

familiar with the facility's processes, products, and analytical monitoring reports should be able to make the determination. Some facilities may prefer consultation with an analytical chemist.

EPA is proposing to set numerical limitations on the discharge of total sulfide from facilities in several subcategories. In an effort to reduce monitoring burden on indirect dischargers, EPA is considering (but not proposing) to allow a waiver for the monitoring of total sulfide (even when present). EPA would require this demonstration one time per permit cycle and if no major changes in processes or raw materials change during that period, the demonstration would not have to be repeated for the next permit cycle. A wastewater treatment operator or other qualified facility personnel who is familiar with the facility's processes, products, and analytical monitoring reports can make the determination.

Finally, EPA is considering, but not proposing, whether to allow certain facilities in the Metal Finishing Job Shop subcategory to demonstrate compliance with specified pollution prevention and water conservation practices (in addition to maintaining compliance with the existing Metal Finishing and Electroplating effluent guidelines) in lieu of meeting the requirements of the MP&M regulation. Facilities would submit certification statements one time initially (by the compliance deadline) and twice per year thereafter for indirect dischargers, or once per year for direct dischargers. The compliance paperwork necessary to implement this alternative would likely require the attention of the wastewater treatment operator or plant manager.

f. Overlapping Federal Rules

EPA has established effluent guidelines regulations for thirteen industrial categories which may perform operations that are sometimes found in MP&M facilities. These effluent guidelines are:

- Electroplating (40 CFR part 413);
- Iron and Steel Manufacturing (40 CFR part 420);
- Nonferrous Metals Manufacturing (40 CFR part 421);
- Ferroalloy Manufacturing (40 CFR part 424);
- Metal Finishing (40 CFR part 433);
- Battery Manufacturing (40 CFR part 461);
- Metal Molding and Casting (40 CFR part 464);
- Coil Coating (40 CFR part 465);
- Porcelain Enameling (40 CFR part 466);

- Aluminum Forming (40 CFR part 467);
- Copper Forming (40 CFR part 468);
- Electrical and Electronic Components (40 CFR part 469); and
- Nonferrous Metals Forming and Metal Powders (40 CFR part 471).

In 1986, the Agency reviewed coverage of these regulations and identified a significant number of metals processing facilities discharging wastewater that these 13 regulations did not cover. As discussed above, EPA's "Preliminary Data Summary for the Machinery Manufacturing and Rebuilding Industry" (EPA 440/1-89/106) identified the MP&M industry as one that is discharging hazardous wastes to publicly owned treatment works and directly into the nation's surface waters.

EPA recognizes that in some cases, unit operations performed in industries covered by the existing effluent guidelines are the same as unit operations performed at MP&M facilities. In general, when unit operations and their associated wastewater discharges are already covered by an existing effluent guideline, they will remain covered under that effluent guideline. However, for the existing Electroplating (40 CFR part 413) and Metal Finishing (40 CFR part 433) effluent guidelines most facilities will be covered by this proposal. EPA is proposing to replace the existing Electroplating (40 CFR part 413) and Metal Finishing (40 CFR part 433) effluent guidelines with the MP&M regulations for all facilities in the Printed Wiring Board subcategory, all facilities in the Metal Finishing Job Shop subcategory, and for direct discharging facilities in the Non-Chromium Anodizers subcategory. (See Section VI.C for a discussion of subcategory-specific applicability).

When a facility covered by an existing metals effluent guidelines (other than Electroplating or Metal Finishing) discharges wastewater from unit operations not covered under that existing metals guideline but covered under MP&M, the facility will need to comply with both regulations. In those cases, the permit writer or control authority (e.g., Publicly Owned Treatment Works) will combine the limitations using an approach that proportions the limitations based on the different in-scope production levels (for production-based standards) or wastewater flows. POTWs refer to this approach as the "combined wastestream formula" (40 CFR 403.6(e)), while NPDES permit writers refer to it as the "building block approach." Permit writers and local control authorities

currently issue permits and control mechanisms for many facilities in other effluent guidelines categories where overlaps with more than one effluent limitation guidelines regulation occur (e.g., Organic Chemicals, Plastics, and Synthetic Fibers; Pesticide Manufacturing; Pesticide Formulating, Packaging and Repackaging; and Pharmaceutical Manufacturing). See Section III.D of this preamble for additional discussion of applicability.

2. Small Business Advocacy Review Panel

As required by section 609(b) of the RFA, as amended by SBREFA, EPA also conducted outreach to small entities and convened a Small Business Advocacy Review Panel to obtain advice and recommendations of representatives of the small entities that potentially would be subject to the rule's requirements. The Panel consisted of representatives from three Federal agencies: EPA, the Small Business Administration, and the Office of Management and Budget. The Panel reviewed materials EPA prepared in connection with the IRFA, and collected the advice and recommendations of small entity representatives. For this proposed rule, the small entity representatives included nine small MP&M facility owner/operators, one small municipality, and the following six trade associations representing different sectors of the industry: National Association of Metal Finishers (NAMF)/Association of Electroplaters and Surface Finishers (AESF)/MP&M Coalition; the Association Connecting Electronics Industries (also known as IPC); Porcelain Enamel Institute; American Association of Shortline Railroads (ASLRA); Electronics Industry Association (EIA); and the American Wire Producers Association (AWPA). Prior to and following the convening of the Panel, EPA and the other members of the Panel sought to gather advice and recommendations by meeting and consulting with the small entity representatives listed above. On September 16, 1999 and October 5, 1999, EPA held pre-Panel meetings with the potential small entity representatives to provide background information on the MP&M regulation and EPA's regulatory process and to provide detailed information on the elements of the IRFA including possible regulatory alternatives. After EPA's Small Business Advocacy Chair convened the Panel on December 8, 1999, the Panel provided over 300 pages of background information and analysis to the small entity representatives and met with the representatives on

December 17, 1999 and January 7, 2000. The Panel asked the small entity representatives to submit written comment on the MP&M rulemaking in relation to the elements of the IRFA. The Panel carefully considered these comments when developing its recommendations.

Consistent with the RFA/SBREFA requirements, the Panel evaluated the assembled materials and small-entity comments on issues related to the elements of the IRFA and prepared a report. The report summarizes the Panel's outreach efforts to small entities and the comments submitted by the small entity representatives. The Panel's report also presents their findings on issues related to the elements of an IRFA and recommendations regarding the rulemaking. EPA included a copy of the Panel report in the docket for this proposed rule.

In the area of potential reporting, record keeping and compliance requirements, the Panel recommended that EPA consider reduced monitoring schemes for small entities including incorporating several concepts of the proposed EPA NPDES Streamlining regulations ("Amendments to Streamline the National Pollutant Discharge Elimination System Program Regulations: Round 2; Proposed Rule" 61 FR 65268; December 11, 1996). For example, the Panel "encourages EPA to explore options for allowing certification in lieu of monitoring where an operator can determine, based on knowledge of the facility and its processes, that certain pollutants are not likely to be present or are adequately controlled." Based on the Panel's recommendations, EPA is proposing to allow MP&M indirect discharge facilities to apply for a waiver that will allow them to reduce their monitoring burden. In order for a facility to receive a monitoring waiver, the facility must submit a certification statement in writing to the control authority (e.g., POTW) stating that the facility does not use nor generate in any way a pollutant (or pollutants) at their site or that the pollutant (or pollutants) is present only at background levels from intake water and without any increase in the pollutant due to activities of the discharger. EPA notes that the NPDES streamlining for direct dischargers, which includes a similar provision, was finalized on May 15, 2000 (65 FR 30886).

The Panel also recommended that EPA give serious consideration to allowing the use of best management practices (BMPs) instead of numerical limitations, at least for some pollutants and/or subcategories of facilities. In

response to this recommendation, EPA is soliciting comment and data on a "Pollution Prevention Alternative for the Metal Finishing Job Shop Subcategory." This alternative would allow facilities in the Metal Finishing Job Shop subcategory to implement a set of pollution prevention measures in lieu of monitoring for a set of regulated parameters. The Agency is also soliciting comment on allowing facilities in other subcategories to comply with this pollution prevention alternative. EPA fully describes this potential alternative in Section XXI.D.

In relation to proposing an indicator for toxic organic constituents to reduce the burden of monitoring for specific organic pollutants, the Panel recommended that EPA attempt to identify an appropriate organic indicator if it turns out that limitations for organic pollutants are appropriate for one or more subcategories. However, the Panel also recommended that if organic pollutant removals by subcategory are not higher than levels in the preliminary analysis provided to the Panel, then EPA should give serious consideration to not proposing pretreatment standards for those pollutants in those subcategories. In response to this recommendation, the Agency is proposing several alternatives for organic pollutant monitoring. EPA is proposing to allow the use of Total Organic Carbon (TOC) as an indicator parameter for organic pollutants found in the wastewater discharges at MP&M facilities. The indicator is an alternative limit. If facilities do not wish to use TOC as an indicator, EPA is proposing two other alternatives. The second alternative allows facilities to monitor for a list of organic pollutants (*i.e.*, total organics parameter (TOP) list) and to meet a limit which would equate to the summation of all quantifiable values of the listed organic pollutants. The third alternative allows facilities to develop and certify the implementation of an "organic chemical management plan." The Agency further discusses these organic monitoring alternatives in Section XXI.C.

The Panel also recommended that EPA not regulate TSS, pH, iron, or aluminum for indirect dischargers. The Agency is not proposing pretreatment standards for any of these parameters.

In the area of overlap with other Federal rules, the Panel recommended that EPA attempt to minimize the potential for MP&M facilities to be covered by more than one effluent guideline and that EPA clarify in the preamble how it plans to regulate facilities that have operations covered by more than one effluent guideline. In

response to this recommendation, EPA has made an effort to clearly define the applicability of the proposed MP&M rule. In addition, EPA is replacing the Metal Finishing (40 CFR part 433) and Electroplating (40 CFR part 413) effluent guidelines for a large number of facilities. Therefore, these facilities will only be covered by the MP&M rule.

The Panel recommended that EPA consider regulatory alternatives, including a "no regulation" option, to reduce any significant economic impacts that are not justified by environmental improvements and to improve the cost-effectiveness of the regulation. In response to these recommendations, the Agency is proposing low flow exclusions for two subcategories and is proposing not to establish pretreatment standards for three other subcategories based on low levels of pollutants discharged. EPA discusses these issues throughout this notice (see Sections II.D, VI.C, and XII for detailed discussions of the proposed flow cutoff (or no regulation) by subcategory).

Additionally, as recommended by the Panel, EPA has solicited data and comment on the following topics discussed in the Panel report: the cost savings to Control Authorities and dischargers of BMPs in lieu of numerical limitations; in-process versus end-of-pipe monitoring for cyanide; inclusion of the steel wire producers in the proposed rule; costs for contract hauling; certain methodological issues, including costs and adequacy of operational changes or treatment enhancements for BAT facilities to consistently and reliably achieve full compliance with proposed limitations; the POTW removals methodology; and the revision to the Toxic Weighting Factors. EPA invites comments on all aspects of the proposal and its impacts on small entities (see Section XXIII for a specific request for comment on each of these issues).

D. Executive Order 12866: Regulatory Planning and Review

Under Executive Order 12866 (58 FR 51735, October 4, 1993), the Agency must determine whether the regulatory action is "significant" and therefore subject to OMB review and the requirements of the Executive Order. The Order defines "significant regulatory action" as one that is likely to result in a rule that may:

(1) Have an annual effect on the economy of \$100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or

State, local, or Tribal governments or communities;

(2) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(3) Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or

(4) Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

Pursuant to the terms of Executive Order 12866, it has been determined that this rule is a "significant regulatory action." As such, this action was submitted to OMB for review. Changes made in response to OMB suggestions or recommendations will be documented in the public record.

E. Executive Order 13132: Federalism

Executive Order 13132, entitled "Federalism" (64 FR 43255, August 10, 1999), requires EPA to develop an accountable process to ensure "meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications." "Policies that have federalism implications" is defined in the Executive Order to include regulations that have "substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government."

This proposed rule does not have federalism implications. It will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132. The rule establishes effluent limitations imposing requirements that apply to metal product and machinery facilities, as defined by this preamble, when they discharge wastewater. The rule applies to States and localities when they own and operate an in-scope MP&M facility. EPA estimates 4,300 MP&M facilities are owned and operated by State and local governments. Only 730 of these 4,300 facilities discharge MP&M process wastewater at levels above the flow exclusions for the General Metals and Oily Wastes subcategories (1 MGY and 2 MGY, respectively).

In addition, this proposed rule will affect State and local governments when they are administering CWA permitting programs. The proposed rule, at most, imposes minimal administrative costs on States that have an authorized

NPDES program. (These States must incorporate the new limitations and standards in new and reissued NPDES permits). In an effort to minimize this administrative burden, EPA has incorporated a low flow cutoff for indirect dischargers in the two largest subcategories (*i.e.*, General Metals and Oily Waste) to reduce permitting burden on POTWs related to permitting the smallest MP&M facilities (see Sections II.D, VI.C, and XII for discussions on the proposed low flow exclusion). The total cost of today's proposal to governments (including regulated MP&M government-owned facilities and regulators) is less than \$15 million. Thus, Executive Order 13132 does not apply to this rule. See Section XXII.B for a discussion of the administrative costs to State and local governments.

Although Executive Order 13132 does not apply to this rule, EPA did consult with State and local government representatives in developing this proposal. EPA developed and administered a survey questionnaire to collect information from POTWs on the burden of implementing permits for MP&M facilities (see Section V.B.5 for a information on the POTW survey questionnaire). In addition, EPA attended several industry and professional meetings such as the National Metal Finishing Strategic Goals Summit and the annual meetings of the Association of Municipal Sewerage Authorities (AMSA) to talk to States and local governments (and other stakeholders) about the MP&M proposed rule including several possible alternative options for monitoring. States and local government representatives were also present at EPA's public meetings on the MP&M proposed rule (see Section V.E of this notice for a discussion on public outreach efforts). Section II.D summarizes many of the major concerns expressed by MP&M stakeholders (including State and local governments) during the development of this proposal.

In the spirit of Executive Order 13132, and consistent with EPA policy to promote communications between EPA and State and local governments, EPA specifically solicits comment on this proposed rule from State and local officials.

F. Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations

1. E.O. 12898 Requirements

Executive Order 12898 requires that, to the greatest extent practicable and

permitted by law, each Federal agency must make achieving environmental justice part of its mission. E.O. 12898 provides that each Federal agency must conduct its programs, policies, and activities that substantially affect human health or the environment in a manner that ensures that such programs, policies, and activities do not have the effect of excluding persons (including populations) from participation in, denying persons (including populations) the benefits of, or subjecting persons (including populations) to discrimination under such programs, policies, and activities because of their race, color, or national origin.

2. Environmental Justice Analysis

EPA examined whether the proposed regulation will promote environmental justice in the areas affected by MP&M discharges. This analysis first examines whether the proposed rule specifically reduces risks to disadvantaged populations. EPA then examined whether MP&M discharges have a disproportionately high environmental impact on minority populations based on the demographic characteristics of the populations residing in the counties affected by MP&M discharges.

a. Changes in Health Risk for Subsistence Anglers

Subsistence anglers include low-income and minority populations that rely heavily on subsistence fishing in their food supply. Subsistence anglers are likely to be at disproportionately high risk from consumption of contaminated fish because of heavy reliance on fish caught in local waters in their diets. EPA's analysis of changes in adverse health effects from the proposed rule show that benefits to subsistence anglers substantially exceed benefits to recreational anglers.

EPA used the same methodology for estimating cancer and systemic health risk used in the national human health benefits analysis to estimate changes in health risk to subsistence anglers. EPA's estimates show that subsistence anglers face significantly higher cancer risk from fish consumption than recreational anglers at the baseline discharge levels. The estimated average lifetime cancer risk in the baseline for subsistence and recreational anglers is 20.3 in a million and 8.08 in a million, respectively. The estimated reduction in average lifetime cancer risk for subsistence anglers is more than double the reduction in risk for sport anglers (*i.e.*, 7.70 in a million vs. 3.77 in a million) (see Table XXII.F-1).

TABLE XXII.F-1.—ESTIMATED CHANGES IN LIFETIME CANCER RISK TO SUBSISTENCE VS. RECREATIONAL ANGLERS

Exposed population category	Average lifetime cancer risk per individual				Estimated changes in individual lifetime cancer risk		
	Baseline	Proposed option	Option 2/6/10	Option 4/8	Proposed option	Option 2/6/10	Option 4/8
Subsistence Anglers	20.3E-06	12.6E-06	12.4E-06	12.8E-06	7.7E-06	7.9E-06	7.5E-06
Recreational Anglers	8.1E-06	4.3E-06	4.3E-06	4.5E-06	3.8E-06	3.8E-06	3.6E-06

EPA also analyzed changes in systemic health risk from fish consumption to subsistence anglers. This analysis is performed at the sample level only. The results from this analysis show that approximately 7,000

subsistence anglers (two percent) in reaches near sample facilities are estimated to ingest MP&M pollutants at rates sufficient to pose a significant risk of health effects at the baseline discharge levels. The proposed

regulation reduces the number of subsistence anglers at risk of developing deleterious health effects by 4,616 (66 percent) (see Table XXII.F-2.).

TABLE XXII.F-2.—CHANGES IN SYSTEMIC HEALTH RISK TO SUBSISTENCE ANGLERS (SAMPLE BASIS)

Regulatory status	Total exposed subsistence anglers	Subsistence anglers exposed to hazard ratio >1 ^a		Subsistence anglers benefitting from the MP&M rule	
		Number of individuals	Percent of total exposed individuals	Number of individuals	Percent of baseline
Baseline	320,366	6,971	2.18	.....	.....
Proposed option	320,366	2,355	0.74	4,616	66
Option 2/6/10	320,366	2,355	0.74	4,616	66
Option 4/8	320,366	2,355	0.74	4,616	66

^a Hazard ratio is a ratio of the estimated ingestion rate of a pollutant to the reference dose (RfD) value for the pollutant. The RfD is an estimate of the maximum daily ingestion rate in mg/kg per day that is likely to be without an appreciable risk of deleterious effects during a lifetime. A hazard ratio greater than one indicates that individuals would be expected to ingest MP&M pollutants at rates sufficient to pose a significant risk of systemic health effects.

b. Demographic Characteristics of the Populations Residing in the Counties Affected by MP&M Discharges

EPA assessed whether adverse environmental, human health, or economic effects associated with MP&M facility discharges are more likely to be borne by minorities and low-income populations. This analysis is based on information on the race, national origin, and income level of populations residing in the counties traversed by reaches receiving discharges from 885 sample MP&M facilities. The analysis was not done at the national level. The 885 sample facilities are located in 643 counties in 46 States (excluding Alaska, Hawaii, Nevada, and Wyoming). Two sample facilities that are located in Puerto Rico were excluded from this analysis due to insufficient data.

EPA compared demographic data on the counties traversed by sample MP&M reaches with the corresponding state-level indicators. The results of this analysis show that counties affected by MP&M discharges tend to have a larger proportion of African-American population than the State average in 41 States. In five States, the proportion of African-Americans in MP&M counties corresponds to the State averages (District of Columbia, North Carolina,

South Carolina, Vermont, and West Virginia). Other socioeconomic characteristics of the populations residing in the counties abutting reaches affected by MP&M discharges reflect the corresponding State averages.

3. Findings

Findings from the EPA's analysis show that this proposed rule is expected to promote environmental justice in the areas affected by MP&M discharges. EPA's analysis of changes in adverse health effects from the proposed rule indicate that health benefits to 3.8 million subsistence anglers substantially exceed benefits to recreational anglers. The estimated reduction in annual cancer risk is an order of magnitude greater for subsistence than for sport anglers (i.e., 0.5 in one hundred million vs 0.5 in one billion). The proportion of subsistence anglers that face a hazard ratio of greater than one under the baseline conditions (2.2 percent) declines by 1.5 percent due to the proposed rule (see Table XXII.F-2). [Note: the hazard ratio is a ratio of the estimated ingestion rate of a pollutant to the reference dose (RfD) value point. A hazard ratio greater than one indicates that individuals would be expected to ingest MP&M pollutants at rates

sufficient to pose a significant risk of systemic health effects.] A much smaller proportion of recreational anglers (0.15 percent) is expected to suffer from systemic health risk effects under the baseline conditions. The percentage of recreational anglers facing a hazard ratio of one drops to 0.05 percent under the post-compliance. Higher representation of African-American households in the areas where most MP&M sample facilities are located and their effluents are released indicates that the disadvantaged populations will receive a relatively larger share of the benefits from the MP&M rule, though they may also bear a disproportionate share of costs if the MP&M facilities that close are in their community (e.g., lost jobs).

G. Executive Order 13045: Protection of Children from Environmental Health Risks and Safety Risks

1. E.O. 13045 Requirements

The Executive Order "Protection of Children From Environmental Health Risks and Safety Risks" (62 FR 19885, April 23, 1997) applies to any rule that: (1) Is determined to be "economically significant" as defined under Executive Order 12866, and (2) concerns an environmental health or safety risk that EPA has reason to believe may have a

disproportionate effect on children. If the regulatory action meets both criteria, the Agency must evaluate the environmental health or safety effects of the planned rule on children; and explain why the planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by the Agency. This proposed rule is subject to the Executive Order because it is an economically significant regulatory action as defined by E.O. 12866. It is expected to reduce numerous pollutants, including lead, in fish tissue and drinking water that exceed human health criteria for consumption of water and organisms and organisms only. Therefore, EPA has performed an analysis of children's health impacts reduced by this proposed rule.

2. Analysis of Children's Health Impacts

EPA expects that the proposed regulation will benefit children in many ways, including reducing health risk from exposure to MP&M pollutants from consumption of contaminated fish tissue and drinking water and improving recreational opportunities. The Agency was able to quantify only one category of benefits to children, however—avoided health damages to pre-school age children from reduced exposure to lead. This analysis

considered several measures of children's health benefits associated with lead exposure for children up to age six. Avoided neurological and cognitive damages were expressed as changes in three metrics: (1) Overall IQ levels, (2) the incidence of low IQ scores (<70), and (3) the incidence of blood-lead levels above 20 mg/dL. The Agency also assessed changes in incidence of neonatal mortality from reduced maternal exposure to lead. EPA's methodology for assessing benefits to children and adults is presented in Section XX.B.3.c. This analysis showed that the proposed rule is expected to yield \$14.4 million (1999\$) in annual benefits to children from reduced neurological and cognitive damages and reduced incidence of neonatal mortality.

