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United States Environmental Protection Agency
Washington, D.C. 20460
Office of Solid Waste and Emergency Response

June 2, 1993

Marshall D. Owens, Jr., P.E.
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Dear Mr. Owens,

Thank you for your letter dated October 27, 1992, concerning the regulatory status of a thermal processing unit located at the Borden Chemicals and Plastics ("Borden") facility in Geismar, Louisiana. As you know, in addition to your letter we received three written requests from Mr. Harvey Rosenzweig (legal counsel representing Borden) dated May 5, June 18, and July 7, 1992, prior to our meeting with you on September 23, 1992. Those letters requested that U.S. EPA Headquarters review a regulatory determination made by the U.S. EPA Region VI office regarding Borden's Valorization of Chlorinated Residuals (VCR) unit. Region VI had determined that the VCR unit meets the definition of an industrial furnace (specifically, a halogen acid furnace, or HAF) under the Resource Conservation and Recovery Act (RCRA), and would require a RCRA industrial furnace permit. Because the issues raised in all four letters sent to us address the same question, this response provides an answer to all four incoming letters. A copy of this response will be sent to Mr. Rosenzweig as well.

EPA shares your interest in the safe and efficient management of residual materials. I can assure you that my staff carefully considered the information you and your counsel presented. I appreciate your including for our understanding the economic and business considerations that were part of your decisions to construct the VCR unit and your goal of being a "generator only." After reviewing the information obtained from incoming letters, U.S. EPA Region VI personnel, and from our meeting on September 23,

RO 11751

our determination is that Region VI was correct in classifying the unit in question at the Geismar facility as a halogen acid furnace. Therefore, this unit would be subject to the regulatory requirements applicable to industrial furnaces burning hazardous waste, including RCRA interim status and permitting requirements. The rationale for this determination is presented in the remainder of this letter, and our response to your specific questions are attached to this letter.

Regulatory Status of HAFs

EPA's position is that the thermal decomposition of hazardous chlorinated residuals in devices like Borden's VCR unit necessarily involves the destruction of toxic organic compounds in addition to any energy recovery and/or reuse of secondary materials as feedstocks. Prior to the final rule promulgated for boilers and industrial furnaces (BIFs) in the February 21, 1991, Federal Register (56 FR 7134), HAFs burning hazardous waste were either regulated as incinerators or as industrial boilers (56 FR 7139). This is because HAFs were not specifically defined as an industrial furnace. Therefore, if a HAF burned hazardous waste and was not a boiler (no steam produced), and since HAFs were not listed as industrial furnaces in §260.10, by definition the unit was an incinerator. Since the promulgation of the BIF rule, however, the industrial furnace definition now includes HAFs (see footnote 1).

Based on all the information we reviewed, Borden's VCR unit meets the definition of a HAF. The preamble and regulatory language in both the proposed and final BIF rulemakings were very explicit concerning EPA's intent to regulate HAFs as industrial furnaces. EPA's rationale for regulating HAFs as industrial furnaces, and for designating any material fed to a HAF as "inherently waste-like," are reflected in the preamble from the April 27, 1990, supplemental notice, which states:

Materials fed to the HAFs are usually the residual still bottoms no longer suitable for use as feedstock to make new chemical products. Many are listed wastes, for example the generically listed F024. These materials contain dozens of Appendix VIII constituents not ordinarily found in the raw materials that are normally used to produce chlorine...Other than for their chlorine content, these organic toxicants do not contribute to

hydrochloric acid production; they are destroyed... Thus, these toxicants (which by volume comprise the greater part of these wastes) are discarded by thermal combustion. Second, inefficient combustion of the halogenated organic compounds in wastes fed to a HAF can pose the same risks to human health and the environment as combustion of those wastes in an incinerator, boiler, or other industrial furnace. We thus believe that hazardous materials burned in these devices are inherently waste-like. 55 FR 17892.

The development of the regulations pertaining to HAFs clearly indicates EPA's intent to regulate these units as BIFs within the Subtitle C management system in order to ensure adequate destruction of the toxic constituents. Despite opportunity to comment on our specific approach to HAFs in both the May 6, 1987, proposal and the April 27, 1990, supplemental notice, no party (including Borden) raised information to cause EPA to modify this approach.

In summary, EPA recognizes the benefits of burning hazardous waste in boilers and industrial furnaces, which include energy and material recovery, and the reduction of waste volumes requiring commercial treatment and disposal. We also must be able to ensure that burning hazardous wastes in boilers and industrial furnaces is performed in a manner that minimizes risks and is protective of human health and the environment. If you have any further questions please contact Ross Elliott of my staff at (202) 260-8551. Thank you very much for your time.

Sylvia K. Lowrance, Director
Office of Solid Waste

cc: Bob Holloway, USEPA; Matt Hale, USEPA; Brian Heineman, USEPA Region VI; Harvey Rosenzweig, Troutman, Sanders, Lockerman & Ashmore

1 The §260.10 definition of industrial furnace now includes "Halogen acid furnaces (HAFs) for the production of acid from halogenated hazardous waste generated by chemical production facilities where the furnace is located on the site of a chemical production facility, the acid product has a halogen acid content of a least 3%, the acid

product is used in a manufacturing process, and, except for hazardous waste burned as fuel, hazardous waste fed to the furnace has a minimum halogen content of 20% as generated."

Enclosure

EPA Response to Specific Questions
Raised by Borden Concerning VCR Process Unit
Located at Borden's Geismar, LA, Facility

The following arguments were raised at various points in the four incoming letters EPA received from Borden (and Borden's counsel) concerning the VCR unit in Geismar, Louisiana. They are addressed here in order to help clarify some of these issues.

