



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 1

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BOSTON, MASSACHUSETTS 02114-2023

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

February 3, 2000

Mr. Robert W. Curry
Edwards & Angell, LLP
101 Federal Street
Boston, MA 02110-1800

Re: Request for Hazardous Waste Regulation Interpretive Advice

Dear Mr. Curry:

This letter is in response to your correspondence dated September 14, 1999 in which you request EPA's assessment of your client's wastewater treatment sludge. As indicated in your letter, your client had recently acquired a business which includes a wafer manufacturing segment that is represented in process flow diagrams which were included with your letter as attachments. A portion of this manufacturing operation includes an "electroless" plating process. In particular, you ask whether EPA's December 2, 1986 interpretive rule (see 51 F.R. 43350), which clarified that "electroless" plating is specifically exempted from the scope of the F006 hazardous waste listing would also exempt "electroless" plating from the scope of the F007 through the F009 listings. You ask this question since the previous practice at your client's facility was to have the wastewater treatment sludge resulting from these manufacturing operations shipped off-site as a non-hazardous waste and are wondering whether or not these wastes should be considered F-listed hazardous waste.

Our response to your request will be two-fold. We will first address the question of the applicability of the 1986 interpretive rule to your client's electroless plating operations and we will then address the potential applicability of the hazardous waste listings to your clients wastewater treatment sludges.

Please note that the State of Massachusetts, in accordance with Section 3006 of the Resource Conservation and Recovery Act (RCRA), is authorized to administer and enforce the base RCRA program in lieu of the federal program and, in particular, has regulatory authority regarding hazardous waste determinations. Therefore, you should consult with the appropriate state personnel regarding your request.

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As indicated above, on December 2, 1986, EPA issued an Interpretive Ruling which clarified that "electroless" plating was specifically exempted from the scope of the F006 hazardous waste listing. This Ruling, however, was silent regarding the applicability of this "exemption" to the F007, F008 and F009 listings. In August of 1989 EPA issued a "RCRA/Superfund Hotline Summary", document number 9432.1989(01), which addressed this issue. That summary indicated that even though the above referenced clarification was specifically written for the F006 listing, an analogous assessment could be made for the F007, F008 and F009 listings. In other words, the solutions and residues resulting from those operations defined in the F007 through F009 listings would not meet the listing criteria if those solutions and residues resulted from *electroless* plating operations. These wastes, however, would still be subject to the hazardous waste regulations if they exhibit any of the characteristics found in 40 CFR Part 261.20 through 261.24.

Included with your letter are process flow diagrams which appear to show the various wafer manufacturing process steps. While it is not entirely clear, it appears as though the wastewaters from these steps are all discharged into the same wastewater treatment system. As indicated above, the solutions and residues resulting from electroless plating operations would not meet the listing criteria, however, at least one of the other manufacturing process steps could be considered electroplating operations, e.g. chemical etching processes. If this is the case, then the sludges resulting from those operations would meet the F006 listing criteria.

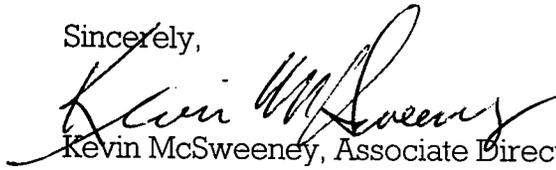
In accordance 40 CFR §261.3(a)(2)(iv), commonly referred to as the "mixture rule", any mixture of solid waste with one or more listed hazardous waste which has not been excluded from the regulations is a hazardous waste. Therefore, using the above assumption that all wastewaters are discharged into the same treatment system and that at least one of the other contributing manufacturing process steps could be considered an electroplating operation, and given the applicability of the mixture rule to this situation, all sludges removed from the same treatment system could be considered RCRA hazardous wastes. This is further explained in the attached memo dated September 13, 1999, entitled "Sludges from Wastewater Mixtures", from David Bussard, Director, Hazardous Waste Identification Division in the Office of Solid Waste, and David Nielsen, Director, RCRA Enforcement Division, in the Office of Regulatory Enforcement. In that memo, EPA states that the hazardous waste listings are intended to cover sludges resulting from mixtures of wastewaters from multiple processes.

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In summary, it could be concluded that the sludges resulting from your clients wastewater treatment operations do meet the criteria of an F006 waste. However, as indicated above this assumption is based upon the information you have submitted. A further clarification of your clients operations, including more specific engineering diagrams of the facility operations, including descriptions of process unit operations, material inputs, and chemical transformations, would be necessary in order to make a more accurate assessment of the wastes produced.

Should you have any questions regarding the above, please contact Sharon Leitch, of my staff. She may be reached at (617)918-1647.

