PPC 9441.1992(33)

RECOVERY OF SULPHUR AND CHLORIDE FROM SLURRIED BAGHOUSE DUST

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

October 8, 1992

Gerald A. Dumas
RSR Corporation
1111 West Mockingbird Lane
Dallas, Texas 75247

Dear Mr. Dumas:

Thank you for your letters dated 18 August and 9 September, 1992, concerning your proposed process to remove sulfur and chloride from the slurried baghouse dust. We appreciate your ability to provide timely information in response to our requests. Our assessment is that if your process is built as you have described, then under the current regulations this process is considered a form of recycling.

We appreciate the reasons you cited in favor of removing the sulfur and chloride from the baghouse dust; your company should be commended for proposing to modify your operation to prevent pollutants from escaping into the atmosphere, and we would encourage you to do so. However, our assessment of the information you provided is that the emission control dust appears to be a solid waste; nevertheless, the units described in the desulfurization process are exempt from RCRA permitting either by being exempt recycling units per 40 CFR Section 261.6(c)(1), or by being a wastewater treatment unit exempt from permit requirements (40 CFR Section 264.1(g)(6)).

Finally, you should know that the Agency is considering changes to the existing regulations that may affect the definition of solid waste. Your situation will be considered in developing any such changes to the current regulatory framework and we would be pleased to continue our dialogue on these issues. Thank you for you interest in hazardous waste recycling, and should you have any further questions. please call Mike Petruska at (202) 260-8551.

Sincerely yours,
Jeffery D. Denit
Deputy Director
Office of Solid Waste

Attachment

RSR Corporation
1111 West Mockingbird Lane
Dallas, Texas 75247

Via Hand Delivery

October 4, 1991

Sylvia K. Lowrance, Esquire
Director
Office of Solid Waste
U.S. Environmental Protection Agency
Mail Stop OS-300
401 M Street, S.W.
Washington, D.C. 20460

Re: Request for Regulatory Clarification on the Definition of Solid Waste

Dear Ms. Lowrance:

This request for clarification on the definition of solid waste under the Resource Conservation and Recovery ACt ("RCRA") is submitted on behalf of RSR Corporation. Specifically, RSR seeks clarification on the application of the exemption at 40 C.F.R Section 261.2(e)(1)(iii) to the processing of emission control dust generated from the secondary smelting of lead (EPA Hazardous Waste Code K069) returned to the smelting process without first being reclaimed.

RSR operates secondary lead smelters that recover lead from lead-acid batteries and other lead-bearing materials. EPA believes that the emission control dust generated from RSR's operations would, if disposed, meet the K069 listing at 40 C.F R. Section 261.32. RSR returns, however, its emission control dust via an enclosed screw conveyor to its smelters for lead recovery without first reclaiming or processing the dust. The dust is excluded from the definition of solid waste under 40 C.F.R. Section 261.2(e)(1)(iii).

Over time, chlorides accumulate in the smelter due to the recycling of the dust, occasionally increasing the emissions of chlorides from the smelter. To reduce these chloride emissions, RSR is considering implementing a process that will remove chlorides

and sulfur from the dust without affecting the lead content of the dust. This process is described below.

The dust will be transferred from its point of generation via an enclosed screw conveyor to a 1000 gallon tank equipped with a mixer and water controls. Water will be added to the dust, resulting in a slurry that then will be piped to a desulfurizing reactor. This reactor is a 15,000 gallon tank equipped with a 40 horsepower mixer. The mixer will keep all solids in suspension. Sodium carbonate will be added to the solution for pH adjustment and to react the sulfur in the dust with the carbonate solution. The slurry then would be piped to a 10,000 gallon overfill tank and subsequently to one of two filter presses, where the slurry will be dewatered. The wastewater from the operation would be transferred to an on-site wastewater treatment unit and discharged. The dewatered dust then would be charged to the reverberatory furnace for reclamation of its metals content.

Section 261.2(e)(1)(iii) exempts from the definition of solid waste materials that are returned to the original process from which they were generated, provided the materials are not reclaimed prior to their return. Based upon RSR's understanding of this provision, processing steps that do not themselves regenerate or recover material values and are not necessary to material recovery are not reclamation. See 48 Fed. Reg. 14489 (April 1983); 50 Fed. Reg. 639 (January 4, 1985).

The purpose of RSR's chloride reduction process is to remove both chlorides and sulfur from the dust. The dust can be and currently is, returned to the process from which it generated without prior processing or reclamation of any kind. The processing steps described above are not intended to alter in fashion the concentration of recoverable metals in the dust, but simply to remove chlorides. These processing steps will not themselves regenerate or recover material values and are not necessary to material recovery.

