

**UNITED STATES  
ENVIRONMENTAL PROTECTION AGENCY  
BEFORE THE ADMINISTRATOR**

**IN THE MATTER OF:** )  
 )  
**ZACLON, INC.,** )  
**ZACLON, LLC, and** ) **DOCKET NO. RCRA-05-2004-0019**  
**INDEPENDENCE LAND** )  
**DEVELOPMENT COMPANY,** )  
 )  
**Respondents.** )

**INITIAL DECISION**

**DATED:** June 4, 2007

**RCRA:** Spent stripping acid, which is recycled by using it as an ingredient in Respondents' manufacture of zinc ammonium chloride, is found to not be "reclaimed," as defined in 40 C.F.R. § 261.1(c)(4), and thus, not hazardous waste. Upon motion for accelerated decision issued previously, Respondents' baghouse dust, zinc ash, and zinc skimmings were found to be hazardous wastes on the basis that they were "accumulated speculatively" within the meaning of 40 C.F.R. § 261.1(c)(8) and Respondents were held to have stored them without a permit or interim status, in violation of Section 3005 of RCRA, 42 U.S.C. § 6925(a) and the state regulations implementing this provision, Ohio Administrative Code 3745-50-45. For this violation, Respondents are jointly and severally assessed a penalty of \$ 49,750.

**PRESIDING OFFICER:** CHIEF ADMINISTRATIVE LAW JUDGE SUSAN L. BIRO

**APPEARANCES:**

For Complainant: Thomas C. Nash, Esquire and Crissy L. Pellegrin, Esquire  
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U.S. Environmental Protection Agency, Region V  
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For Respondents: Martin H. Lewis, Esquire  
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## I. PROCEDURAL HISTORY

This proceeding was initiated on September 29, 2004 by the filing of a Complaint by the Chief of the Enforcement and Compliance Assurance Branch of the Waste, Pesticides and Toxics Division, United States Environmental Protection Agency, Region 5 (“EPA” or “Complainant”) pursuant to Section 3008(a) of the Resource Conservation and Recovery Act of 1976, as amended (RCRA), 42 U.S.C. § 6928(a). The Complaint charged Respondent Zaclon, Incorporated with one count of storing hazardous waste, namely baghouse dust and “sash” (zinc skimmings and ash from zinc metal melting kettles), at its facility without a permit or interim status, in violation of Section 3005(a) of RCRA, 42 U.S.C. § 6925(a) and Ohio state regulations implementing this provision, codified as Ohio Administrative Code (OAC) 3745-50-45. Complainant proposed a penalty of \$162,371 for the violation. Respondent Zaclon, Incorporated timely filed an Answer to the Complaint denying the violation.

After unsuccessfully engaging in Alternative Dispute Resolution, both parties filed their prehearing exchanges. Thereafter, upon motion granted, on August 18, 2005, Complainant amended the Complaint naming Zaclon LLC and Independence Land Development Company as additional Respondents.<sup>1</sup> On October 14, 2005, upon further motion granted, Complainant filed a Second Amended Complaint (hereinafter referred to as “the Complaint”), based upon information Complainant received from an inspection of Respondents’ facility conducted from August 10 through 12, 2005, which added a second count alleging another RCRA violation. Count 2 alleges that Respondents received, stored, and treated hazardous waste, namely spent stripping acid, without a permit or interim status, in violation of Section 3005(a) of RCRA and OAC 3745-50-45. The Complaint proposed a penalty of \$231,772 for this violation and also requested issuance of a Compliance Order. Respondents submitted an Answer on November 2, 2005, *inter alia*, denying the second count of violation.<sup>2</sup>

Complainant filed a Motion for Accelerated Decision on Liability as to Count 1 on August 19, 2005, which was opposed by Respondents, and granted by Order dated November 3, 2005, holding Respondents liable for Count 1 of the Complaint. The parties’ Prehearing Exchanges were then supplemented in regard to Count 2 of the Complaint. On February 3, 2006, the parties filed cross-motions for accelerated decision as to Count 2. By Order dated May 18, 2006, accelerated decision on Count 2 was granted, *in part*, in favor of Complainant, holding that the stripping acid was a “spent material” within the meaning of 40 C.F.R. § 261.1(c)(1) and OAC 3745-51-01(C)(1). The May 18, 2006 Order, however, denied Complainant accelerated decision as to the other issues relating to Respondents’ liability on Count 2, concluding that there

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<sup>1</sup> Zaclon, Incorporated, Zaclon LLC, and Independence Land Development Company are hereinafter collectively referred to as “Respondents” or “Zaclon.”

<sup>2</sup> Complainant subsequently submitted a motion to file a *third* Amended Complaint, to name as additional respondents in this action the individual owners of Zaclon, but the motion was denied by Order dated April 21, 2006.

were genuine issues of material fact as to whether the stripping acid was “reclaimed” and thus a “solid waste” and a “hazardous waste” under the applicable regulations. Respondent’s Motion for Accelerated Decision requesting dismissal of Count 2 was also denied by the May 18, 2006 Order. By subsequent Order dated May 23, 2006, Complainant’s Motion for Accelerated Decision on the Issue of Ability to Pay, opposed by Respondents, was granted.

An evidentiary hearing in this matter was held from June 6 through June 9, 2006, on the remaining issues related to Respondents’ liability on Count 2 and as to penalty on both counts. At the hearing, Complainant presented 55 exhibits (hereinafter cited as “C’s Ex. \_\_\_”) and the oral testimony of six witnesses: Karen L. Nesbit, Lt. Ollie Zahorodnij, Dr. Douglas S. Kendall, Dr. Christopher P. Weis, Joseph M. Boyle and Barrett E. Benson. Respondents presented at the hearing 32 exhibits (hereinafter cited as “Rs’ Ex. \_\_\_”) and the oral testimony of two witnesses: Joseph T. Turgeon and James B. Krimmel.

On or about August 1, 2006, the parties submitted their respective initial Post-Hearing Briefs in this matter (hereinafter cited either as “C’s [or Rs’] Brief”) and on or about August 31, 2006 submitted their respective Reply Briefs (hereinafter cited either as “C’s [or Rs’] Reply”). With those latter filings, the record closed.

## **II. FACTUAL BACKGROUND**

Zaclon owns and operates a facility located at 2981 Independence Road, Cleveland, Ohio, which is a chemical plant on a 35 acre site formerly owned by E.I. DuPont de Nemours and Company (DuPont) for over 100 years. The owners of Zaclon, James B. Krimmel and Joseph T. Turgeon, former employees of DuPont, purchased the facility from DuPont in June of 1987. Mr. Turgeon, Zaclon’s Chief Executive Officer, is a chemical engineer. Mr. Krimmel, Zaclon’s President, is a mechanical engineer. Zaclon has about 30 employees. The facility manufactures zinc-containing chemicals, including zinc chloride and zinc ammonium chloride, a flux used on iron or steel surfaces so that they can be galvanized with zinc.<sup>3</sup> The facility also manufactures other industrial chemicals, such as potassium silicates, and Quilon, which is a chrome complex and a fatty acid for adhesive release and water repellency on surfaces such as candy wrappers.

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<sup>3</sup> The chemical composition of zinc ammonium chloride, a salt, is:  $ZnCl_2 \cdot 2NH_4Cl$  (CAS no.14639-97-5). In metallurgy, “flux” is a substance that promotes the fusing of metals. The flux acts as a wetting agent aiding the flow of molten metals, a chemical cleaner removing oxidation from the metal, and a sealant preventing the formation of further oxides. Metal is passed through flux before being galvanized. “Galvanizing” is the coating of a ferrous metal (iron or steel) by passing it through a bath of molten zinc. Metals are galvanized to protect against corrosion. The Condensed Chemical Dictionary 397, 409, 948 (8<sup>th</sup> Ed. 1971) .

Zaclon uses secondary sources of zinc in its zinc chemical manufacturing processes.<sup>4</sup> One of the secondary sources of zinc it uses is a mixture of zinc skimmings and ash from the galvanizing process, called “sash” by Zaclon, stored in a pile on a pad, and which had been used by DuPont to make fluxes before Zaclon owned the facility. Another secondary source is baghouse dust, which is residue from filters in the brass industry. Since 1991, Zaclon has used stripping acid sent to its facility from galvanizing facilities as an ingredient in manufacturing zinc ammonium chloride.

On August 22, 2001, EPA and the Ohio Environmental Protection Agency (OEPA) conducted a RCRA compliance evaluation inspection of Zaclon’s facility. Thereafter, on September 19, 2002, EPA took samples of the sash and baghouse dust stored at the facility, and determined that they were hazardous wastes. In August 2005, OEPA conducted an inspection to determine Zaclon’s compliance with state hazardous waste laws. During this inspection, Zaclon’s process of using stripping acid was discussed with Zaclon’s representatives, and the inspector took photographs of the sash pile, parts of the zinc ammonium chloride manufacturing process, and other areas of the facility.

At all times relevant to the Complaint, Zaclon had not been issued a permit, and did not have interim status, to treat, store or dispose of hazardous waste. Complaint and Answer ¶¶ 23, 28, 70, 71.

### **III. APPLICABLE LAW AND REGULATIONS**

Subtitle C of RCRA, 42 U.S.C. §§ 6921-6939e, mandates comprehensive “cradle-to-grave” (*i.e.*, from generation to disposal) regulation of hazardous wastes. Section 3005(a) of RCRA, 42 U.S.C. § 6925(a), authorizes EPA to promulgate regulations requiring each person owning or operating a facility for the treatment, storage or disposal of hazardous waste (a “TSD facility”) to have a hazardous waste management permit, or “interim status,” which is granted by EPA upon application if the facility meets the requisite criteria.

Section 3006 of RCRA, 42 U.S.C. § 6926, provides that EPA may authorize states to administer their own hazardous waste programs in lieu of the federal RCRA program. EPA granted the State of Ohio final authorization to administer a hazardous waste program, effective June 30, 1989, and authorized Ohio hazardous waste regulations codified at OAC Chapters 3745-49 through 69. 54 Fed. Reg. 27170 (June 28, 1989). Section 3008 of RCRA, 42 U.S.C. § 6928, authorizes the Administrator of EPA to assess civil penalties and impose a compliance order upon his determination that a person has violated any requirement of Subtitle C of RCRA, including Federal regulations promulgated thereunder, or any authorized requirement of a state

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<sup>4</sup> “Secondary” sources are materials that potentially can be a solid waste when recycled, such as spent materials, sludges, by-products, and scrap metal. 50 Fed. Reg. 614, 616 n. 4 (Jan. 4, 1985).

hazardous waste program.

The federal and Ohio regulations provide that treatment, storage or disposal of hazardous waste by any person who has not applied for or received a RCRA permit is prohibited. 40 C.F.R. § 270.1(b); OAC 3745-50-45.

The term “treatment” is defined Section 1004(34) of RCRA, 42 U.S.C. § 6903, as:

any method, technique, or process, including neutralization, designed to change the physical, chemical, or biological character or composition of any hazardous waste so as to neutralize such waste or so as to render such waste nonhazardous, safer for transport, amenable for recovery, amenable for storage, or reduced in volume. Such term includes any activity or processing designed to change the physical form or chemical composition of the waste to render it nonhazardous.<sup>5</sup>

“Storage” is defined in 40 C.F.R. § 260.10 and OAC 3745-50-10 as “the holding of hazardous waste for a temporary period, at the end of which the hazardous waste is treated, disposed of or stored elsewhere.”

The term “hazardous waste” is defined as a “solid waste” which, with certain exceptions, exhibits characteristics of ignitability, corrosivity, reactivity or toxicity as defined in 40 C.F.R. §§ 261.20 through 261.24 and OAC 3745-51-20 through -24, or is listed following a rulemaking in § 261.31-33 and OAC 3745-51-30 through -33. 40 C.F.R. § 261.3 and OAC 3745-51-03. Solid wastes that are aqueous and have a pH less than or equal to 2 exhibit the characteristic of corrosivity and, with certain exceptions not applicable here, are hazardous wastes. 40 C.F.R. §§ 261.20(a) and 261.22; OAC 3745-51-22.

The term “solid waste” is defined as any “discarded material” which includes abandoned, recycled or inherently waste-like materials. 40 C.F.R. §§ 261.2(a)(1) and (2) and OAC 3745-51-02. As to recycled materials, the pertinent text of 40 C.F.R. § 261.2(c) and OAC 3745-51-02(C) provides:

Materials are solid wastes if they are recycled – or accumulated, stored or treated before recycling - as specified in paragraphs (c)(1) through (4) of this section.

(1) *Used in a manner constituting disposal.* \* \* \*

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<sup>5</sup> “Treatment” is similarly defined in 40 C.F.R. § 260.10 and OAC 3745-50-10 as “any method, technique, or process, including neutralization, designed to change the physical, chemical, or biological character or composition of any hazardous waste so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store, or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.”

(2) *Burning for energy recovery.* \* \* \*

(3) *Reclaimed.* Materials noted with a “\*” in column 3 of Table 1 are solid wastes when reclaimed (except as provided under § 261.4(a)(17)[spent materials generated within the primary mineral processing industry from which certain values are recovered by mineral processing or by beneficiation]).

(4) *Accumulated speculatively.* Materials noted with a “\*” in Column 4 of Table 1 are solid wastes when accumulated speculatively.

Table 1 in turn is noted with an asterisk (“\*”) in columns 3 (for reclaimed materials) and 4 (for materials accumulated speculatively) in several rows, including the row marked “spent materials.” The Table thus shows that “spent materials” that are “reclaimed” or “accumulated speculatively” are solid wastes.

The term “spent material” is defined at 40 C.F.R. § 261.1(c)(1) and OAC 3745-51-01(C)(1) as “any material that has been used and as a result of contamination can no longer serve the purpose for which it was produced without processing.”

A material is “reclaimed” if it is processed to recover a usable product, or if it is regenerated. Examples are recovery of lead values from spent batteries and regeneration of spent solvents.” 40 C.F.R. § 261.1(c)(4) and OAC 3745-51-01(C)(4).

The regulations provide the following exceptions from the definition of “solid waste” for recycled materials:

*Materials that are not solid waste when recycled.* (1) Materials are not solid wastes when they can be shown to be recycled by being:

(i) **Used or reused** as ingredients in an industrial process to make a product, provided the materials are not being **reclaimed**; or

(ii) Used or reused as effective substitutes for commercial products; or

(iii) Returned to the original process from which they are generated, without first being reclaimed or land disposed.\* \* \* \*

40 C.F.R. § 261.2(e)(1) and OAC 3745-51-02(E)(1)(emphasis added).

For purposes of Section 261.2, the regulations provide at 40 C.F.R. § 261.1(c)(5) and OAC 3745-51-01(C)(5) that:

A material is “used or reused” if it is either:

(I) Employed as an ingredient (including use as an intermediate) in an industrial process to make a product (for example, distillation bottoms from one process used as feedstock in another process). However, a material will not satisfy this condition if distinct components of the material are recovered as separate end

products (as when metals are recovered from metal-containing secondary materials); or

(ii) Employed in a particular function or application as an effective substitute for a commercial product (for example, spent pickle liquor used as phosphorus precipitant and sludge conditioner in wastewater treatment).