The Agency also examined whether lead discharges from MP&M facilities are likely to have a disproportionate impact on children in subsistence anglers' families. Children in subsistence fishing families face a greater risk of adverse health effects from exposure to lead-contaminated fish due to high proportion of fish from local waters in their diet. EPA's analysis showed that the beneficial outcome of the MP&M rule favor children from subsistence fishing families. The average estimated health risk reduction

per child for each of the four lead-related health effects was much larger for children from subsistence fishing families. This finding is also supported by the monetary estimates of benefits per child in each population category. EPA estimated that the monetary value of benefits to a child from a subsistence fishing family is \$781.2 (1999\$) per year, as compared to \$82.6 (1999\$) for a child from a recreational fishing family. These benefits comprise a much larger portion of subsistence fishing families income compared to the benefits received by a recreational fishing because subsistence fishing families (e.g., Native American families) have on average a lower household income. EPA estimated that the monetary value of benefits from reduced cognitive damages to children for a subsistence household is about 2.9 percent of their current household income, while benefits for a recreational fishing family is 0.2 percent of their household income. This analysis uses average household income in Native American families and average household income of all households in the United States. Table XXII.G-1 summarizes estimated changes in health risk and the monetary value of benefits to children from recreational and subsistence fishing families.

TABLE XXII.G-1.—ESTIMATED BENEFITS TO PRE-SCHOOL CHILDREN FROM REDUCED EXPOSURE TO LEAD

Benefit category	Population category	Number of children (ages 0 to 1)	Reduction in the number of adverse health effect cases	Estimated monetary value of avoided health damages to children (1999\$)—mean estimates	
				Total	Per child
Preferred Option					
Neo-Natal Mortality	Recreation .....	.....	0.92	\$5,536,000	\$47
	Subsistence .....	.....	0.69	\$4,002,000	\$609
Avoided IQ Loss	Recreation .....	.....	390.43	\$3,934,410	\$30
	Subsistence .....	.....	98.65	\$994,104	\$151
Reduced IQ <70	Recreation .....	.....	0.02	\$101,311	\$1
	Subsistence .....	.....	0.09	\$25,079	\$4
Reduced PbB >20	Recreation .....	.....	0.03	\$686	(¹)
	Subsistence .....	.....	0.06	\$60	(¹)
Total	Recreation	131,511	.....	\$9,372,407	\$83
	Subsistence	6,576	.....	\$5,021,243	\$764
	All Children	138,087	.....	\$14,393,650	\$120
Option 2/6/10					
Neo-Natal Mortality	Recreation .....	.....	0.95	\$5,510,000	\$49
	Subsistence .....	.....	0.71	\$4,118,000	\$626
Avoided IQ Loss	Recreation .....	.....	402.75	\$4,058,465	\$31
	Subsistence .....	.....	101.74	\$1,025,276	\$156
Reduced IQ <70	Recreation .....	.....	0.02	\$104,529	\$1
	Subsistence .....	.....	0.09	\$25,866	\$4
Reduced PbB >20	Recreation .....	.....	0.03	\$609	(¹)
	Subsistence .....	.....	0.04	\$36	(¹)
Total	Recreation	131,511	.....	\$9,546,407	\$84
	Subsistence	6,576	.....	\$5,013,243	\$781

TABLE XXII.G-1.—ESTIMATED BENEFITS TO PRE-SCHOOL CHILDREN FROM REDUCED EXPOSURE TO LEAD—Continued

Benefit category	Population category	Number of children (ages 0 to 1)	Reduction in the number of adverse health effect cases	Estimated monetary value of avoided health damages to children (1999\$)—mean estimates	
				Total	Per child
	All Children	138,087	.....	\$14,683,650	\$122
Option 4/8					
Neo-Natal Mortality	Recreation .....	.....	0.95	\$5,510,000	\$49
	Subsistence .....	.....	0.71	\$4,118,000	\$626
Avoided IQ Loss	Recreation .....	.....	402.75	\$4,058,465	\$31
	Subsistence .....	.....	101.74	\$1,025,276	\$156
Reduced IQ <70	Recreation .....	.....	0.02	\$104,529	\$1
	Subsistence .....	.....	0.09	\$25,866	\$4
Reduced PbB >20	Recreation .....	.....	0.03	\$609	(¹)
	Subsistence .....	.....	0.04	\$36	(¹)
Total	Recreation	131,511	.....	\$9,673,603	\$85
	Subsistence	6,576	.....	\$5,169,178	\$786
	All Children	138,087	.....	\$14,842,781	\$124

¹ Negligible.

Children over age six are also likely to benefit from reduced neurological and cognitive damages due to reduced exposure to lead. Recent research on brain development among 10-to 18-year-old children shows unanticipated and substantial growth in brain development, mainly in the early teenage years (Giedd *et al.*, 1999). This research suggests that older children may be hypersensitive to lead exposure, as are children aged 0 to 6.

Additional benefits to children from reduced exposure to lead not quantified in this analysis may include prevention of the following adverse health effects: slowed or delayed growth, delinquent and anti-social behavior, metabolic effects, impaired heme synthesis, anemia, impaired hearing, and cancer.

H. Executive Order 13084: Consultation and Coordination With Indian Tribal Governments

Under Executive Order 13084, EPA may not issue a regulation that is not required by statute, that significantly or uniquely affects the communities of Indian Tribal governments, and that imposes substantial direct compliance costs on those communities, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by the Tribal governments, or EPA consults with those governments. If EPA complies by consulting, Executive Order 13084 requires EPA to provide to the Office of Management and Budget, in a separately identified section of the preamble to the rule, a description of the extent of EPA's prior consultation with representatives of affected Tribal governments, a

summary of the nature of their concerns, and a statement supporting the need to issue the regulation. In addition, Executive Order 13084 requires EPA to develop an effective process permitting elected officials and other representatives of Indian Tribal governments "to provide meaningful and timely input in the development of regulatory policies on matters that significantly or uniquely affect their communities."

Today's rule does not significantly or uniquely affect the communities of Indian Tribal governments. Based on the information collection efforts for this industry category, EPA does not expect any Indian Tribal governments to own or operate in-scope MP&M facilities. In addition, given the proposed applicability thresholds (*i.e.*, low flow exclusions for the General Metals and Oily Wastes subcategories), EPA estimates that few, if any, new facilities subject to the rule will be owned by Tribal governments. Accordingly, the requirements of section 3(b) of Executive Order 13084 do not apply to this rule.

I. National Technology Transfer and Advancement Act

Section 12(d) of the National Technology Transfer and Advancement Act (NTTAA) of 1995, (Pub L. 104-113 Sec. 12(d) 15 U.S.C. 272 note) directs EPA to use voluntary consensus standards in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (*e.g.*, materials specifications, test methods,

sampling procedures, business practices) that are developed or adopted by voluntary consensus standard bodies. The NTTAA directs EPA to provide Congress, through the Office of Management and Budget (OMB), explanations when the Agency decides not to use available and applicable voluntary consensus standards.

Although today's proposed rule does not establish new analytical methods, it does require dischargers to monitor for TSS, O&G (as HEM), Total Organic Carbon (TOC), Aluminum, Cadmium, Chromium, Copper, Cyanide (T), Cyanide (A), Lead, Manganese, Molybdenum, Nickel, Silver, Sulfide (as S), Tin, and Zinc. (EPA notes that the pollutants listed may not be regulated for all subcategories). All of these analytes can be measured by EPA methods and many using consensus standards that are specified in the tables at 40 CFR part 136.3. EPA is also proposing a limit for Total Organics Parameter (TOP), as part of an organic monitoring alternative. (See Section XXI.C.2). EPA developed the TOP list of organic pollutants using the list of organic priority pollutants and other non-conventional organic pollutants that met EPA's "pollutant of concern" criteria for this rule (see section VII for a discussion on the selection of the MP&M pollutants of concern). Of the nonconventional organic chemicals on the MP&M pollutant of concern list, EPA included only those that were removed in appreciable quantities (based on toxic weighted pound-equivalents) in two or more subcategories. See appendix B to part 438 in the proposed rule accompanying

this notice for a list of organic pollutants that comprise the proposed Total Organics Parameter (TOP). The following analytes that EPA is proposing to comprise the TOP do not have approved EPA methods: Benzoic acid, carbon disulfide, 3,6-Dimethylphenanthrene, 2-Isopropylphenanthrene, 1-Methylfluorene, and 2-Methylnaphthalene. In addition, aniline and 1-Methylphenanthrene do not have procedures approved in 40 CFR part 136, but have procedures that have been validated as attachments to EPA Methods 1625/625. EPA plans to promulgate methods or validate the procedures for these analytes prior to the promulgation of the MP&M rule. EPA welcomes comments on this aspect of the proposed rulemaking and, specifically, invites the public to identify potentially applicable voluntary consensus standards and to explain why such standards should be used in this regulation.

J. Plain Language Directive

Executive Order 12866 and the President's memorandum of June 1, 1998, require each agency to write all rules in plain language. We invite your comments on how to make this proposed rule easier to understand. For example, have we organized the material to suit your needs? Are the requirements in the rule clearly stated? Does the rule contain technical language or jargon that isn't clear? Would a different format (grouping and order of sections, use of headings, paragraphing) make the rule easier to understand? Would more (but shorter) sections be better? Could we improve clarity by adding tables, lists, or diagrams? What else could we do to make the rule easier to understand?

K. Executive Order 13158: Marine Protected Areas

1. E.O. 13158 Requirements

Executive Order 13158 has been established to "help protect the significant natural and cultural resources within the marine environment for the benefit of present and future generations by strengthening and expanding the Nation's system of marine protected areas (MPAs)." MPAs include areas of coastal and ocean waters, the Great Lakes and their connecting waters that have been reserved by laws or regulations to provide lasting protection for part or all of their natural resources. The list of MPAs defined for the purposes of this Executive Order will be published and maintained by the Secretary of

Commerce and the Secretary of the Interior.

This order aims at further enhancing and strengthening protection of the existing MPAs and establishing new or expanded MPAs. The order provides EPA with the ability to propose new science-based regulations, as necessary, to ensure better protection for beaches, coasts, and the marine environment from pollution.

2. Impacts on Marine Resources

The proposed regulation is expected to enhance protection of MPAs by improving the quality of marine waters receiving discharges from MP&M facilities. Although the list of MPAs affected by this order has not yet been published, may include waterbodies currently protected under the National Estuaries Program (NEP), wildlife refuges, and other significant natural and cultural resources in marine environments. EPA compared sample MP&M facility discharge locations with the list of the 28 waterbodies under the NEP and the Chesapeake Bay to assess potential impacts of the regulation on significant marine resources. Sample MP&M facilities included in this analysis discharge directly or indirectly to 627 receiving waterways, of which, 544 are rivers/streams, 55 are bays or estuaries, and 28 are lakes, including the Great Lakes. This analysis showed that several of the NEP waterbodies currently receive discharges from the sample facilities, including Long Island Sound (NY/CT), Buzzards Bay (MA), Narragansett Bay (RI), and Puget Sound (WA). Most of the other protected estuaries receive effluents from the sample MP&M facilities via connecting waters. For example, discharges to the Connecticut River enter Long Island Sound (NY/CT), and discharges to the Hudson River enter the New York-New Jersey Harbor.

The absence of the current MPA list makes it difficult to determine the extent of benefits to MPAs from the proposed rule. The breadth of this regulation, however, ensures that some MPAs are likely to benefit from reduced pollutant discharges from MP&M facilities.

L. Coastal Zone Act Reauthorization Amendments (CZARA)

Congress enacted Section 6217 of the Coastal Zone Act Reauthorization Amendments (CZARA) in 1990 to address the problem of nonpoint source pollution in coastal waters. Section 6217 of CZARA requires all States/tribes with federally approved coastal zone management programs to develop and implement coastal nonpoint pollution

control programs. The EPA and NOAA administer the Section 6217 program and have developed guidance to assist States in implementing the coastal nonpoint pollution control programs. States may choose the specific practice or combination of practices that will achieve the goals of controlling nonpoint source pollution and of protecting coastal waters.

Section 6217 of CZARA differs from the previous Coastal Zone Management Act (CZMA) of 1972 in that it is a mandatory program. Under CZMA the participation by States in coastal resource management was voluntary. CZARA requires coastal States/tribes to submit a coastal nonpoint pollution program to the EPA and NOAA within 30 months of the technical guidance issuance by EPA and NOAA (by July 1995).

The technical guidance provided by EPA and NOAA identifies five categories of nonpoint sources affecting coastal waters: Agriculture; forestry; urban runoff; marinas and recreational boating; and hydromodification. For each category, the technical guidance specifies management measures and practices to control nonpoint pollution. Management measures are defined in CZARA as economically achievable measures that reflect the best available technology to control the addition of pollutants to coastal waters.

Although today's proposed rule does not affect nonpoint sources directly, it may contribute to nonpoint source pollution control in coastal areas by improving the quality of sewage sludge. EPA estimates that 1.7 million dry metric tons of sewage sludge would be newly qualified for land application as a result of the proposed rule. Sewage sludge is a valuable source of fertilizer and can be applied to agricultural land, golf courses, sod farms, forests, and residential gardens. Compared to nitrogen in most chemical fertilizers, nitrogen in sewage sludge is relatively insoluble in water. If sewage sludge is used as a substitute for chemical fertilizers on agricultural land nonpoint source contamination of surface water can be reduced.

XXIII. Solicitation of Data and Comments

EPA invites and encourages public participation in this rulemaking. The Agency asks that comments address any perceived deficiencies in the record of this proposal and that suggested revisions or corrections be supported by data where possible. See Section XXIV for guidelines for submittal of data.

EPA particularly requests comments and information on the following issues:

1. Steel Forming & Finishing Facilities. EPA solicits comments on the choice to include the Steel Forming & Finishing facilities in today's proposed MP&M regulation. Facilities in this subcategory predominantly process steel wire, rod, bar, pipe, or tube. EPA previously regulated these sites under the 1982 Iron & Steel Manufacturing effluent guidelines (40 CFR part 420). However, based on the information gathered during the data collection effort for the Agency's proposed revision to the Iron & Steel Manufacturing regulations, EPA has determined that these facilities are more appropriately regulated by the MP&M proposed rule. (See Section VI.C.5 for a discussion of the proposed applicability of the Steel Forming & Finishing Subcategory). EPA is also interested in analytical sampling data to help better identify the raw wastewater characteristics and treatment performance of facilities in the proposed Steel Forming & Finishing subcategory. Please note the requirements for submitting paired influent and effluent data, as described in section XXIV.A.

In addition, for facilities that perform operations that fall within the proposed scope of both the MP&M Steel Forming & Finishing subcategory and the proposed Iron & Steel regulations (*i.e.*, a facility that performs manufacturing and batch electroplating of steel), EPA is soliciting comment on whether both regulations should cover these facilities (using the combined waste stream formula for indirect dischargers or building block approach for direct dischargers) or whether EPA should allow facilities that would fall under the scope of both regulations to be regulated only by the Iron & Steel Manufacturing rule. EPA notes that both the proposed regulations discussed here set mass-based limits for these facilities. If the Agency were to choose the later option, it would need to incorporate a wastewater flow allowance for the steel forming and finishing operations into the mass-based limits of the Iron & Steel regulation, where applicable. EPA is particularly interested in comments from permit writers and control authorities concerning the burden of permitting an Iron & Steel facility under two effluent guidelines (using the building block approach or combined waste stream formula) versus the expected complexity of interpreting the applicability statements when two regulations cover the same operations. In addition, EPA is interested in better understanding the potential economic advantage (or disadvantage) this might create between stand-alone steel

forming & finishing facilities and steel manufacturing facilities where steel forming & finishing operations occur.

2. P2 Alternative for Metal Finishing Job Shops subcategory. EPA solicits comment on all aspects of the Pollution Prevention Alternative for the Metal Finishing Job Shops subcategory including the list of practices as well as the possible format for the alternative (see Section XXI.D for a discussion of the P2 Alternative). More specifically, EPA requests comment on whether there are additional or different practices that should be listed, the number of practices that should be required in each category, the reasons why any of the practices may not be applicable to specific facilities or processes, the costs of implementing this compliance alternative, the pollutant reduction associated with this alternative, and whether EPA should offer this alternative to direct discharging facilities in the Metal Finishing Job Shops subcategory, only to facilities discharging below a specified wastewater discharge flow, other subcategories such as General Metals (even those not currently regulated by the Metal Finishing and Electroplating effluent guidelines), or at certain facilities in other subcategories (*e.g.*, captive metal finishing and electroplating shops).

EPA also requests comment on whether the Agency should (if the P2 Alternative is incorporated in the final rule) require all facilities that choose the P2 Alternative to also meet the pretreatment standards for the Metal Finishing effluent guidelines (40 CFR part 433). That is, should facilities that are currently covered by the Electroplating effluent guidelines (40 CFR part 413) have to meet the pretreatment standards for the Metal Finishing effluent guidelines or for the Electroplating effluent guidelines when choosing to comply with the P2 Alternative in lieu of the MP&M pretreatment standards? EPA is interested in receiving information on the additional costs that would be incurred by facilities currently covered by the Electroplating effluent guidelines in order to meet the pretreatment standards of the Metal Finishing effluent guidelines.

3. Monitoring Flexibility—Monitoring Waiver for Pollutants Not Present. In an effort to reduce monitoring burden on facilities, EPA is proposing to allow MP&M indirect discharge facilities to apply for a waiver that will allow them to reduce their monitoring burden. In order for a facility to receive a monitoring waiver, the facility must submit a certification statement in

writing to the control authority (*e.g.*, POTW) stating that the facility does not use, nor generate in any way, a pollutant (or pollutants) at their site and that the pollutant (or pollutants) is present only at background levels from intake water and without any increase in the pollutant due to activities of the discharger. The facility must base this certification on sampling data or other technical factors and is not a waiver from including the numerical limit in the control mechanism (*i.e.*, permit) (see Section XXI.C.1 for a discussion on this monitoring waiver). EPA solicits comment on the language proposed for the monitoring waiver for MP&M indirect dischargers. EPA is also interested in receiving comment on the Agency's estimate of burden related to preparing and filing such a certification and the reduction in monitoring burden and associated cost savings that a facility would expect (see section XXII.A. for a discussion on the estimated burden).

4. Monitoring Flexibility—Organic Pollutant Monitoring. As discussed in Section XXI.C, EPA is proposing to allow the use of Total Organic Carbon (TOC) as an indicator parameter for organic pollutants found in the wastewater discharges at MP&M facilities. The indicator is an alternative limit. If facilities do not wish to use TOC as an indicator, EPA is proposing two other alternatives. The second alternative allows facilities to monitor for a list of organic pollutants (*i.e.*, total organics parameter (TOP) list) and to meet a limit which would equate to the summation of all quantifiable values of the listed organic pollutants. In any case where the data for these pollutants indicated a level below the minimum level (*i.e.*, below quantitation), EPA used the minimum level for the specific pollutant in the summation of the total organics parameter limit. Facilities will only have to monitor for those TOP chemicals that are reasonably present. The third alternative allows facilities to develop and certify the implementation of an "organic chemical management plan."

EPA solicits comment on the three alternatives being proposed for reducing the burden associated with monitoring for organic pollutants. EPA specifically solicits comment on the use of TOC as an indicator pollutant for the broad spectrum of organic pollutants found in MP&M process wastewater and whether EPA should require facilities that are not using the Agency's selected BAT technology to demonstrate a correlation between removal of TOC and removal of organic pollutants in their MP&M process wastewater.

EPA also requests comment on whether the Agency should allow facilities to choose an indicator pollutant from a given set of choices (e.g., COD, Oil & Grease (as HEM), TOC, Total Petroleum Hydrocarbons (as SGT-HEM), etc.) instead of specifying TOC as the only allowable indicator parameter. Facilities would be required to demonstrate that the reductions in the chosen indicator parameter are equivalent to the reduction in the organic constituents required by the limit that EPA is proposing for the "Total Organics Parameter" (TOP). EPA is also interested in receiving comment on the Agency's estimate of burden related to preparing an organic chemicals management plan and the reduction in monitoring burden and associated cost savings that a facility would expect in each of these suggested alternatives as compared to monitoring for the TOP list (see section XXII.A. for a discussion on the estimated burden).

5. Monitoring Flexibility—Total Sulfide Waiver. EPA is proposing to set numerical limitations on the discharge of Total Sulfide from facilities in the General Metals, Metal Finishing Job Shops, Printed Wiring Board, Steel Forming & Finishing, and Oily Waste subcategories. In an effort to reduce monitoring burden on indirect dischargers, EPA is considering to allow a waiver for the monitoring of total sulfide (even when present), at the discretion of the POTW, when a facility demonstrates that the sulfides will not generate acidic or corrosive conditions and will not create conditions that enhance opportunities for release of hydrogen sulfide gas in the sewer/interceptor collection system or at the receiving POTW or otherwise interfere with the operation of the POTW. EPA solicits comment on this alternative and the burden associated with demonstrating that it meets the specified conditions.

6. Oily Operations Wastewater. Facilities in the Oily Wastes subcategory must only discharge wastewater from one or more of the following MP&M unit operations: alkaline cleaning for oil removal, aqueous degreasing, corrosion preventive coating, floor cleaning, grinding, heat treating, impact deformation, machining, painting, pressure deformation, solvent degreasing, testing (e.g., hydrostatic, dye penetrant, ultrasonic, magnetic flux), steam cleaning, and laundering. If they discharge wastewater from any of the above listed operations but also discharge wastewater from other MP&M operations, they do not meet the criteria of the Oily Wastes subcategory. Facilities in this subcategory are

predominantly machine shops or maintenance and repair shops. Similarly, EPA is proposing to define the applicability of the Railroad Line Maintenance subcategory using the same set of "oily" unit operations with the addition of "washing of final product" at facilities that perform routine cleaning and light maintenance on railroad engines, cars, and car-wheel trucks and similar structures. EPA solicits comment on the list of "oily" unit operations and whether commenters prefer the use of a list of unit operations to define the applicability or a definition (related to low metals content of the wastewater). EPA also requests comment on whether there are additional MP&M unit operations that should be included in this list.

7. Possible Addition of Other Regulated Parameters. The list of parameters which EPA proposes to regulate under today's proposal are listed in the proposed codified rule that accompanies this preamble. EPA is soliciting comments and data on additional parameters that should be considered for regulation. There are two additional chemicals that EPA is considering for regulation under the MP&M rule: dithiocarbamates and carbon disulfide. Dithiocarbamates is a chemical structural group that refers to a set of chemicals, including sodium dimethyldithiocarbamate, that are used by facilities in the MP&M industry for treatment of chelated metals wastewater (often referred to as "DTC"). It can also be used as a reducing agent. Carbon disulfide can be formed during chelation breaking and other treatment steps. Although these chemicals are not used in the MP&M processes, they can be used/generated by the treatment of MP&M wastewater and may cause environmental impacts. EPA is specifically interested in data on the treatment of dithiocarbamates and carbon disulfide (including treatment effectiveness, treatment costs, costs of contract hauling of these wastewater) and on the environmental impacts that these chemicals may pose to aquatic life, human health, and POTWs.