Spent Sulfuric Acid Exemption - Borden made the argument that the chlorinated stillbottoms used in the production of "anhydrous hydrogen chloride" in the VCR thermal unit (and therefore the overall process itself) should be excluded from RCRA regulation because they are analogous to the materials covered by the exclusion in 261.4(a)(7) for spent sulfuric acid used as a feedstock to produce virgin sulfuric acid.

EPA promulgated the sulfuric acid exclusion to make clear that spent sulfuric acid recycled in industrial furnaces was not solid waste under the use/reuse provisions in 261.2(e)(1)(i) and (ii) (see January 4, 1985 Federal Register; 50 FR 634). In contrast, we felt that the industrial furnaces in which halogenated residuals are burned warranted regulation due to the highly toxic nature of the materials entering the unit, and the fact that many of these chlorinated organics were being thermally destroyed in the process (see 56 FR 7141).

Coke By-Product Rule - Borden believes that EPA's rationale supporting the exclusions found in the final rule on coke by-products is applicable to the chlorinated stillbottoms entering Borden's VCR thermal unit. Specifically, the coke by-product rule excluded from the definition of solid waste certain coke by-product residues that are TC (toxicity characteristic) hazardous, and are recycled in certain ways, including return to the coke oven as feedstock. The rationale for these exclusions is based on the presence of adequate air emission controls under the Clean Air Act, and applicability of the American Mining Congress court decisions ("AMC I" and "AMC II") in favor of excluding in-process recycling that does not contribute to the waste disposal problem. These exclusions are

also conditioned on there being no land disposal of the recycled material Borden feels that they can satisfy these conditions in their VCR process.

However, EPA based its coke by-product determination on data submitted by the American Iron and Steel Institute (AISI) in the form of a rulemaking petition. Using this data, EPA was able to determine that the addition of K087 (or other TC-hazardous coke residues) to coal prior to coking, to the tar recovery process as a feedstock, and to coal tar prior to sale, had no significant effect on the levels of hazardous constituents in the materials to which they were added, and equally important, no significant effect on air emissions. In this case, EPA was able to conclude that this type of recycling is not part of the waste disposal problem. With respect to Borden's case, the air emissions from the unit in question are clearly related to the hazardous waste input, even though the specific unit may well be well designed and operated such that the emissions are safe. We also believe that Appendix VIII constituents not ordinarily found in the raw materials normally used to produce chlorine do not contribute to hydrochloric acid production; they are destroyed (discarded) in the HAF.

RCRA Jurisdiction - In several of the incoming letters, the stillbottom materials being fed to the VCR unit were characterized as "previously unused and unconsumed organic intermediates" that are then "processed into usable anhydrous hydrogen chloride feedstock," for use in a continuing production process. The implication was that there is no Subtitle C jurisdiction over either the materials or the VCR process unit. The AMC court decisions were cited in support of these arguments.

EPA disagrees with this assessment. First, the stillbottom materials are considered to be chemical manufacturing residuals (i.e., by-products) (see footnote 2), as they were described when EPA listed these wastes as hazardous (K019 and K020) in 1980 (see footnote 3). Although land disposal and incineration were the common management practices industry-wide for these stillbottoms at that time, EPA also recognized that some of these by-products were being recycled as feedstocks in other processes. In fact, EPA still recognizes the reuse of these materials as feedstocks when fed to HAFs (see 56 FR 7141; 52 FR 17019). However, EPA retains jurisdiction over this type of reuse (i.e., the burning

of highly-chlorinated residuals as ingredients to make halogen acid), in part through the inherently waste-like designation (¶261.2(d)).

The AMC I decision regarding in-process recycling does not preclude the Agency from making inherently waste-like determinations. The inherently waste-like criteria originally discussed in the January 4, 1985 Final Rule (50 FR 637), were reiterated in a rulemaking proposed in response to the AMC I decision, in which EPA stated:

The factors the Agency is required to consider in designating secondary materials as solid wastes under this section address the element of discard necessarily involved in recycling these materials (e.g., whether the material is typically discarded, or whether it contains unusual hazardous constituents not found in corresponding virgin materials for which the secondary material substitutes which do not contribute to the recycling process, and whether the recycling process may pose a hazard to human health and the environment). The court's opinion does not affect this provision. (54 FR 523).

HAF Definition - Borden believes that the VCR unit does not meet the definition of HAF in ¶260.10, because it is not used for "the production of acid"; instead, Borden claims that the VCR unit is producing anhydrous HCl.

We understand that the production of aqueous HCl is the initial result of the thermal reactor and subsequent water quenching within the VCR process unit. When EPA was proposing a regulatory definition for HAFs, we were clearly targeting units that, in the example of chlorinated residues being burned, "...produce hydrogen chloride (HCl) from chlorine-bearing secondary streams by scrubbing HCl from combustion gases" (emphasis added) (52 FR 17018). The fact that the HCl is further processed, in subsequent concentration and distillation stages within the VCR process, to produce the desired anhydrous hydrogen chloride does not preclude the thermal portion of the unit from meeting the definition of a HAF.

However, should a particular unit (that is processing

hazardous secondary materials using controlled-flame combustion), both (1) not meet the definition of a HAF, or other industrial furnace specified in §260.10, and (2) not meet the definition of a boiler, then EPA would consider such a unit an incinerator (§260.10). (Based on the information provided concerning the production of steam from the thermal portion of the VCR process, it is possible that the unit may also meet the definition of a boiler.) This determination would be moot if the unit was otherwise classified as a HAF, which we believe it is.

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- 2 EPA defines a by-product as "...a material that is not one of the primary products of a production process and is not solely or separately produced by the production process. Examples are process residues such as slags or distillation column bottoms." (40 CFR 261.1(c)(3)).
 - 3 See Listing Background Document for Ethylene Dichloride and Vinyl Chloride Monomer Production, November 14, 1980.