The burden of proof as to establishing an exception to the definition of “solid waste” is set out in the regulations at 40 C.F.R. § 261.2(f) and OAC 3745-51-02(F) as follows:

Respondents in actions to enforce regulations implementing Subtitle C of RCRA who raise a claim that a certain material is not a solid waste . . . must demonstrate that there is a known market or disposition for the material, and that they meet the terms of the exclusion or exemption. In doing so, they must provide appropriate documentation (such as contracts showing that a second person uses the material as an ingredient in a production process) to demonstrate that the material is not a waste, or is exempt from regulation. In addition, owners or operators of facilities claiming that they actually are recycling materials must show that they have the necessary equipment to do so.

#### **IV. CONSIDERATION OF RESPONDENTS’ LIABILITY ON COUNT 2**

##### **A. Findings of Fact**

1. Among other products, Zaclon manufactures and sells [**TEXT ASSERTED BY RESPONDENT AS CONFIDENTIAL BUSINESS INFORMATION “CBI” HAS BEEN REDACTED. HEREINAFTER SUCH TEXT IS MARKED AS “CBI deleted.”**] zinc ammonium chloride [**CBI deleted**]. Hearing Transcript (“Tr.”) 463-464. Zaclon’s zinc ammonium chloride is sold in both solid and liquid form. Tr. 464.
2. Zinc ammonium chloride is a galvanizing flux. Galvanizers purchase and use this flux in their zinc galvanizing process: specifically, after an iron or steel part is cleaned and rinsed, it is treated with or dipped in the flux just before it is galvanized, *i.e.* placed in molten zinc. The flux prevents oxidation and protects the iron surface to allow for efficient galvanizing. Tr. 234.
3. Stripping acid is hydrochloric acid used by galvanizers to remove zinc from the chains and other fixtures that are used to hold steel parts during the galvanizing process. Tr. 201. Other materials, such as iron, sulfate, cadmium, copper and lead that are on the fixtures, also get removed during the stripping acid cleaning process. Tr. 235. As the amount of zinc accumulates in the stripping acid, it loses its strength, and at some point can no longer be used for stripping and is thus “spent.” Tr. 201.
4. Zaclon, in turn, can and does use spent stripping acid generated by galvanizers as an

ingredient in manufacturing its zinc ammonium chloride flux bought by galvanizers. Tr. 464.

5. Therefore, Zaclon solicits and accepts spent stripping acid, meeting its certain specifications, from galvanizers, including those that purchase its zinc ammonium chloride. Tr. 463, 517, 771. Approximately twelve galvanizers, located in at least eight States (California, Illinois, Maryland, New York, North Carolina, Ohio, Pennsylvania and Virginia), supply spent stripping acid from their facilities to Zaclon. C's Exs. 18, 23; Rs' Ex. 30 (Bates stamp number ("Bates") RES00274).
6. Zaclon has been accepting and storing [CBI deleted] spent stripping acid since the mid-1990s. Rs' Ex. 8, 30 (Bates RES00273).
7. In-house legal staff for DuPont issued a legal opinion in 1986, before Zaclon acquired the facility, stating that the use of "pickle liquor" (stripping acid) was exempt from RCRA. Tr. 514-515; C's Ex. 21 (Bates 1196, 1197, 1214).
8. The New York State Department of Environmental Conservation ("NYDEC") issued a letter to Frontier Hot Dip Galvanizing, Inc. on February 6, 1991, stating that the "zinc-rich/low iron pickling acid" shipped to Zaclon as a substitute for "zinc chloride/hydrochloric acid mixture" for Zaclon's use as a raw material in making "marketable zinc salts," was exempt from regulation under RCRA "as it is being used or reused as an effective substitute for a commercial product." C's Ex. 21 (Bates 1198-1199).
9. Thomas J. Roth, an environmental scientist in the hazardous waste division of OEPA conducted a hazardous waste inspection of Zaclon's facility on January 5, 1994, and requested information about Zaclon's use of spent acid as feedstock in the zinc chloride process, to evaluate compliance with the hazardous waste rules. C's Ex. 21 (Bates 1210); Tr. 576-577. Zaclon submitted a response to OEPA dated January 28, 1994 with the requested information, including a flowchart and description of its process, culminating in production of zinc ammonium chloride. C's Ex. 21 (Bates 1211-1213).
10. Mr. Roth issued a letter dated December 23, 1994 to Zaclon, which stated in pertinent part:

On January 5, 1994, I conducted a hazardous waste inspection of your facility . . . to assess compliance with Ohio regulations applicable to a generator of hazardous waste.

Zaclon is a large quantity generator of a hazardous waste sludge (D006 and D008). This sludge is generated by the facility's zinc ammonium chloride process . . . . No violation of Ohio's hazardous waste regulations were discovered during this inspection.

Following this inspection, you were sent a letter dated January 14, 1994, requesting information about your zinc chloride process. This information was requested to aid this agency in determining whether or not the spent stripping acid being accepted by Zaclon was a hazardous waste.

The information (and other materials received from Zaclon since this initial submittal) indicates that Zaclon considers the stripping acid a product and that it is managed as such at the facility. This includes stipulating supplier specifications the stripping acid must meet before Zaclon will accept it. Materials are not wastes when they are reused in accordance with . . . (OAC) 3745-51-02(E)(1)(a). A material is reused if it is employed as an ingredient, including as an intermediate in an industrial process to make a product. (OAC 3745-51-01(C)(5)(a)). As you explained, some raw materials purchased are processed similarly to the stripping acid. Therefore, the stripping acid which Zaclon accepts to use in their process to produce zinc chloride is not considered a waste and is therefore also not a hazardous waste. This information is based on the information provided to the Ohio EPA.

Respondents' Exhibit ("Rs' Ex.") 2 (Bates RES00019).

11. Zaclon gave Mr. Roth's letter to its suppliers of spent stripping acid. Tr. 578-579.
12. In 2005, EPA Region 1 evaluated Zaclon's use of spent stripping acid in its manufacturing process in response to an inquiry made to it by Stone Environmental, an engineering firm hired by Voigt & Schweitzer of Taunton, Massachusetts, a "hot-dip galvanizing" facility which supplies stripping acid to Zaclon. By letter dated September 8, 2005, EPA Region 1 advised Stone Environmental that while Zaclon "uses spent stripping acid as an ingredient in the manufacturing of zinc ammonium chloride galvanizing fluxes," because "[p]rior to use, the stripper solution is treated by Zaclon to remove heavy metals and iron from the zinc chloride solution" "we have come to the conclusion that the stripper solution removed from the stripper tanks is a solid waste. The basis for our solid waste determination is that we consider the stripper solution to fall into the category of spent material being reclaimed (see 40 C.F.R. Part 261.2)." EPA further suggested the stripper solution was "hazardous waste." C's Ex. 26 (Bates 1408).
13. Also in or about 2005, the Cleveland Fire Department expressed concerns to OEPA and others about Zaclon. Tr. 34-35.
14. In response, Karen Nesbit, a hazardous waste facility inspector and Environmental Specialist for the Northeast District Office of OEPA, Division of Hazardous Waste Management, was asked to conduct an inspection of Zaclon. Tr. 34, 39; C's Ex. 19

15. As part of her preparation for the inspection, Ms. Nesbit reviewed OEPA's files on Zaclon, and saw initial interoffice correspondence written by Thomas Roth of OEPA suggesting that Zaclon needed a RCRA permit, as well as the letter subsequently issued to Zaclon by Mr. Roth on December 23, 1994 stating that the spent acid is not a waste and therefore the company did not need a RCRA permit. Tr. 37-38. Handouts in the file suggested to Ms. Nesbit that OEPA held meetings with Zaclon prior to issuing the December 23, 1994 letter, but there were no notes of those meetings in the file, and therefore there was a "lack of information" so that she was "not quite sure how the [no permit required] conclusion was made." Tr. 38, 123. In addition, pre-inspection, Ms. Nesbit was advised by Lieutenant Ollie Zahorodnij of the Cleveland Fire Department that in June 2005, there had been a fire at Zaclon in Building 39 during which abandoned laboratory chemicals were found (but the fire had no connection to the stripping acid process). Tr. 38-39, 133. Ms. Nesbit was also advised by OEPA prior to conducting her inspection that EPA was taking an enforcement action against Zaclon. Tr. 36.
16. Ms. Nesbit conducted an inspection of the Zaclon facility for compliance with state hazardous waste requirements from August 10 through 12, 2005. Tr. 40; C's Exs. 19, 22. This was Ms. Nesbit's first inspection of a chemical manufacturing facility and in her position she does not often deal with reclamation issues. Tr. 38, 141-142. She has a Bachelor of Science Degree from the University of Dayton in geology. Tr. 25. Joining her for the inspection were Suzanne Prusnek, a backup inspector from the OEPA Northeast District Office, and Mitch Matthews, an Environmental Specialist from OEPA's Central office, for technical assistance. Tr. 39-40, 127-128. During the inspection, the inspectors met with John Curry, Jon Hall, Joseph Turgeon and Joseph Busovicki of Zaclon. C's Ex. 22.
17. Ms. Nesbit prepared a report of her inspection of Zaclon's facility, including photographs, indicating several concerns regarding determination and handling of hazardous waste. C's Ex. 19.
18. As a result of Ms. Nesbit's inspection, on November 14, 2005, OEPA issued a Notice of Violation (NOV) to Zaclon. C's Ex. 22. The NOV cited as violations, *inter alia*, that Zaclon was managing hazardous waste, specifically sash and baghouse dust as well as stripping acid, at its facility without a permit. *Id.* Ms. Nesbit based her conclusion that Zaclon needed a RCRA permit in regard to the stripping acid on her understanding that Zaclon puts the acid through a "two step reclamation process" before use, which would not be required if "raw materials were used." *Id.* (Bates 1222).
19. Dr. Douglas Kendall, who has a doctorate degree from Harvard University in physical chemistry, has been a chemist at EPA's National Enforcement Investigations Center ("NEIC") for 24 years. Tr. 187; C's Ex. 33. His responsibilities include analyzing hazardous wastes and providing advice with regard to chemistry to EPA enforcement programs. Tr. 191. At hearing, he testified as an expert in chemistry and hazardous

- waste analysis, including zinc and iron chemistry, on behalf of Complainant. Tr. 199.
20. Dr. Kendall's testimony was based on his review of various documentation provided by Zaclon on its processes including two flow diagrams (Rs' Ex. 21, 24), a written description of the processes (Rs' Ex. 22, 25), and a list of chemical reactions in the process (Rs' Ex. 23). Tr. 199, 204.
  21. Dr. Kendall testified that Zaclon removes materials such as iron and lead from the spent stripping acid, "and then they're able to use the zinc and the chloride and the water in the spent stripping acid to produce a product, either zinc chloride or zinc ammonium chloride." Tr. 202.
  22. Mr. Barrett Benson is a Senior RCRA expert at NEIC and a licensed professional engineer, with a master's degree in environmental (sanitary) engineering, who testified as an expert in RCRA hazardous waste determinations and reclamation on behalf of Complainant. Tr. 882-887, 900. Mr. Benson began employment with NEIC in 1972, and has worked with RCRA regulations, including drafting comments on them, since 1976. Tr. 887, 892-894. He testified that he has inspected eight to ten reclamation facilities. Tr. 895.
  23. Mr. Benson opined at hearing that Zaclon's process of manufacturing flux from spent stripping acid is "reclamation." Tr. 913-915.
  24. Zaclon's specifications for the spent stripping acid it acquires from galvanizers are that it must contain at least 25% zinc chloride and less than 3% iron. Rs' Exs. 8 (Bates RES00066), 17, 18; C's Ex. 18 (Bates 0698, 0911, 0912), 21 (Bates 1205, 1216); Tr. 295.
  25. Zaclon encourages its suppliers of stripping acid to separate the stripping process into two tanks – one for pickling (to remove rust or scale) and the other for stripping the zinc – in order to minimize the amount of iron in the spent stripping acid supplied to Zaclon. Tr. 462.
  26. On occasion, Zaclon has received spent stripping acid that did not meet its specifications. For example, one supplier sent Zaclon spent stripping acid with 7%-over 9% iron in 1999; one supplier sent stripping acid with over 4% iron in 2000; suppliers occasionally sent Zaclon stripping acid with over 4% iron in 2001; three suppliers occasionally provided Zaclon with stripping acid with 4% to over 5% iron, one shipment contained over 8% iron in 2002; and Zaclon received a shipment of stripping acid with over 6% iron in 2003. Rs' Ex. 27 (Bates RES00221), 18 (Bates RES00225); C's Ex. 18 (Bates 0711, 0717, 0733, 0745, 0771, 0777-0781, 0784, 0788, 0791, 0797, 0822, 0823, 0849, 0891, 0903, 0904, 0945). The incidences of suppliers providing Zaclon with stripping acid not meeting its specifications decreased very substantially between 1999 and 2003.
  27. If the spent stripping acid it receives does not meet its specifications, Zaclon may reject

- the shipment and send it back to the supplier. Rs' Ex. 17 (Bates RES00221); Tr. 583-584.
28. In addition, Mr. Krimmel testified, and copies of invoices indicate, that Zaclon negotiates the price for spent stripping acid and whether Zaclon or the galvanizer pays the freight charges in the course of purchasing spent stripping acid from, and selling galvanizing flux to the galvanizer. Tr. 643-644; C's Ex. 18. In this negotiation, the higher the zinc chloride content in the stripping acid the more credit the galvanizer is given, and the higher the iron content, the more the galvanizer is debited. Tr. 644-648; C's Ex.18.
  29. If its suppliers did not send their spent stripping acid to Zaclon for its use in making zinc ammonium chloride, they would probably dispose of it as hazardous waste, Mr. Turgeon testified. Tr. 424.
  30. The spent stripping acid is transported to Zaclon's facility by tanker trucks. Rs' Ex. 21, 24.
  31. The spent stripping acid acquired by Zaclon has a pH of less than 2. Complaint and Answer ¶ 66. Therefore, it has the characteristic of corrosivity. 42 U.S.C. § 6921(a); 40 C.F.R. § 261.22.
  32. The spent stripping acid arrives at Zaclon as a solution, a liquid, which contains several distinct components, including water, zinc, chloride, iron, lead, copper, cadmium, and sometimes sulfate. Tr. 204, 209-210; C's Ex. 18 (Bates 0698).
  33. Mr. Krimmel testified that 65 percent of the spent stripping acid is water, 30 to 33 percent is zinc chloride, two to three percent is hydrochloric acid, and the remaining one half to three percent is iron and other heavy metals. Tr. 921.
  34. Samples of stripping acid typical of that found in the East and West tanks were found to contain **[CBI deleted]**. C's Ex. 18 attachment 11 (Bates 0965-0968); Tr. 211-212.
  35. Upon its receipt at Zaclon's facility, the spent stripping acid is initially placed into Zaclon's East and West tanks, for storage with other sources of zinc and chloride. Rs' Ex. 21; Tr. 204, 209, 211-212, 599; C's Ex. 18 attachment 11 (Bates 0965-0968). The other sources stored in those tanks are **[CBI deleted]**, sash and hydrochloric acid, and preflux (solution flux). Tr. 208-209, 242-243, 583; Rs' Ex. 21, 22; C's Brief n. 30.
  36. The spent stripping acid is normally used by Zaclon in its manufacturing process within a month of receipt. C's Ex. 19 (Bates 1073).
  37. The materials stored in the East and West tanks are then transferred to the South **[CBI deleted]** Tank and North **[CBI deleted]** Tank for processing. Tr. 215; Rs' Ex. 21.