In addition, EPA solicits comment on proper management practices for using dithiocarbamates (DTC) at MP&M facilities. EPA also requests information on alternative chemicals (e.g., hydrazine, sodium borohydride) or technologies for use in chelation breaking as reducing or precipitation agents and the associated costs and environmental impacts.

8. Possible Deletion of Regulated Parameters. The list of parameters which EPA proposes to regulate in

today's proposal are listed in the proposed codified rule that accompanies this preamble. EPA is soliciting comments and data on parameters that should be deleted from consideration for regulation.

9. Additional Technology Data. The Agency solicits additional data on the use of ultrafiltration systems for the removal of oily wastes and organic pollutants and on microfiltration systems for the removal of metal pollutants and Total Suspended Solids (TSS) in relation to process wastewater in the MP&M category. The Agency is particularly interested in receiving data on: (1) Technology performance, including pollutant reduction/elimination; (2) economics, including initial capital investment, operation and maintenance costs, payback period, waste disposal savings, material input savings, and other savings; (3) overall energy use; (4) sludge generation, including metals recoverability and the ability of sludge to be recycled on or off-site; (5) waste oil generation, including oil recovery and the ability of the oil to be recycled on or off-site; (6) air quality impacts and emissions. In addition, as some technologies eliminate or reduce discharges to water, but not to other media, the Agency solicits comments on the environmental impacts and regulatory costs associated with each technology's impact on other environmental media. The Agency particularly welcomes comments on technology performance and cost from MP&M facilities currently using these systems and from technology vendors and developers.

10. Costs of Contract Hauling MP&M Wastewater and Sludge. EPA's cost model costs facilities to contract haul small volumes of process wastewater when the cost is estimated to be less than installing and operating a wastewater treatment system. EPA used data from the detailed surveys (see Section V for a discussion of the Detailed Surveys) to estimate costs associated with contract hauling MP&M process wastewater and wastewater treatment sludge. EPA solicits comment on the total cost of contract hauling small volumes of untreated MP&M process wastewater and how much those costs differ based on the type of wastewater (i.e., oily wastewater, hexavalent chromium-bearing wastewater, concentrated metal-bearing wastewater, chelated wastewater). EPA also solicits comment on the cost to haul hazardous wastewater treatment sludge.

11. Ultrasonic Cleaning. EPA solicits comment on non-chemical cleaning methods, such as ultrasonic cleaning.

Prior to performing surface finishing operations, facilities must clean the metal surface to remove dirt, grit, grease or other surface contaminants that may interfere with the finish. Currently, the most common method for cleaning metal parts prior to surface finishing operations is using an alkaline cleaning bath, which may be followed by electrolytic cleaning and rinsing steps, and then an acid bath followed by another rinse step. Recently, some facilities have started to use ultrasonic cleaning (*i.e.*, the use of sound waves) to clean metal surfaces prior to electroplating (or other surface finishing operations). Ultrasonic cleaning generates a wastewater that does not contain acid or alkaline cleaning agents. EPA solicits data and information on ultrasonic cleaning including the capital and operation and maintenance costs, feasibility of this method versus more traditional methods, characterization of the wastewater generated, size of the ultrasonic cleaning unit, and the limitations on its use (*e.g.*, is it only available for parts of a certain size or shape?).

12. Mixed-Use Facility Definition and Determination. As discussed in Section III, EPA is proposing to cover MP&M process wastewater at mixed-use facilities (*i.e.*, any municipal, private, U.S. military or federal facility which contains both industrial and commercial/administrative buildings at which one or more industrial sites conduct operations within the facility's boundaries). However, unlike the typical industrial facility, such as an aircraft or electronic equipment manufacturing plant with one primary manufacturing activity, the majority of military installations are mixed-use facilities and more like municipalities with several small industries as well as other operations within their boundaries. EPA is proposing to allow wastewater generated at different sites within a mixed-use facility to be dealt with as separate discharges for the purpose of applying the appropriate low flow cutoff (when applicable). EPA is proposing to allow the control authority to use its discretion in determining which wastewater discharges can be considered separate discharges for the purposes of applying the appropriate low flow cutoff (when applicable). The determination would likely be based on the degree of proximity between industrial operations and a practical application of the requirements for applicable MP&M subcategories.

EPA seeks information from facilities (both military and non-military) that believe they would fall within this mixed-use facility category. In addition,

EPA seeks comments on the choice to allow control authorities to make this determination and the factors for making such a decision as well as alternative ways to divide a mixed-use facility.

13. Subcategorization of Metal Finishing Job Shops. EPA is proposing to create a subcategory called "Metal Finishing Job Shops." This subcategory would only include facilities that are job shops by definition (*i.e.*, they own less than 50 percent of the parts that they process on-site) and are performing one of the six identifying operations in the existing Metal Finishing and Electroplating effluent guidelines. As discussed in Section VI.A, EPA chose to subcategorize these facilities as separate from facilities in the General Metals subcategory (which includes captive metal finishing and electroplating shops) based on the variability of their wastewater and on economics. Although, the facilities in both subcategories are performing many of the same operations and require the same wastewater treatment technologies. EPA requests comment on whether to combine the Metal Finishing Job Shops subcategory with the General Metals subcategory (or a portion of the General Metals subcategory). This would also include combining the data sets from which EPA sets the numerical limits for the rule.

In addition, the Agency notes that today's proposal sets a low flow exclusion for the indirect dischargers in the General Metals subcategory to reduce permitting burden, but does not set a low flow exclusion for the Metal Finishing Job Shops subcategory, as those facilities already have permits under existing effluent guidelines (see sections II.D, VI.C, and XII for discussions on the low flow exclusion). However, EPA notes that the proposed limits and standards for the Metal Finishing Job Shops subcategory are somewhat less stringent than those being proposed for the General Metals subcategory. EPA solicits comment on whether the use of the low flow exclusion for indirect dischargers in the General Metals subcategory versus no exclusion for facilities in the Metal Finishing Job Shops subcategory would cause a shift away from the use of job shops or whether the difference in numeric limitations would prevent such a shift.

14. Printed Wiring Board Job Shops. EPA solicits comment on the best placement, in terms of subcategorization, for printed wiring board "job shops." EPA has identified a small number of facilities that perform some steps in the printed wiring board

manufacturing process. For example, a printed wiring board manufacturer may contract out the tin/lead soldering operations to a printed wiring board job shop. Such a facility never performs all the steps necessary for manufacturing printed wiring boards. EPA is proposing to include these facilities in the Metal Finishing Job Shops subcategory due to their similarity in economics (due to the "job shop" nature of their work). However, EPA is soliciting comment on whether it is more appropriate to include these printed wiring board job shops in the Printed Wiring Board subcategory. More specifically, EPA requests data on the characterization of the wastewater from printed wiring board job shops, the variability of their raw materials, and the variability of the wastewater they generate.

15. BMPs in Lieu of Numerical Limitations. EPA solicits comment on allowing MP&M facilities to demonstrate compliance through installation of well-operated and maintained treatment systems. For example, instead of meeting a cyanide limit, the facility would demonstrate and keep records of the installation and ongoing use of a well-operated and maintained cyanide destruction unit that monitors oxidation-reduction potential (ORP). EPA is particularly interested in comments on how to define "well-operated and maintained" and estimates of the burden (in labor hours and dollars) required to keep records sufficient for demonstrating compliance and prepare a related certification statement.

EPA also solicits comment from control and permitting authorities on whether such an approach would increase or decrease their burden related to determining compliance and by how much (in labor hours and dollars). Comments should account for maintaining certifications and conducting inspections. EPA also requests comment on whether such an approach would be protective of the environment.

16. Applicability to Facilities With Ancillary MP&M Operations. EPA solicits comment on the language used to define applicability in regards to facilities that are not manufacturing, maintaining or rebuilding metal parts, products or machines for use in the 18 industrial sectors and that only perform MP&M operations (*e.g.*, maintenance and repair of metal parts and machines) as ancillary activities. For example, as discussed in Section III, EPA does not intend for the MP&M proposal to include process wastewater discharges from an on-site machine or maintenance shop at a facility engaged in the

manufacture of organic chemicals when the facility operates that shop to maintain the equipment related to manufacturing their products (*i.e.*, organic chemicals). EPA solicits comment on the clarity of this statement and specifically requests comment on alternative language. For example, EPA could use the following language instead: "facilities that perform on-site maintenance and repair of equipment used to produce a product or perform an operation (*e.g.*, manufacturing of organic chemicals) where the wastewater generated is already covered by effluent guidelines for another point source category (with the exception of the Metal Finishing or Electroplating effluent guidelines) are excluded from the applicability of the MP&M regulation."

17. Non-Chromium Anodizing. EPA is proposing to exclude wastewater from indirect discharging non-chromium anodizing facilities (that also do not use dichromate sealants) from the MP&M categorical pretreatment standards. Such facilities would still need to comply with the pretreatment standards of the Metal Finishing (40 CFR part 433) effluent guidelines for their non-chromium anodizing wastewater and the general pretreatment standards at 40 CFR part 403. EPA is proposing limits for direct dischargers in this subcategory. EPA solicits comment on whether the applicable standards for indirect discharging non-chromium anodizers should be transferred from 40 CFR part 433 to the MP&M regulation in order to include all non-chromium anodizers under one regulation. Because today's proposal includes a monitoring waiver for pollutants that are not present (see section XXI.C.1 for a discussion on the monitoring waiver), the Agency believes that transferring the pretreatment standards for these facilities to the MP&M regulation would allow non-chromium anodizing indirect dischargers to reduce the number of parameters for which they have to monitor.

In addition, EPA solicits comment and data on the chromium content of sulfuric acid anodizing baths, anodizing dyes/sealants, and other wastewater from sulfuric acid anodizing. EPA is especially interested in data that provides measurement of hexavalent chromium separate from that of trivalent chromium or total chromium.

18. Cyanide Monitoring. EPA is proposing to allow facilities, in subcategories with limits and standards for cyanide, to also monitor for amenable cyanide when they have alkaline chlorination treatment in place prior to commingling their wastewater

(see detailed discussion in section XXI.C.3). The point of compliance is based on monitoring for total cyanide (or amenable cyanide) directly after cyanide treatment, before combining the cyanide treated effluent with other wastestreams. EPA is also proposing an alternative where a facility may take samples of final effluent, in order to meet the total cyanide limit, if the control authority adjusts the permit limits based on the dilution ratio of the cyanide wastestream flow to the effluent flow. EPA is proposing to allow end-of-pipe alternative sampling point for amenable cyanide as well; however, in addition to adjusting the permit limits based on the dilution ratio, facilities must have alkaline chlorination treatment in place prior to the commingling of their cyanide-bearing wastewater with other process wastewater. The Agency notes this is very similar to the language used in the Metal Finishing effluent guidelines (40 CFR part 433). EPA solicits comment on this approach.

19. Compliance Cost for BAT Facilities. EPA has based the numeric limitations for today's proposed rule on wastewater sampling analytical data from facilities that the Agency believes to be operating "best available technology." This includes pollution prevention and water conservation practices as well as wastewater treatment systems. However, because EPA uses more than one facility to determine the achievable long-term average concentrations and variability factors (see Section VIII.B for a discussion on calculation of limits), not all model facilities are achieving the long-term average concentrations for all pollutants in their wastewater at all times. Therefore, EPA has included compliance costs to enhance these model BAT facilities to meet the proposed long-term average concentrations for all regulated pollutants. For example, model BAT facilities may incur costs for additional operational controls or for additional equipment or chemical additives that will allow them to target more than one metal type in their wastewater treatment system. EPA solicits comment on this approach and the adequacy of operational changes and treatment enhancements for BAT facilities to consistently and reliably achieve full compliance with proposed limitations. EPA also solicits comment and data on additional costs that model BAT facilities may incur that EPA has not included in the cost model for this proposal.

20. Space Limitations. EPA solicits comment on the extent to which a

MP&M facility can install or upgrade its current treatment system to meet the proposed limits within the space they currently occupy. More specifically, when facilities are located in urban areas with little space for expansion, can facilities still install the treatment necessary (consider the inclusion of pollution prevention and water conservation practices) to meet the proposed limits. If not, can such facilities use pollution prevention and water conservation practices and install microfiltration systems instead of installing or enlarging their existing clarifiers within the space they currently occupy?

21. Segregation of Waste Streams. EPA solicits comment and information on the problems/ issues with segregation of waste streams for performing preliminary treatment steps as described in section VIII. EPA is especially interested in data on the costs associated with retrofitting equipment to segregate waste streams.

22. Revision to POTW Removals. EPA uses the pollutant by pollutant percent removals achieved by POTWs (national average of well-operated POTWs with secondary treatment) to give credit to the pretreatment system and to conduct the "Pass Through" analysis for selecting regulated parameters for pretreatment standards.

In calculating the pollutant removals achieved by the selected technology option for today's proposed rule (for wastewater generated by indirect dischargers), EPA does not take "credit" for removing the portion of pollutant loadings that are currently removed by the POTWs. In addition, EPA performs a comparison of the percentage of a pollutant removed by POTWs with the percentage of the pollutant removed by discharging facilities applying EPA's selected technology option (BAT). In most cases, (particularly for metals and non-volatile organics) EPA has concluded that a pollutant passes through the POTW when the median percentage removed nationwide by representative POTWs (those meeting secondary treatment requirements) is less than the median percentage removed by facilities complying with BAT effluent limitations guidelines for that pollutant. EPA notes that the Pass Through Analysis uses a different standard for "pass through" than that used by POTWs to determine compliance with the General Pretreatment Standards (40 CFR part 403).

Recently, EPA has revisited the databases used (see Section XII.A for a discussion of the databases and the editing criteria used) to determine the

percent removal of pollutants achieved by the national average of well-operated POTWs. Previously, EPA edited data at or near the minimum level for POTW performance based on the editing criteria used to calculate BAT limitations. EPA is considering revising the POTW data editing criteria. Given the range of analytical minimum levels and their influence on calculated percent removals, EPA is considering several editing alternatives, detailed in section XIV. The Agency solicits comments on potential revisions to the pass-through methodology.

23. Toxic Weighting Factors. EPA has developed Toxic Weighting Factors (TWFs) using a combination of toxicity data on human health and aquatic life. EPA develops TWFs relative to the toxicity of copper. (See section XVII or the Cost-Effectiveness Analysis Document for this proposed rule for a more detailed discussion of toxic weighting factors). TWFs are multipliers that are applied to the mass of pollutants discharged (or removed) to generate toxic-weighted pound-equivalents. EPA uses toxic pound-equivalents to indicate the amount of toxicity that a pollutant may exert on human health and aquatic life relative to other pollutants. Conventional pollutants such as BOD, TSS, Oil & Grease (as HEM) and other bulk parameters do not have toxic weighting factors. As scientists and researchers develop and publish new human health and aquatic toxicity data for various pollutants, EPA must revise the TWFs. EPA has documented the changes to TWFs in the Cost-Effectiveness Analysis document for this proposed rule. EPA solicits comment on these changes.

24. Phosphoric Acid Cleaning. In regards to the applicability of the Oily Wastes subcategory, EPA is soliciting comment on the differences in metals content of wastewater generated from "light" phosphoric acid operations (such as some phosphoric acid etching operations and cleaning operations using phosphoric acid solutions) and from phosphate conversion coating. EPA is considering including phosphoric acid etching and cleaning using phosphoric acid solutions in the definition of "oily operations" discussed in section VI.C.6. However, the Agency is not considering the inclusion of phosphate conversion coating as one of the "oily operations." Based on EPA's database for this proposal, EPA believes that wastewater generated from phosphate conversion coating operations contains high levels of zinc and manganese. EPA is especially interested in analytical data from sampling wastewater that is

representative of either of these operations.

25. Organics Management Plan for Oily Wastes Subcategory. EPA solicits comment on whether sites with significant amounts of oil-bearing wastewater (for example, a facility in the Oily Wastes subcategory) should be eligible for the use of an organic pollutant management plan as described Section XXI.C.2. Based on the current data base, EPA believes that wastewater generated by facilities in the Oily Wastes subcategory require end-of-pipe treatment to reduce the concentrations of organic pollutants and that an organic management plan alone may not adequately control organic-bearing wastewater at facilities containing significant quantities of oil-bearing wastewater.

26. NSPS and PSNS Technology Option. EPA is proposing NSPS and PSNS for the General Metals, Metal Finishing Job Shops, Printed Wiring Board, and Steel Forming and Finishing subcategories based on BAT Option 4. This proposed option includes in-process flow control and pollution prevention, segregation of wastewater streams, preliminary treatment steps as necessary (including oils removal by ultrafiltration), chemical precipitation using lime or sodium hydroxide, and solids separation using a microfilter. The Agency also strongly considered proposing NSPS and PSNS for these subcategories based on ultrafiltration for oil and grease removal and chemical precipitation followed by sedimentation for TSS and metals removal. This option is equivalent to BAT Option 2 with the oil/water separator replaced by an ultrafilter. The Agency is soliciting comment and data on this option for NSPS and PSNS for the final rule.

27. Total Sulfide. EPA is soliciting comment on the appropriate analytical method for analyzing total sulfide in wastewater from MP&M facilities, specifically in regard to interferences from reducing agents or organic chemicals present in the wastewater. The Agency used EPA Method 376.1 for seven wastewater sampling episodes, EPA Method 376.2 at one episode, and Standard Method 4500-S2 for three sampling episodes that were performed for EPA by a local POTW. Stakeholders have suggested that presence of reducing agents and organic chemicals can interfere with EPA Method 376.1, leading to over estimates of total sulfide.

EPA performed matrix spike/matrix spike duplicate recoveries as part of its QA/QC procedures on these samples. If the matrix spike is recovered quantitatively (e.g., 75–125%), it is unlikely that an interference is present.

The data narratives for these samples did not cite any QA/QC outliers. However, some interferences could still be present. (The data narratives can be found in section 5.2 of the public record.) EPA intends to perform additional sampling for total sulfide following this proposal using both EPA Method 376.1 and 376.2. EPA notes that it collected the data used for estimating total sulfide pollutant loadings in raw wastewater (i.e., in wastewater from MP&M unit operations) at sampling points located prior to treatment technologies which introduce reducing agents (i.e., chelation breaking). In addition, the data that EPA used to develop the numerical limitation for total sulfide was from a site that did not add reducing agents to treat its wastewater.

EPA solicits comment on the various sulfide methods and whether these methods are appropriate for analytical wastewater sampling at MP&M facilities. EPA also solicits raw wastewater and treatment performance data for total sulfide.

28. Limits for the Non-Chromium Anodizing Subcategory. EPA is soliciting comment on two issues relating to the proposed limitations for the Non-Chromium Anodizing subcategory. These two issues are discussed below.

EPA is proposing an effluent limitation for aluminum applicable to existing and new direct dischargers in the Non-Chromium Anodizing subcategory. Because EPA does not have data from any direct discharging non-chromium anodizers, it based the proposed aluminum limitation on two indirect discharging non-chromium anodizers. However, the Agency does not believe that these indirect discharging facilities were achieving effluent levels of aluminum that reflect BAT. Because aluminum assists in the flocculation of wastewater at POTWs prior to sedimentation, many POTWs do not set stringent pretreatment standards for aluminum from non-chromium anodizers. EPA is not proposing pretreatment standards for aluminum in today's proposal for that reason. In addition, neither the Electroplating (40 CFR part 413) nor the Metal Finishing (40 CFR part 433) effluent guidelines contain pretreatment standards for aluminum. Therefore, the Agency does not believe that these two facilities targeted aluminum in their wastewater treatment operations. EPA believes that a non-chromium anodizer employing Option 2 technologies can achieve effluent concentrations of aluminum much lower than those proposed today. Therefore, EPA is soliciting data and

comment on effective removal of aluminum from non-chromium anodizing wastestreams. See section XXIV for guidelines for submitting analytical data.

EPA is proposing effluent limitations for new and existing direct dischargers for manganese, nickel and zinc for facilities in the Non-Chromium Anodizing subcategory. The Agency based these effluent limitations on facilities in the General Metals subcategory employing the Option 2 treatment technology because it did not have adequate wastewater treatment information on these metals from non-chromium anodizing facilities. EPA solicits data and comment on the treatment of manganese, nickel, and zinc from non-chromium anodizing facilities employing Option 2 treatment. See section XXIV for guidelines for submitting analytical data.

29. Limits for the Printed Wiring Subcategory. EPA is proposing effluent limitations for chromium, copper, lead, and zinc for existing facilities in the Printed Wiring Boards subcategory. The Agency based these effluent limitations on facilities in the General Metals subcategory employing the Option 2 treatment technology because it did not have adequate wastewater treatment information on these metals from printed wiring board facilities employing Option 2 treatment. EPA solicits data and comment on the treatment of chromium, copper, lead, and zinc at printed wiring board facilities employing Option 2 treatment. See section XXIV for guidelines for submitting analytical data.

30. Cyanide Loadings and Removals. EPA solicits comment and data (at the point directly following cyanide destruction treatment) on achievable effluent concentrations of cyanide (or amenable cyanide) from MP&M facilities that are currently regulated under the Metal Finishing effluent guidelines (40 CFR part 433). EPA's Design & Cost Model for the MP&M rule estimates pollutant loadings for the industry before and after compliance with the proposed regulation. For the purposes of estimating baseline loadings (*i.e.*, current discharges) for model facilities (*i.e.*, survey sites) currently covered by the Metal Finishing or Electroplating effluent guidelines that indicated in their survey questionnaire that they both generate wastewater from cyanide-bearing operations and have cyanide treatment in place, EPA assumed that these sites were achieving the LTA concentrations achieved by EPA's sampled MP&M BAT facilities (sampled at the point directly following cyanide destruction treatment).

For model sites currently covered by the Metal Finishing or Electroplating effluent guidelines that indicated in their survey questionnaire that they generate wastewater from cyanide-bearing operations but *did not* indicate that they have cyanide treatment in place, EPA used information from EPA sampling of cyanide bearing units operations (*i.e.*, raw wastewater loads) to estimate baseline loads prior to implementing the technology option under consideration (note that cyanide loadings were not analyzed separately by subcategory). On a national basis, EPA estimates that 65% (2,315) of MP&M facilities discharging cyanide-bearing wastewater do not have treatment in place for cyanide destruction. EPA based this national estimate on responses to survey questionnaires. This methodology implicitly assumes that many of these facilities may not be achieving the cyanide removals that were projected for the Metal Finishing and Electroplating effluent guidelines. In addition to the request for data above, EPA also requests comment on its method for determining baseline cyanide loadings. (See Section 6.5 of the public record for a memorandum that includes a table of the comparison of cyanide using sites versus cyanide treating sites.)

