Regulations Affecting Aqueous Cleaning Systems

The new Metal Products and Machinery effluent guideline will most probably affect you . . .

By JOHN B. DURKEE, II President Creative EnterpriZes Lake Jackson, Texas he proposed Metal Products and Machinery (MP&M) effluent guideline was signed on March 31, 1995, and was published in the Federal Register (FR) at the end of April. You can get a full copy of the proposed rule by downloading it from the EPA bulletin board at 703-821 4695 [8N1] as file MP&M.ZIP, from the FR as published, or by contacting the EPA administrator's office.

Does This Affect Me? What does it mean if I replace my vapor degreaser with an aqueous cleaning line? Your new aqueous cleaning line probably will be covered by this regulation if it is the first or a large source of process wastewater at your facility. However, it will not be covered if there are other sources of process wastewater, and discharge from the new aqueous cleaning line is only a modest part of the total discharge.

OK. So it Affects Me. What Does it Mean? The proposed regulation is performance-based and does not specify a method of compliance. Users must meet mass-based limits. This is distinctly different from the NESHAP for chlorinated solvents in that only certain "control combinations" can be used.

Generally you will use conventional wastewater treatment, chemical precipitation followed by clarification. Oily streams are treated with emulsion-breaking and oil skimming techniques. Cyanide-bearing wastewater goes through cyanide destruction with sodium hypochlorite. Chromium-bearing wastewater is treated to reduce hexavalent chromium to trivalent. Self-monitoring

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Pollutant or Property mg/liter	Daily Maximum mg/liter	Monthly Avg. Maximum mg/liter
Aluminum	1.4	1.0
Cadmium	0.7	0.3
Chromium	0.3	0.2
Copper	1.3	0.6
Iron	2.4	1.3
Nickel	1.1	0.5
Zinc	0.8	0.4
Cyanide	0.03	0.02
Oil & Grease	35	17
TSS (total suspended solids)	73	36
One pH	Within 6.0 to 9.0	Within 6.0 to 9.0

TABLE I—Concentration Limits

for cyanide must be conducted after cyanide treatment and before combining it with other streams. In-process flow reduction and recycling would also be used.

The effluent limits represent the degree of effluent reduction attainable by applying the best practical control technology (BPT) currently available. Your permit limit will be determined by a concentration limit multiplied by a mass flow rate, and converted to mass units. The permit writer will use an appropriate process wastewater flow rate that may reflect your current values or less. For direct and indirect dischargers, the concentration limits are as shown in Table I.

What is the MP&M? The MP&M effluent guideline covers facilities that manufacture, maintain and rebuild finished metal parts, products or machines in the following industrial sectors: aircraft, aerospace, electronic equipment, hardware, mobile industrial equipment, ordnance, and stationary industrial equipment. This is Phase I of the implementation. Seven additional sectors will be covered in 1999 as Phase II: bus and truck, office machines, household equipment, railroad, instruments, ships and boats, motor vehicles, and precious and non-precious metals.

Indirect discharges are those to a POTW (Publicly Owned Treatment Works); direct discharges are to surface waters. Existing indirect discharges of less than one million gal per year (4,000 gpd), per site, are exempt from this proposal. New indirect, and all direct discharges are covered by this proposal, at any flow rate.

For those cleaning parts in industry sectors covered by this regulation, the effect of this regulation depends on other operations that discharge water. The limit is by site. If you discharge water from spray cleaning large aircraft to a POTW, the discharge from the smallest cleaning station will be covered.

Alternately, larger discharges from aqueous cleaning machines probably will be covered now in the absence of any other site discharges, since the

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annual discharge volume will likely exceed one million gal. Remember, it is not the cleaning equipment being regulated, it is the water discharged from the site.

New discharges, direct or indirect, at any flow rate, will be covered. New means relative to the site (installation or building). And the definition of "new" is a judgment call for the permit writer, who will reference CFC 403.3.K.1.

Both new and existing facilities must meet technology-based limits. The limits are calculated using mass, which means "dilution is no longer the solution to pollution."

When is Compliance Necessary? Three years from the date the rule is finally promulgated, which will probably be September 30, 1999.

Why is the EPA Doing This? The purpose is to eliminate almost a million lbs of toxic pollutants discharged each year. The metals content of municipal sludge will be reduced, so POTWs do not have to landfill or incinerate the non-hazardous sludge.

Important aspects are fairness and not letting one type of pollution (ozone-depletion) be traded for another (water-pollution).

The EPA estimates that 75 pct of the affected facilities are small businesses that should not see a major economic impact. The EPA estimates direct and indirect dischargers will pay \$50 and \$127 respectively per incremental pound toxic equivalent.

VOX Populi. When published, you will have 90 days from the date of publication to comment on this proposal.

I expect significant comment about the concentration levels of metals. particularly aluminum, iron, and lead. The low levels given are seen in drinking water of fairly high quality. Typical wastewater treatment may not recover high levels of iron normally present in water, particularly when aggressive aqueous metal cleaning is done at high or low pH. The addition of alum often causes normal drinking water to have higher levels of aluminum than are allowed in this regulation. In that case, washing plastic would exceed the aluminum level in the permit. And lead, which is toxic, is not mentioned because there was no data on which to base a limit.

The oil and grease test is an extraction with Freon 113 (or hexane). It is likely there will be public comment about why a traditional TOC test cannot be used or substituted.

The oil and grease test may miss some detergent and solvent components of cleaning agents, and solubilized or emulsified soils. There will also be public comment about this test missing organic matter that is more soluble in water than in the extract.

The EPA will review public comment, and are scheduled to issue a final ruling in September, 1996. You should consider commenting. **PF**

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