38. Chemical reagents are added to the mixture in the South and North [CBI deleted] Tanks. Tr. 215. The chemicals added to the mixture include: [CBI deleted]. Rs' Ex. 21; Tr. 697.
39. The first chemical added to the mixture is [CBI deleted]. Tr. 600, 605. Since the year 2000, Zaclon has been adding [CBI deleted]. Tr. 216-217, 218-223, 226, 236-237, 596-597, 846. Prior to 2000, Zaclon used [CBI deleted]. Tr. 597. The [CBI deleted] reacts with the [CBI deleted] to yield water. Tr. 236. Ammonium becomes part of the final product, zinc *ammonium* chloride. Tr. 216-217. Raising the pH is required both to remove the iron and for making the final product. Tr. 216-217, 218.
40. At this point the solution contains zinc atoms, chloride atoms, and ammonium ions surrounded by water. Tr. 236-237. Dr. Kendall testified that "to some extent they'll associate. But to say that you've basically got a product molecule [of zinc ammonium chloride] at this phase, I don't accept that." Tr. 236-237.
41. The iron in the spent stripping acid is mostly in the [CBI deleted], and it is the contaminant present in the largest quantity in the spent stripping acid. Tr. 212, 214.
42. To remove the iron, the [CBI deleted] must be converted to [CBI deleted], which is less soluble. Tr. 214-215. [CBI deleted] is added to the mixture in the North and South [CBI deleted] Tanks as an oxidizing agent that converts [CBI deleted] to [CBI deleted], by reacting the [CBI deleted] with oxygen to remove an electron. Tr. 215-216, 218. Chloride and water also result from this reaction. Tr. 237-238. The ferric iron reacts with hydroxide to form ferric hydroxide (Fe(OH)<sub>3</sub>), which is rust, and which "precipitates," that is, forms into a solid which is suspended in the liquid solution. Tr. 218-219, 237-238; Rs' Ex. 23.
43. [CBI deleted] is occasionally added to the solution in the North and South [CBI deleted] Tanks. Tr. 605-607. Dr. Kendall testified that it would be used to add [CBI deleted] as a component of the final product and to react with hydrochloric acid to raise the pH. Tr. 222-223.
44. [CBI deleted] is sometimes added to the solution in the North and South [CBI deleted] Tanks. Tr. 608. Mr. Krimmel testified that it is not always needed because stripping acid normally does not have [CBI deleted]. Tr. 608. [CBI deleted]. Tr. 202, 223, 238-239; Rs' Ex. 23.
45. [CBI deleted] Tr. 223-224.
46. Zaclon uses a [CBI deleted] to separate the liquid from the suspended solids in the solution. Tr. 224. A filter cake forms, which is a waste. Tr. 221; Rs' Ex. 21, 22.

47. After the filtration, the solution contains water, zinc, ammonium, chloride, lead, cadmium and copper. Tr. 224-225, 233. The percentage of the total of lead, copper and cadmium in the solution is approximately [CBI deleted] . Tr. 272. Dr. Kendall testified that at this point “there are zinc ions in solution, . . . chloride ions in solution and . . . ammonium ions in solution, perhaps associated to some degree, but not in a nice neat form like [a zinc ammonium chloride molecule].” Tr. 239. He explained that there are zinc ions with a +2 charge, ammonium ions with a positive charge, and chloride ions with a negative charge, and that his “first assumption would be that each of those ions is surrounded by water molecules. But as you get to high concentrations of things like chloride and ammonium, some of these ions start to associate, start to complex. And in these concentrated solutions, it’s not easy to predict, at least for me, exactly what form these ions are in. I don’t believe they’re in the form of zinc ammonium chloride. But exactly what form they’re in, I don’t know.” Tr. 275.
48. This solution is then [CBI deleted] to remove the remaining cadmium, lead, copper and [CBI deleted] . Tr. 226; Rs’ Ex. 21, 22. At this point, [CBI deleted] are added to the solution. Rs’ Ex. 21, 22; Tr. 226. The [CBI deleted] increases the pH and adds zinc to the product, and the [CBI deleted] decreases the pH and adds [CBI deleted] to the product. Tr. 226-227. The adjustment of [CBI deleted] is very important for the process to work correctly. Tr. 227. The [CBI deleted] reduces the trace metals to an insoluble form, “plating out” the metals onto the surface of the [CBI deleted] . Tr. 226-230, 239-240, 610-611.
49. The solution then goes through a [CBI deleted] where the solids are separated from the liquids, and the solids are disposed of as a hazardous waste. Tr. 232; Rs’ Exs. 21, 22.
50. The solution then goes through a concentrator, where heat is applied to evaporate and thus reduce the water content. Tr. 232; Rs’ Ex. 21.
51. After this [CBI deleted] , the components of the solution are water, zinc, ammonium and chloride. Tr. 232-233. Dr. Kendall testified that in the solution there are separate ions of zinc, chloride and ammonium “floating around in solution, again, perhaps associated to some extent.” Tr. 240, 294-295. He stated that the zinc and chloride “are maintained in solution” and are “never physically separated,” but after the [CBI deleted] , the zinc and chloride in solution are “suitable for processing” into a product and become part of the end product. Tr. 268-269. The zinc, chloride and water from the spent stripping acid are used to produce zinc ammonium chloride. Tr. 202, 203.
52. In the [CBI deleted] Tank, normally, the ratio of zinc, ammonium and chloride are adjusted by the addition of [CBI deleted] . Tr. 614-615, 851; Rs’ Ex. 21. Sometimes, for liquid “high-speed flux,” the ammonium level is sufficient so that [CBI deleted] is not needed. Tr. 615.
53. Dr. Kendall testified that in the [CBI deleted] tank for the [CBI deleted] form, that is,

- the [CBI deleted] Tank, the product zinc ammonium chloride is formed, and that does not occur until every component is in the correct proportion and water is removed. Tr. 296-297, 849-851.
54. In lieu of using spent stripping acid to manufacture its zinc ammonium chloride, Zaclon can and does on occasion use [CBI deleted] or sash as alternative sources of zinc and chloride. Tr. 47-48, 202, 245, 583; Rs' Ex. 24. These materials are first placed into the [CBI deleted]. Tr. 47-48, 61, 63, 245, 710; Rs' Ex. 24. Zaclon also has used [CBI deleted], baghouse dust, and preflux, for manufacturing zinc ammonium chloride. Tr. 583, 587, 801; Rs' Exs. 21, 24.
55. Dr. Kendall testified that, according to Respondents' "Overall Zinc Products Manufacturing Process Flow Chart," zinc [CBI deleted] and hydrochloric acid could be processed in several different ways: (1) placed in the East and West storage tanks, to be processed into zinc ammonium chloride like the spent stripping acid; (2) put into manufacturing of zinc chloride solution; (3) [CBI deleted]; or (4) [CBI deleted]. Tr. 245-246; Rs' Ex. 24. He testified that the iron removal would be necessary if the material from the [CBI deleted] had more than the desired amount of iron, according to the specifications of the flux product, but if there is "fresh hydrochloric acid and pure zinc[CBI deleted], . . . you're not going to have any iron or [CBI deleted] and you can bypass those treatment steps and go right to the final processing steps." Tr. 246.
56. Dr. Kendall opined that the spent stripping acid is not as effective as using hydrochloric acid and zinc [CBI deleted] because with the latter, the iron and [CBI deleted] removal steps can be bypassed. Tr. 246-247.
57. [CBI deleted]. Tr. 49, 635; C's Ex. 19 (Bates 1073). Also it would need to go through [CBI deleted] if the zinc [CBI deleted] was not of the highest quality and had impurities in it. Tr. 130-131.
58. Zaclon's Flux Manufacturing Process Flow Chart, dated October 18, 2005, shows that by-product zinc chloride can be processed in three ways: (1) placed into the same process as the stripping acid, (2) [CBI deleted], or (3)[CBI deleted]. Rs' Ex. 21; Tr. 243. Dr. Kendall opined that the determination of which of the three types of processing is utilized would depend on the purity of the zinc chloride solution. Tr. 243-244.
59. Respondents agreed that Dr. Kendall correctly analyzed the chemistry of Zaclon's operations involving spent stripping acid. Tr. 593-594, 670, 857.
60. Mr. Turgeon testified that the liquid "zinc chloride solution" in the North and South [CBI deleted] tanks [CBI deleted] would flux steel, but not very efficiently particularly on "dirty steel," so that he would not sell it in such form, he would purify it. Tr. 494-95.

61. In 1994, as shown on Respondents' flowchart reflecting its stripping acid process in 1994. [CBI deleted]. C's Ex. 21 (Bates 1202, 1203); Tr. 249-252, 699. The material was then filtered, went through the [CBI deleted] tank, through a filter and evaporator, and into a [CBI deleted] storage tank. C's Ex. 21 (Bates 1202); Tr. 254. Next, in the continuing flowchart depicting Respondent's zinc ammonium chloride process, [CBI deleted] were added, it was then filtered and the material was processed to be ready for shipment as zinc ammonium chloride. C's Ex. 21 (Bates 1203); Tr. 255-256.
62. Zaclon previously used [CBI deleted] in the first step to adjust basicity, but later used [CBI deleted]. Tr. 519, 674-676. Mr. Krimmel testified that since March 2000, Zaclon adds the [CBI deleted] in the North and South [CBI deleted] tanks. Tr. 678, 697-701. Mr. Krimmel testified that since the mid-1990s, it does not use [CBI deleted] anymore, but instead uses [CBI deleted] in the [CBI deleted] tank and the [CBI deleted] tank. Tr. 672, 697.
63. Zaclon wrote a letter dated June 16, 2005 to Voigt and Schweitzer, one of the galvanizing companies that sends stripping acid to Zaclon, describing its spent stripping acid process. C's Ex. 24 (Bates 1399); Tr. 703-706. In the letter, [CBI deleted]. *Id.*; Tr. 258, 260-262, 277. [CBI deleted]. Tr. 277-279. [CBI deleted]. C's Ex. 24 (Bates 1399); Tr. 261-263.
64. Attached to that 2005 letter is a flowchart of Zaclon's zinc ammonium chloride process which appears to show the same process as the 1994 zinc ammonium chloride flowchart, after the point at which [CBI deleted] is produced. C's Ex. 21 (Bates 1203); C's Ex. 24 (Bates 1402); Tr. 254.
65. A letter dated October 19, 2005 from Zaclon to EPA describes Zaclon's zinc ammonium chloride process consistent with Zaclon's Flux Manufacturing Process Flow Chart. C's Ex. 23 (Bates 1280-1288); Tr. 247-249, 694-702.
66. Dr. Kendall opined that the 1994 process was clearly reclamation because the reclamation step occurs earlier, before the product manufacturing step, whereas in 2005 the reclamation and manufacturing steps are simultaneous. Tr. 281-284, 290; C's Ex. 21 (Bates 1202, 1203); Rs' Ex. 21.

## **B. Arguments of the Parties**

### **1. Complainant's Arguments**

As presented in its Brief, Complainant's position is that the spent stripping acid is a hazardous waste and a solid waste because Zaclon recycles the spent stripping acid by reclaiming it. Complainant asserts that Zaclon reclaims the stripping acid by processing it to remove contaminants including iron, copper, sulfate, cadmium and lead, and to recover zinc

chloride or the material values, namely zinc and chloride. Zaclon then combines the zinc and chloride with ammonium to produce the final product, zinc ammonium chloride. Complainant argues that the neutralization of the spent stripping acid, and the removal of iron, other heavy metals, sulfate and water constitutes “treatment” as defined in RCRA Section 1004(34). Complainant explains that this treatment neutralizes the spent stripping acid, changes its chemical composition, and removes toxic metal and other contaminants, thereby making it more amenable for recovery of the zinc and chloride it contains, thereby allowing Zaclon to process the spent stripping acid to recover a usable product. This treatment process constitutes reclamation, Complainant argues. C’s Brief at 9-14.

This argument is based on Complainant’s assertion that the removal of contaminants from a waste material is essentially a waste management activity. C’s Brief at 14, citing Tr. 959, 973. Complainant emphasizes that spent stripping acid, being a spent material – “used and as a result of contamination can no longer serve the purpose for which it was produced without reprocessing” -- has an inherently waste-like nature. Therefore, it is not like a byproduct which can be recycled and not considered a waste even when reclaimed. C’s Brief at 52. Mr. Benson testified that if Zaclon rejects a shipment of spent stripping acid which does not have a hazardous waste manifest, the shipment could be disposed of by a trucker into a sewer. Tr. 930.

From the 1985 Preamble to the rule setting forth the Final Definition of Solid Waste, Complainant points out that the definition of reclamation “relies heavily on a number of statutory definitions, including those of ‘resource recovery’ (RCRA Section 1004(31)) and ‘recovered material’ (RCRA Section 1004(19)).” 50 Fed. Reg. 614, 633 (January 4, 1985)(“1985 Preamble”). The latter term is defined as “waste material and byproducts which have been recovered or diverted from solid waste.” RCRA Section 1004(19). Complainant also quotes as follows from the 1985 Preamble: “We defined reclamation to constitute either regenerating waste materials or processing waste materials to recover usable products. In essence, reclamation involves regeneration or material recovery.” 50 Fed. Reg. at 633. The regulatory definition of reclamation relies heavily on the statutory definition of treatment, Complainant asserts. C’s Brief at 32. Citing to Mr. Benson’s testimony, Complainant argues that the removal of any contaminants constitutes reclamation because it undergoes “treatment” by changing the physical characteristic. Tr. 965-968, 973.

Mr. Benson testified that in his expert opinion, after consulting with Dr. Kendall and reviewing the documents regarding this case, Zaclon’s process of manufacturing flux is reclamation. Tr. 913-915. Mr. Benson explained that removing a contaminant constitutes reclamation “because you are changing the physical characteristic, which is the definition of treatment, which is what reclamation is,” and that when something is removed from a material, the material is changed and thus is reclaimed. Tr. 973. He referred to the heavy metals which are in solution in the stripping acid, and which Zaclon removes, as “toxics along for the ride.” Tr. 936-937. Mr. Benson explained that when the material goes into the North and South [**CBI deleted**] Tanks, it is being reclaimed. He described reclamation as “removing unwanted materials from a secondary material, so that you have . . . a better spent material so that you can operate with that and produce a product,” and “tak[ing] the material out of the stream so that we

have a purer stream that we can work with and eventually get down to where we can make a product,” which includes the “waste treatment activity” of removing the trace metals. Tr. 913-915; C’s Brief at 55. Mr. Benson asserted that the spent stripping acid is not “used as an ingredient” because “[a]n ingredient would be something that goes in, nothing is done to it to remove anything from it, and it is used as an ingredient through the process,” whereas only “*part* of the stripping acid is used to make a product,” and part of it is removed, which is reclamation. Tr. 952, 959. For example, he testified, removal of water from a secondary material is “part of reclamation” and “in a reclamation step.” Tr. 916.

Complainant states that reclamation “means treatment of a hazardous waste stream to allow a recycler to recover material values (in this case zinc and chloride) by removing contaminants . . . while neutralizing the acidity of the spent material so that the purified spent material (zinc chloride) can be used to make a product that can be sold (zinc ammonium chloride in Zaclon’s case).” C’s Brief at 60-61. Complainant defines a material which is reclaimed as a material which “is treated to neutralize the material or to facilitate the recovery of a usable product by altering the chemical composition or physical characteristics of the material.” C’s Brief at 64.