31. Subcategorization. EPA explains its rationale for its proposed subcategorization scheme in section VI. EPA is proposing to subdivide the MP&M industrial category into the following 8 subcategories: General Metals, Metal Finishing Job Shops, Non-Chromium Anodizing, Printed Wiring Boards, Steel Forming and Finishing, Oily Wastes, Railroad Line Maintenance, and Shipbuilding Dry Dock. The Agency believes its proposed subcategories make sense, but requests comment on other possible subcategories. Commenters should include data to support their suggestions where possible.

32. Cost Savings Associated with Pollution Prevention and Water Conservation. As discussed in section VIII, EPA's proposed technology options include the incorporation of water conservation techniques and pollution prevention technologies. In all cases, EPA's options that incorporated these technologies and practices costed less and removed more pollutants than those options that did not. EPA requests comment on its determination that pollution prevention, recycle, and water conservation result in net cost savings to facilities, and examples of any specific situations where this may not be true.

33. Assessment of Treatment System Performance. As discussed in section VIII, EPA excluded data from chemical precipitation and clarification systems at which the concentration of most of the metals present in the influent stream did not decrease, indicating poor treatment. Although EPA believes this is an appropriate practice, in order to focus on facilities with well-run treatment systems, it also introduces a risk of biasing estimates of treatment effectiveness upwards with respect to identifying pollutant removals on a national basis. If a particular metal is not able to be effectively removed by a particular treatment train, but its concentration fluctuates randomly over time in both the influent and the effluent, then retaining only data showing positive "removals" may give a misleading impression of effectiveness of that treatment technology nationally. Some commenters have raised this issue in the past particularly with respect to boron, which those commenters believe is not effectively removed by certain treatment trains where EPA's data (edited to include only decreases) appears to show removals. EPA is continuing to assess this concern both with regards to metals in general and with regards to boron in particular. EPA requests comment on this issue and suggestions for addressing it.

34. Flow Cutoff Level for the General Metals Subcategory. As explained in sections XII and XIII, EPA is proposing a 1 MGY flow cutoff for existing and new indirect discharging facilities in the General Metals subcategory. EPA requests comment on the 1 MGY flow cutoff and whether a higher or lower cutoff would be appropriate. EPA also requests comment on whether the flow cutoff should be different for facilities currently covered under 40 CFR Part 413 or 433 and whether or not that would create an unfair economic advantage for those facilities (*e.g.*, captive electroplating shops in General Metals remaining regulated under 40 CFR Part 433 but Metal Finishing Job Shops being regulated under the proposed MP&M rule).

35. Flow Cutoff Level for the Metal Finishing Job Shops Subcategory. As explained in sections XII and XIII, EPA is not proposing a flow cutoff for existing or new indirect discharging facilities in the Metal Finishing Job Shops subcategory. The Agency concluded that the pollutant reductions associated with the proposed option (Option 2) were feasible and achievable and the economic impacts were not substantially mitigated under the 1 MGY flow cutoff. EPA requests

comment on the use of a flow cutoff for this subcategory.

36. Flow Cutoff Level for the Printed Wiring Board Subcategory. As explained in sections XII and XIII, EPA is not proposing a flow cutoff for existing or new indirect discharging facilities in the Printed Wiring Board subcategory. The Agency concluded that the pollutant reductions associated with the proposed option (Option 2) were feasible and achievable and the economic impacts were not mitigated at a 1 MGY flow cutoff for this subcategory. The Agency solicits comments on a 1 MGY flow cutoff. Under this scenario, existing regulation would continue to apply. EPA solicits comment on the implementation and market consequences of this option.

37. Flow Cutoff Level for the Steel Forming and Finishing Subcategory. As explained in sections XII and XIII, EPA is not proposing a flow cutoff for existing or new indirect discharging facilities in the Steel Forming and Finishing subcategory. However, EPA solicits comment on flow cutoffs at the 1, 2, and 3 MGY levels. Under these flow cutoff scenarios, existing regulations would continue to apply. EPA solicits comment on implementation and market consequences of these options.

38. Flow Cutoff Level for the Oily Wastes Subcategory. As explained in sections XII and XIII, EPA is proposing a 2 MGY flow cutoff for existing and new indirect discharging facilities in the Oily Wastes subcategory. It is proposing the 2 MGY flow cutoff primarily to reduce the burden on POTWs, and solicits comment on a 3 MGY cutoff.

39. For the General Metals, Metal Finishing Job Shops, Printed Wiring Boards, and Steel Forming and Finishing subcategories, EPA is proposing new source performance standards and pretreatment standards for new sources based on Option 4. EPA noted in section IX in the discussion of its consideration of this technology for BPT/BAT for each of these subcategories that it is not being proposed for BPT because the additional removals, while large when considered across the entire population of existing facilities, were not significant on a per facility basis, and because of concerns with potential increased loadings (relative to Option 2) of COD and organic pollutants. EPA requests comment on basing NSPS on Option 2 for the above subcategories for the same reasons it is proposing to base BPT/BAT on Option 2.

40. Monitoring Costs. In estimating annual monitoring costs for model facilities in EPA's MP&M Design and Cost Model, the Agency assumed that

facilities meeting local limitations or national effluent limitation guidelines and pretreatment standards will already incur monitoring costs. EPA solicits comment on whether the facilities will incur additional monitoring costs to comply with today's proposal (and how much that monitoring would cost). EPA has incorporated several options for adding additional flexibility in regards to monitoring (See Section XXI.C for a discussion on monitoring flexibility). EPA expects that these proposed flexibilities will decrease the overall burden and costs of analytical wastewater monitoring for facilities within the scope of this rule.

41. Cash Flow Assumption. As discussed in Section XVI, baseline cash flow is defined as the sum of reported net income and depreciation. The measure is widely used within industry in evaluating capital investment decisions because both net income and depreciation (which is an accounting offset against income, but not an actual cash expenditure) are potentially available to finance future investment. However, assuming that total baseline cash flow is available over an extended time horizon (for example, 15 years) to finance investments related to environmental compliance could overstate a site's ability to comply. In particular, the cost of existing capital equipment (not associated with regulatory compliance) is not netted out of cash flow, as it is of income through the subtraction of depreciation. Thus, any costs associated with either replacing existing capital equipment, or repaying money that was previously borrowed to pay for it, are omitted from the facility analysis. EPA requests comment on its use of cash flow as a measure of resources available to finance environmental compliance and suggestions for alternative methodologies. (See Section XXII of today's notice.)

42. Alternatives for Establishing Permit Effluent Limitations and Standards for the Steel Forming and Finishing subcategory. As discussed in Section XXI.B, EPA is soliciting comment on several alternative approaches for the development of mass-based limitations for the Steel Forming and Finishing subcategory. These approaches may result in more stringent mass-based permits/control mechanisms for some facilities with better protection of the environment for the entire life of a permit/control mechanism and may result in higher costs. Each alternative requires that production from unit operations that do not generate or discharge process wastewater shall not be included in the

calculation of operating rates. EPA solicits comments on these alternatives to the proposed production basis for calculating effluent limitations and pretreatment standards used in NPDES permits or control mechanisms. In particular, the Agency solicits comments on related costs and any technical difficulties that steel forming and finishing facilities might have in meeting limits during short periods of high production. EPA also solicits other options for consideration including whether to allow concentration-based limits for this subcategory and any rationale for doing so.

43. Benefit Analysis. As explained in Section XX, benefits analyses for past effluent guidelines have been limited in the range of benefits addressed which has hindered EPA's ability to compare the benefits and costs of rules comprehensively. The Agency is working to improve its benefits analyses, including applying methodologies that have now become well established in the natural resources valuation field, but have not been used previously in the effluent guidelines program. EPA was particularly interested in expanding its benefits analysis for this rule to include water-based recreational activities other than fishing. EPA has therefore expanded upon its traditional methodologies in the benefits analysis for the proposed MP&M rule. Past effluent guidelines analyses have included human health benefits, economic productivity benefits such as reduced costs for POTW sludge disposal, recreational benefits for fishing, and nonuse values. The additional analysis contained in this rule expands on the traditional analysis by adding benefits to participants in boating, swimming, and viewing (i.e., near-water recreation). Because EPA has not yet resolved some anomalies in the extrapolation of the analysis to the national level, the monetized benefits for these new categories are not included in the summary statements of benefits for the proposed rule. However, EPA is including these analyses in the EEBA to present the new methodologies and their results as applied to the MP&M rule for public comment.

Although EPA is confident in the sample-based results, EPA believes that the large number of viewers and boaters projected to benefit from the rule at the national level may indicate a need to revise its procedures for scaling up from sampled facilities to the national level. This simple extrapolation technique used in both the cost and benefit analyses may bias both estimates and may have the unintended effect of overcounting the number of benefitting

boaters and wildlife viewers. EPA recognizes that extrapolating from sample facility to national results introduces uncertainty in the analysis and is continuing to explore ways to reduce this uncertainty. The Agency is requesting comment on the methods used to extrapolate sample results to national benefit estimates. EPA is also specifically soliciting comment on several of the other methodological approaches used in the new analysis including the benefits transfer of values from studies that did not specifically address boating and wildlife viewing to these activities, and the extent to which activities such as recreational boating and wildlife viewing are applicable to children. EPA may include additional categories of monetized benefits estimates based on these new methodologies, as revised based on comment and peer review, in its economic analysis for the final rule.

XXIV. Guidelines for Submission of Analytical Data

EPA requests that commenters to today’s proposed rule submit analytical, flow, and production data to supplement data collected by the Agency during the regulatory development process. To ensure that commenter data may be effectively evaluated by the Agency, EPA has developed the following guidelines for submission of data.

A. Types of Data Requested

1. EPA requests paired influent and effluent treatment data for each of the technologies identified in the technology options (especially in cases where paired data will be helpful in assessing variability), as well as any additional technologies applicable to the treatment of MP&M wastewater. This includes end-of-pipe treatment technologies and in-process treatment, recycling, water reuse, or metal recovery technologies. Submission of effluent data only is not sufficient for full analysis; the corresponding influent data must be provided.

For submissions of paired influent and effluent treatment data, a minimum of four days of data are required for EPA to assess variability. Submissions of paired influent and effluent treatment data should include: a process diagram of the treatment system; treatment chemical addition rates; sampling point locations; sample collection dates; influent and effluent flow rates for each treatment unit during the sampling period; sludge or waste oil generation rates; a brief discussion of the treatment technology sampled; and a list of unit operations contributing to the sampled

wastestream. EPA requests data for systems that are treating only process wastewater. Systems treating non-process wastewater (e.g., sanitary wastewater or non-contact cooling water) will not be evaluated by EPA. In addition to data for the analytes discussed below, data for total suspended solids (TSS) and pH must be included with submissions of treatment data. If available, information on capital cost, annual (operation and maintenance) cost, and treatment capacity should be included for each treatment unit within the system.

2. EPA also requests flow, production, and analytical data from MP&M unit operations, rinses, and wet air pollution control devices. Submissions of analytical data for MP&M unit operations and rinses should include a process diagram of the unit operation; a description of the purpose and performance of the operation; production data associated with the sampling period; flow rates associated with the sampling period (i.e., continuous discharge flow rates, intermittent discharge rates and frequencies, or volume of bath and time of last discharge for stagnant baths); sample type (grab or composite); temperature and pH of each sample; sample collection dates; known process bath constituents; sampling point locations; and, the volume, discharge frequency, and destination of all process wastewater, waste oil, or sludge generated by the unit operation.

Associated production data should be provided in the following units: mass of metal removed (for abrasive jet machining, electrical discharge machining, grinding, machining, and plasma arc machining operations), in standard cubic feet of air flow (for wet air pollution control operations), or surface area of parts processed (for all other unit operations). Flow, production, and analytical data should all correspond to the same period of time. When applicable, a description of any pollution prevention technologies used at the site for the unit operations, including cost savings and pollution reduction estimates should be provided.

B. Analytes Requested

EPA considered metal, organic, conventional, and other nonconventional pollutant parameters for regulation under the MP&M Category. Based on analytical data collected, the Agency initially identified 132 pollutant parameters as MP&M “pollutants of concern.” Complete lists of pollutant parameters considered for regulation and pollutants of concern (as well as the criteria used to identify each

of these pollutant parameters) are briefly discussed in Section VII and fully discussed the Technical Development Document for this proposal. The Agency requests analytical data for any of the 132 pollutants of concern and for any other pollutant parameters which commentors believe are of concern in the MP&M industry. TSS and pH data are requested for all samples. Table XXIV–1 presents the EPA analytical methods for these pollutants. Commentors should use these methods or equivalent methods for analyses, and should document the method used for all data submissions.

C. Quality Assurance/Quality Control (QA/QC) Requirements

EPA based today’s proposed regulations on analytical data collected by EPA using rigorous QA/QC checks. These QA/QC checks include procedures specified in each of the analytical methods, as well as procedures used for the MP&M sampling program in accordance with EPA sampling and analysis protocols. The Agency requests that submissions of analytical data include documentation of QA/QC procedures.

EPA followed the QA/QC procedures specified in the analytical methods listed in Table XXIV–1. These QA/QC procedures include sample preservation and the use of method blanks, matrix spikes, matrix spike duplicates, laboratory duplicate samples, and Q standard checks (e.g., continuing calibration blanks). EPA requests that sites provide detection limits for all non-detected pollutants. EPA also requests that composite samples be collected for all flowing wastewater streams (except for analyses requiring grab samples, such as oil and grease), sites collect and analyze 10 percent field duplicate samples to assess sampling variability, and sites provide data for equipment blanks for volatile organic pollutants when automatic compositors are used to collect samples.

TABLE XXIV–1.—EPA ANALYTICAL METHODS FOR USE WITH MP&M

Parameter	EPA method
Acidity	305.1
Alkalinity	310.1
Ammonia as Nitrogen	350.1
BOD 5-Day (Carbonaceous)	405.1
Chemical Oxygen Demand (COD)	410.1
Chloride	410.2
Cyanide, Total	325.3
Cyanide, Amenable	335.2
Fluoride	335.1
Metals	340.2
	1620

TABLE XXIV-1.—EPA ANALYTICAL METHODS FOR USE WITH MP&M—Continued

Parameter	EPA method
Volatile Organics	1624
Semivolatile Organics	1625
Nitrogen, Total Kjeldahl	351.2
Oil and Grease	413.2
Oil and Grease (as HEM)	1664
pH	150.1
Phenolics, Total Recoverable	420.2
Phosphorus, Total	365.4
Sulfate	375.4
Sulfide, Total	376.2
Total Dissolved Solids (TDS)	160.1
Total Organic Carbon (TOC)	415.1
Total Petroleum Hydrocarbons (as SGT-HEM)	1664
Total Suspended Solids (TSS)	160.2
Weak-Acid Dissociable Cyanide ..	1677
Ziram	630.1

Appendix A to the Preamble—Abbreviations, Acronyms, and Other Terms Used in This Document

Act—The Clean Water Act
 Agency—U.S. Environmental Protection Agency
 AWQC—Ambient Water Quality Criteria
 BAT—Best available technology economically achievable, as defined by section 304(b)(2)(B) of the Act.
 BCT—Best conventional pollutant control technology, as defined by section 304(b)(4) of the Act.
 BMP—Best management practices, as defined by section 304(e) of the Act.
 BPT—Best practicable control technology currently available, as defined by section 304(b)(1) of the Act.
 CAA—Clean Air Act (42 U.S.C. 7401 *et seq.*, as amended)
 CBI—Confidential Business Information
 Clean Water Act—(33 U.S.C 1251 *et seq.*, as amended)
 Conventional Pollutants—Constituents of wastewater as determined by section 304(a)(4) of the Act and the regulations thereunder 40 CFR 401.16, including pollutants classified as biochemical oxygen demand, suspended solids, oil and grease, fecal coliform, and pH.
 CE—Cost Effectiveness
 DAF—Dissolved Air Flotation
 Direct Discharger—An industrial discharger that introduces wastewater to a water of the United States with or without treatment by the discharger.
 EEA—Economic and Environmental Impact Assessment of the Proposed Effluent Limitations Guidelines and Standards for the Metal Products & Machinery Industry. This document presents the methodology employed to assess economic and environmental impacts of the proposed rule and the results of the analysis.
 Effluent Limitation—A maximum amount, per unit of time, production, volume or other unit, of each specific constituent of the effluent from an existing point source that is subject to limitation. Effluent limitations may be expressed as a mass

loading or as a concentration in milligrams of pollutant per liter discharged.
 End-of-Pipe Treatment—Refers to those processes that treat a plant waste stream for pollutant removal prior to discharge.
 FTE—Full Time Equivalents (related to the number of employees)
 HAP—Hazardous Air Pollutant
 HEM—Hexane Extractable Material refers to an analytical method (EPA Method 1664) for determining the level of oil and grease that does not use Freon extraction.
 Indirect Discharger—An industrial discharger that introduces wastewater into a publicly owned treatment works.
 MP&M—Metal Products and Machinery point source category
 NCEPI—EPA's National Center for Environmental Publications
 NESHAP—National Emission Standards for Hazardous Air Pollutants
 NRMRL—EPA's National Risk Management Research Laboratory (formerly RREL—EPA's Risk Reduction Engineering Laboratory).
 MACT—Maximum Achievable Control Technology (applicable to NESHAPs)
 Nonconventional Pollutants—Pollutants that have not been designated as either conventional pollutants or priority pollutants.
 NPDES—National Pollutant Discharge Elimination system, a Federal Program requiring industry dischargers, including municipalities, to obtain permits to discharge pollutants to the nation's water, under section 402 of the Act.
 OCPSF—Organic chemicals, plastics, and synthetic fibers manufacturing point source category (40 CFR part 414).
 ORP—Oxidation-Reduction Potential
 POTW—Publicly owned treatment works.
 Priority Pollutants—The 126 pollutants listed in 40 CFR part 423, appendix A.
 PPA—Pollutant Prevention Act of 1990 (42 U.S.C. 13101 *et seq.*, Pub. L. 101-508, November 5, 1990)
 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 sections 307 (b) and (c) of the Act.
 SIC—Standards Industrial Classification, a numerical categorization scheme used by the U.S. Department of Commerce to denote segments of industry.
 SGP—EPA's National Metal Finishing Strategic Goals Program.
 SGT-HEM—Silica Gel Treated—Hexane Extractable Material refers to the freon-free oil and grease method (EPA Method 1664) used to measure the portion of oil and grease that is similar to total petroleum hydrocarbons.
 SIU—Significant Industrial User as defined in the General Pretreatment Regulations (40 CFR part 403)
 Technical Development Document (TDD)—Development Document for Effluent Limitations Guidelines and Standards for the Metal Products and Machinery Point Source Category.
 TOC—Total Organic Carbon (EPA method 415.1)
 TOP—Total Organics Parameter

TRI—Toxic Release Inventory
 TTO—Total Toxic Organics as defined in the Metal Finishing effluent guidelines (40 CFR part 433).
 TWF—Toxic Weighting Factor
 VOC—Volatile Organic Compound

List of Subjects

40 CFR Part 413

Environmental protection, Electroplating, Metals, Reporting and recordkeeping requirements, Waste treatment and disposal, Water pollution control.

40 CFR Part 433

Environmental protection, Metals, Reporting and recordkeeping requirements, Waste treatment and disposal, Water pollution control.

40 CFR Part 438

Environmental protection, Metals, Waste treatment and disposal, Water pollution control.

40 CFR Part 463

Environmental protection, Plastics materials and synthetics, Waste treatment and disposal, Water pollution control.

40 CFR Part 464

Environmental protection, Metals, Waste treatment and disposal, Water pollution control.

40 CFR Part 467

Environmental protection, Aluminum, Reporting and recordkeeping requirements, Waste treatment and disposal, Water pollution control.

40 CFR Part 471

Environmental protection, Metals, Waste treatment and disposal, Water pollution control.

Dated: October 31, 2000.

Carol M. Browner,
 Administrator.

For the reasons set out in the preamble, title 40, chapter I of the Code of Federal Regulations is proposed to be amended as follows:

PART 413—ELECTROPLATING POINT SOURCE CATEGORY

1. The authority citation for Part 413 is revised to read as follows:

Authority: 33 U.S.C. 1311, 1314, 1316, 1317, 1318, 1342, and 1361.

2. Section 413.01 is amended by revising the first and last sentence of paragraph (a) to read as follows:

§ 413.01 Applicability and compliance dates.

(a) As defined more specifically in each subpart, this part applies to discharges resulting from electroplating operations in which a metal is electroplated on any basis material and to related metal finishing operations as set forth in the various subparts, whether such operations are conducted in conjunction with electroplating, independently, or as part of some other operation. * * * This part does not apply to any facility that must achieve the standards or limitations in 40 CFR 433.15 (Metal Finishing PSES) or 40 CFR part 438 (Metal Products & Machinery).

* * * * *

PART 433—METAL FINISHING POINT SOURCE CATEGORY

3. The authority citation for Part 433 is revised to read as follows:

Authority: 33 U.S.C. 1311, 1314, 1316, 1317, 1318, 1342, and 1361.

4. Section 433.10 is amended by revising paragraph (b) to read as follows:

§ 433.10 Applicability; description of the metal finishing point source category.

* * * * *

(b) In some cases, effluent limitations and standards for other industrial categories may be applicable to wastewater discharges from the metal finishing operations listed in paragraph (a) of this section. In such cases, the effluent limitations and standards for this part do not apply and the metal finishing operations are subject to the provisions of one of the following categories:

Iron and Steel (40 CFR part 420);
Nonferrous Metals Smelting and Refining (40 CFR part 421);
Metal Products and Machinery (40 CFR part 438);
Battery Manufacturing (40 CFR part 461);
Plastic Molding and Forming (40 CFR part 463);
Metal Casting Foundries (40 CFR part 464);
Coil Coating (40 CFR part 465);
Porcelain Enameling (40 CFR part 466);
Aluminum Forming (40 CFR part 467);
Copper Forming (40 CFR part 468);
Electrical and Electronic Components (40 CFR part 469); and
Nonferrous Metals Forming (40 CFR part 471).

* * * * *

5. A new part 438 is proposed to be added to read as follows:

PART 438—METAL PRODUCTS AND MACHINERY POINT SOURCE CATEGORY

Sec.