Sincerely,



Kevin McSweeney, Associate Director of Waste Policy
Office of Ecosystem Protection

enclosure

cc: Ken Rota, EPA RCRA Technical Unit
Jeff Fowley, EPA Office of Regional Council
Steven DeGabriele, MADEP Bureau of Waste Prevention
Jim Miller, MADEP Bureau of Waste Prevention
Stacy Ladner, MEDEP
John Duclos, NHDES
Peter Marshall, VTDEC
Leo Hellested, RIDEM
Dave Sattler, CTDEP



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

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OFFICE OF
ENFORCEMENT AND
COMPLIANCE ASSURANCE

MEMORANDUM

Subject: Sludges from Wastewater Mixtures

From: David Bussard, Director 
Hazardous Waste Identification Division, Office of Solid Waste

David Nielsen, Director 
RCRA Enforcement Division, Office of Regulatory Enforcement

To: Robert Springer, Director
Waste, Pesticides, and Toxics Division, Region V

Recently, regional staff contacted our offices and asked for an agency interpretation of the regulatory status of wastewater treatment sludges that result from the mixture of wastewater that is a precursor to a RCRA hazardous waste sludge with wastewater that is not a precursor to a RCRA hazardous waste sludge. This memorandum provides further clarification of the status of sludges from wastewater mixtures and the effect of the 1994 opinion of the Seventh Circuit in *United States v. Bethlehem Steel Corp.*, 38 F.3d 862, on this issue. This memorandum covers not only the F006 listing at issue in the *Bethlehem Steel* case, but also F012, F019, K001-007, K151, K106, K032, K035, K037, K040, K041, K044, K046, K066, and K084.

It has always been EPA's interpretation that sludges from wastewater mixtures of the type described above are covered by the listing description. When promulgating the wastewater treatment sludge listings, EPA contemplated that the listings applied to sludges that result from mixtures of precursor wastewaters. For example, the F006 listing covers "wastewater treatment sludges from electroplating operations;" the listing is not modified in any way to suggest that it does not apply to sludges derived from combined wastewater streams. In fact, the F006 Listing Background Document describes a variety of sequential electroplating operations that generate rinsewaters/wastewaters. Some, but not all, of these rinsewaters/wastewaters are precursor wastestreams. Facilities with multiple operations routinely mix their wastewaters prior to treatment, and the Agency intended the listings to cover sludges from these mixtures of wastewaters.

The U.S. Court of Appeals for the Seventh Circuit rejected this interpretation in *Bethlehem Steel*. In this case, the court held that the F006 listing did not apply to sludges from combined wastewater streams. The court based its conclusion in part on the fact that "when the EPA intends to include waste mixtures in its listings, it knows how to do so," referring to EPA's amendment of the F001-F005 spent solvent listings to include solvent mixtures. 38 F.3d at 868.

The Agency previously discussed this Court decision in a November 1994 memorandum to the Regions.¹ As indicated in the November 1994 memorandum issued by OECA and OGC, we believe the Seventh Circuit incorrectly interpreted the F006 listing. But the decision is binding only on district courts in the Seventh Circuit; EPA's interpretation that mixed sludges are covered by the listing remains viable outside the Seventh Circuit. In the Seventh Circuit, we rely solely on the mixture rule in finding that sludges from combined wastewaters are also RCRA hazardous wastes under the federal RCRA program.

Sludges from mixed wastewaters are RCRA hazardous wastes under the mixture rule (40 CFR 261.3(a)(2)(iv)), regardless of the Seventh Circuit's interpretation of the scope of the F006 listing. As indicated above, the ruling in *Bethlehem Steel* held that, if F006 precursor wastewater from electroplating operations is mixed or combined with other wastewater prior to sludge formation, the resulting mixture is not classified as F006 waste. However, the mixture rule was not in effect at the time of that decision. Implicit in the court's decision in *Bethlehem Steel* is the conclusion that if the mixture rule had been in effect at the time of the decision, it would have applied to the treatment sludges from the combined wastewaters. The court specifically stated, "We conclude that the F006 listing does not, *independent of the mixture rule*, include Bethlehem's mixed wastewater treatment sludges." [emphasis added] 38 F.3d at 869. The sludge that is generated from the combined wastewaters is a mixture of a listed hazardous waste and a solid waste.

Because the mixture rule was not then in effect, it did not result in Bethlehem Steel's sludges being RCRA-listed wastes. Bethlehem Steel's sludges had been generated and managed during the period the mixture rule had been vacated under *Shell Oil Co. v. EPA*, 950 F.2d 741 (D.C. Cir. 1991). However, the mixture rule was reinstated in March 1992 (57 Fed. Reg. 7628), and thus it would apply to sludge from mixed wastewater generated and managed subsequent to the rule's reinstatement. Mixed sludges generated prior to the March 1992 reinstatement of the mixture rule are still regulated if they have been actively managed since.

It should be noted that only mixed treatment sludges that are separated and removed from the wastewater treatment plant/system are actually covered by the listings, but not the commingled wastewaters themselves. This is reflected in the Office of Solid Waste (OSW) interpretive letters. That is, OSW has clarified that electroplating rinsewaters are not specifically

¹ Memorandum to Regional Counsel and Waste Management Division Directors from Susan E. O'Keefe, Director, RCRA Enforcement Division, and Lisa K. Friedman, Associate General Counsel, Solid Waste and Emergency Response Division, November 21, 1994 (attached).

listed under 40 CFR 261 Subpart D; once the wastewater treatment sludge precipitates, it meets the listing description of F006 (with the exception of precipitates from rinsewaters from certain excluded electroplating processes). The wastewaters discharged from the treatment plant are nevertheless subject to regulation under the Clean Water Act.

This interpretation of the federal RCRA program should be communicated to the states and to the affected regulated community. We will work with you to more widely disseminate this interpretation to the regulated community. If you have any questions regarding this matter, please call Chichang Chen of OSW at (703) 308-0441 or Mary Andrews of ORE-RED at (202) 564-4011.

cc: Regional Counsel, Regions I - X
Waste Management Division Directors, Regions I - X
RCRA Enforcement Managers, Regions I - X