Complainant cites to a reference in the 1985 Preamble to “recovery of material values” as constituting “reclamation.” 50 Fed. Reg. at 620. Dr. Kendall testified that “material value” means that “either a waste or some components of a waste have some value in terms of producing a product. So if you can isolate those materials so that you can produce a product, you’ve got something of material value.” Tr. 203. Complainant argues that Zaclon processes the spent stripping acid to recover the “material values of zinc and chloride ions which are present in solution in the spent material when it arrives at Zaclon.” C’s Brief at 24. This is the “material recovery” constituting reclamation, Complainant asserts. Complainant argues in other words that the spent stripping acid is “processed by Zaclon to recover a ‘usable product,’ or products, zinc chloride, or zinc and chloride, which Zaclon then uses to produce a final product.” C’s Brief at 68.

Dr. Kendall disagreed with Zaclon’s statement that the “entire stream [of stripping acid] is consumed,” because part of the stream was iron, lead, cadmium, copper and sulfate, and these parts were removed. Tr. 256-257; C’s Ex. 21(Bates 1215). When Mr. Benson was asked whether, for reclamation, it matters how much material is present or taken out, he responded in the negative. Tr. 927. He also stated that removal of water is part of reclamation. Tr. 916. He explained further that if any amount of material must be removed in order to meet the specifications of the product, that is reclamation, but:

when you’re getting down to the limits of hydraulic chemistry in here and how much can come out, that is – if you got in, say, 10 parts per million and you could not get that out and it stayed with the material, that would not be reclamation. So, but if you can pull it out, it’s reclamation. Tr. 929-930.

As to whether the spent stripping acid is “used or reused as [an] effective substitute[] for

[a] commercial product” under OAC 3745-51-02(E)(1)(b) and 40 C.F.R. § 261.2(e)(1)(ii), Complainant asserts that it is not, citing to Dr. Kendall’s and Mr. Benson’s testimony. Dr. Kendall testified that to manufacture zinc ammonium chloride, spent stripping acid requires iron removal and trace metal removal, whereas zinc shot and hydrochloric acid can bypass those steps. Tr. 246-247. Mr. Benson testified that if the material went into the North and South [CBI **deleted**] Tanks, then it would not be used directly, but reclaimed, whereas if the material bypassed that and went directly into the solution flux tank, then it would be a commercial substitute. Tr. 936. Mr. Benson indicated that the presence of the toxic metals or other materials in the spent stripping acid renders it not essentially equivalent to a commercial product and therefore not exempt under 40 C.F.R. § 261.2(e)(ii). Tr. 937. He explained that “[r]ecycling of a material under RCRA is either use, reuse or reclamation. Reclamation trumps all use/reuse. If there is any reclamation occurring, you do not get use/reuse.” Tr. 936. He explained further that to be an effective substitute for a commercial product under OAC 3745-51-02(E)(1)(b) and 40 C.F.R. §261.2(e)(1)(ii), the material “has to be essentially equivalent. That means you can’t use twice as much to get the same result, you can’t have toxics along for the ride . . . .” Tr. 936-937.

## 2. Respondents’ Arguments

Zaclon’s position as set forth in its Brief is that it recycles the spent stripping acid by using it as an ingredient to make the product zinc ammonium chloride, and that the stripping acid is not reclaimed. Citing to the testimony of Mr. Krimmel, Dr. Kendall and Mr. Benson, Zaclon asserts that it is undisputed that no other “end products” are produced as part of the process. Tr. 268, 572, 954. Zaclon observes that there is no allegation that sham recycling is occurring at Zaclon’s facility. Tr. 129. Zaclon points out that from 1994 through 2005, the only substantial change to its process was [CBI **deleted**], and argues that this makes no difference from a regulatory standpoint. Rs’ Brief at 4.

Zaclon asserts that Complainant’s witnesses testified to definitions of reclamation which are inconsistent with the regulations and inconsistent with each other. Rs’ Brief at 4. In particular, Zaclon does not agree with Complainant’s, Mr. Benson’s and Ms. Nesbit’s interpretation of the term “reclamation” as encompassing any process in which any impurity is removed from the material, because the regulations say nothing about the removal of impurities. *See*, Tr. 124, 144, 915, 927, 959. Therefore, Zaclon asserts, their interpretations are “clearly wrong.” Rs’ Brief at 5. Zaclon cites with approval Dr. Kendall’s testimony, as follows:

Q: Now looking at this chart, where in the process exactly is zinc recovered?

A: Well, I would say throughout the whole process the zinc is recovered. The zinc is maintained in solution.

Q: But is it recovered as a separate product?

A: It’s never separated from that original solution, no.

Q: So it's never a separate end product?

A: No.

Q: Okay. How about chloride?

\* \* \*

A: It's never a separate end product in the sense that it's physically separated. It does become part of the final product.

Tr. 268.

Zaclon argues that because no product is manufactured and sold separately in the process of manufacturing zinc ammonium chloride other than the final product, there is no reclamation. Rs' Brief at 6. In support of this argument, Zaclon cites to the following excerpt from the 1995 Preamble to the Final Rule of the Definition of Solid Waste:

We also drew a distinction in the proposal between situations where material values in a spent material, by-product, or sludge are *recovered as an end-product of a process* (as in metal recovery from secondary materials) as opposed to situations where these secondary materials are used as ingredients to make new products *without distinct components of the materials being recovered as end-products*. The former situation is reclamation; the latter is a type of direct use that usually is not considered to constitute waste management. 48 Fed. Reg. 14487.

\* \* \*

We are adopting these provisions as proposed.

50 Fed. Reg. at 633 (emphasis added). Relying on this excerpt from the Preamble, Zaclon's position is that if distinct components of the material are not being recovered as separate end products, the spent material is not reclaimed and thus is not a waste.

Zaclon posits that the regulations pose the following series of questions to determine whether a material meets the exemption of 40 C.F.R. § 261.2(e)(1)(I):

(1) Is the material being recycled by being used or reused as an ingredient in an industrial process to make a product?

(2) If so, is the material processed to remove contaminants in a way that restores it to its usable original condition?

(3) If not, are distinct components of the material being recovered as separate end products? If not, it is not reclaimed and not a waste.

Rs' Brief at 8.

### 3. Complainant's Arguments in Reply

Complainant argues in reply that some of the steps of Zaclon's process are inherently waste-management processes. C's Reply at 1-2, citing 48 Fed. Reg. 14487. Complainant states that Zaclon's process is "essentially a waste treatment process to prepare the spent material for recycling by making it more amenable to recovery of material values present in the waste stream," quoting Mr. Benson's testimony:

Reclamation also would include having a waste stream zinc that's in solution and you're going to pull other material out so that your waste stream itself, in this case the spent material, remains . . . but the iron and anything else that would come out at that particular pH . . . then you still have the zinc chloride and the other chemicals that have been added to it . . . the reclamation is we take this material out of the stream so that we have a purer stream that we can work with and eventually get down to where we can make a product. Tr. 914-915.

C's Reply at 3-4. Removal of the trace metals is a second stage of facilitating removal of additional contaminants.

Complainant asserts that Zaclon reads the regulations backwards and presents a selective and misleading description of the application of the exclusion in 40 C.F.R. § 261.2(e)(1)(I). Complainant's view of the correct interpretation is first to determine whether reclamation has occurred by determining whether the material is "processed to recover a usable product" as stated in the definition of reclamation at 40 C.F.R. § 261.1(c)(4). If it has, then the analysis is finished, and the definition of use or reuse is irrelevant. C's Reply at 3.

Complainant argues that Zaclon first looks at the use or reuse definition and incorrectly considers that the phrase "recovered as separate end products" is a component of the definition of reclamation. Complainant asserts that the phrase is actually part of the definition of use or reuse, which is to be considered only if the material has been determined *not* to have been reclaimed, and therefore is "completely irrelevant" to this case. C's Reply at 5.

Complainant states that the "usable products" from Zaclon's process are zinc chloride or zinc and chloride. Complainant disagrees with Zaclon's statement that the regulations say nothing about removal of impurities, and asserts that the term "processing" in the regulations refers to removal of impurities. C's Reply at 7-8. Complainant points out that not all "products" are produced for sale; some "usable products" -- like the chloride and zinc at issue -- are produced as intermediates for combination with other products to manufacture a final product. *Id.* at 8. Complainant reiterates that the final product is not produced until the ratio adjustment step that produces the various grades of zinc ammonium chloride galvanizing fluxes. *Id.* Before that happens, the zinc and chloride have been reclaimed by being processed to make them amenable for recovery and use as intermediates in the manufacturing process. *Id.* at 8-9. The waste management-like treatment processes constitute the reclamation. *Id.* at 10. If the material must be processed first to make it amenable for recovery, or treated to remove contamination

before it can be used, the material is being reclaimed. *Id.* at 10-11. In contrast, when Zaclon uses by-product zinc chloride and transfers it directly to the Solution Flux Manufacturing Tank, it is direct use without any reclamation. *Id.* at 11.

Complainant points to a discussion in the 1985 Preamble distinguishing reclamation from non-regulated or “incidental processing,” which do not themselves regenerate or recover material values and are not necessary to material recovery, such as briquetting of dry wastes to facilitate resmelting. 50 Fed. Reg. at 639. The discussion states that “operations that do recover or regenerate materials so as to make them available for further use are considered to involve reclamation.” *Id.*

Complainant asserts that reclamation does not require that material values are recovered as *separate end products*, pointing to a discussion in the preamble to the Proposed Rule for the Definition of Solid Waste, which states that reclamation is “either regenerating waste materials or processing waste materials to recover usable products. Regeneration processes involve removing of contaminants or impurities so that the material can be put to *further use*. Examples are . . . most secondary metal reclamation, *including* smelting (recovery of usable metal from otherwise unusable metal).” 48 Fed. Reg. 14472, 14487 (emphasis added). Complainant asserts that the words “further use” and “including” mean that removal of contaminants to make the material amenable for further use is not excluded from the definition of reclamation just because the material values are not recovered as separate end products. C’s Reply at 13.

Complainant posits that the regulations pose the following series of questions to determine whether a material meets the exclusion of 40 C.F.R. § 261.2(e)(1)(I):

- (1) Is the material being recycled by being used or reused as an ingredient in an industrial process to make a product, provided the material is not being reclaimed?
- (2) Is the material being processed to recover a usable product?
- (3) If not, looking to the definition of use or reuse, does the exemption apply?

Complainant asserts that “an accurate reading of the RCRA regulations would show that reclamation trumps all use/reuse.” C’s Reply at 15.

#### 4. Respondents’ Reply Arguments

Zaclon asserts in its Reply Brief that it is not recovering a usable product nor regenerating stripping acid. Zaclon argues that Complainant misapplies the terms “treatment,” “recovery” and “removal,” and is attempting to regulate *all* spent materials under RCRA. Zaclon points out EPA’s acknowledgment, in the Preamble to the Final Rule Definition of Solid Waste, of its limit of jurisdiction over use of secondary materials in “normal manufacturing

processes” based on legislative history in which Congress had “rejected an approach that would have required modifying production processes in order to reduce the volume of hazardous waste generated.” 50 Fed. Reg. at 638.

Zaclon argues that if a material is exempt as a waste because it is recycled, then it is not a waste and the definition of treatment, is defined as “any method, technique or process . . . designed to change the . . . character or composition of any *hazardous waste*,” therefore does not apply. 42 U.S.C. § 6903(34). Zaclon argues further that “removal” of contaminants may be part of reclamation, but only if a material is being regenerated. Rs’ Reply at 4. Zaclon points out that Complainant has not cited any statutory or regulatory provision to support its argument that recovery of an *intermediate* product is reclamation. Zaclon asserts that the statutory definitions of “resource recovery” and “recovered material” support its argument, as Zaclon does not recover any material for use. Rs’ Reply at 5. Zaclon asserts that reclamation is a subset of use/reuse, and that RCRA encourages use/reuse, as evidenced by the regulations providing that use or reuse of a byproduct or sludge is exempt from RCRA even if there is reclamation, and that spent materials used or reused without reclamation are RCRA exempt. Rs’ Reply at 5-6.

Zaclon asserts that it does not matter when in the process the zinc ammonium chloride is formed, or whether it could be sold earlier or later in the process. Rs’ Reply at 6. Zaclon asserts further that changes in the process (type or reactant and where it was used in the process) were for cost and ease of use, and that from a regulatory or chemical focus it makes no difference. Rs’ Reply at 6, citing Tr. 276, 298.

### **C. Discussion**

This case reflects “a certain tension” carried within the RCRA program “between, on one hand, prophylactic regulation of recyclables in order to protect the public and the environment from the serious consequences of mismanagement of such materials, and, on the other hand, not inhibiting through such regulation the beneficial recycling and legitimate reuse of such material.” *Howmet Corp.*, RCRA (3008) Appeal No. 05-04 (EAB, May 24, 2007), slip op. at 16.

The broad question presented is whether Zaclon’s spent stripping acid meets one of the three exemptions in 40 C.F.R. § 261.2(e)(1) for materials that are not solid wastes when recycled. Materials can be shown to be recycled by being: (i) “Used or reused as ingredients in an industrial process to make a product, provided the materials are not being reclaimed; or (ii) Used or reused as effective substitutes for commercial products; or (iii) Returned to the original process from which they are generated, without first being reclaimed or land disposed.”<sup>6</sup>

The parties agree that the spent stripping acid is “used or reused as an ingredient in an

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<sup>6</sup> It is noted that the second exemption, Section 261.2(e)(1)(ii), regarding substitutes for commercial products, is not limited to non-reclaimed materials.

industrial process to make a product,” specifically zinc ammonium chloride, within the meaning of the exemption provided in subsection (i) of 261.2(e)(1). The undisputed evidence shows that there is no separation of zinc, chloride, or zinc chloride from the spent stripping acid or from the solution at any point in Zaclon’s process, from the time the spent stripping acid is received through the production of zinc ammonium chloride. Thus, the parties further agree that the only issue is whether any zinc, chloride or zinc chloride is being “reclaimed” in this process so as to not come within such exemption by virtue of the last phrase thereof.

The regulations provide that a “material is ‘reclaimed’ if it is processed to recover a usable product.” 40 C.F.R. § 261.1(c)(4). The parties disagree on the interpretation of this definition. Complainant focuses on the removal of impurities and de-emphasizes the words “recover a usable product,” interpreting them to mean making material values amenable for further use, or amenable for recovery. Zaclon interprets “reclamation” in accordance with what appears to be an alternate definition of “reclamation” within the definition of “used or reused.” That is, 40 C.F.R. §261.1(c)(5), the definition of “use or reuse,” provides that “a material will not satisfy this condition [being used or reused by being employed as an ingredient] if distinct components of the material are recovered as separate end products.” Subsection 261.1(c)(5) does not explicitly refer to reclamation. However, the similarity of the phrases “recover a usable product” and “recovered as separate end products” suggests inquiry as to whether the term “usable product” should be interpreted as being further defined as “separate end product[s].” Thus, the question is whether “to recover a usable product,” as reclamation is defined in section 261.1(c)(4), requires that an end product be separated from the material at some point before the final product is completed.