- 438.1 General applicability.
- 438.2 General definitions.
- 438.3 General pretreatment standards.
- 438.4 Monitoring requirements.
- 438.5 Compliance date for pretreatment standards for existing sources.

Subpart A—General Metals

- 438.10 Applicability.
- 438.12 Effluent limitations attainable by the application of the best practicable control technology currently available (BPT).
- 438.13 Effluent limitations attainable by application of the best control technology for conventional pollutants (BCT).
- 438.14 Effluent limitations attainable by the application of the best available technology economically achievable (BAT).
- 438.15 Pretreatment standards for existing sources (PSES).
- 438.16 New source performance standards (NSPS).
- 438.17 Pretreatment standards for new sources (PSNS).

Subpart B—Metal Finishing Job Shops

- 438.20 Applicability.
- 438.21 Special definitions.
- 438.22 Effluent limitations attainable by the application of the best practicable control technology currently available (BPT).
- 438.23 Effluent limitations attainable by application of the best control technology for conventional pollutants (BCT).
- 438.24 Effluent limitations attainable by the application of the best available technology economically achievable (BAT).
- 438.25 Pretreatment standards for existing sources (PSES).
- 438.26 New source performance standards (NSPS).
- 438.27 Pretreatment standards for new sources (PSNS).

Subpart C—Non-Chromium Anodizing

- 438.30 Applicability.
- 438.31 Special definitions.
- 438.32 Effluent limitations attainable by the application of the best practicable control technology currently available (BPT).
- 438.33 Effluent limitations attainable by application of the best control technology for conventional pollutants (BCT).
- 438.34 Effluent limitations attainable by the application of the best available technology economically achievable (BAT).
- 438.36 New source performance standards (NSPS).

Subpart D—Printed Wiring Boards

- 438.40 Applicability.
- 438.42 Effluent limitations attainable by the application of the best practicable control technology currently available (BPT).
- 438.43 Effluent limitations attainable by application of the best control

technology for conventional pollutants (BCT).

- 438.44 Effluent limitations attainable by the application of the best available technology economically achievable (BAT).
- 438.45 Pretreatment standards for existing sources (PSES).
- 438.46 New source performance standards (NSPS).
- 438.47 Pretreatment standards for new sources (PSNS).

Subpart E—Steel Forming and Finishing

- 438.50 Applicability.
- 438.51 Special definitions.
- 438.52 Effluent limitations attainable by the application of the best practicable control technology currently available (BPT).
- 438.53 Effluent limitations attainable by application of the best control technology for conventional pollutants (BCT).
- 438.54 Effluent limitations attainable by the application of the best available technology economically achievable (BAT).
- 438.55 Pretreatment standards for existing sources (PSES).
- 438.56 New source performance standards (NSPS).
- 438.57 Pretreatment standards for new sources (PSNS).
- 438.58 Calculation of NPDES and pretreatment permit effluent limitations.

Subpart F—Oily Wastes

- 438.60 Applicability.
- 438.61 Special definitions.
- 438.62 Effluent limitations attainable by the application of the best practicable control technology currently available (BPT).
- 438.63 Effluent limitations attainable by application of the best control technology for conventional pollutants (BCT).
- 438.64 Effluent limitations attainable by the application of the best available technology economically achievable (BAT).
- 438.65 Pretreatment standards for existing sources (PSES).
- 438.66 New source performance standards (NSPS).
- 438.67 Pretreatment standards for new sources (PSNS).

Subpart G—Railroad Line Maintenance

- 438.70 Applicability.
- 438.72 Effluent limitations attainable by the application of the best practicable control technology currently available (BPT).
- 438.73 Effluent limitations attainable by application of the best control technology for conventional pollutants (BCT).
- 438.76 New source performance standards (NSPS).

Subpart H—Shipbuilding Dry Docks

- 438.80 Applicability.
- 438.81 Special definitions.
- 438.82 Effluent limitations attainable by the application of the best practicable

- control technology currently available (BPT).
- 438.83 Effluent limitations attainable by application of the best control technology for conventional pollutants (BCT).
- 438.86 New source performance standards (NSPS).

Appendix A to Part 438—Typical Products In Metal Products & Machinery Sectors

Appendix B to Part 438—TOP Pollutants List

Authority: 33 U.S.C. 1311, 1314, 1316, 1317, 1318, 1342 and 1361.

§ 438.1 General applicability.

(a)(1) As defined more specifically in each subpart, except as provided in paragraphs (b), (c), (d), (e), (f), and (g) of this section, this part applies to process wastewater discharges from existing or new industrial sites (including facilities owned and operated by federal, state, or local governments) engaged in manufacturing, rebuilding, or maintenance of metal parts, products or machines for use in the Metal Product & Machinery (MP&M) industrial sectors listed in this section. A list of typical products found in each of the 18 industrial sectors is provided in Appendix A to this part. The MP&M Industrial Sectors consist of the following:

Aerospace;
Aircraft;
Bus and Truck;
Electronic Equipment;
Hardware;
Household Equipment;
Instruments;
Job Shops;
Mobile Industrial Equipment;
Motor Vehicle;
Office Machine;
Ordnance;
Precious Metals and Jewelry;
Printed Wiring Boards;
Railroad;
Ships and Boats;
Stationary Industrial Equipment; or
Miscellaneous Metal Products.

(2) This part also applies to mixed-use facilities, as described in paragraph (h) of this section.

(b) The regulations in this part do not apply to wastewater discharges which are subject to the limitations and standards of one or more of the following categories:

- (1) Iron and steel manufacturing (40 CFR part 420).
- (2) Nonferrous metals manufacturing (40 CFR part 421).
- (3) Ferroalloy manufacturing (40 CFR part 424).
- (4) Battery manufacturing (40 CFR part 461).
- (5) Plastic molding and forming (40 CFR part 463).
- (6) Metal molding and casting (40 CFR part 464).

- (7) Coil coating (40 CFR part 465).
- (8) Porcelain enameling (40 CFR part 466).
- (9) Aluminum forming (40 CFR part 467).
- (10) Copper forming (40 CFR part 468).
- (11) Electrical and electronic components (40 CFR part 469).
- (12) Nonferrous metals forming and metal powders (40 CFR part 271).

(c) When a facility discharges process wastewater that is subject to the general applicability of this part and the facility discharges other wastewater that is subject to the limitations and standards of one or more of the categories listed in paragraph (b) of this section, the facility must comply with both the provisions of this part and other parts, as applicable.

(d) Facilities other than those reasonably included in the 18 MP&M industrial sectors specified in paragraph (a) of this section are not subject to this part when discharges from the maintenance or repair of metal parts or machines at the facility are performed only as ancillary activities.

(e) Wastewater discharges generated from electroplating during semiconductor wafer manufacturing in a "clean room" environment are not subject to this part. Wastewater discharges from electroplating during semiconductor final wafer assembly are subject to this part.

(f) Wastewater discharges resulting from the washing of cars, aircraft or other vehicles, when performed as a preparatory step prior to one or more successive manufacturing, rebuilding, or maintenance operations, are subject to this part.

(g) Process wastewater generated by maintenance and repair activities at gasoline service stations, passenger car rental facilities, or utility trailer and recreational vehicle rental facilities are not subject to this part.

(h) When this part is applied to wastewater discharges generated at different industrial sites (industrial buildings as well as outdoor locations where manufacturing, rebuilding, or maintenance occur as specified in § 438.1) within a mixed-use facility (as defined in § 438.2(c)), the control authority may consider these discharges to be separate for the purpose of applying the applicable low flow exemption to a pretreatment standard. The control authority must determine which wastewater discharges can be considered separate for this purpose.

§ 438.2 General definitions.

As used in this part:

(a) The general definitions and abbreviations in 40 CFR part 401 shall apply.

(b) The regulated parameters are listed with approved methods of analysis in

Table 1B at 40 CFR 136.3, and are defined as follows:

- (1) *BOD₅* means 5-day biochemical oxygen demand.
- (2) *Cadmium* means total cadmium.
- (3) *Chromium* means total chromium.
- (4) *Copper* means total copper.
- (5) *Cyanide (T)* means total cyanide.
- (6) *Cyanide (A)* means those cyanides which are amenable to alkaline chlorination.
- (7) *Lead* means total lead.
- (8) *Manganese* means total manganese.
- (9) *Molybdenum* means total molybdenum.
- (10) *Nickel* means total nickel.
- (11) *O&G (as HEM)* means total recoverable oil and grease as hexane extractable material.
- (12) *Silver* means total silver.
- (13) *Sulfide (as S)* means total sulfide.
- (14) *Tin* means total tin.
- (15) *TSS* means total suspended solids.
- (16) *Zinc* means total zinc.

(c) *Mixed-Use Facility* means any privately-owned or state, local, or federal government-owned facility which contains both industrial and commercial/administrative buildings (such as military bases and airports) at which one or more industrial sites conduct operations (including at least one that discharges wastewater subject to this part) within the facility's boundaries.

(d) *Non-process wastewater* means sanitary wastewater, non-contact cooling water, and storm water. In relation to a mixed-use facility, as defined in this part, non-process wastewater for this part also includes wastewater discharges from non-industrial sources such as residential housing, schools, churches, recreational parks, shopping centers as well as wastewater discharges from gas stations, utility plants, hospitals, and similar sources.

(e) *Process wastewater* means wastewater as defined in 40 CFR parts 122 and 401, and includes wastewater from non-contact, nondestructive testing (e.g., photographic wastewater from nondestructive X-ray examination of parts) performed at facilities subject to this part and includes wastewater from air pollution control devices.

(f) *TOP (total organics parameter)* means a parameter which is calculated as the sum of all quantifiable concentration values greater than the nominal quantitation value of the organic pollutants listed in the Appendix B to this part. These organic chemicals are defined as parameters at 40 CFR 136.3 in Table 1C, which also cites the approved methods of analysis

or have procedures that have been validated as attachments to EPA Methods 1624/624 or 1625/625.

(g) *TOC (as indicator)* means total organic carbon used as an indicator for the organic pollutants listed in the Appendix B to this part.

§ 438.3 General pretreatment standards.

Any source subject to this part that introduces process wastewater pollutants into a publicly owned treatment works (POTW) must comply with 40 CFR part 403.

§ 438.4 Monitoring requirements.

(a) *Monitoring options.* All subcategories with limitations or standards for the TOP or TOC (as indicator) parameters must choose one of three monitoring options:

- (1) Achieve the limitation or standard specified for the TOP parameter;
- (2) Achieve a limitation or standard specified for the TOC (as indicator) parameter; or
- (3) Develop and certify the implementation of a management plan for organic chemicals.

(b) *Management plan for organic chemicals.* (1) The management plan for organic chemicals must specify to the satisfaction of the permitting authority (or the control authority for discharges to a POTW) all organic chemicals that are in use at the facility; the method(s) used for disposal of these chemicals; the procedures in place for ensuring that organic chemicals do not routinely spill or leak into the wastewater, or that reduce to a minimum the amount of organic chemicals that are used in the process; the procedures in place to manage the oxidation-reduction potential (ORP) of process wastewater during cyanide destruction to control the formation of chlorinated organic by-products; and the procedures employed to prevent an excessive dosage of dithiocarbamates when treating wastewater containing chelated metals. Facilities choosing to develop a management plan for organic chemicals must certify that the procedures described in the plan are being implemented at the facility. A mixed-use facility, as defined in § 438.2(c), may develop, certify, and implement one or more management plans for organic chemicals when multiple industrial sites are subject to this part within their facility boundaries.

(2) In lieu of monitoring for individual organic chemicals specified collectively as TOP in Appendix B of this part or in lieu of monitoring for TOC (as an indicator), the permitting authority (or the control authority for dischargers to a POTW) may allow

dischargers to make the following certification: “Based on my inquiry of the person or persons directly responsible for managing compliance with the provisions of the Metal Products and Machinery regulation, I certify that, to the best of my knowledge, this facility is implementing the management plan for organic chemicals which was submitted to the permitting (or control) authority.” For dischargers to surface waters, this statement is to be included as a comment on the Discharge Monitoring Report (DMR) required by 40 CFR 122.44(i). For indirect dischargers, the statement is to be included as a comment to the periodic reports required by 40 CFR 403.12(e).

(c) *TOP monitoring.* In monitoring to measure compliance with the TOP standard, the industrial discharger need analyze only for those TOP organic chemicals which would reasonably be expected to be present. Facilities may apply for a monitoring waiver for any individual TOP organic chemical(s) as described in paragraph (e) of this section for indirect dischargers and 40 CFR 122.44 for direct dischargers. See § 438.2(f) for definition of TOP.

(d) *Cyanide monitoring.* Self-monitoring for cyanide must be conducted after cyanide treatment and before dilution with other wastewater streams. Alternatively, samples of the final effluent may be taken, if the plant limitations are adjusted based on the following dilution ratio: Cyanide-bearing wastewater flow divided by the final effluent flow.

(e) *Monitoring waivers for certain pollutants.* (1) The control authority may authorize a discharger subject to pretreatment standards in this part to forego sampling of a pollutant if the discharger has demonstrated through sampling and other technical factors, as described in paragraph (e)(2) of this section, that the pollutant is not used or generated on-site or is present only at background levels from intake water and without any increase in the pollutant due to activities of the discharger.

(2) Sampling or other technical information, including, but not limited to, information generated during the monitoring for the baseline monitoring report (40 CFR 403.12(b)) or the 90-day compliance report (40 CFR 403.12(d)), must be used to demonstrate that the pollutant is not used or generated on-site or is present only at background levels from intake water and without any increase in the pollutant due to activities of the discharger.

(3) Any grant of the monitoring waiver must be included in the control

mechanism as an express condition and the reasons supporting the grant must be documented in the fact sheet or similar supporting documentation.

§ 438.5 Compliance date for pretreatment standards for existing sources.

Any existing source subject to pretreatment standards in this part must be in compliance no later than [DATE 3 years after date of PUBLICATION of FINAL RULE].

Subpart A—General Metals

§ 438.10 Applicability.

(a) This subpart applies to process wastewater discharges from facilities (as specified in § 438.1(a)) other than those subject to subparts B, C, D, E, F, G, or H of this part.

(b) Facilities introducing process wastewater into a POTW at a rate that does not exceed 1 million gallons per year are not subject to § 438.15 or § 438.17.

§ 438.12 Effluent limitations attainable by the application of the best practicable control technology currently available (BPT).

(a) Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the application of BPT. Discharges must remain within the pH range 6 to 9 and must not exceed the following:

EFFLUENT LIMITATIONS [BPT]

Regulated parameter	Maximum daily ¹	Maximum monthly avg. ¹
1. TSS	34	18
2. O&G (as HEM)	15	12
3. TOC (as indicator)	87	50
4. TOP	9.0	4.3
5. Cadmium	0.14	0.09
6. Chromium	0.25	0.14
7. Copper	0.55	0.28
8. Cyanide (T)	0.21	0.13
9. Cyanide (A)	0.14	0.07
10. Lead	0.04	0.03
11. Manganese	0.13	0.09
12. Molybdenum	0.79	0.49
13. Nickel	0.50	0.31
14. Silver	0.22	0.09
15. Sulfide (as S) ..	31	13
16. Tin	1.4	0.67
17. Zinc	0.38	0.22

¹mg/L (ppm).

(b) Upon agreement with the permitting authority and pursuant to § 438.4(d), facilities with cyanide treatment have the option of achieving

the limitation for either cyanide (T) or cyanide (A).

(c) Upon agreement with the permitting authority, facilities must choose to monitor for TOP or TOC, or implement a management plan for organic chemicals as specified in § 438.4(a).

§ 438.13 Effluent limitations attainable by application of the best control technology for conventional pollutants (BCT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitation representing the application of BCT: Limitations for TSS, O&G (as HEM) and pH are the same as the corresponding limitation specified in § 438.12.

§ 438.14 Effluent limitations attainable by the application of the best available technology economically achievable (BAT).

(a) Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitation representing the application of BAT: Limitations for TOC (as indicator), TOP, cadmium, chromium, copper, cyanide (T), cyanide (A), lead, manganese, molybdenum, nickel, silver, sulfide (as S), tin, and zinc are the same as the corresponding limitation specified in § 438.12.

(b) Upon agreement with the permitting authority and pursuant to § 438.4(d), facilities with cyanide treatment have the option of achieving the limitation for either cyanide (T) or cyanide (A).

(c) Upon agreement with the permitting authority, facilities must choose to monitor for TOP or TOC, or implement a management plan for organic chemicals as specified in § 438.4(a).

§ 438.15 Pretreatment standards for existing sources (PSES).

(a) Except as provided in 40 CFR 403.7 and 403.13, and except at facilities where the process wastewater introduced into a POTW does not exceed 1 million gallons per year, any existing source subject to this subpart must achieve the following:

**PRETREATMENT STANDARDS
[PSES]**

Regulated parameter	Maximum daily ¹	Maximum monthly avg. ¹
1. TOC (as indicator)	87	50
2. TOP	9.0	4.3
3. Cadmium	0.14	0.09
4. Chromium	0.25	0.14

**PRETREATMENT STANDARDS—
Continued
[PSES]**

Regulated parameter	Maximum daily ¹	Maximum monthly avg. ¹
5. Copper	0.55	0.28
6. Cyanide (T)	0.21	0.13
7. Cyanide (A)	0.14	0.07
8. Lead	0.04	0.03
9. Manganese	0.13	0.09
10. Molybdenum	0.79	0.49
11. Nickel	0.50	0.31
12. Silver	0.22	0.09
13. Sulfide (as S) ..	31	13
14. Tin	1.4	0.67
15. Zinc	0.38	0.22

¹ mg/L (ppm).

(b) Upon agreement with the control authority and pursuant to § 438.4(d), facilities with cyanide treatment have the option of achieving the limitation for either cyanide (T) or cyanide (A).

(c) Upon agreement with the control authority, facilities must choose to monitor for TOP or TOC, or implement a management plan for organic chemicals as specified in § 438.4(a).

(d) A POTW has the option of imposing mass-based standards in place of the concentration-based standards. To convert to mass-based standards, multiply each parameter's concentration-based standard times the average daily flow of process wastewater discharged by the source into the POTW.

§ 438.16 New source performance standards (NSPS).

New point sources subject to this subpart must achieve the following new source performance standards (NSPS), as applicable.

(a) Any new point source subject to the provisions of this section and currently subject to the provisions of 433.16 that commenced discharging after [date 10 years prior to the date that is 60 days after the publication date of the final rule] and before [date that is 60 days after the publication date of the final rule] must continue to achieve the applicable standards specified in 40 CFR 433.16. Those standards shall not apply after the expiration of the applicable time period specified in 40 CFR 122.29(d)(1); thereafter, the source must achieve the applicable standards specified in § 438.12 and § 438.14.

(b) The following performance standards apply with respect to each new point source that commences discharge after [date that is 60 days after the publication date of the final rule]. Discharges must remain within the pH range of 6 to 9 and must not exceed the following:

**PERFORMANCE STANDARDS
[NSPS]**

Regulated parameter	Maximum daily ¹	Maximum monthly avg. ¹
1. TSS	28	18
2. O&G (as HEM)	15	12
3. TOC (as indicator)	87	50
4. TOP	9.0	4.3
5. Cadmium	0.02	0.01
6. Chromium	0.17	0.07
7. Copper	0.44	0.16
8. Cyanide (T)	0.21	0.13
9. Cyanide (A)	0.14	0.07
10. Lead	0.04	0.03
11. Manganese	0.29	0.18
12. Molybdenum	0.79	0.49
13. Nickel	1.9	0.75
14. Silver	0.05	0.03
15. Sulfide (as S) ..	31	13
16. Tin	0.03	0.03
17. Zinc	0.08	0.06

¹ mg/L (ppm).

(c) Upon agreement with the permitting authority and pursuant to § 438.4(d), facilities with cyanide treatment have the option of achieving the limitation for either cyanide (T) or cyanide (A).

(d) Upon agreement with the permitting authority, facilities must choose to monitor for TOP or TOC, or implement a management plan for organic chemicals as specified in § 438.4(a).

§ 438.17 Pretreatment standards for new sources (PSNS).

New sources subject to this subpart must achieve the following pretreatment standards for new sources (PSNS), as applicable.

(a) Any new source subject to the provisions of this section and currently subject to the provisions of 40 CFR 433.17 that commenced discharging after [date 10 years prior to the date that is 60 days after the publication date of the final rule] and before [date that is 60 days after the publication date of the final rule] must continue to achieve the standards specified in 40 CFR 433.17 for ten years beginning on the date the source commenced discharge or during the period of depreciation or amortization of the facility, whichever comes first, after which the source must achieve the standards specified in § 438.15.

(b) Except as provided in 40 CFR 403.7, and except at facilities where the process wastewater introduced into a POTW does not exceed 1 million gallons per year, the following standards apply with respect to each new source that commences discharge after [date

that is 60 days after the publication date of the final rule]:

PRETREATMENT STANDARDS
[PSNS]

Regulated parameter	Maximum daily ¹	Maximum monthly avg. ¹
1. TOC (as indicator)	87	50
2. TOP	9.0	4.3
3. Cadmium	0.02	0.01
4. Chromium	0.17	0.07
5. Copper	0.44	0.16
6. Cyanide (T)	0.21	0.13
7. Cyanide (A)	0.14	0.07
8. Lead	0.04	0.03
9. Manganese	0.29	0.18
10. Molybdenum	0.79	0.49
11. Nickel	1.9	0.75
12. Silver	0.05	0.03
13. Sulfide (as S) ..	31	13
14. Tin 0.03 0.03 ..	0.03	0.03
15. Zinc	0.08	0.06

¹ mg/L (ppm).

(c) Upon agreement with the control authority and pursuant to § 438.4(d), facilities with cyanide treatment have the option of achieving the limitation for either cyanide (T) or cyanide (A).

(d) Upon agreement with the control authority, facilities must choose to monitor for TOP or TOC, or implement a management plan for organic chemicals as specified in § 438.4(a).

(e) The control authority has the option of imposing mass-based standards in place of the concentration-based standards. To convert to mass-based standards, multiply each parameter's concentration-based standard times the average daily flow of process wastewater discharged by the source into the POTW.

Subpart B—Metal Finishing Job Shops

§ 438.20 Applicability.

(a) This subpart applies to process wastewater discharges from facilities, as specified in § 438.1(a), that operate as a metal finishing job shop (as defined in § 438.21) and perform one or more of the following six operations:

electroplating; electroless plating; anodizing; coating (chromating, phosphating, passivating, and coloring); chemical etching and milling; or the manufacture of printed circuit boards (printed wiring boards).

