0.111
Copper	0.951	0.453
Lead	0.074	0.066
Nickel	0.408	0.274
Zinc	0.757	0.312
TTO	0.252	0.252
Oil and grease [1]	7.430	7.430

[1] For alternate monitoring.

(q) Subpart A—Miscellaneous Waste Streams PSNS.

Pollutant or pollutant property	Maximum for any 1 day	Maximum for monthly average
	Metric units—mg/off-kg of copper or copper alloy formed English units—pounds per 1,000,000 off-pounds of copper or copper alloy formed	
Chromium	0.008	0.003
Copper	0.027	0.013
Lead	0.0021	0.0019
Nickel	0.011	0.008
Zinc	0.022	0.009
TTO	0.007	0.007
Oil and grease [1]	0.218	0.218

[1] For alternate monitoring.

§ 468.16 Effluent limitations representing the degree of effluent reduction attainable by the application of the best conventional pollution control technology (BCT). [Reserved]

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