In interpreting a regulation, “the normal tenets of statutory construction are generally applied.” *Howmet Corp.*, RCRA (3008) Appeal No. 05-04 (EAB, May 24, 2007), slip op. at 13 (citations omitted). “The plain meaning of words is ordinarily the guide to the definition of a regulatory term” which is not otherwise defined in the regulation, and a regulation “must, of course, be interpreted so as to harmonize with and further, and not to conflict with, the objective of the statute it implements.” *Id.* (quoting, *inter alia*, *Secretary of Labor v. Western Fuels-Utah, Inc.*, 900 F.2d 318, 320 (D.C. Cir. 1990)). A preamble to a regulation is an authoritative Agency interpretation of the regulation, stating an Agency’s contemporaneous understanding of its proposed and final rules. *Morton L. Friedman and Schmitt Construction Co.*, CAA App. No. 02-07, 2004 EPA App. LEXIS 3 \* 67 (EAB, Feb. 18, 2004), *aff’d*, *Friedman v. U.S. EPA*, No. 2:04-CV-00517-WBS-DAD (E.D. Cal. Feb. 25, 2005). *Howmet Corp.*, slip op. at 14 (“[J]ust as legislative history can be helpful in interpreting a statute, regulatory history, such as preamble statements, assists us in interpreting regulations.”). On the other hand, Mr. Benson’s testimony, based on his experience and involvement with the hazardous waste rulemaking process, is helpful to understanding Complainant’s position but it does not provide any official Agency interpretation or controlling construction of the regulations. *Cf.*, *Consumer Safety Product Commission v. GTE Sylvania, Inc.*, 447 U.S. 102, 118 (1980)(“[O]rdinarily, even the contemporaneous remarks of a single legislator who sponsors a bill are not controlling in analyzing legislative history.”).

The 1985 Preamble states as follows in the discussion of the definition of reclamation in Section 261.2(c):

We also drew a distinction in the proposal between situations where material values in a spent material, by-product, or sludge are recovered *as an end product* of a process (as in metal recovery from secondary materials) as opposed to situations where these secondary materials are used as ingredients to make new products without distinct components of the materials being recovered as end-products. The former situation is reclamation; the latter is a type of direct use that usually is not considered to constitute waste management. 48 FR 14487.

\* \* \*

We are adopting these provisions as proposed.

50 Fed. Reg. 614, 633 (Jan. 4, 1985)(emphasis added). The 1985 Preamble states as follows as to Section 261.2(e), in pertinent part:

EPA proposed that secondary materials that are used as ingredients to make new products were not solid wastes provided that *distinct components were not recovered (i.e. reclaimed) as end products*. We also proposed that secondary materials used as substitutes for commercial products in particular functions or applications are not solid wastes. See 48 FR 14477, 14487-88. An example of the former practice – i.e., use as an ingredient – is the use of chemical industry still bottoms as feedstock.

50 Fed. Reg. at 637 (emphasis added).<sup>7</sup> The 1985 Preamble reiterates, “when a component of the material is recovered *as an end product*, the material is being reclaimed, not used.” 50 Fed. Reg. at 638 (emphasis added).

The Agency has consistently maintained this interpretation. Fifteen years later, the Agency stated:

EPA defines reclamation as either recovery of a useful product or regeneration of a product for its original use. 40 C.F.R. § 261.1(c)(4). Under EPA’s hazardous waste regulations, recovery is defined as the recovery of *distinct components of a secondary material as separate end products*. . . . [W]hen distinct components, such as metals, are not *separated from the material in which they are constituents*,

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<sup>7</sup> This passage also supports a finding that the spent stripping acid is not “used or reused as [an] effective substitute[] for [a] commercial product” within the meaning of the exemption of 40 C.F.R. § 261.2(e)(ii), as the spent stripping acid is used by Zaclon as an ingredient in manufacturing, rather than being used in “particular functions or applications,” such as in the given examples, use of hydrofluorosilicic acid as a drinking water fluoridating agent or use of spent pickle liquor as a wastewater conditioner. 50 Fed. Reg. at 637.

recovery has not occurred.

65 Fed. Reg. 12378, 12387 (Final Rule, 180 Day Accumulation Time under RCRA for Wastewater Treatment Sludges from the Metal Finishing Industry, March 8, 2000)(emphasis in original). Similarly, in a preamble to a proposed rule, the Agency stated, “[f]rom a strictly definitional standpoint, reclamation is ‘recovery of contained values in a matrix as a *usable end product*.’” 65 Fed. Reg. 42937, 42946 (Proposed Rule, Land Disposal Restrictions: Treatment Standards for Spent Potliners, July 12, 2000)(emphasis added). These excerpts specifically define “reclamation” as recovery of an *end product*, supporting Zaclon’s argument regarding the interpretation of the term.

Mr. Benson admitted that the only “separate *end product*” is zinc ammonium chloride. Tr. 953, 954, 961. While he asserted that zinc chloride “is what is taken from the stripping acid.” (tr. 953-954), the evidence shows that neither zinc, chloride nor zinc chloride were removed or separated from the solution at any point such that they could be considered as “separate end products.”

Complainant’s argument that the phrase “recovered as separate end products,” being part of the definition of use or reuse, is to be considered only if the material has been determined *not* to have been reclaimed (C’s Reply at 5) is inconsistent with the quoted preamble discussions, and furthermore, is not logical. If a material has *not* been reclaimed, then it likely cannot have “distinct components of the material . . . recovered as separate end products,” which phrase is covered by the term “reclaimed.” To accept Complainant’s argument would be to render the phrase inoperative, which would violate an elementary canon of construction. *Colautti v. Franklin*, 439 U.S. 379, 392 (1979)(It is an elementary canon of construction that a statute should be interpreted so as not to render any one part inoperative.). In addition, the Agency stated in the 1985 Preamble that in the proposed rule, the exclusions for using and reusing materials directly took the form of exceptions to the definition of reclamation, but the Agency has “redrafted the final regulation so that § 261.2(e)(1) indicates explicitly which secondary materials used/reused in particular ways are not solid wastes. A definition of “use/reuse” appears in § 261.1(c).” 50 Fed. Reg. at 638.

The 1985 Preamble explains:

When secondary materials are directly used (or, in the case of previously used materials, reused) in these ways, we stated, they *function as raw materials in normal manufacturing operations* or as products in normal commercial applications. We reiterate these positions in the final regulation. These direct use recycling situations represent exceptions to the general principle that accumulated hazardous secondary materials are hazardous wastes.

The final rule consequently states that secondary materials used as ingredients or used directly as commercial products are not wastes and so are outside the Agency’s RCRA jurisdiction. They thus are not subject to RCRA Subtitle C

regulations when generated, transported or used (unless they are accumulated speculatively . . . .)

\* \* \*

Our RCRA authority over recycling hazardous secondary materials is broad, but has some limits. The legislative history indicates that Congress rejected an approach that would have required modifying production processes in order to reduce the volume of hazardous waste generated. This is because such restrictions “i(n) many instances would amount to interference with the productive (sic) process itself . . . .” H.R. Rep. No. 94-1491, 94<sup>th</sup> Cong. 2d Sess. at 26. The Agency accordingly has interpreted its jurisdiction so as to avoid regulating secondary materials recycled in ways that *most closely resemble normal production processes*. These types of recycling are use of secondary materials as ingredients or as direct commercial substitutes, or . . . use in a closed-loop type of production process.

50 Fed. Reg. at 637-638 (emphasis added). That materials used as an ingredient in a process to make a product – where they “function as raw materials” and “closely resemble normal production processes” – are not reclaimed, shows that the Agency recognizes that such use may not be *identical* to use as raw materials or *follow exactly* the production process using raw materials.

The following passage in the 1985 Preamble was cited by Complainant in support of its position:

The Agency has defined “reclamation” in these regulations to mean recovery or regeneration. We further clarified, in the April 4 preamble, that processing steps that do not themselves regenerate or recover material values and are not necessary to material recovery are not reclamation. See 48 FR 1448 9/1. Examples are the wetting of dry wastes to avoid wind dispersal (id.) or the briquetting of dry wastes to facilitate resmelting. Another example . . . is sintering operations at iron and steel plants where taconite ores, flue dusts, and other iron-bearing materials are agglomerated thermally before charging to a blast furnace. Conversely, *processing operations that do recover or regenerate materials so as to make them available for further use are considered to involve reclamation*. Examples are dewatering of wastewater treatment sludges before the dewatered sludges are recycled, and the treatment of wastewater before recycling (See 48 FR 1448 7/1, explaining that both of these operations involve reclamation.)

50 Fed. Reg. at 639 (emphasis added). This passage is part of a discussion of closed-loop recycling, which involves wastes that are returned at the same plant site to the original production process from which the material was generated. The words “available further use” refer to further use at that same plant site in the process which generated the material, and therefore is of no relevance to the Respondents’ process. The portions of the preamble to the Proposed Rule, 48 Fed. Reg. 14472 (April 4, 1983)(“1983 Preamble”), that are referenced in this

passage are contained within discussions of storage in surface impoundments and closed-loop recycling. The Agency explained that “[s]urface impoundments containing hazardous waste pose a particular threat of contaminating grounds water and have always been one of the chief concerns of the hazardous waste management program,” and that “reclamation in surface impoundments is very similar to a use or reuse constituting disposal.” 48 Fed. Reg. at 14486-14487. The Agency provided an example of a sludge that is dewatered in a surface impoundment, then dredged and used as an ingredient in manufacturing cement. 48 Fed. Reg. at 14486. The Agency stated that the sludge is a solid waste when dewatered in the impoundment, because it is “reclaimed *or otherwise processed*,” and thus within the standard of the proposed regulatory provision, 40 C.F.R. § 261.6(b)(1), but “is not a solid waste once it is removed from the impoundment because it is being used as an ingredient, not reclaimed.” 48 Fed. Reg. at 14487 (emphasis added). While the Agency stated that “when wet sludges are dewatered in impoundments, recovery is occurring, since the sludges could not be recycled further without the dewatering step,” (48 Fed. Reg. at 14489), it also stated that “operations designed to reduce the volume of material” may be “conducted *incident to* or as part of reclamation operations,” and referred to “dewatering of sludges *before their reclamation* or use elsewhere.” 48 Fed. Reg. at 14504 (emphasis added). Upon a careful reading these passages, it is clear that the Agency acknowledges that dewatering or volume reduction does not necessarily constitute reclamation.

Thus, Complainant’s attempt to broaden the meaning of “processed to recover a usable product” to “processing to make available for further use” is not supported by the 1985 Preamble discussion of closed-loop recycling or by the discussion in the 1983 Preamble. Furthermore, it is not supported by the Agency’s clear distinction of the two types of reclamation: (1) recovery of a usable product, and (2) regeneration. 40 C.F.R. § 261.1(c)(4). Regeneration is defined as “process[ing] to remove contaminants in a way that restores them to their usable original condition” (50 Fed. Reg. at 633) or “removing of contaminants or impurities so that the material can be put to further use” as it was originally used.<sup>8</sup> 48 Fed. Reg. at 14487. The term “recovery” is defined generally as “recovery of material . . . from solid waste” (RCRA § 1004(22)), and in the context of reclamation, as “contained material values . . . recovered as an end-product” (48 Fed. Reg. at 14487) and “recovery of distinct components of a secondary material as separate end products.” 65 Fed. Reg. at 12387 (emphasis omitted). Any interpretation of “recovery” as merely “removal of contaminants or impurities” or “processing to make available for further use,” is inconsistent with these distinct definitions.

The definition of “reclaimed” requires the *actual* recovery of a usable product; it does not encompass processing so that material values or usable products *could* be recovered or so that they are “amenable for recovery.” The 1983 Preamble states that reclamation operations are “operations involving recovery of energy or material,” and that they *include* “treatment.” 48 Fed. Reg. at 14504. This does not mean that reclamation *is the same as* “treatment.” While all

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<sup>8</sup> The spent stripping acid is not being regenerated for use as stripping acid, so the definition of regeneration does not apply to Respondents’ process.

reclamation includes treatment, not all treatment is reclamation. The term “treatment” is defined as “any method technique or process . . . designed to change the . . . character or composition of . . . hazardous waste . . . so as to render such waste amenable for recovery.” RCRA § 1005(34). The Agency interpreted the phrase “amenable for recovery,” as “processes that make a waste or its contained values available for further use,” including processes that recover material or energy resources as well as treatment “up until the point reclamation commences.” 48 Fed. Reg. at 14504. Thus, the Agency acknowledged that reclamation occurs when the usable product is in fact recovered.

Further shedding light on the Agency’s interpretation of reclamation is its discussion of using spent sulfuric acid as a feedstock to produce virgin sulfuric acid. In this discussion, the Agency noted that the spent sulfuric acid is “normally reintroduced into the original sulfuric acid production process where sulfur values are recovered and absorbed into existing sulfuric acid.” 50 Fed. Reg. at 642. The Agency acknowledged the “confusion” generated by its discussion in the Proposed Rule (48 Fed. Reg. 14487 n. 30), and stated that “[t]he Agency still does not think this process involves reclamation, but “[t]o eliminate any uncertainty,” it specifically excluded it under 40 C.F.R. § 261.4(a)(7), on the basis that “the spent sulfuric acid recycling process more closely resembles a manufacturing operation than a reclamation process.” 50 Fed. Reg. at 634, 642. The Agency also considered that the operation is “well established” and “accounts for approximately 9% . . . of the roughly 33 million tons of sulfuric acid produced annually.” 50 Fed. Reg. at 642. The Proposed Rule discussion referenced therein reads as follows:

The Distinction Between “Use” and “Reclamation.” Proposed § 261.2(c)(1) contains an important clarifying clause indicating that three types of activity involving the use or reuse of spent materials, sludges or by-products do not constitute reclamation:

First, using materials as ingredients to make new products, without distinct components of the materials being *recovered as end-products*. Examples are zinc-containing sludges used as ingredients in fertilizer manufacture, and chemical intermediates (for example, distillation residues from one process used as feedstocks for a second process). FN 30.

FN 30 Another example, which occurs often in the chemical industry, is using spent sulfuric acid as an ingredient in producing sulfuric acid. In this operation, spent sulfuric acid is introduced as a feedstock where it is burned to derive sulfur as SO<sub>2</sub>. As part of the same process, this SO<sub>2</sub> is then *purified*, catalytically converted, and absorbed into existing sulfuric acid. This process does not constitute reclamation because the spent sulfuric acid is neither regenerated (impurities are not removed from the spent sulfuric acid to make it reusable) nor recovered (acid values are not recovered from the spent acid). It is being used as an ingredient.

This exception does not apply when the spent material . . . is itself recovered or when its contained material values are recovered *as an end-product*. For example, if a metal-containing sludge is processed to recover its contained metal values, the process constitutes reclamation, and the sludge, if listed, is a hazardous waste.

Second, using the materials as substitutes for raw materials in processes that normally use raw materials as principal feedstocks;

\* \* \* \*

Third, using the materials as substitutes for commercial products in particular functions or applications.\* \* \*

In these three cases, the materials are being used essentially as raw materials and so ordinarily are not appropriate candidates for regulatory control. Moreover, when these materials are used to manufacture new products, the processes generally are normal manufacturing operations . . . .The Agency is reluctant to read the statute as regulating actual manufacturing processes.

48 Fed. Reg. at 14487-14488 (emphasis added). This discussion further supports a finding that Zaclon's process is not "reclamation." In particular, it is noted that the spent sulfuric acid is "purified" as part of the process of using it as an ingredient in producing sulfuric acid.