(b) Metal finishing job shops that only perform anodizing without the use of chromic acid or dichromate sealants are not subject to this subpart, but may be subject to subpart C of this part.

(c) Facilities that manufacture, rebuild, or maintain printed wiring boards and do not operate as a job shop

(as defined in § 438.21) are not subject to this subpart, but are subject to subpart D of this part.

§ 438.21 Special definitions.

As used in this subpart, *metal finishing job shop* means a facility that owns 50 percent or less (based on metal surface area processed per year) of the materials undergoing metal finishing within the boundaries of a facility.

§ 438.22 Effluent limitations attainable by the application of the best practicable control technology currently available (BPT).

(a) Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the application of BPT. Discharges must remain within the pH range 6 to 9 and must not exceed the following:

EFFLUENT LIMITATIONS
[BPT]

Regulated parameter	Maximum daily ¹	Maximum monthly avg. ¹
1. TSS	60	31
2. O&G (as HEM) ..	52	26
3. TOC (as indicator)	78	59
4. TOP	9.0	4.3
5. Cadmium	0.21	0.09
6. Chromium	1.3	0.55
7. Copper	1.3	0.57
8. Cyanide (T)	0.21	0.13
9. Cyanide (A)	0.14	0.07
10. Lead	0.12	0.09
11. Manganese	0.25	0.10
12. Molybdenum	0.79	0.49
13. Nickel	1.5	0.64
14. Silver	0.15	0.06
15. Sulfide (as S) ..	31	13
16. Tin	1.8	1.4
17. Zinc	0.35	0.17

¹ mg/L (ppm).

(b) Upon agreement with the permitting authority and pursuant to § 438.4(d), facilities with cyanide treatment have the option of achieving the limitation for either cyanide (T) or cyanide (A).

(c) Upon agreement with the permitting authority, facilities must choose to monitor for TOP or TOC, or implement a management plan for organic chemicals as specified in § 438.4(a).

§ 438.23 Effluent limitations attainable by application of the best control technology for conventional pollutants (BCT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitation

representing the application of BCT: Limitations for TSS, O&G (as HEM) and pH are the same as the corresponding limitation specified in § 438.22.

§ 438.24 Effluent limitations attainable by the application of the best available technology economically achievable (BAT).

(a) Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitation representing the application of BAT: Limitations for TOC (as indicator), TOP, cadmium, chromium, copper, cyanide (T), cyanide (A), lead, manganese, molybdenum, nickel, silver, sulfide (as S), tin and zinc are the same as the corresponding limitation specified in § 438.22.

(b) Upon agreement with the permitting authority and pursuant to § 438.4(d), facilities with cyanide treatment have the option of achieving the limitation for either cyanide (T) or cyanide (A).

(c) Upon agreement with the permitting authority, facilities must choose to monitor for TOP or TOC, or implement a management plan for organic chemicals as specified in § 438.4(a).

§ 438.25 Pretreatment standards for existing sources (PSES).

(a) Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart must achieve the following:

PRETREATMENT STANDARDS
[PSES]

Regulated Parameter	Maximum daily ¹	Maximum monthly avg. ¹
1. TOC (as indicator)	78	59
2. TOP	9.0	4.3
3. Cadmium	0.21	0.09
4. Chromium	1.3	0.55
5. Copper	1.3	0.57
6. Cyanide (T)	0.21	0.13
7. Cyanide (A)	0.14	0.07
8. Lead	0.12	0.09
9. Manganese	0.25	0.10
10. Molybdenum	0.79	0.49
11. Nickel	1.5	0.64
12. Silver	0.15	0.06
13. Sulfide (as S) ..	31	13
14. Tin	1.8	1.4
15. Zinc	0.35	0.17

¹ mg/L (ppm).

(b) Upon agreement with the control authority and pursuant to § 438.4(d), facilities with cyanide treatment have the option of achieving the limitation for either cyanide (T) or cyanide (A).

(c) Upon agreement with the control authority, facilities must choose to

monitor for TOP or TOC, or implement a management plan for organic chemicals as specified in § 438.4(a).

(d) The control authority has the option of imposing mass-based standards in place of the concentration-based standards. To convert to mass-based standards, multiply each parameter's concentration-based standard times the average daily flow of process wastewater discharged by the source into the POTW.

§ 438.26 New source performance standards (NSPS).

New point sources subject to this subpart must achieve the following new source performance standards (NSPS), as applicable.

(a) Any new point source subject to the provisions of this section that commenced discharging after [date 10 years prior to the date that is 60 days after the publication date of the final rule] and before [date that is 60 days after the publication date of the final rule] must continue to achieve the applicable standards specified in 40 CFR 433.16. Those standards shall not apply after the expiration of the applicable time period specified in 40 CFR 122.29(d)(1); thereafter, the source must achieve the applicable standards specified in § 438.22 and § 438.24.

(b) The following performance standards apply with respect to each new point source that commences discharge after [date that is 60 days after the publication date of the final rule]. Discharges must remain within the pH range of 6 to 9 and must not exceed the following:

PERFORMANCE STANDARDS [NSPS]		
Regulated Parameter	Maximum daily ¹	Maximum monthly avg. ¹
1. TSS	28	18
2. O&G (as HEM)	15	12
3. TOC (as indicator)	78	59
4. TOP	9.0	4.3
5. Cadmium	0.02	0.01
6. Chromium	0.17	0.07
7. Copper	0.44	0.16
8. Cyanide (T)	0.21	0.13
9. Cyanide (A)	0.14	0.07
10. Lead	0.04	0.03
11. Manganese	0.29	0.18
12. Molybdenum	0.79	0.49
13. Nickel	1.9	0.75
14. Silver	0.05	0.03
15. Sulfide (as S) ..	31	13
16. Tin	0.03	0.03
17. Zinc	0.08	0.06

¹ mg/L (ppm).

(c) Upon agreement with the permitting authority and pursuant to

§ 438.4(d), facilities with cyanide treatment have the option of achieving the limitation for either cyanide (T) or cyanide (A).

(d) Upon agreement with the permitting authority, facilities must choose to monitor for TOP or TOC, or implement a management plan for organic chemicals as specified in § 438.4(a).

§ 438.27 Pretreatment standards for new sources (PSNS).

New sources subject to this subpart must achieve the following pretreatment standards for new sources (PSNS), as applicable.

(a) Any new source subject to the provisions of this section that commenced discharging after [date 10 years prior to the date that is 60 days after the publication date of the final rule] and before [date that is 60 days after the publication date of the final rule] must continue to achieve the standards specified in 40 CFR 433.17 for ten years beginning on the date the source commenced discharge or during the period of depreciation or amortization of the facility, whichever comes first, after which the source must achieve the standards specified in § 438.25.

(b) Except as provided in 40 CFR 403.7, the following standards apply with respect to each new source that commences discharge after [date that is 60 days after the publication date of the final rule]:

PRETREATMENT STANDARDS
[PSNS]

Regulated parameter	Maximum daily ¹	Maximum monthly avg. ¹
1. TOC (as indicator)	78	59
2. TOP	9.0	4.3
3. Cadmium	0.02	0.01
4. Chromium	0.17	0.07
5. Copper	0.44	0.16
6. Cyanide (T)	0.21	0.13
7. Cyanide (A)	0.14	0.07
8. Lead	0.04	0.03
9. Manganese	0.29	0.18
10. Molybdenum	0.79	0.49
11. Nickel	1.9	0.75
12. Silver	0.05	0.03
13. Sulfide (as S) ..	31	13
14. Tin	0.03	0.03
15. Zinc	0.08	0.06

¹ mg/L (ppm).

(c) Upon agreement with the control authority and pursuant to § 438.4(d), facilities with cyanide treatment have the option of achieving the limitation for either cyanide (T) or cyanide (A).

(d) Upon agreement with the control authority, facilities must choose to monitor for TOP or TOC, or implement a management plan for organic chemicals as specified in § 438.4(a).

(e) The control authority has the option of imposing mass-based standards in place of the concentration-based standards. To convert to mass-based standards, multiply each parameter's concentration-based standard times the average daily flow of process wastewater discharged by the source into the POTW.

Subpart C—Non-Chromium Anodizing

§ 438.30 Applicability.

(a) Except for facilities that discharge to a POTW, this subpart applies to discharges of process wastewater resulting from non-chromium anodizing, as defined in § 438.31.

(b) Facilities which commingle wastewater from non-chromium anodizing with wastewater subject to subparts A, B, or D of this part are not subject to this subpart but are subject to subparts A, B, or D of this part, as applicable.

(c) Facilities that discharge to a POTW and perform anodizing without the use of chromic acid or dichromate sealants are subject to 40 CFR part 413 or 40 CFR part 433, as applicable.

§ 438.31 Special definitions.

As used in this subpart, *non-chromium anodizing* means anodizing without the use of chromic acid or dichromate sealants.

§ 438.32 Effluent limitations attainable by the application of the best practicable control technology currently available (BPT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the application of BPT. Discharges must remain within the pH range 6 to 9 and must not exceed the following:

EFFLUENT LIMITATIONS
[BPT]

Regulated parameter	Maximum daily ¹	Maximum monthly avg. ¹
1. TSS	60	31
2. O&G (as HEM)	52	26
3. Aluminum	8.2	4.0
4. Manganese	0.13	0.09
5. Nickel	0.50	0.31
6. Zinc	0.38	0.22

¹ mg/L (ppm).

§ 438.33 Effluent limitations attainable by application of the best control technology for conventional pollutants (BCT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitation representing the application of BCT: Limitations for TSS, O&G (as HEM) and pH are the same as the corresponding limitation specified in § 438.32.

§ 438.34 Effluent limitations attainable by the application of the best available technology economically achievable (BAT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitation representing the application of BAT: Limitations for aluminum, manganese, nickel and zinc are the same as the corresponding limitation specified in § 438.32.

§ 438.36 New source performance standards (NSPS).

New point sources subject to this subpart must achieve the following new source performance standards (NSPS), as applicable.

(a) Any new point source subject to the provisions of this section that commenced discharging after [date 10 years prior to the date that is 60 days after the publication date of the final rule] and before [date that is 60 days after the publication date of the final rule] must continue to achieve the applicable standards specified in 40 CFR 433.16. Those standards shall not apply after the expiration of the applicable time period specified in 40 CFR 122.29(d)(1); thereafter, the source must achieve the applicable standards specified in § 438.32 and § 438.34.

(b) The following performance standards apply with respect to each new point source that commences discharge after [date that is 60 days after the publication date of the final rule]. Discharges must remain within the pH range of 6 to 9 and must not exceed the following:

**PERFORMANCE STANDARDS
(NSPS)**

Regulated parameter	Maximum daily ¹	Maximum monthly avg. ¹
1. TSS	52	22
2. O&G (as HEM)	15	12
3. Aluminum	8.2	4.0
4. Manganese	0.13	0.09
5. Nickel	0.50	0.31
6. Zinc	0.38	0.22

¹ mg/L (ppm).

Subpart D—Printed Wiring Boards

§ 438.40 Applicability.

(a) This subpart applies to discharges of process wastewater resulting from the manufacture, maintenance and repair of printed wiring boards (printed circuit boards).

(b) Printed wiring board operations conducted at a metal finishing job shop (as defined in § 438.21) are not subject to this subpart.

§ 438.42 Effluent limitations attainable by the application of the best practicable control technology currently available (BPT).

(a) Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the application of BPT. Discharges must remain within the pH range 6 to 9 and must not exceed the following:

**EFFLUENT LIMITATIONS
(BPT)**

Regulated parameter	Maximum daily ¹	Maximum monthly avg. ¹
1. TSS	60	31
2. O&G (as HEM)	52	26
3. TOC (as indicator)	101	67
4. TOP	9.0	4.3
5. Chromium	0.25	0.14
6. Copper	0.55	0.28
7. Cyanide (T)	0.21	0.13
8. Cyanide (A)	0.14	0.07
9. Lead	0.04	0.03
10. Manganese	1.3	0.64
11. Nickel	0.30	0.14
12. Sulfide (as S) ..	31	13
13. Tin	0.31	0.14
14. Zinc	0.38	0.22

¹ mg/L (ppm).

(b) Upon agreement with the permitting authority and pursuant to § 438.4(d), facilities with cyanide treatment have the option of achieving the limitation for either cyanide (T) or cyanide (A).

(c) Upon agreement with the permitting authority, facilities must choose to monitor for TOP or TOC, or implement a management plan for organic chemicals as specified in § 438.4(a).

§ 438.43 Effluent limitations attainable by application of the best control technology for conventional pollutants (BCT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitation representing the application of BCT: Limitations for TSS, O&G (as HEM) and

pH are the same as the corresponding limitation specified in § 438.42.

§ 438.44 Effluent limitations attainable by the application of the best available technology economically achievable (BAT).

(a) Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitation representing the application of BAT: Limitations for TOC (as indicator), TOP, chromium, copper, cyanide (T), cyanide (A), lead, manganese, nickel, sulfide (as S), tin and zinc are the same as the corresponding limitation specified in § 438.42.

(b) Upon agreement with the permitting authority and pursuant to § 438.4(d), facilities with cyanide treatment have the option of achieving the limitation for either cyanide (T) or cyanide (A).

(c) Upon agreement with the permitting authority, facilities must choose to monitor for TOP or TOC, or implement a management plan for organic chemicals as specified in § 438.4(a).

§ 438.45 Pretreatment standards for existing sources (PSES).

(a) Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart must achieve the following pretreatment standards:

**PRETREATMENT STANDARDS
(PSES)**

Regulated parameter	Maximum daily ¹	Maximum Monthly avg. ¹
1. TOC (as indicator)	101	67
2. TOP	9.0	4.3
3. Chromium	0.25	0.14
4. Copper	0.55	0.28
5. Cyanide (T)	0.21	0.13
6. Cyanide (A)	0.14	0.07
7. Lead	0.04	0.03
8. Manganese	1.3	0.64
9. Nickel	0.30	0.14
10. Sulfide (as S) ..	31	13
11. Tin	0.31	0.14
12. Zinc	0.38	0.22

¹ mg/L (ppm).

(b) Upon agreement with the control authority and pursuant to § 438.4(d), facilities with cyanide treatment have the option of achieving the limitation for either cyanide (T) or cyanide (A).

(c) Upon agreement with the control authority, facilities must choose to monitor for TOP or TOC, or implement a management plan for organic chemicals as specified in § 438.4(a).

(d) The control authority has the option of imposing mass-based

standards in place of the concentration-based standards. To convert to mass-based standards, multiply each parameter's concentration-based standard times the average daily flow of process wastewater discharged by the source into the POTW.

§ 438.46 New source performance standards (NSPS).

New point sources subject to this subpart must achieve the following new source performance standards (NSPS), as applicable.

(a) Any new point source subject to the provisions of this section that commenced discharging after [date 10 years prior to the date that is 60 days after the publication date of the final rule] and before [date that is 60 days after the publication date of the final rule] must continue to achieve the applicable standards specified in 40 CFR 433.16. Those standards shall not apply after the expiration of the applicable time period specified in 40 CFR 122.29(d)(1); thereafter, the source must achieve the applicable standards specified in § 438.42 and § 438.44.

(b) The following performance standards apply with respect to each new point source that commences discharge after [date that is 60 days after the publication date of the final rule]. Discharges must remain within the pH range of 6 to 9 and must not exceed the following:

**PERFORMANCE STANDARDS
[NSPS]**

Regulated parameter	Maximum daily ¹	Maximum monthly avg. ¹
1. TSS	28	18
2. O&G (as HEM)	15	12
3. TOC (as indicator)	101	67
4. TOP	9.0	4.3
5. Chromium	0.17	0.07
6. Copper	0.01	0.01
7. Cyanide (T)	0.21	0.13
8. Cyanide (A)	0.14	0.07
9. Lead	0.04	0.03
10. Manganese	0.29	0.18
11. Nickel	1.9	0.75
12. Sulfide (as S) ..	31	13
13. Tin	0.09	0.07
14. Zinc	0.08	0.06

¹ mg/L (ppm).

(c) Upon agreement with the permitting authority and pursuant to § 438.4(d), facilities with cyanide treatment have the option of achieving the limitation for either cyanide (T) or cyanide (A).

(d) Upon agreement with the permitting authority, facilities must choose to monitor for TOP or TOC, or

implement a management plan for organic chemicals as specified in § 438.4(a).

§ 438.47 Pretreatment standards for new sources (PSNS).

New sources subject to this subpart must achieve the following pretreatment standards for new sources (PSNS), as applicable.

(a) Any new source subject to the provisions of this section that commenced discharging after [date 10 years prior to the date that is 60 days after the publication date of the final rule] and before [date that is 60 days after the publication date of the final rule] must continue to achieve the standards specified in 40 CFR 433.17 for ten years beginning on the date the source commenced discharge or during the period of depreciation or amortization of the facility, whichever comes first, after which the source must achieve the standards specified in § 438.45.

(b) Except as provided in 40 CFR 403.7, the following standards apply with respect to each new source that commences discharge after [date that is 60 days after the publication date of the final rule]:

**PRETREATMENT STANDARDS
[PSNS]**

Regulated parameter	Maximum daily ¹	Maximum monthly avg. ¹
1. TOC (as indicator)	101	67
2. TOP	9.0	4.3
3. Chromium	0.17	0.07
4. Copper	0.01	0.01
5. Cyanide (T)	0.21	0.13
6. Cyanide (A)	0.14	0.07
7. Lead	0.04	0.03
8. Manganese	0.29	0.18
9. Nickel	1.9	0.75
10. Sulfide (as S) ..	31	13
11. Tin	0.09	0.07
12. Zinc	0.08	0.06

¹ mg/L (ppm).

(c) Upon agreement with the control authority and pursuant to § 438.4(d), facilities with cyanide treatment have the option of achieving the limitation for either cyanide (T) or cyanide (A).

(d) Upon agreement with the control authority, facilities must choose to monitor for TOP or TOC, or implement a management plan for organic chemicals as specified in § 438.4(a).

(e) The control authority has the option of imposing mass-based standards in place of the concentration-based standards. To convert to mass-based standards, multiply each parameter's concentration-based

standard times the average daily flow of process wastewater discharged by the source into the POTW.

Subpart E—Steel Forming and Finishing

§ 438.50 Applicability.

(a) This subpart applies to discharges of process wastewater from surface finishing or cold forming operations on steel wire, rod, bar, pipe or tubing. This subpart does not apply to process wastewater from these same operations when they are performed on base materials other than steel.

(b) Wastewater discharges from the following operations on steel are not subject to this subpart: any hot forming operation; and cold forming, continuous electroplating, or continuous hot dip coating of sheets, strips or plates. Wastewater discharges from performing these operations on steel are subject to 40 CFR part 420.

§ 438.51 Special definitions.

As used in this subpart:

(a) *Acid pickling* means the removal of scale and/or oxide from steel surfaces using acid solutions. The mass-based limitations for acid pickling operations include wastewater flow volumes from acid treatment with and without chromium, acid pickling neutralization, annealing, alkaline cleaning, electrolytic sodium sulfate descaling, and salt bath descaling.

(b) *Alkaline cleaning* means the application of solutions containing caustic soda, soda ash, alkaline silicates, or alkaline phosphates to a metal surface primarily for removing mineral deposits, animal fats, and oils. The mass-based limitations for alkaline cleaning operations include wastewater flow volumes from alkaline cleaning for oil removal, alkaline treatment without cyanide, aqueous degreasing, annealing, and electrolytic cleaning operations.

(c) *Cold forming* means operations conducted on unheated steel for purposes of imparting desired mechanical properties and surface qualities (density, smoothness) to the steel. The mass-based limitations for cold forming operations are based on zero wastewater discharge from welding operations.

(d) *Continuous Annealing* means a heat treatment process in which steel is exposed to an elevated temperature in a controlled atmosphere for an extended period of time and then cooled. The mass-based limitations for continuous annealing operations include wastewater flow volumes from heat treating operations.

(e) *Electroplating* means the application of metal coatings including,

but not limited to, chromium, copper, nickel, tin, zinc, and combinations thereof, on steel products using an electro-chemical process. The mass-based limitations for electroplating operations includes wastewater flow volumes from acid pickling, annealing, alkaline cleaning, electroplating without chromium or cyanide, and electroless plating operations.

(f) *Hot Dip Coating* means the coating of pre-cleaned steel parts by immersion in a molten metal bath. The mass-based limitations for hot dip coating operations includes wastewater flow volumes from acid pickling, annealing, alkaline cleaning, chemical conversion coating without chromium, chromate conversion coating, galvanizing, and hot dip coating operations.

(g) *Lubrication* means the process of applying a substance to the surface of

the steel in order to reduce friction or corrosion. The mass-based limitations for lubrication operations includes wastewater flow volumes from corrosion preventive coating operations as defined in § 438.61(b).

(h) *Mechanical Descaling* means the process of removing scale by mechanical or physical means from the surface of steel. The mass-based limitations for mechanical descaling operations includes wastewater flow volumes from abrasive blasting, burnishing, grinding, impact deformation, machining, and testing operations.

(i) *Painting* means applying an organic coating to a steel bar, rod, wire, pipe, or tube. The mass-based limitations for painting operations includes wastewater flow volumes from

spray or brush painting and immersion painting.

(j) *Pressure Deformation* means applying force (other than impact force) to permanently deform or shape a steel bar, rod, wire, pipe, or tube. The mass-based limitations for pressure deformation operations includes wastewater flow volumes from forging operations and extrusion operations.

§ 438.52 Effluent limitations attainable by the application of the best practicable control technology currently available (BPT).

(a) Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the application of BPT. Discharges must remain within the pH range 6 to 9 and must not exceed the following:

EFFLUENT LIMITATIONS [BPT]
TABLE 1

Pollutant	TSS		O&G (as HEM)	
	Maximum daily ¹	Maximum monthly avg. ¹	Maximum daily ¹	Maximum monthly avg. ¹
Forming/finishing operation				
(a) Acid Pickling	0.0709	0.0369	0.0312	0.0239
(b) Alkaline Cleaning	0.0709	0.0369	0.0312	0.0239
(c) Cold Forming	0	0	0	0
(d) Continuous Annealing	0.00355	0.00184	0.00156	0.00120
(e) Electroplating	0.142	0.0737	0.0623	0.0478
(f) Hot Dip Coating	0.0206	0.0107	0.00903	0.00693
(g) Lubrication	0.00170	0.000884	0.000748	0.000574
(h) Mechanical Descaling	0.000284	0.000148	0.000125	0.0000956
(i) Painting	0.00922	0.00479	0.00405	0.00311
(j) Pressure Deformation	0.00355	0.00184	0.00156	0.00120

¹ Pounds per 1000 lbs. (gm/kg) of product.