Based on the foregoing, RSR believes that the processing of the dust in the manner described above is consistent with the exclusion at Section 261.2(e)(1)(iii). We respectfully request that EPA confirm our understanding or, alternatively, explain why the understanding is incorrect.

Please call me at (214) 631-6070 if you have any questions on this request or if you require additional information. I look forward to your prompt response.

Sincerely,

Gerald A. Dumas
Manager, Environmental Services

Attachment

RSR Corporation
1111 West Mockingbird Lane
Dallas, Texas 75247

August 18, 1992

Via Hand Delivery

Mr. Jeffery D. Denit
Deputy Director
Office of Solid Waste
U.S. Environmental Protection Agency
Room M2101
410 M Street, S.W.
Washington, D.C. 20460

Mr. Matthew A. Straus
Director
Waste Management Division
Office of Solid Waste
U.S. Environmental Protection Agency
2800 Crystal Drive
Sixth Floor
Arlington, Virginia 22202

Re: RSR Corporation

Dear Jeff and Matt:

In preparation for our meeting scheduled for 9:00 A.M. on August 31, RSR Corporation (RSR) herein provides further detail on RSR's proposed process for removing sulfur and chlorides from emission control dust generated at RSR's three facilities. This letter also supplements discussions our counsel, Lynn Bergeson, and Messrs. Tom Ovenden and Rob Wilkins of Environmental Information strategies have had with you regarding the regulatory status of RSR's proposed process by responding to your questions regarding that process.

RSR operates three secondary lead smelters located in City of Industry, California; Indianapolis, Indiana; and Middletown, New York. RSR's facilities manufacture lead through the reclamation of lead-acid batteries and other lead-bearing materials. EPA believes that emission control dust generated from RSR's operations would,

if disposed, meet the K069 listing found at 40 C.F.R. Section 261.32. RSR returns this emission control dust via an enclosed screw conveyor to its smelters for lead recovery, however, without first reclaiming the dust. Consequently, RSR believes the dust is excluded from the definition of solid waste under 40 C.F.R. Section 261.2(e)(1)(iii).

Over time, chlorides accumulate in the smelters due to the recycling of the dust. This buildup of chlorides occasionally causes an increase in emissions of chlorides from the smelters. To reduce these emissions, RSR is considering implementing a process that will remove chlorides and sulfur from the dust without affecting the lead content of the dust. This desulfurization and dechlorination process would occur as follows. First, the dust will be conveyed from its point of generation via an enclosed screw conveyor to a 1,000 gallon tank which is equipped with a mixer and water controls. Water will be added to the dust, resulting in a slurry that then will be piped to a desulfurizing reactor. The reactor is a 15,000 gallon tank equipped with a 40 horsepower mixer. The mixer will keep all solids in suspension. Sodium carbonate will be added to the solution for pH adjustment and also to react the sulfur in the dust with the carbonate solution. The slurry next will be piped to a 10,000 gallon overfill tank and subsequently to one of two filter presses, where the slurry will be dewatered. Wastewater generated from the process will be transferred to an on-site wastewater treatment unit and then will be discharged. The dewatered sludge then would be charged to the reverberatory furnace for reclamation of its metals content.

Section 261.2(e)(1)(iii) exempts from the definition of solid waste materials that are returned to the process from which they were generated, provided the materials are not reclaimed prior to their reinsertion into the process. Based upon RSR's understanding of this provision, processing steps that do not themselves regenerate or recover material values and that are not necessary to material recovery are not considered reclamation for purposes of this provision. See 48 Fed. Reg. 14489 (April 4, 1985) and 50 Fed. Reg. 639 (Jan. 4, 1985).

The purpose of RSR's proposed process is to remove both chlorides and sulfur from the dust to reduce emissions of chlorides and sulfates. The dust can be, and indeed is, returned to the process from which it was generated without prior processing or reclamation of any kind. The processing steps described above do not alter in any manner the concentration of recoverable metals in the dust; the process simply will remove chlorides and sulfates. These processing steps will not themselves regenerate or recover material values and are not necessary to metal recovery at RSR's

facilities.

For some time, RSR has sought EPA's concurrence that the proposed process would be eligible for the exemption under Section 261.2(e)(1)(iii). Along those lines, Messrs. Tom Ovenden and Rob Wilkins, and, more recently, Lynn Bergeson, RSR's counsel, have discussed this matter with you and others in the Office of Solid Waste. During one of these discussions you provided questions you wished RSR to answer regarding the process. These questions and RSR's answers are provided below.

1. Is the removal of dust intermittent or continuous?

Dust is removed from the smelter furnace by screw conveyor on a near continuous basis. The only instance in which the removal is not continuous is when the furnace and baghouse are shut down for maintenance.