Complainant's concern that the Respondents' removal of toxic metals from the spent stripping acid is a waste treatment activity does not override the Agency's definitions and explanations in the regulatory text and preambles thereto. Furthermore, the evidence shows that the toxic metals are filtered out and properly disposed of as hazardous waste. Tr. 232; Rs' Ex. 21, 22. The regulations do not preclude from the definition of "used or reused" the removal of impurities. Instead, the regulations address the purpose of the process -- to employ as an ingredient to make product -- and preclude only materials from which separate end products are recovered. This is consistent with the fact that in general, making a product with either raw materials or recycled materials involves the removal of impurities.

Indeed, Complainant has not compared using the spent stripping acid with using the virgin material, zinc *ore*, in making zinc ammonium chloride. Mr. Benson stated at the hearing that "if these toxics, if they are not in a *virgin ore* or something that is being used, it is not essentially equivalent" thereto. Tr. 938-939. As noted above, the Agency has stated with respect to use of secondary materials as ingredients, "[w]hen secondary materials are directly used . . . they function as *raw materials* in normal manufacturing operations" (50 Fed. Reg. at 637), and this may include virgin ores. Another reference to virgin ore appears in a preamble to a proposed revision to the regulations, in which the Agency asserted that an important consideration to distinguish exempted reclamation of sludges and byproducts from waste treatment is "the similarity [of the secondary material] to the raw material it is replacing, both in terms of material value to be recovered and concentration of toxic constituents." 53 Fed. Reg. 519, 526 (Proposed Rule, Identification and Listing of Hazardous Waste, Amendments to

Definition of Solid Waste, Jan. 8, 1988)(emphasis added). The Agency stated as an example that “an emission control dust . . . containing as much lead, and the same toxic constituents, as *ore concentrate*, is much more likely” to be in an exempted continuous production process “than a sludge from an unrelated industry . . . which contains less recoverable metal than the *virgin ore concentrate* and (more importantly) significant concentrations of toxic constituents not normally found in the *ore concentrate*. . . [which] often indicates that the recycling activity is largely a waste treatment process.” *Id.* at 526-527 (emphasis added). The Agency did not define a level of “significant concentrations of toxic constituents” to distinguish activities that are exempt from those that are waste treatment subject to regulation as hazardous waste.

Moreover, in this case, the Complainant has not presented evidence on the levels of impurities in the raw material, *zinc ore concentrate*, to show that Respondents’ process is distinct from a process using raw materials.<sup>9</sup> Instead, Complainant compares the use of *zinc shot*, which is refined and processed to remove impurities before it would arrive at Respondents’ facility.

Mr. Benson’s description of the metals involved in Respondent’s process as “toxics along for the ride” (tr. 937) could also be applied to toxic contaminants in raw materials such as *zinc shot* or *zinc ore concentrate*. His description reflects language in a Fifth Circuit decision, “[a] hazardous waste is not ‘employed as an ingredient’ if it contributes in no legitimate way to the product’s production . . . A substance cannot be an ingredient in making something if it is merely along for the ride.” *United States v. Marine Shale Processors, Inc.*, 81 F.3d 1361, 1366 (5<sup>th</sup> Cir. 1996). However, in that case, the material at issue was wholly incorporated into, but not of any value to, the product being manufactured. Similarly, the phrase “[n]o toxics along for the ride” also appears in an EPA Office of Solids Waste report entitled, “Re-Engineering RCRA for Recycling, Definition of Solid Waste Task Force: Report and Recommendations,” in which EPA defines the phrase as “hazardous constituents not necessary for the product to perform as was intended,” and explains that the phrase addresses concerns about *products* that contain hazardous wastes, which introduce “significant new risks into the marketplace,” particularly products used by the general public or applied to land, and EPA suggests that recycled products be compared to counterpart products made from virgin material to determine whether the former contain significantly higher levels of hazardous constituents. Rs’ Ex. 19 (Bates RES00137, RES00171-172). This concern does not apply to the product here, *zinc ammonium chloride*; the *zinc* and *chloride* are clearly of value in making *zinc ammonium chloride*, and the other metals are filtered out.

The 1985 Preamble discusses comparison of using the secondary material with using

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<sup>9</sup> See e.g., Technical Background Document supporting the Mineral Processing Supplemental Proposed Rule, RCRA Docket No. F-96-PH4A-S0001 (U.S. EPA Office of Solid Waste, Industrial and Extractive Waste Branch, Dec. 1995), available at <http://www.epa.gov/epaoswer/other/mining/minedock/id/id4-zin.pdf> (describing the processing of *zinc ore concentrate*).

virgin material, in distinguishing sham recycling from legitimate recycling:

[An] example of sham use occurs when secondary materials are used in excess of the amount necessary for operating a process. Examples are when secondary materials which contain chlorine are used as ingredients in a process requiring chlorine but are used in excess of the chlorine levels required. An indication that secondary materials are not being used in excess is if the recycler *requires product specifications on incoming materials*, and these specifications are in accord with those generally in use in the industry.

Another indication that a claimed recycling use is a sham is if the secondary material is not as effective as what it is replacing. Conversely, where the secondary material is *as effective as the alternative virgin material*, the activity is much more likely to be considered legitimate recycling. . . . A secondary material considerably less effective . . . could well be viewed as not being used legitimately.

A final indication of sham use is if the secondary materials are not handled in a manner consistent with their use as raw materials or commercial product substitutes. Thus, if secondary materials are stored or handled in a manner that does not guard against significant economic loss (i.e., the secondary materials are stored in leaking surface impoundments, or are lost through fires or explosions), there is a strong suggestion that the activity is not legitimate recycling.

50 Fed. Reg. at 638 (emphasis added).

Zaclon's process can be distinguished from these sham operations. There is no evidence that spent stripping acid is used in excess of the amount necessary for its zinc ammonium chloride process. There is no evidence that Zaclon stores the spent stripping acid in any manner that is not guarded against significant loss; the evidence does not establish that any fires or spills at the Zaclon facility involved spent stripping acid. Tr. 68-72, 133, 161, 166-167, 170-171, 173. Zaclon has product specifications on the spent stripping acid, that it contain no more than three percent iron, and a minimum of 25 percent of zinc chloride, and although Zaclon had accepted shipments of spent stripping acid with higher percentages of iron, such shipments decreased very substantially between 1999 and 2003. Rs' Ex. 17; C's Ex. 18 (Bates 0823, 0832, 0881). There is no evidence of specifications generally in use by the industry, as the parties have not referred to any businesses that use spent stripping acid to manufacture zinc ammonium chloride.

The evidence shows that Zaclon's process using the spent stripping acid is as effective in producing zinc ammonium chloride as using zinc shot and hydrochloric acid, in that there is no difference in the final product, zinc ammonium chloride, produced by spent stripping acid and that produced with zinc shot and hydrochloric acid. Because there is no evidence regarding use of zinc ore concentrate, there is no evidence that Zaclon's process is any less effective or efficient than using zinc ore concentrate.

Complainant's concern that transporters of the spent stripping acid may improperly dispose of any spent stripping acid that is rejected by Zaclon does not weigh in favor of a finding that it is reclaimed and thus a hazardous waste. If the spent stripping acid is not accepted by Zaclon, then it no longer meets the exemption for recycled materials used as an ingredient to make a product. At that point, it loses the exemption and is subject to regulation as a hazardous waste. If it is improperly disposed of, then the disposer would be liable for the illegal disposal of a hazardous waste. *See*, Tr. 969-970; 50 Fed. Reg. at 642 (spent sulfuric acid that is used as a feedstock to make virgin sulfuric acid is exempt from the definition of solid waste, but is a hazardous waste if disposed of).

Zaclon has demonstrated in the testimony and evidence presented at the hearing that "there is a known market or disposition for the material," in that Zaclon utilizes spent stripping acid for manufacturing zinc ammonium chloride, which it sells to galvanizers. *See*, 40 C.F.R. § 261.2(f). A preponderance of the evidence and testimony shows that Zaclon uses spent stripping acid as an ingredient in making the product zinc ammonium chloride without reclamation. Therefore, Zaclon meets the terms of the exemption of 40 C.F.R. § 261.2(e)(i) from regulation of the stripping acid as a hazardous waste. Accordingly, Count 2 of the Complaint is dismissed.

## **V. THE PENALTY ASSESSED FOR COUNT 1**

### **A. Calculation of Penalties under RCRA § 3008 and the RCRA Penalty Policy**

RCRA provides that any penalty assessed "shall not exceed \$25,000 per day of noncompliance for each violation of a requirement" of RCRA, and "[i]n assessing such a penalty, the Administrator shall take into account the seriousness of the violation and any good faith efforts to comply with applicable requirements." RCRA § 3008(a)(3), 42 U.S.C. § 6928(a)(3). The Civil Monetary Inflation Adjustment Rule, 40 C.F.R. Part 19, adjusts the \$25,000 penalty cap to \$27,500 for violations occurring between January 30, 1997 and March 15, 2004, to account for inflation. Under 40 C.F.R. § 22.27(b), the presiding judge "shall determine the penalty based on the evidence in the record and in accordance with any penalty criteria set forth in the Act," and "shall consider any civil penalty guidelines issued under the Act."

The civil penalty guidelines utilized by Complainant for calculating the proposed penalty in this case is the 1990 RCRA Civil Penalty Policy (Policy).<sup>10</sup> C's Ex. 14B. The Policy sets forth a methodology for determining a penalty by first assessing a gravity-based component to measure the

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<sup>10</sup> Complainant asserted that it used the 1990 RCRA Civil Penalty Policy rather than the updated 2003 RCRA Penalty Policy because the latter is not in the record and there is no material difference, for the purposes of this case, between the two policies. C's Brief at 74 n. 1. Respondent raises no issue in this regard.

seriousness of the violation, then adding a multi-day component for violations lasting more than one day, then making upward or downward adjustments to the penalty for factors of good faith efforts to comply, degree of willfulness and/or negligence, history of noncompliance, ability to pay the penalty, and “other unique factors,” and finally adding a component measuring any economic benefit of the noncompliance to the violator. *Id.*

Under the Policy, the gravity-based component is determined by assessing a level of minor, moderate or major for the factors of “potential for harm” from the violation and “extent of deviation” from the regulatory requirement. The three levels for each of the two factors (potential for harm and extent of deviation) form a matrix of gravity-based penalty amounts, with a range of penalties in each cell of the matrix. The Policy also sets forth a matrix for determining multi-day penalties.

## **B. Background as to Count 1**

Zaclon recycled sash and baghouse dust by using them, in addition to spent stripping acid and preflux, as ingredients in its zinc ammonium chloride manufacturing process. Sash is a by-product under OAC 3745-51-01(C)(3) and 40 C.F.R. § 261.1(c)(3), and baghouse dust is a sludge under OAC 3745-51-01(C)(2) and 40 C.F.R. § 261.1(c)(2). Ten samples of sash and five samples of baghouse dust were taken at Respondents’ facility on September 19, 2002 and EPA tested them under the Toxicity Characteristic Leaching Procedure. The testing showed that nine of the ten sash samples had a lead level above the toxicity characteristic regulatory level of 5.0 milligrams per liter (mg/L), and six of the ten had a cadmium level above the regulatory level of 1.0 mg/L. As to the baghouse dust, the testing revealed that three of the dust samples had a lead level above the regulatory level and four had a cadmium level above the regulatory level. Therefore, the sash and baghouse dust stored at the Zaclon facility exhibited characteristics of hazardous waste. The sash and baghouse dust were stored at Zaclon’s facility for at least six years prior to the September 19, 2002 sampling event. The sash was stored by Zaclon outdoors in an open pile, and the baghouse dust was stored outdoors on a ledge in torn bags, without a RCRA permit or interim status.

For a material to be a “hazardous waste” regulated under RCRA, it must meet the definition of “solid waste.” OAC 3745-51-03(A), 40 C.F.R. § 261.3(a). A “solid waste” is “any discarded material,” including certain materials that are “recycled.” Sludges and by-products that are recycled are “solid wastes” if they are “used in a manner constituting disposal” or “accumulated speculatively.” OAC 3745-51-02(C), 3745-51-02(E)(2); 40 C.F.R. § 261.2(c), (e)(2). A material that is stored is *not* “accumulated speculatively” if it is shown that the material is potentially recyclable, has a feasible means of being recycled, and during the year the amount of material that is recycled or transferred off site for recycling is at least 75 percent of the amount of material accumulated at the beginning of the year. OAC-3745-51-01(C)(8), 40 C.F.R. §261.1(c)(8). Such material must be “of the same type” and “recycled in the same way.” *Id.*

Zaclon admitted that it did not recycle annually at least 75 percent of the sash and

baghouse dust accumulated at the beginning of each of the six years preceding the 2002 sampling event. However, Zaclon argued that it did recycle annually more than 75 percent of a *combination* of the sash and baghouse dust, taken together with the spent stripping acid and preflux, and that these are materials of the “same type . . . recycled in the same way.” Zaclon claimed that at least 75 percent of the combined amount of these four materials accumulated at the beginning of each year was recycled, except admittedly for the year 2001. Upon Complainant’s motion for accelerated decision, Complainant showed, and Zaclon did not raise a genuine issue of material fact in regard thereto, that the four materials (sash, baghouse dust, stripping acid and preflux) have different characteristics and therefore are not of the “same type,” and thus, by Order dated November 3, 2005, it was held that Zaclon “accumulated speculatively” the sash and baghouse dust, and was liable for the violation alleged in Count 1.

### **C. Complainant’s Proposed Penalty for Count 1**

Complainant proposed to assess Respondent a penalty of \$162,371 for Respondent’s storage of the sash and baghouse dust, which are hazardous wastes, without a permit or interim status. Complainant calculated this penalty by first determining a gravity based penalty for one day of violation. Complainant assessed the “potential for harm” factor as “moderate,” considering the following: the sash was stored outside on a concrete pad with a ramp where runoff could occur; the baghouse dust was stored in bags which were broken open, and dust could become airborne and expose workers; the sash and baghouse dust had the potential to escape into the environment, and the lead and cadmium therein could contaminate groundwater or impact the nearby Cuyahoga River; and if large amounts of material build up at sites without being processed, it could result in abandonment of the waste, and by keeping almost 3 million pounds on site for several years, the intent of the RCRA regulatory program was undermined and thus harmed. C’s Ex. 15.

Complainant argues that evaluating the potential for harm must necessarily include consideration of the potential for harm as exacerbated by the conditions present at the facility as a whole. C’s Brief at 96. In this regard, Complainant cites the fact that the Zaclon facility has been in operation since the late 1800s, its infrastructure and buildings are old and in disrepair, that there is a record of spills, leaks and mismanagement of flammable hazardous waste, the fire suppression equipment is inadequate, and it has messy industrial hygiene practices which create an unsafe workplace for employees and a health risk to nearby businesses and emergency responders, where toxic and hazardous drums and other containers of incompatible material are maintained in near proximity to each other. Complainant asserts that Zaclon’s wastewater treatment system’s underground pipes are not acid resistant and have not been inspected since 1987. C’s Brief at 99-100; *see*, Tr. 752-753 (Mr. Krimmel testified that the polyvinyl chloride pipes in the system would be acid resistant, but that there are other types of piping in the system). Complainant asserts that the wastewater treatment system would not collect all releases on site, because as Mr. Krimmel testified, most of the site is paved with permeable gravel. C’s Brief at 100, citing Tr. 717-719; C’s Ex. 54. Complainant suggests that the accidents that have occurred at Zaclon’s facility could have been prevented if the company had obtained a RCRA permit and complied therewith.