TABLE 2

Pollutant	TOC		TOP	
	Maximum daily ¹	Maximum monthly avg. ¹	Maximum daily ¹	Maximum monthly avg. ¹
Forming/finishing operation				
(a) Acid Pickling	0.181	0.103	0.0188	0.00896
(b) Alkaline Cleaning	0.181	0.103	0.0188	0.00896
(c) Cold Forming	0	0	0	0
(d) Continuous Annealing	0.00901	0.00514	0.000937	0.000448
(e) Electroplating	0.361	0.206	0.0375	0.0180
(f) Hot Dip Coating	0.0523	0.0300	0.00543	0.00260
(g) Lubrication	0.000433	0.00247	0.000450	0.000215
(h) Mechanical Descaling	0.000721	0.000411	0.0000750	0.0000359
(i) Painting	0.0235	0.0134	0.00244	0.00117
(j) Pressure Deformation	0.00901	0.00514	0.000937	0.000448

¹ Pounds per 1000 lbs. (gm/kg) of product.

TABLE 3

Pollutant	Cadmium		Chromium	
	Maximum daily ¹	Maximum monthly avg. ¹	Maximum daily ¹	Maximum monthly avg. ¹
Forming/finishing operation				
(a) Acid Pickling	0.000292	0.000188	0.000509	0.000277
(b) Alkaline Cleaning	0.000292	0.000188	0.000509	0.000277
(c) Cold Forming	0	0	0	0

TABLE 3—Continued

Pollutant Forming/finishing operation	Cadmium		Chromium	
	Maximum daily ¹	Maximum monthly avg. ¹	Maximum daily ¹	Maximum monthly avg. ¹
(d) Continuous Annealing	0.0000146	0.00000938	0.0000255	0.0000139
(e) Electroplating	0.000583	0.000376	0.00102	0.000553
(f) Hot Dip Coating	0.0000845	0.0000545	0.000148	0.0000801
(g) Lubrication	0.00000699	0.00000450	0.0000123	0.00000663
(h) Mechanical Descaling	0.00000116	0.00000075	0.00000204	0.00000110
(i) Painting	0.0000379	0.0000244	0.0000662	0.0000359
(j) Pressure Deformation	0.0000146	0.00000938	0.0000255	0.0000139

¹ Pounds per 1000 lbs. (gm/kg) of product.

TABLE 4

Pollutant Forming/finishing operation	Copper		Lead	
	Maximum daily ¹	Maximum monthly avg. ¹	Maximum daily ¹	Maximum monthly avg. ¹
(a) Acid Pickling	0.00114	0.000565	0.0000737	0.0000522
(b) Alkaline Cleaning	0.00114	0.000565	0.0000737	0.0000522
(c) Cold Forming	0	0	0	0
(d) Continuous Annealing	0.0000570	0.0000283	0.00000368	0.00000261
(e) Electroplating	0.00228	0.00113	0.000148	0.000105
(f) Hot Dip Coating	0.000331	0.000164	0.0000214	0.0000152
(g) Lubrication	0.0000274	0.0000136	0.00000177	0.00000125
(h) Mechanical Descaling	0.00000455	0.00000226	0.00000029	0.00000021
(i) Painting	0.000148	0.0000734	0.00000957	0.00000678
(j) Pressure Deformation	0.0000570	0.0000283	0.00000368	0.00000261

¹ Pounds per 1000 lbs. (gm/kg) of product.

TABLE 5

Pollutant Forming/finishing operation	Manganese		Molybdenum	
	Maximum daily ¹	Maximum monthly avg. ¹	Maximum daily ¹	Maximum monthly avg. ¹
(a) Acid Pickling	0.000269	0.000183	0.00164	0.00103
(b) Alkaline Cleaning	0.000269	0.000183	0.00164	0.00103
(c) Cold Forming	0	0	0	0
(d) Continuous Annealing	0.0000135	0.00000914	0.0000820	0.0000511
(e) Electroplating	0.000537	0.000366	0.00328	0.00205
(f) Hot Dip Coating	0.0000779	0.0000531	0.000476	0.000297
(g) Lubrication	0.00000644	0.00000439	0.0000394	0.0000246
(h) Mechanical Descaling	0.00000107	0.00000073	0.00000656	0.00000409
(i) Painting	0.0000350	0.0000238	0.000214	0.000133
(j) Pressure Deformation	0.0000135	0.00000914	0.0000820	0.0000511

¹ Pounds per 1000 lbs. (gm/kg) of product.

TABLE 6

Pollutant Forming/finishing operation	Nickel		Silver	
	Maximum daily ¹	Maximum monthly avg. ¹	Maximum daily ¹	Maximum monthly avg. ¹
(a) Acid Pickling	0.00104	0.000642	0.000456	0.000187
(b) Alkaline Cleaning	0.00104	0.000642	0.000456	0.000187
(c) Cold Forming	0	0	0	0
(d) Continuous Annealing	0.0000520	0.0000321	0.0000228	0.00000934
(e) Electroplating	0.00208	0.00129	0.000912	0.000374
(f) Hot Dip Coating	0.000302	0.000186	0.000133	0.0000542
(g) Lubrication	0.0000250	0.0000154	0.0000110	0.00000448
(h) Mechanical Descaling	0.00000415	0.00000257	0.00000182	0.00000075
(i) Painting	0.000135	0.0000834	0.0000593	0.0000243
(j) Pressure Deformation	0.0000520	0.0000321	0.0000228	0.00000934

¹ Pounds per 1000 lbs. (gm/kg) of product.

TABLE 7

Pollutant	Sulfide (as S)		Tin	
	Maximum daily ¹	Maximum monthly avg. ¹	Maximum daily ¹	Maximum monthly avg. ¹
Forming/finishing operation				
(a) Acid Pickling	0.0630	0.0267	0.00274	0.00139
(b) Alkaline Cleaning	0.0630	0.0267	0.00274	0.00139
(c) Cold Forming	0	0	0	0
(d) Continuous Annealing	0.00315	0.00134	0.000137	0.0000694
(e) Electroplating	0.126	0.0534	0.00547	0.00278
(f) Hot Dip Coating	0.0183	0.00774	0.000793	0.000403
(g) Lubrication	0.00151	0.000641	0.0000656	0.0000333
(h) Mechanical Descaling	0.000252	0.000107	0.0000110	0.00000555
(i) Painting	0.00818	0.00347	0.000356	0.000181
(j) Pressure Deformation	0.00315	0.00134	0.000137	0.0000694

¹ Pounds per 1000 lbs. (gm/kg) of product.

TABLE 8

Pollutant	Zinc	
	Maximum daily ¹	Maximum monthly avg. ¹
Forming/finishing operation		
(a) Acid Pickling	0.000793	0.000456
(b) Alkaline Cleaning	0.000793	0.000456
(c) Cold Forming	0	0
(d) Continuous Annealing	0.0000397	0.0000228
(e) Electroplating	0.00159	0.000912
(f) Hot Dip Coating	0.000230	0.000133
(g) Lubrication	0.0000191	0.0000110
(h) Mechanical Descaling	0.00000317	0.00000182
(i) Painting	0.000103	0.0000593
(j) Pressure Deformation	0.0000397	0.0000228

¹ Pounds per 1000 lbs. (gm/kg) of product.

TABLE 9

Pollutant	Cyanide (T)		Cyanide (A)	
	Maximum daily ¹	Maximum monthly avg. ¹	Maximum daily ¹	Maximum monthly avg. ¹
Forming/finishing operation				
(e) Electroplating	0.000865	0.000513	0.000580	0.000282

¹ Pounds per 1000 lbs. (gm/kg) of product.

(b) Upon agreement with the permitting authority and pursuant to § 438.4(d), facilities with cyanide treatment have the option of achieving the limitation for either cyanide (T) or cyanide (A).

(c) Upon agreement with the permitting authority, facilities must choose to monitor for TOP or TOC, or implement a management plan for organic chemicals as specified in § 438.4(a). (d) Permit limitations must be established in accordance with § 438.58.

§ 438.53 Effluent limitations attainable by application of the best control technology for conventional pollutants (BCT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitation representing the application of BCT:

Limitations for TSS, O&G (as HEM), and pH are the same as the corresponding limitation specified in § 438.52.

§ 438.54 Effluent limitations attainable by the application of the best available technology economically achievable (BAT).

(a) Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitation representing the application of BAT: Limitations for TOC (as indicator), TOP, cadmium, chromium, copper, cyanide (T), cyanide (A), lead, manganese, molybdenum, nickel, silver, sulfide (as S), tin, and zinc are the same as the corresponding limitation specified in § 438.52.

(b) Upon agreement with the permitting authority and pursuant to § 438.4(d), facilities with cyanide treatment have the option of achieving

the limitation for either cyanide (T) or cyanide (A).

(c) Upon agreement with the permitting authority, facilities must choose to monitor for TOP or TOC, or implement a management plan for organic chemicals as specified in § 438.4(a).

§ 438.55 Pretreatment standards for existing sources (PSES).

(a) Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart must achieve the following pretreatment standards: Limitations for TOC (as indicator), TOP, cadmium, chromium, copper, cyanide (T), cyanide (A), lead, manganese, molybdenum, nickel, silver, sulfide (as S), tin, and zinc are the same as the corresponding limitation specified in § 438.52.

(b) Upon agreement with the control authority and pursuant to § 438.4(d), facilities with cyanide treatment have the option of achieving the limitation for either cyanide (T) or cyanide (A).

(c) Upon agreement with the control authority, facilities must choose to monitor for TOP or TOC, or implement a management plan for organic chemicals as specified in § 438.4(a).

(d) Pretreatment standards must be established in accordance with § 438.58.

§ 438.56 New source performance standards (NSPS).

New point sources subject to this subpart must achieve the following new source performance standards (NSPS), as applicable.

(a) Any new point source subject to the provisions of this section that commenced discharging after [date 10 years prior to the date that is 60 days after the publication date of the final rule] and before [date that is 60 days after the publication date of the final rule] must continue to achieve the applicable new source standards

specified in 40 CFR part 420. Those standards shall not apply after the expiration of the applicable time period specified in 40 CFR 122.29(d)(1); thereafter, the source must achieve the applicable standards specified in §§ 438.52 and 438.54.

(b) The following performance standards apply with respect to each new point source that commences discharge after [date that is 60 days after the publication date of the final rule]. Discharges must remain within the pH range of 6 to 9 and must not exceed the following:

PERFORMANCE STANDARDS [NSPS]
TABLE 1

Pollutant	TSS		O&G (as HEM)	
	Maximum daily ¹	Maximum monthly avg. ¹	Maximum daily ¹	Maximum monthly avg. ¹
Forming/finishing operation				
(a) Acid Pickling	0.0571	0.0358	0.0312	0.0239
(b) Alkaline Cleaning	0.0571	0.0358	0.0312	0.0239
(c) Cold Forming	0	0	0	0
(d) Continuous Annealing	0.00286	0.00179	0.00156	0.00120
(e) Electroplating	0.115	0.0716	0.0623	0.00478
(f) Hot Dip Coating	0.0166	0.0104	0.00903	0.00693
(g) Lubrication	0.00137	0.000859	0.000748	0.000574
(h) Mechanical Descaling	0.000229	0.000144	0.000125	0.0000956
(i) Painting	0.00743	0.00466	0.00405	0.00311
(j) Pressure Deformation	0.00286	0.00179	0.00156	0.00120

¹ Pounds per 1000 lbs. (gm/kg) of product.

TABLE 2

Pollutant	TOC		TOP	
	Maximum daily ¹	Maximum monthly avg. ¹	Maximum daily ¹	Maximum monthly avg. ¹
Forming/finishing operation				
(a) Acid Pickling	0.181	0.103	0.0188	0.00896
(b) Alkaline Cleaning	0.181	0.103	0.0188	0.00896
(c) Cold Forming	0	0	0	0
(d) Continuous Annealing	0.00901	0.00514	0.000937	0.000448
(e) Electroplating	0.361	0.206	0.0375	0.0180
(f) Hot Dip Coating	0.0523	0.0298	0.00543	0.00260
(g) Lubrication	0.00433	0.00247	0.000450	0.000215
(h) Mechanical Descaling	0.000721	0.000411	0.0000750	0.0000359
(i) Painting	0.0235	0.0134	0.00244	0.00117
(j) Pressure Deformation	0.00901	0.00514	0.000937	0.000448

¹ Pounds per 1000 lbs. (gm/kg) of product.

TABLE 3

Pollutant	Cadmium		Chromium	
	Maximum daily ¹	Maximum monthly avg. ¹	Maximum daily ¹	Maximum monthly avg. ¹
Forming/finishing operation				
(a) Acid Pickling	0.0000267	0.0000184	0.000355	0.000143
(b) Alkaline Cleaning	0.0000267	0.0000184	0.000355	0.000143
(c) Cold Forming	0	0	0	0
(d) Continuous Annealing	0.00000133	0.00000092	0.0000178	0.00000714
(e) Electroplating	0.0000534	0.0000368	0.000710	0.000286
(f) Hot Dip Coating	0.00000773	0.00000533	0.000103	0.0000415
(g) Lubrication	0.00000064	0.00000044	0.00000851	0.00000343
(h) Mechanical Descaling	0.00000011	0.00000007	0.00000142	0.00000057
(i) Painting	0.00000347	0.00000239	0.0000461	0.0000186
(j) Pressure Deformation	0.00000133	0.00000092	0.0000178	0.00000714

¹ Pounds per 1000 lbs. (gm/kg) of product.

TABLE 4

Pollutant Forming/finishing operation	Copper		Lead	
	Maximum daily ¹	Maximum monthly avg. ¹	Maximum daily ¹	Maximum monthly avg. ¹
(a) Acid Pickling	0.000898	0.000327	0.0000692	0.0000517
(b) Alkaline Cleaning	0.000898	0.000327	0.0000692	0.0000517
(c) Cold Forming	0	0	0	0
(d) Continuous Annealing	0.0000449	0.0000164	0.00000346	0.00000258
(e) Electroplating	0.00180	0.000654	0.000139	0.000104
(f) Hot Dip Coating	0.000261	0.0000949	0.0000201	0.0000150
(g) Lubrication	0.0000216	0.00000785	0.00000166	0.00000124
(h) Mechanical Descaling	0.00000359	0.00000131	0.00000028	0.00000021
(i) Painting	0.000117	0.0000425	0.00000899	0.00000671
(j) Pressure Deformation	0.0000449	0.0000164	0.00000346	0.00000258

¹ Pounds per 1000 lbs. (gm/kg) of product.

TABLE 5

Pollutant Forming/finishing operation	Manganese		Molybdenum	
	Maximum daily ¹	Maximum monthly avg. ¹	Maximum daily ¹	Maximum monthly avg. ¹
(a) Acid Pickling	0.000600	0.000364	0.00164	0.00103
(b) Alkaline Cleaning	0.000600	0.000364	0.00164	0.00103
(c) Cold Forming	0	0	0	0
(d) Continuous Annealing	0.0000300	0.0000182	0.0000820	0.0000511
(e) Electroplating	0.00120	0.000728	0.00328	0.00205
(f) Hot Dip Coating	0.000174	0.000106	0.000476	0.000297
(g) Lubrication	0.0000144	0.00000873	0.0000394	0.0000246
(h) Mechanical Descaling	0.00000240	0.00000146	0.00000656	0.00000409
(i) Painting	0.0000780	0.0000473	0.000214	0.000133
(j) Pressure Deformation	0.0000300	0.0000182	0.0000820	0.0000511

¹ Pounds per 1000 lbs. (gm/kg) of product.

TABLE 6

Pollutant Forming/finishing operation	Nickel		Silver	
	Maximum daily ¹	Maximum monthly avg. ¹	Maximum daily ¹	Maximum monthly avg. ¹
(a) Acid Pickling	0.00391	0.00156	0.0000955	0.0000582
(b) Alkaline Cleaning	0.00391	0.00156	0.0000955	0.0000582
(c) Cold Forming	0	0	0	0
(d) Continuous Annealing	0.000196	0.0000779	0.00000477	0.00000291
(e) Electroplating	0.00782	0.00312	0.000191	0.000117
(f) Hot Dip Coating	0.00114	0.000452	0.0000277	0.0000169
(g) Lubrication	0.0000939	0.0000374	0.00000229	0.00000140
(h) Mechanical Descaling	0.0000157	0.00000623	0.00000038	0.00000023
(i) Painting	0.000509	0.000203	0.0000125	0.00000756
(j) Pressure Deformation	0.000196	0.0000779	0.00000477	0.00000291

¹ Pounds per 1000 lbs. (gm/kg) of product.

TABLE 7

Pollutant Forming/finishing operation	Sulfide (as S)		Tin	
	Maximum daily ¹	Maximum monthly avg. ¹	Maximum daily ¹	Maximum monthly avg. ¹
(a) Acid Pickling	0.0630	0.0267	0.0000606	0.0000453
(b) Alkaline Cleaning	0.0630	0.0267	0.0000606	0.0000453
(c) Cold Forming	0	0	0	0
(d) Continuous Annealing	0.00315	0.00134	0.00000303	0.00000226
(e) Electroplating	0.126	0.0534	0.000122	0.0000905
(f) Hot Dip Coating	0.0183	0.00774	0.0000176	0.0000132
(g) Lubrication	0.00151	0.000641	0.00000145	0.00000109
(h) Mechanical Descaling	0.000252	0.000107	0.00000024	0.00000018
(i) Painting	0.00818	0.00347	0.00000788	0.00000588

TABLE 7—Continued

Pollutant	Sulfide (as S)		Tin	
	Maximum daily ¹	Maximum monthly avg. ¹	Maximum daily ¹	Maximum monthly avg. ¹
Forming/finishing operation				
(j) Pressure Deformation	0.00315	0.00134	0.0000303	0.00000226

¹ Pounds per 1000 lbs. (gm/kg) of product.

TABLE 8

Pollutant	Zinc	
	Maximum daily ¹	Maximum monthly avg. ¹
Forming/finishing operation		
(a) Acid Pickling	0.000163	0.000111
(b) Alkaline Cleaning	0.000163	0.000111
(c) Cold Forming	0	0
(d) Continuous Annealing	0.00000811	0.00000553
(e) Electroplating	0.000325	0.000222
(f) Hot Dip Coating	0.0000471	0.0000321
(g) Lubrication	0.00000389	0.00000265
(h) Mechanical Descaling	0.00000065	0.00000044
(i) Painting	0.0000211	0.0000144
(j) Pressure Deformation	0.00000811	0.00000553

¹ Pounds per 1000 lbs. (gm/kg) of product.

TABLE 9

Pollutant	Cyanide (T)		Cyanide (A)	
	Maximum daily ¹	Maximum monthly avg. ¹	Maximum daily ¹	Maximum monthly avg. ¹
Forming/finishing operation				
(a) Electroplating	0.000865	0.000513	0.000580	0.000282

¹ Pounds per 1000 lbs. (gm/kg) of product.

(c) Upon agreement with the permitting authority and pursuant to § 438.4(d), facilities with cyanide treatment have the option of achieving the limitation for either cyanide (T) or cyanide (A).

(d) Upon agreement with the permitting authority, facilities must choose to monitor for TOP or TOC, or implement a management plan for organic chemicals as specified in § 438.4(a).

(e) Performance standards must be established in accordance with § 438.58.

§ 438.57 Pretreatment standards for new sources (PSNS).

New sources subject to this subpart must achieve the following pretreatment standards for new sources (PSNS), as applicable.

(a) Any new source subject to the provisions of this section that commenced discharging after [date 10 years prior to the date that is 60 days after the publication date of the final rule] and before [date that is 60 days after the publication date of the final rule] must continue to achieve the applicable new source standards specified in 40 CFR part 420 for ten

years beginning on the date the source commenced discharge or during the period of depreciation or amortization of the facility, whichever comes first, after which the source must achieve the standards specified in § 438.55.

(b) Except as provided in 40 CFR 403.7, the following standards apply with respect to each new source that commences discharge after [date that is 60 days after the publication date of the final rule]: Limitations for TOC (as indicator), TOP, cadmium, chromium, copper, cyanide (T), cyanide (A), lead, manganese, molybdenum, nickel, silver, sulfide (as S), tin, and zinc are the same as the corresponding limitation specified in § 438.56.

(c) Upon agreement with the control authority and pursuant to § 438.4(d), facilities with cyanide treatment have the option of achieving the limitation for either cyanide (T) or cyanide (A).

(d) Upon agreement with the control authority, facilities must choose to monitor for TOP or TOC, or implement a management plan for organic chemicals as specified in § 438.4(a).

(e) Pretreatment standards must be established in accordance with § 438.58.

§ 438.58 Calculation of NPDES and pretreatment permit effluent limitations.

(a) Production-based limitations in NPDES permits must comply with 40 CFR 122.45(b)(2)(i). The average rate of production reported by the owner or operator in accordance with 40 CFR 403.12(b)(3) shall be based not upon the design production capacity but rather upon a reasonable measure of actual production of the facility, such as the production during the high month of the previous year, or the monthly average for the highest of the previous five years. For new sources or new dischargers, actual production shall be estimated using projected production.

(b) The following protocols shall be used when calculating the operating rate for Subpart E:

(1) For similar, multiple production lines with process waters treated in the same wastewater treatment system, the reasonable measure of production (the daily operating rate) shall be determined from the combined production of the similar production lines during the same time period.

(2) For process wastewater treatment systems where wastewater from two or more different production lines are

commingled in the same wastewater treatment system, the reasonable measure of production (the daily operating rate) shall be determined separately for each production line (or combination of similar production lines) during the same time period.

(c) Mass effluent limitations and pretreatment requirements for each forming/finishing operation shall be computed by multiplying the average daily operating rate (or other reasonable measure of production), as determined in accordance with § 438.58(b), by the respective effluent limitations guidelines or standards. The mass effluent limitations or pretreatment requirements applicable at a given NPDES or pretreatment compliance monitoring point shall be the sum of the mass effluent limitations or pretreatment requirements for each regulated pollutant parameter within each applicable forming/finishing operation with process wastewater discharging to that compliance monitoring point.

(d) Mass NPDES permit effluent limitations or pretreatment requirements derived from this part shall remain in effect for the term of the NPDES permit or pretreatment control mechanism, except:

(1) When the permit is modified in accordance with § 122.62 of this chapter or local POTW permit modification provisions; or

(2) Where the NPDES permit authorizes alternate effluent limitations for increased or decreased production levels in accordance with § 122.45(b)(2)(ii)(A)(1) of this chapter.

(e) Production from unit operations that do not generate or discharge process wastewater shall not be included in the calculation of the operating rate.

Subpart F—Oily Wastes

§ 438.60 Applicability.