In support of its assessment of a moderate potential for harm, Complainant presented the testimony of Karen Nesbit, the OEPA inspector who conducted the inspection of Zaclon's facility in August 2005. Ms. Nesbit photographed the concrete sash pad, observing that there were breaks in the secondary containment of the sash pad, one of which was the entranceway for the front-end loader Bobcat to scoop the sash and place it into the Coarse Zinc Wash (CWZ) dissolver. Tr. 51-57; C's Ex. 19 (Bates 1111-1117); C's Ex. 54. She further testified that as a result of her observations she was concerned that the Bobcat tracked the sash outside the pile, and that rain would cause sash to run out through the breaks in the containment. Tr. 54-55, 57. She saw and photographed sash material which had apparently leaked outside the secondary containment. Tr. 55-56; C's Ex. 19 (Bates 1116-1117). Ms. Nesbit further asserted at hearing that Mr. Krimmel admitted that rainwater ponded within the sash pad during rain events and that he did not cover the sash pile. Tr. 94-95. She also expressed concern that debris removed from the sash pile may be contaminated with sash and that the roll-off box container into which the debris was deposited was not being handled as hazardous waste. Tr. 52-54, 56-57; C's Ex. 19 (Bates 1113). Ms. Nesbit noted that the CWZ at Zaclon's facility, into which the sash is placed from the pile and reacted with hydrochloric acid, had secondary containment which contained greenish liquid, and stains indicating that the containment had been filled almost to capacity, and she testified that she did not know if it had any linings to withstand acid material Tr. 60-63, 560; C's Ex. 19 (Bates 1118). She also observed that there was no secondary containment under the East and West tanks, but only a "blind sump," that did not discharge. Tr. 64-66; C's Ex. 19 (Bates 1119, 1120). Further, that the filter press for the heavy metal removal tank in the zinc ammonium chloride process, with a 200 gallon container to collect the sludge from the filter press, was not labeled "hazardous waste" or kept closed when not receiving or being emptied of waste. Tr. 58-60; C's Ex. 19 (Bates 1114).

Additionally, Ms. Nesbit testified as to conditions at the facility which did not involve sash. During the inspection, she observed an open container and secondary containment full of ignitable hazardous waste from the Vanox process, floor dry absorbing waste material remaining on the floor, containers of unknown material, about 100 drums many of which were unmarked, rusting, bulging, open and/or in poor condition, some of which contained hazardous waste, as well as spent fluorescent bulbs in open, unlabeled boxes which did not minimize breakage. Tr. 76-80, 84-94, 97; C's Ex. 19 photo 11-14 (Bates 1123-1124), C's Ex. 22 ¶ 38 (Bates 1239). Ms. Nesbit further observed unmarked, unidentified containers of materials in Building 13 that could be chemically incompatible and reactive if they came into contact with each other. Tr. 98-105, 139; C's Ex. 19 photos 17-29 (Bates 1127-1139). Post-inspection, on November 14, 2005, OEPA issued a Notice of Violation to Zaclon and in response thereto Zaclon had the contents of the drums analyzed, and on or about April 28, 2006, submitted to OEPA a response to the NOV. Tr. 87-C's Ex. 22, C's Ex. 40 ¶ 38 (Bates 2119); C's Ex. 40-J. During a May 2006 inspection, Ms. Nesbit testified, she found many of the materials of concern in Zaclon's Building 13 had been removed and others were in the process of being removed. Tr. 105-106, 143.

Complainant also submitted into the record three Pollution Incident Reports regarding the

Zaclon facility: one from 1995 regarding a wastewater treatment pump failure and bypass discharge to the Cuyahoga River, one from 1997 regarding 50 drums including some that were bulging or spilling, and one from 2001 regarding a hydrochloric acid tank overfill. Tr. 107-116; C's Ex. 43-45.

Also in support of its assessment of a moderate potential for harm, Complainant presented the testimony of Lt. Ollie Zahorodnij, a certified firefighter, who has worked for the Cleveland Fire Department for 33 years, the last five years of which as a supervisor in the Fire Prevention Bureau, Hazardous Materials Section, where he does emergency hazardous material response, and conducts hazardous material-related inspections and other hazardous material activities. Tr. 150-152. Lt. Zahorodnij testified that he issued cease use and cease operations orders and notices of violation to Zaclon concerning installation of ammonia tanks without a permit and chemicals left behind by a plating company that leased and later abandoned Building 39 at the Zaclon facility. Tr. 154-155, 158-161. He stated that a fire had occurred inside Building 39 in June 2005, during which fire personnel observed that the fire protection sprinkler system was not operating and that Zaclon personnel were unable to advise them what materials were in the building. The day after the fire, Lt. Zahorodnij said, he conducted an inspection and found baghouse dust and lab chemicals in the Building. Tr. 166-170. As a result, the fire marshal filed an immediate peril complaint which was heard by the local Building and Housing court, upon which a plea agreement was reached and no fines were assessed against Zaclon. Tr. 177, 180-181. Lt. Zahorodnij further testified that a release of hydrochloric acid occurred in 2005 at Zaclon's facility as a result of overfilling a tank. Tr. 173. He recalled another hydrochloric acid spill a few years before that. Tr. 173. In addition, he stated that he issued a cease-use order in 1997 in regard to the Vanox process at the Zaclon facility, for leaky piping, leaky sprinkler system, spills of hazardous substances, underground tanks that were abandoned or not leak tested, and unidentified containers of hazardous substances. Tr. 161-165. Lt. Zahorodnij characterized Zaclon as using a "band-aid" approach of correcting problems when they arise, rather than a proactive approach of installing proper fire protection systems. Tr. 156, 180.

In further support of the moderate potential for harm, Complainant presented the expert testimony of Dr. Christopher Weis, a senior toxicologist with EPA's NEIC. Based upon his review of the documents filed in this case, Dr. Weis testified that lead, cadmium and zinc could leach out from the sash at Zaclon's facility at levels above those recommended by EPA, and that the leakage of sash from the secondary containment could "easily move into groundwater" and into the Cuyahoga River. Tr. 326-327, 341-342. He also testified that zinc is extremely poisonous to aquatic organisms and that the sash being so finely powdered may be released into the environment by wind and cause human exposure by inhalation. Tr. 341-342. Moreover, Dr. Weis stated that the mortar in the secondary containment of the CWZ could be corroded by the acidic fluid from the CWZ, and, in addition, if the tank failed, the fluid added to that in the secondary containment would overflow it, causing extreme hazards to nearby workers and a release to the environment. Tr. 343-344. The banding on the tank supports indicated to him that the secondary containment may have been full or even overflowed before, Dr. Weis stated. Tr. 344. Furthermore, Dr. Weis provided testimony on the health and environmental hazards

associated with other conditions at the facility. Tr. 346-358.

Finally in this regard, Complainant presented the testimony of Mr. Joseph Boyle, Chief of the Compliance and Enforcement Assurance Branch of the Waste, Toxics and Pesticides Division of EPA Region 5. Mr. Boyle testified that Zaclon's failure to apply for a RCRA permit for hazardous waste units caused harm to the regulatory program because a permit establishes practices to protect safety and prevent damage to health and the environment. Tr. 404-405. The permit application, he stated, requires the applicant to describe secondary containment, tanks, piping, personnel training, plans and financial resources to close hazardous waste units, and insurance coverage for bodily injury or property damage from hazardous waste accidents. Tr. 405-407. Without a permit application, members of the public, businesses and government entities have no opportunity to review the proposed permit and comment on it. Tr. 408.

In view of the testimony it presented, Complainant argues that there is a high probability that the violation may have resulted in a release of sash and baghouse dust to the environment and therefore the characterization of the "potential for harm" as "moderate" is warranted. C's Brief at 102.

Complainant also assessed the "extent of deviation" from the regulatory requirement in this case as only "moderate" based on the fact that Respondent did recycle some of the sash and baghouse dust, and attempted to sell it for recycling. Moreover, from the cell of the matrix for moderate potential for harm and moderate extent of deviation, Complainant chose a gravity based penalty of 40 percent of the cell value, based on Respondent's cooperation in complying with information requests, evidence that all of the baghouse dust has been recycled and sash is being recycled, the fact that Zaclon is a small business under 13 C.F.R. Part 121, and that there were many days of violation since the baghouse dust and sash were first purchased. C's Ex. 15.

Additionally, Complainant assessed a multi-day penalty based on the time period between January 1, 2000, which is the date that the sash and baghouse dust became a hazardous waste after 75 percent was not recycled in 1999, until the sampling inspection on September 19, 2002. In its discretion, EPA assessed a penalty for only 179 days after the first day of violation. Complainant calculated a multi-day penalty of \$869 per day, multiplied by 179 days, or \$155,551. Added to the penalty for the initial day of violation, the gravity based penalty is \$162,371.

Finally, Complainant did not adjust the penalty for any of the adjustment factors set forth in the Penalty Policy. Complainant determined that any economic benefit of noncompliance was insignificant, as Respondent could have complied with the requirements by recycling more sash and baghouse dust. Complainant also did not increase the penalty for history of violations because no RCRA inspection of Zaclon's facility had been conducted in the five years prior to the August 2001 inspection.

#### **D. Respondents' Penalty Arguments**

Zaclon requests imposition of a substantially reduced penalty from that proposed by Complainant in regard to Count 1. Zaclon argues that no EPA witness testified in support of the calculation of the proposed \$162,371 penalty, that the potential for harm and extent of deviation should be “minor,” rather than “moderate,” and that Zaclon was not given credit in the proposed penalty calculation for its good faith belief that it was in compliance with the 75 percent requirement. Rs’ Brief at 9, 12. Zaclon emphasizes that if it recycled the sash at a rate of 75 percent annually, such sash would not be hazardous waste, but would be exempt. *Id.* at 10.

Additionally, Zaclon points out that there was no documentation of wind dispersal of sash, or of its moisture content, and that any leaks from the pad are captured and diverted to its wastewater treatment system. *Id.*; Rs’ Ex. 10. Also Zaclon argues that the Initial Pollution Incident Reports have no follow-up documentation, such as notice of violation or citation, which suggests that there was no confirmation of any violation nor any harm resulting. Rs’ Reply at 9. It points out that there is nothing in the record to suggest that gravel areas are more harmful environmentally than paved areas regarding runoff, and nothing in the record to suggest that there are any inspection requirements, leakage or compliance issues with regard to its wastewater treatment plant. Rs’ Reply at 9. Furthermore, in that the sash and baghouse dust had been stored directly on the ground for many years before the construction of the concrete pads, the ground beneath is “in all probability, compromised,” Zaclon argues, and any incremental increase of materials would be insignificant in comparison. Rs’ Ex. 10.

Further, the record indicates that most of the sash and baghouse dust existed at the site since before Zaclon owned it, and was used by DuPont in manufacturing fluxes. Tr. 510-512, 548. DuPont received the sash with the debris in it. Tr. 554. In a letter dated March 24, 1987 to the facility, then owned by DuPont, OEPA stated that its inspection of the facility on March 18, 1987 to determine compliance with State and Federal hazardous waste regulation, revealed no violations. Rs’ Ex. 1. During a 1994 inspection, no hazardous waste violations were found either, according to a letter dated December 23, 1994 from Mr. Roth. Rs’ Ex. 2. In a letter to EPA dated July 29, 2003, Mr. Krimmel stated that Zaclon had recycled all of the baghouse dust, and that the pad on which it was stored is empty. C’s Ex. 9 p. 3.

Mr. Krimmel testified that the east half of the pad underlying the sash pile was built in 1972, that he designed it, and that it is constructed of 10 inch double reinforced concrete, and the construction joints have a polyvinyl chloride (PVC) water stop in them. Tr. 548-550; Rs’ Ex. 8. The walls of the pad are made of 12 inch double reinforced concrete with two water stops on the connections to the pad. Tr. 550. Moveable highway concrete barriers, called “Jersey barriers,” close off a 20-foot opening in the wall. Tr. 549, 555, 557-559. The opening in the barriers for the scoop front-end loader is designed with a rise to retain water on the pad. Tr. 550. As to the west half of the pad, Mr. Krimmel stated he thought it was built in the 1940s or 1950s. Rs’ Ex. 8.

Additionally, Mr. Krimmel testified that the areas around the pad are paved, not gravel. Tr. 551. He said that rainwater runoff leads to Zaclon’s storm sewer system and it is treated by Zaclon’s wastewater treatment plant along with non-contact cooling water, after which Zaclon

reuses most of it and discharges a small portion to the publicly owned treatment works. Tr. 551-553. He mentioned that there is a sewer near the area where the sash leaked out of an opening in the wall. Tr. 559. Mr. Krimmel asserted that the debris from the sash pile is now being disposed of as hazardous waste. Tr. 556. Moreover, he testified that under the CWZ dissolver, the secondary containment area is constructed of acid-proof brick and acid-proof mortar, and is impervious. Tr. 560. He testified that Zaclon's operating instructions are to keep the secondary containment pumped out and that it is not the routine practice for liquid to fill it. Tr. 560-561.

Mr. Krimmel further testified that Zaclon is in the process of recycling 75 percent of the material on the sash pad and that they have conveyed that information to OEPA. Tr. 586. He asserted that it had been his belief that he was always in compliance with that requirement on the basis of combining the amounts of sash, baghouse dust, stripping acid and preflux as one type of material. Tr. 586-587.

#### **E. Potential for Harm**

The Policy states that "potential for harm" is based on two types of harm: (1) the risk of human or environmental exposure to hazardous waste or hazardous waste constituents that may be posed by noncompliance; and (2) the adverse impact noncompliance may have on the regulatory purposes or procedures for implementing the RCRA program. Policy at 13-14. The risk of exposure depends on the probability of exposure and the potential seriousness of contamination. As to probability of exposure, the Policy states:

Where a violation involves the actual management of waste, a penalty should reflect the probability that the violation could have resulted in, or has resulted in a release of hazardous waste or constituents, or hazardous waste conditions creating a threat of exposure to hazardous waste or waste constituents. The determination of the likelihood of a release should be based on whether the integrity and/or stability of the waste management unit is likely to have been compromised.

Policy at 13. Facts relevant to the probability of exposure are evidence of release, evidence of waste mismanagement, and adequacy of provisions for detecting and preventing a release. *Id.* at 13-14.

Potential seriousness of contamination is weighed by considering the quantity and toxicity of the wastes, likelihood of transport by way of air or water, and existence, size and proximity of receptor populations of humans, animals, or wildlife, and any sensitive environmental media. Policy at 14.

The Policy (at 15-16) provides that a violation is assessed as "major" if the violation poses or may pose a *substantial* risk of exposure of humans or other environmental receptors to

hazardous waste or constituents; and/or the actions have or may have a substantial adverse effect on statutory or regulatory purposes or procedures for implementing the RCRA program. It is assessed as “moderate” if the violation poses or may pose a *significant* risk of exposure and/or adverse effect, and as “minor” if the violation poses or may pose a *relatively low* risk of exposure and/or the actions have or may have a small adverse effect.

The testimony and evidence shows that the sash had leaked out by rainwater runoff through a breach in the wall surrounding the pad, and was tracked out from the pad from the openings in the wall around the pad. Tr. 551. The evidence suggests that it is possible that hazardous waste constituents, such as lead, zinc and cadmium, could have leached into groundwater by rainwater runoff from the sash pile and absorbed into permeable gravel surfaces at the facility, and from there leached into groundwater and/or the Cuyahoga River. The testimony and evidence also shows that the secondary containment around the CWZ had been full, but the record does not indicate how often or whether it overflowed.