(a) This subpart applies to process wastewater from facilities specified in § 438.1(a) that discharge wastewater exclusively from oily operations (as defined in § 438.61) and are not otherwise subject to subparts G or H of this part.

(b) Facilities introducing process wastewater into a POTW at a rate that does not exceed 2 million gallons per year are not subject to the pretreatment standards (§§ 438.65 and 438.67) of this subpart.

§ 438.61 Special definitions.

(a) As used in this subpart, *oily operations* means one or more of the following: Alkaline cleaning for oil

removal; aqueous or solvent degreasing; corrosion preventive coating (as specified in § 438.61(b)); floor cleaning; grinding; heat treating; deformation by impact or pressure; machining; painting; steam cleaning; laundering; and testing (such as, hydrostatic, dye penetrant, ultrasonic, magnetic flux).

(b) *Corrosion preventive coating* means the application of removable oily or organic solutions to protect metal surfaces against corrosive environments. Corrosion preventive coatings include, but are not limited to: petrolatum compounds, oils, hard dry-film compounds, solvent-cutback petroleum-based compounds, emulsions, water-displacing polar compounds, and fingerprint removers and neutralizers. Corrosion preventive coating does not include electroplating, or chemical conversion coating (including phosphate conversion coating) operations.

§ 438.62 Effluent limitations attainable by the application of the best practicable control technology currently available (BPT).

(a) Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the application of BPT. Discharges must remain within the pH range 6 to 9 and must not exceed the following:

EFFLUENT LIMITATIONS [BPT]

Regulated parameter	Maximum daily ¹	Maximum monthly avg. ¹
1. TSS	63	31
2. O&G (as HEM)	27	20
3. TOC (as indicator)	633	378
4. TOP	9.0	4.3
5. Sulfide (as S)	31	13

¹ mg/L (ppm).

(b) Upon agreement with the permitting authority, facilities must choose to monitor for TOP or TOC, or implement a management plan for organic chemicals as specified in § 438.4(a).

§ 438.63 Effluent limitations attainable by application of the best control technology for conventional pollutants (BCT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitation representing the application of BCT: Limitations for TSS, O&G (as HEM) and pH are the same as the corresponding limitation specified in § 438.62.

§ 438.64 Effluent limitations attainable by the application of the best available technology economically achievable (BAT).

(a) Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitation representing the application of BAT: Limitations for TOC (as indicator), TOP and sulfide (as S) are the same as the corresponding limitation specified in § 438.62.

(b) Upon agreement with the permitting authority, facilities must choose to monitor for TOP or TOC, or implement a management plan for organic chemicals as specified in § 438.4(a).

§ 438.65 Pretreatment standards for existing sources (PSES).

(a) Except as provided in 40 CFR 403.7 and 403.13, and except at facilities where the process wastewater introduced into a POTW does not exceed 2 million gallons per year, any existing source subject to this subpart must achieve the following pretreatment standards:

PRETREATMENT STANDARDS [PSES]

Regulated parameter	Maximum daily ¹	Maximum monthly avg. ¹
1. TOC (as indicator)	633	378
2. TOP	9.0	4.3
3. Sulfide (as S)	31	13

¹ mg/L (ppm).

(b) Upon agreement with the permitting authority, facilities must choose to monitor for TOP or TOC, or implement a management plan for organic chemicals as specified in § 438.4(a).

(c) The control authority has the option of imposing mass-based standards in place of the concentration-based standards. To convert to mass-based standards, multiply each parameter's concentration-based standard times the average daily flow of process wastewater discharged by the source into the POTW.

§ 438.66 New source performance standards (NSPS).

(a) Any new point source subject to this subpart must achieve performance standards for TSS, O&G (as HEM), TOC (as indicator), TOP, sulfide (as S) and pH, which are the same as the corresponding limitation specified in § 438.62.

(b) Upon agreement with the permitting authority, facilities must

choose to monitor for TOP or TOC, or implement a management plan for organic chemicals as specified in § 438.4(a).

§ 438.67 Pretreatment standards for new sources (PSNS).

(a) Except as provided in 40 CFR 403.7, or except at facilities where the process wastewater introduced into a POTW does not exceed 2 million gallons per year, any existing source subject to this subpart must achieve pretreatment standards for TOC (as indicator), TOP and sulfide (as S), which are the same as the corresponding standard specified in § 438.65.

(b) Upon agreement with the permitting authority, facilities must choose to monitor for TOP or TOC, or implement a management plan for organic chemicals as specified in § 438.4(a).

(c) The control authority has the option of imposing mass-based standards in place of the concentration-based standards. To convert to mass-based standards, multiply each parameter's concentration-based standard times the average daily flow of process wastewater discharged by the source into the POTW.

Subpart G—Railroad Line Maintenance

§ 438.70 Applicability.

(a) This subpart applies to discharges of process wastewater from facilities that perform routine cleaning and light maintenance on railroad engines, cars, car-wheel trucks, or similar parts or machines, and discharge wastewater exclusively from oily operations (as defined in § 438.61(a)) or from washing of the final product.

(b) Facilities engaged in the manufacture, overhaul or heavy maintenance of railroad engines, cars, car-wheel trucks, or similar parts or machines are not subject to this subpart. These facilities may be subject to Subpart A or F of this part.

§ 438.72 Effluent limitations attainable by the application of the best practicable control technology currently available (BPT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the application of BPT. Discharges must remain within

the pH range 6 to 9 and must not exceed the following:

EFFLUENT LIMITATIONS [BPT]

Regulated parameter	Maximum daily ¹	Maximum monthly avg. ¹
1. BOD ₅	34	12
2. TSS	30	16
3. O&G (as HEM)	11	8

¹ mg/L (ppm).

§ 438.73 Effluent limitations attainable by application of the best control technology for conventional pollutants (BCT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitation representing the application of BCT: Limitations for BOD₅, TSS, O&G (as HEM) and pH are the same as the corresponding limitation specified in § 438.72.

§ 438.76 New source performance standards (NSPS).

Any new point source subject to this subpart must achieve performance standards for BOD₅, TSS, O&G (as HEM) and pH, which are the same as the corresponding limitation specified in § 438.72.

Subpart H—Shipbuilding Dry Docks

§ 438.80 Applicability.

(a) This subpart applies to discharges of process wastewater generated in or on dry docks and similar structures, such as graving docks, building ways, marine railways and lift barges at shipbuilding facilities (or shipyards). This subpart applies to the following when generated by operations from within a dry dock or similar structure: process wastewater generated inside and outside the vessel (including bilge water) and wastewater generated from barnacle removal conducted as preparation for ship maintenance, rebuilding or repair.

(b) The following wastewater discharges are not subject to this subpart:

(1) Wastewater from "on-shore" operations (that is, other than dry docks and similar structures) at a shipyard.

(2) Wastewater generated on board ships and boats when they are afloat (that is, not in dry docks or similar structures). Wastewater generated on U.S. military ships and boats afloat in U.S. waters are subject to the Uniform

Discharge Standards (UNDS) at 40 CFR part 1700.

(3) Flooding water (as defined in § 438.81(a)), dry dock ballast water (as defined in § 438.81(b)), and storm water.

§ 438.81 Special definitions.

As used in this subpart:

(a) *Flooding water* means water that is used to float ships or boats into the dry dock or similar structure and is discharged prior to performing any MP&M operations, or water that is used to float ships or boats out of the dry dock or similar structure after all MP&M operations have ceased.

(b) *Dry dock ballast water* means water that enters and exits the dry dock or similar structure for the purpose of sinking or raising the dry dock.

§ 438.82 Effluent limitations attainable by the application of the best practicable control technology currently available (BPT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the application of BPT. Discharges must remain within the pH range 6 to 9 and must not exceed the following:

EFFLUENT LIMITATIONS [BPT]

Regulated parameter	Maximum daily ¹	Maximum monthly avg. ¹
1. TSS	81	44
2. O&G (as HEM)	16	11

¹ mg/L (ppm).

§ 438.83 Effluent limitations attainable by application of the best control technology for conventional pollutants (BCT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitation representing the application of BCT: Limitations for TSS, O&G (as HEM) and pH are the same as the corresponding limitation specified in § 438.82.

§ 438.86 New source performance standards (NSPS).

Any new point source subject to this subpart must achieve performance standards for TSS, O&G (as HEM) and pH, which are the same as the corresponding limitation specified in § 438.82.

APPENDIX A TO PART 483—TYPICAL PRODUCTS IN METAL PRODUCTS & MACHINERY SECTORS

<p>AEROSPACE</p> <p>Guided Missiles & Space Vehicle Guided Missile & Space Vehicle Prop. Other Space Vehicle & Missile Parts</p>	<p>AIRCRAFT</p> <p>Aircraft Engines & Engine Parts Aircraft Frames Manufacturing Aircraft Parts & Equipment Airports, Flying Fields, & Services</p>	<p>BUS & TRUCK</p> <p>Bus Terminal & Service Facilities Courier Services, Except by Air Freight Truck Terminals, W/ or W/O Maintenance Intercity & Rural Highways (Buslines) Local & Suburban Transit (Bus & subway) Local Passenger Trans. (Lim., Amb., Sight See) Local Trucking With Storage Local Trucking Without Storage Motor Vehicle Parts & Accessories School Buses Trucking Truck & Bus Bodies Truck Trailers</p>
<p>ELECTRONIC EQUIPMENT</p> <p>Communications Equipment Connectors for Electronic Applications Electric Lamps Electron Tubes Electronic Capacitors Electronic Coils & Transformers Electronic Components Radio & TV Communications Equipment Telephone & Telegraph Apparatus</p>	<p>HARDWARE</p> <p>Architectural & Ornamental Metal Work Bolts, Nuts, Screws, Rivets & Washers Crowns & Closures Cutlery Fabricated Metal Products Fabricated Pipe & Fabricated Pipe Fittings Fabricated Plate Work (Boiler Shops) Fabricated Structural Metal Fasteners, Buttons, Needles & Pins Fluid Power Valves & Hose Fittings Hand & Edge Tools Hand Saws & Saw Blades Hardware Heating Equipment, Except Electric Industrial Furnaces & Ovens Iron & Steel Forgings Machine Tool Accessories & Measuring Devices Machine Tools, Metal Cutting Types Machine Tools, Metal Forming Types Metal Shipping Barrels, Drums Kegs, Pails Metal Stampings Power Driven Hand Tools Prefabricated Metal Buildings & Components Screw Machine Products Sheet Metal Work Special Dies & Tools, Die Sets, Jigs, Etc Steel Springs Valves & Pipe Fittings Wire Springs</p>	<p>HOUSEHOLD EQUIPMENT</p> <p>Commercial, Ind. & Inst. Elec. Lighting Fixtures Current-Carrying Wiring Devices Electric Housewares & Fans Electric Lamps Farm Freezers Household Appliances Household Cooking Equipment Household Refrig. & Home & Farm Freezers Household Laundry Equipment</p> <p>Household Vacuum Cleaners Lighting Equipment Noncurrent-Carrying Wiring Devices Radio & Television Repair Shops Radio & Television Sets Except Commn. Types Refrig. & Air Cond. Serv. & Repair Shops Residential Electrical Lighting Fixtures</p>
<p>INSTRUMENTS</p> <p>Analytical Instruments Automatic Environmental Controls Coating, Engraving, & Allied Services Dental Equipment & Supplies Ophthalmic Goods Fluid Meters & Counting Devices Instruments to Measure Electricity Laboratory Apparatus & Furniture Manufacturing Industries Measuring & Controlling Devices Optical Instruments & Lenses Orthopedic, Prosthetic, & Surgical Supplies Pens, Mechanical Pencils, & Parts Process Control Instruments Search & Navigation Equipment Surgical & Medical Instruments & Apparatus Watches, Clocks, Associated Devices & Parts</p> <p>MOTOR VEHICLE</p> <p>Auto Exhaust System Repair Shops Automobile Dealers (new & used) Auto. Dealers (Dunebuggy, Go-Cart, Snowmobile) Automobile Service (includes Diag. & Insp. Cntrs.) Automotive Equipment Automotive Glass Replacement Shops Automotive Repairs Shops Automotive Stampings Automotive Transmission Repair Shops Carburetors, Pistons Rings, Valves Electrical Equipment for Motor General Automotive Repair Shops Mobile Homes Motor Vehicle & Automotive Bodies Motor Vehicle Parts & Accessories Motorcycle Dealers Motorcycles</p>	<p>JOB SHOP</p> <p>Perform Work on Products for Use In Any MP&M Sector But Owns Less Than 50% of the Products On-Site (e.g., Electroplating, Plating, Polishing, Anodizing, and Coloring)</p> <p>OFFICE MACHINE</p> <p>Calculating & Accounting Equipment Computer Maintenance & Repair Computer Peripheral Equipment Computer Related Services Computer Rental & Leasing Computer Storage Devices Computer Terminals Electrical & Electronic Repair Electronic Computers Office Machines Photographic Equipment & Supplies</p>	<p>MOBILE INDUSTRIAL EQUIPMENT</p> <p>Construction Machinery & Equipment Farm Machinery & Equipment Garden Tractors & Lawn & Garden Equipment Hoist, Industrial Cranes & Monorails Industrial Trucks, Tractors, Trailers, Tanks & Tank Components Mining Machinery & Equipment, Except Oil Field</p> <p>ORDNANCE</p> <p>Ammunition Ordnance & Accessories Small Arms Small Arms Ammunition</p>

APPENDIX A TO PART 483—TYPICAL PRODUCTS IN METAL PRODUCTS & MACHINERY SECTORS—Continued

Passenger Car Leasing Recreational & Utility Trailer Dealers Taxicabs Top & Body Repair & Paint Shops Travel Trailers & Campers Vehicles Vehicular Lighting Equipment Welding Shops (includes Automotive)		
PRECIOUS METALS & JEWELRY Costume Jewelry Jewelers' Materials & Lapidary Work Jewelry, Precious Metal Musical Instruments Silverware, Plated Ware, & Stainless	PRINTED WIRING BOARD Printed Circuit Boards Printed Circuit Boards for Television and Radio Wiring Boards	RAILROAD Line-Haul Railroads Railcars, Railway Systems Switching & Terminal Stations
SHIPS AND BOATS Boat Building & Repairing Deep Sea Domestic Transportation of Freight Deep Sea Passenger Transportation, Except by Ferry Freight Transportation on the Great Lakes Marinas Ship Building & Repairing Towing & Tugboat Service Water Passenger Transportation Ferries Water Transportation of Freight Water Transportation Services	STATIONARY INDUSTRIAL EQUIPMENT Air & Gas Compressors Automatic Vending Machines Ball & Roller Bearings Blowers & Exhaust & Ventilation Fans Commercial Laundry Equipment Conveyors & Conveying Equipment Electric Industrial Apparatus Elevators & Moving Stairways Equipment Rental & Leasing Food Product Machinery Fluid Power Cylinders & Actuators Fluid Power Pumps & Motors General Industrial Machinery Heavy Construction Equipment Rental Industrial Machinery Industrial Patterns Industrial Process Furnaces & Ovens Internal Combustion Engines Measuring & Dispensing Pumps Mechanical Power Transmission Equipment Metal Working Machinery Motors & Generators Oil Field Machinery & Equipment Packaging Machinery Paper Industries Machinery Printing Trades Machinery & Equipment Pumps & Pumping Equipment Refrigeration & Air & Heating Equipment Relays & Industrial Controls Rolling Mill Machinery & Equipment Scales & Balances, Except Laboratory Service Industry Machines Special Industry Machinery Sped Changers, High Speed Drivers & Gears Steam, Gas, Hydraulic Turbines, Generator Units Switchgear & Switchboard Apparatus Textile Machinery Transformers Welding Apparatus	STEEL FORMING & FINISHING Cold-Finished Steel Bars Steel Pipe and Tubes Steel Wiredrawing and Steel Nails and Spikes Miscellaneous Fabricated Wire Products (e.g., steel wire rope, cable, netting)
MISCELLANEOUS METAL PRODUCTS Miscellaneous Fabricated Wire Products Miscellaneous Metal Work Miscellaneous Repair Shops & Related Services Miscellaneous Transportation Equipment		

APPENDIX B TO PART 438—TOP POLLUTANTS LIST

Total organics parameter pollutants	CAS number	Nominal quantitation value (mg/L)
1. Acrolein	107-02-8	0.05
2. Benzoic acid	62-85-0	0.05
3. Carbon disulfide	75-15-0	0.01
4. Dibenzofuran	132-64-9	0.01
5. Dibenzothiophene	132-65-0	0.01
6. Isophorone	78-59-1	0.01
7. n-Hexadecane	544-76-3	0.01
8. n-Tetradecane	929-59-4	0.01
9. Aniline	62-53-3	0.01
10. Chloroform (trichloromethane)	67-66-3	0.01
11. Methylene chloride (dichloromethane)	75-09-2	0.01
12. Chloroethane (ethyl chloride)	75-00-3	0.05
13. 1,1-Dichloroethane	75-34-3	0.01

APPENDIX B TO PART 438—TOP POLLUTANTS LIST—Continued

Total organics parameter pollutants	CAS number	Nominal quantitation value (mg/L)
14. 1,1,1-Trichloroethane (methylchloroform)	71-55-6	0.01
15. Tetrachloroethene	127-18-4	0.01
16. 1,1-Dichloroethylene (vinylidene chloride)	75-35-4	0.01
17. Trichloroethylene	79-01-6	0.01
18. Biphenyl	92-52-4	0.01
19. p-Cymene	99-87-6	0.01
20. Ethylbenzene	100-41-4	0.01
21. Toluene	108-88-3	0.01
22. N-Nitrosodimethylamine	62-75-9	0.05
23. N-Nitrosodiphenylamine	86-30-6	0.02
24. Chlorobenzene	108-90-7	0.01
25. 2,6-Dinitrotoluene	606-20-2	0.01
26. Phenol	108-95-2	0.01
27. 4-Chloro-m-cresol (parachlorometacresol or 4-chloro-3-methylphenol)	59-50-7	0.01
28. 2,4-Dinitrophenol	51-28-5	0.05
29. 2,4-Dimethylphenol	105-67-9	0.01
30. 2-Nitrophenol (o-nitrophenol)	88-75-5	0.02
31. 4-Nitrophenol (p-nitrophenol)	100-02-7	0.05
32. Acenaphthene	83-32-9	0.01
33. Anthracene	120-12-7	0.01
34. 3,6-Dimethylphenanthrene	1576-67-6	0.01
35. Fluorene	86-73-7	0.01
36. Fluoranthene	206-44-0	0.01
37. 2-Isopropyl-naphthalene	2027-17-0	0.01
38. 1-Methylfluorene	1730-37-6	0.01
39. 2-Methylnaphthalene	91-57-6	0.01
40. 1-Methylphenanthrene	832-69-9	0.01
41. Naphthalene	91-20-3	0.01
42. Phenanthrene	85-01-8	0.01
43. Pyrene	129-00-0	0.01
44. Benzyl butyl phthalate	85-68-7	0.01
45. Dimethyl phthalate	131-11-3	0.01
46. Di-n-butyl phthalate	84-74-2	0.01
47. Di-n-octyl phthalate	117-84-0	0.01
48. Bis(2-ethylhexyl) phthalate	117-81-7	0.01

PART 463—PLASTICS MOLDING AND FORMING POINT SOURCE CATEGORY

6. The authority citation for part 463 is revised to read as follows:

Authority: 33 U.S.C. 1311, 1314, 1316, 1317, 1318, 1342 and 1361.

7. Section 463.1 is amended by revising paragraph (c) to read as follows:

§ 463.1 Applicability.

* * * * *

(c) Processes that coat a plastic material onto a substrate may fall within the Electroplating, Metal Finishing, or Metal Products and Machinery provisions of 40 CFR parts 413, 433, and 438, as applicable. These coating processes are excluded from the effluent limitations guidelines and standards for the electroplating, metal finishing, and metal products and machinery point source categories and are subject to the plastics molding and forming regulation in this part.

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PART 464—METAL MOLDING AND CASTING POINT SOURCE CATEGORY

8. The authority citation for part 464 is revised to read as follows:

Authority: 33 U.S.C. 1311, 1314, 1316, 1317, 1318, 1342 and 1361.

9. Section 464.02 is amended by revising the last sentence of paragraphs (a), (b), (c), and (d) to read as follows:

§ 464.02 General definitions.

(a) * * * Processing operations following the cooling of castings not covered under aluminum forming, except for grinding scrubber operations which are covered here, are covered under the electroplating, metal finishing, and metal products and machinery point source categories (40 CFR parts 413, 433, and 438), as applicable.

(b) * * * Except for grinding scrubber operations which are covered here, processing operations following the cooling of castings are covered under the electroplating, metal finishing, and metal products and machinery point source categories (40 CFR parts 413, 433, and 438), as applicable.

(c) * * * Except for grinding scrubber operations which are covered here, processing operations following the cooling of castings are covered under the electroplating, metal finishing, and metal products and machinery point source categories (40 CFR parts 413, 433, and 438), as applicable.

(d) * * * Processing operations following the cooling of castings not covered under nonferrous metals forming are covered under the electroplating, metal finishing, and metal products and machinery point source categories (40 CFR parts 413, 433, and 438), as applicable.

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PART 467—ALUMINUM FORMING POINT SOURCE CATEGORY

10. The authority citation for Part 467 is revised to read as follows:

Authority: 33 U.S.C. 1311, 1314, 1316, 1317, 1318, 1342 and 1361.

11. Section 467.01 is amended by revising the fourth sentence of paragraph (a) to read as follows:

§ 467.01 Applicability.

(a) * * * For the purposes of this part, surface treatment of aluminum is considered to be an integral part of aluminum forming whenever it is performed at the same plant site at which aluminum is formed and such operations are not considered for regulation under the Electroplating, Metal Finishing, or Metal Products and

Machinery provisions of 40 CFR parts 413, 433, and 438, as applicable. * * *

PART 471—NONFERROUS METAL FORMING AND METAL POWDERS POINT SOURCE CATEGORY

12. The authority citation for Part 471 is revised to read as follows:

Authority: 33 U.S.C. 1311, 1314, 1316, 1317, 1318, 1342 and 1361.

13. Section 471.01 is amended by revising paragraph (c) to read as follows:

§ 471.01 Applicability.

(c) Surface treatment includes any chemical or electrochemical treatment applied to the surface of the metal. For the purposes of this regulation, surface treatment of metals is considered to be an integral part of the forming of metals whenever it is performed at the same

plant site at which the metals are formed. Such surface treatment operations are not regulated under Electroplating, Metal Finishing, or Metal Products and Machinery Point Source Category regulations, 40 CFR parts 413, 433, and 438, respectively.

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