As to potential seriousness of contamination, at the time of the August 2001 inspection Zaclon had approximately 2,711,526 pounds of sash and 100,144 pounds of baghouse dust at the facility. C’s Exs. 8 (Bates 0039), 12 (Bates 0396, 0398). Upon analysis of the samples taken on September 19, 2002, the sash was found to contain a mean concentration of 64.69 milligrams per liter (mg/L) of lead and 1.409 mg/L of cadmium, and the baghouse dust was found to contain 7.07 mg/L of lead and 1.73 mg/L of cadmium. C’s Ex. 8B-5 (Bates 0067). The regulatory limits are 5.0 mg/L of lead and 1.0 mg/L of cadmium. *Id.* Respondents’ evidence shows that sash is composed of an average of 60 percent zinc, 1.3 percent lead, and 0.17 percent cadmium, and the baghouse dust is composed of 39.4 percent zinc and 0.072 percent lead. Rs’ Ex. 8. However, the potential seriousness of contamination from the violation, and thus the potential for harm, is mitigated by the fact that there are no sensitive environmental media or large populations of animals or wildlife in close proximity to the facility, and the humans most likely to be potentially impacted are Zaclon’s employees and any emergency responders, because the facility is located in an industrial area. Tr. 465.

The potential for harm is the degree of risk of exposure and adverse effect posed or possibly posed by *the violation*. Here, the violation is the storage of material which is a hazardous waste on the basis of speculatively accumulating it rather than recycling annually 75 percent of it, which does not suggest a significantly higher risk of exposure than if Respondents had met the 75 percent standard and purchased more sash to recycle. However, the failure of Zaclon to either apply for a RCRA permit or to recycle the sash and baghouse dust in sufficient amounts undermines purposes and procedures of the RCRA program. Therefore, the potential for harm is deemed “moderate.”

#### **F. Extent of Deviation**

The Policy (at 17) provides that the “extent of deviation” factor is assessed as “major” if

the violator deviates from the requirements to such an extent that most (or important aspects) are not met resulting in substantial noncompliance; “moderate” if “the violator significantly deviates from the requirements of the regulation or statute but some of the requirements are implemented as intended;” and as “minor” if “the violator deviates somewhat from the regulatory or statutory requirements but most (or all important aspects) of the requirement are met.”

The record shows that Zaclon did recycle significant amounts of sash and baghouse dust *after* the August 2001 inspection. However, as to Zaclon’s rate of recycling prior to the inspection, the record is not clear. Mr. Krimmel testified that Zaclon was not monitoring its percentage of recycling until about the year 2000. Tr. 811-812. Zaclon stated in a letter to EPA dated April 25, 2002 that it consumed [CBI deleted] pounds of sash, mostly in 1987 to 1989, and since that time “only consumed minor amounts.” C’s Ex. 12 (Bates 0396). This is consistent with Zaclon’s statement that in 1987 it purchased 4.3 million pounds of sash from Dupont and otherwise purchased an additional 3.1 million pounds, and that in 1988, that it further purchased an additional 1.3 million pounds of sash, all of which far exceeds the amount at the facility during the inspection, 2.7 million pounds. Rs’ Ex. 8 (Bates RES00065), C’s Exs. 8 (Bates 0039), 12 (Bates 0396). It is also consistent with the testimony that Zaclon began using stripping acid in manufacturing fluxes in about 1991, which might suggest that if Zaclon was manufacturing fluxes in 1987 through 1991, it used sash as an ingredient. Tr. 548. On the other hand, the Inspection Report from the August 2001 inspection, indicating that “none of the zinc containing material had been recycled since 1987,” is not corroborated in the record. C’s Ex. 8A (Bates 0046).

To reflect Zaclon’s extent of deviation from the regulatory requirement to either apply for a permit for storage of hazardous waste or to recycle annually at least 75 percent of the sash and baghouse dust, the appropriate assessment based on the facts in the record is deemed to be a “moderate” extent of deviation.

#### **G. Gravity-Based Penalty from the Matrix**

The matrix shows a penalty range of \$5,000 to \$7,999 for a violation exhibiting a “moderate” “potential for harm” and “moderate” “extent of deviation.” The Policy provides that in selection of the dollar amount from the range, the following factors may be considered: seriousness of the violation, efforts at remediation or the degree of cooperation evidenced by the facility, the size and sophistication of the violator, the number of days of violation, and other relevant matters.

The evidence shows that soon after the 2002 sampling event, Zaclon made efforts to recycle all of the baghouse dust and to recycle annually at least 75 percent of the sash, that Zaclon was cooperative during inspections and follow-up, and that Zaclon is a small business. Tr. 134-135. There would be no violation, and thus no consideration of risks of exposure, if Zaclon had simply recycled more of the sash and baghouse dust, enough to meet the 75 percent standard. Because the 75 percent standard is based on annual consumption of the material rather than daily consumption, and a multi-day penalty component is assessed in this case, the

number of total days of the violation should not weigh in favor of increasing the penalty. Therefore, in consideration of the circumstances in this case, the lowest penalty amount in the range, \$5,000, is deemed an appropriate assessment.

#### **H. Multi-day Penalties**

The Policy provides (at 24) that in deciding whether to assess multi-day penalties, the Agency should ensure fair and consistent penalties which reflect the seriousness of violations, promoting prompt and continuing compliance, and deterring future non-compliance. There is no reason presented by Respondents or otherwise apparent to depart from the Agency's discretion in assessing a multi-day penalty in this case. Therefore, a multi-day penalty is assessed.

In selecting a dollar amount from the range in a given cell, the Policy (at 24-25) provides that the same factors apply as those for selecting the gravity based penalty dollar amount. Therefore, again, the lowest amount in the range, \$250, is assessed.

The per-day penalty of \$250 is multiplied by 179 to yield a multi-day penalty of \$44,750. Adding to it the penalty of \$5,000 for the first day yields a total gravity based penalty of \$49,750.

#### **I. Good Faith Efforts to Comply**

The Policy (at 33) provides that –

The violator can manifest good faith by promptly identifying and reporting noncompliance or instituting measures to remedy the violation before the Agency detects the violation . . . a violator's admission or correction of a violation prior to detection may be cause for mitigation of the penalty, particularly where the violator institutes significant new measures to prevent recurrence. Lack of good faith, on the other hand, can result in an increased penalty.

No downward adjustment should be made if the good faith efforts to comply primarily consist of coming into compliance . . . [or] because respondent lacks knowledge concerning either applicable requirements or violations committed by respondent. EPA will also apply a presumption against downward adjustment for respondent's efforts to comply or otherwise correct violations after the Agency's detection of violations (failure to undertake such measures may be cause for upward adjustment as well as multi-day penalties), since the amount set in the gravity-based penalty component matrix assumes good faith efforts by a respondent to comply after EPA discovery of a violation.

Zaclon was put on notice that EPA may consider the sash and baghouse dust as hazardous waste pursuant to the inspection in August 2001 and subsequent request for

information dated March 29, 2002. Rs' Ex. 5; C's Ex. 8A. Zaclon was formally notified by letter dated January 28, 2003 that the sash and baghouse dust was hazardous waste. C's Ex. 8 (Bates 0038). Zaclon stated by letter dated July 29, 2003 that it recycled the baghouse dust and "has resumed recycling" of the sash. Rs' Ex. 9 (Bates RES00071). Thus, Zaclon did not "promptly identify[] and report[] noncompliance or institut[e] measures to remedy the violation before the Agency detect[ed] the violation."

Any claim that Zaclon had a good faith intent to comply with the regulations but lacked knowledge that the 75 percent requirement could apply to sash and baghouse dust separately from the other materials (preflux and stripping acid) does not merit a downward adjustment in the penalty under the Policy for good faith. Assuming *arguendo* that such lack of knowledge could merit a decrease, the evidence and reasonable interpretation of the regulations does not support such a decrease. Mr. Krimmel was aware of the 75 percent requirement in the early 1990s. Tr. 810-811. Zaclon knew that it failed to meet the 75 percent standard in 2001, as it admitted that in 2001 only 69.8 percent of starting inventories of all four of the zinc resources were recycled. Rs' Ex. 9 (Bates RES00070). The application of the 75 percent requirement to "each material of the same type" can reasonably be interpreted as applying to the sash, baghouse dust, preflux and stripping acid separately, since each of them is a separate "type" coming from different processes, as discussed in the Order dated November 3, 2005. The text of the definition of "accumulated speculatively" in 40 C.F.R. § 261.1(c)(8), OAC 3745-51-01(C)(8), specifically, that "the 75 percent requirement is to be applied to each material of the same type (e.g., slags from a single smelting process)," is sufficient to put Zaclon on notice that the four materials may be different "types" and thus that the 75 percent requirement applies to each material separately. Zaclon admitted that the definition of "accumulated speculatively" is "inherently ambiguous" in a letter to EPA dated July 29, 2003. Rs' Ex. 9 (Bates RES0069). To the extent that Zaclon was doubtful or confused as to whether they are different "types," Zaclon "assumed a calculated risk by failing to inquire about the meaning of the regulations at issue." *Howmet*, slip op. at 47. Therefore, "by failing to seek regulatory guidance in a circumstance in which [respondent] should have known that it was pursuing a highly risky course of conduct, [it] assumed the consequences associated with its actions and cannot now credibly claim that it was victimized by lack of fair notice." *Id.* at 48-49.

Thus, it is not appropriate to make any downward adjustment in the penalty based upon this factor.

#### **J. Degree of Willfulness/Negligence**

The Policy (at 34) provides that a penalty may be increased or reduced based on the following factors:

- a) how much control the violator had over the violation;
- b) the foreseeability of events constituting the violation;
- c) whether the violator took reasonable precautions against the events constituting the violation;

- d) whether the violator knew or should have known of the hazards associated with the conduct; and
- e) [to increase the penalty only] whether the violator knew or should have known of the legal requirement which was violated.

Zaclon did not demonstrate any lack of control or unforeseeability over whether it could recycle the sash and baghouse dust. It asserts that it recycled the sash in 1987 through 1989. C's Ex. 12 (Bates 0396). Nor has it proffered sufficient facts or argument supporting a downward adjustment on the remaining relevant factors. To the extent that Complainant has proffered evidence in regard to increasing the penalty based upon these factors I deem the extent of the penalty imposed herein as taking those factors sufficiently into account. Therefore, it is not appropriate to make any adjustment in the penalty, upward or downward, based upon this factor.

**K. History of Noncompliance**

This factor can only be used to increase the penalty. Policy at 35. Complainant did not increase the penalty for this factor, and therefore it will not be increased.

**L. Ability to Pay**

By Order dated May 23, 2006, Complainant's Motion for Accelerated Decision on the Issue of Ability to Pay was granted, on the basis that Respondents had not raised any genuine issue of material fact that they had an inability to pay the proposed penalty. This factor is therefore not considered further.

**M. Other Unique Factors**

Neither party has raised any issues which have not been considered under other factors already discussed and which would suggest that the penalty should be adjusted for "other unique factors." Furthermore, it is noted that the Policy discusses for this factor considerations relevant to penalty assessments in settlement. The penalty will not be adjusted for this factor.

**N. Final Penalty Calculation**

No adjustments are warranted to the gravity based penalty, and therefore the penalty assessed for Count 1 is \$49,750.

**VI. COMPLIANCE ORDER**

Complainant requests issuance of a Compliance Order as follows: (1) prohibiting

Respondents from treating, storing, or disposing of hazardous waste without a RCRA permit; (2) requiring Respondents to submit to OEPA a closure plan and documentation of financial responsibility for all hazardous waste storage and treatment units at the facility; (3) requiring Respondents to implement the closure plan; and (4) requiring Respondents to notify EPA upon achieving compliance with the order.

The first item in the proposed Compliance Order is merely a repetition of the general prohibition of RCRA, which is generally applicable by law and thus is not necessary to specifically impose against Respondents by specific order.

The second item, as discussed herein, does not apply to the spent stripping acid and does not apply to the sash pile to the extent that Respondents are complying with the 75 percent standard of 40 C.F.R. § 261.1(c)(8). The testimony of record indicates that Respondents are complying with that standard. Tr. 586.

The third and fourth items in the proposed order are relevant only in relation to the first and second items and are thus moot.

Therefore, the issuance of the proposed Compliance Order is found to be not warranted.

**ORDER**

1. Count 2 of the Second Amended Complaint is hereby DISMISSED;
2. For the Respondents' violation of Section 3005 RCRA and the regulations in the Ohio Administrative Code 3745-50-45, as alleged in Count 1 of the Second Amended Complaint, Respondents are hereby, jointly and severally, assessed a civil penalty in the amount of \$49,750;
3. Payment of the full amount of this civil penalty shall be made within thirty (30) days after this Initial Decision becomes a final order under 40 C.F.R. § 22.27(c), as provided below. Payment shall be made by submitting a certified or cashiers' check(s) in the requisite amount, payable to the Treasurer, United States of America, and mailed to:

EPA Region 5  
(Regional Hearing Clerk)  
P.O. Box 70753  
Chicago, IL 60673

4. A transmittal letter identifying the subject case and the EPA docket number, as well as the Respondents' names and address(es), must accompany the check;
5. If Respondents fail to pay the penalty within the prescribed statutory period after entry of this Initial Decision, interest on the penalty may be assessed. *See*, 31 U.S.C. § 3717; 40 C.F.R. § 13.11;
6. Pursuant to 40 C.F.R. § 22.27(c), this Initial Decision shall become a final order forty-five (45) days after its service upon the parties and without further proceedings unless: (1) a party moves to reopen the hearing within twenty (20) days after service of this Initial Decision, pursuant to 40 C.F.R. § 22.28(a); (2) an appeal to the Environmental Appeals Board is taken within thirty (30) days after this Initial Decision is served upon the parties pursuant to 40 C.F.R. § 22.30(a); or (3) the Environmental Appeals Board elects, upon its own initiative, to review this Initial Decision, pursuant to 40 C.F.R. § 22.30(b).

\_\_\_\_\_  
Susan L. Biro  
Chief Administrative Law Judge

Date: June 4, 2007

Washington, D.C.

In the Matter of Zaclon, Incorporated, Zaclon LLC and Independence Land Development

Company, Respondents  
Docket No. RCRA-05-2004-0019

CERTIFICATE OF SERVICE

I certify that the foregoing **redacted copy** of the **Initial Decision**, dated June 4, 2007, was sent this day in the following manner to the addressees listed below.

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Maria Whiting-Beale  
Legal Staff Assistant

Dated: July 24, 2007

Original And One Copy By Pouch Mail To:

Sonja Brooks-Woodard  
Regional Hearing Clerk  
U.S. EPA  
77 West Jackson Boulevard, E-19J  
Chicago, IL 60604-3590

Copy By Pouch Mail To:

Thomas C. Nash, Esquire  
Crissy L. Pellegrin, Esquire  
Associate Regional Counsel  
U.S. EPA  
77 West Jackson Boulevard, C-14J  
Chicago, IL 60604-3590

Copy By Regular Mail To:

Martin Lewis, Esquire  
Tucker, Ellis & West, LLP  
1150 Huntington Building  
925 Euclid Avenue  
Cleveland, OH 44115-1475