2.a. Describe the wastewater treatment process.

The wastewater treatment system is designed and operated to produce a metals-rich sludge that is amenable for recovery in RSR's furnaces. The system is a step reaction during which the pH is controlled to maximize the removal of lead, cadmium, antimony, zinc and copper. As you know, these metals precipitate at varying pH levels; thus, a controlled pH environment is necessary to maximize their removal. Wastewater treatment generally consists of pH adjustment, followed by iron precipitation, clarification and filtration.

2.b. What percentage of total effluent is the effluent that is generated from the treatment of the dust?

Effluent from the treatment of the dust constitutes approximately six percent of the total effluent.

2.c. What are the concentrations of heavy metals in liquids:

i. Prior to WWTS before treating dust?

The average concentrations in parts per million ("ppm") are as follows: Pb 80-100 ppm; Sb: 20-50 ppm; Cd: 4-10 ppm; As: 20-40 ppm.

ii. After treating dust?

After treating the dust the average

concentrations are identical to those listed above. Specifically, the concentrations are as follows; Pb: 80-100; Sb: 20-50; Cd: 4-10 ppm; As: 20-40 ppm.

iii. In discharge to POTW prior to treating dust (presently)?

Average concentrations in the discharge to the POTW are: Pb: <0.3 ppm; Sb: <2.0 ppm; Cd: <1.0 ppm; As: <1.0 ppm.

iv. In discharge to POTW after treating dust?

After treating the dust the discharge to the POTW would be identical to those listed immediately above. Specifically, the concentrations are as follows: Pb: <0.3; Sb: <2.0 ppm; Cd: <1.0 ppm; As <1.0 ppm.

The following chart summarizes the answers to the above four questions.

	Average Concentration (ppm)			
Stage in processing	Pb	Sb	Cd	As
Prior to WWTS before treating dust	80-100	20-50	4-10	20-40
Prior to WWTS after treating dust	80-100	20-50	4-10	20-40
In discharge to POTW prior to treating dust	<0.3	<0.2	<1.0	<1.0
In discharge to POTW after treating dust	<0.3	<0.2	<1.0	<1.0

3. List present concentrations of metals in WWTS sludge now versus what the concentrations will be after treatment of dust.

The sludge currently contains approximately six percent total heavy metals. RSR expects no change in concentrations.

The foregoing illustrates that RSR's proposed desulfurization/dechlorination process does not reclaim metals values from the dust. The process thus is not "reclamation" and should not preclude RSR from using the exemption under Section 261.2(e)(1)(iii).

RSR looks forward to meeting with you and others of your staff you deem appropriate to discuss this matter in detail. I understand this meeting is to take place at 9:00 A.M. on August 31, 1992. If you will require additional information before the meeting, please call me at (214) 631-6070 or Lynn Bergeson at (202) 962-8577.

Sincerely,
Gerald A. Dumas
Vice President
Environmental Services

cc: Lynn L. Bergeson, Esquire

Attachment

RSR Corporation
1111 west Mockingbird Lane
Dallas, Texas 75247

September 9, 1992

Via Hand Delivery

Mr. Jeffery D. Denit
Deputy Director
Office of Solid Waste
U.S. Environmental Protection Agency
Room M2101, 410 M Street, S.W.
Washington, D.C. 20460

Mr. Matthew A. Straus
Director
Waste Management Division
Office of Solid Waste
U.S. Environmental Protection Agency
2800 Crystal Drive, Sixth Floor
Arlington, Virginia 22202

Re: Desulfurization Process

Dear Jeff and Matt:

At our August 31 meeting, I promised to send additional information regarding RSR Corporation's proposed desulfurization process for emission control dust generated at RSR's secondary lead smelting facilities (see footnote 1). This letter fulfills that promise.

RSR currently returns emission control dust to the smelting furnaces from which the dust was generated. The total amount of dust returned at all of RSR's facilities is approximately 100 tons per day, or approximately 35,000 tons per year.

RSR would like to remove sulfur and chlorides from the dust before it is returned to the furnaces. This process would in no way alter the concentration of lead in the dust. It would, however, eliminate approximately 1300-2500 tons per year of sulfur dioxide from the atmosphere and help extend the useful life of our pollution control equipment by reducing corrosion-causing

contaminants from the dust. RSR seeks confirmation from EPA that the removal of these contaminants is not "reclamation" under RCRA and that the process would qualify for the exclusion codified at 40 C.F.R. Section 261.2(e)(1)(iii) (see footnote 2).

During our meeting, Mr. Straus stated that whether RSR's desulfurization process would be is considered reclamation for purposes of Section 261.2(e)(1)(iii) may have little regulatory impact on whether the process would be subject to RCRA permitting or interim status requirements. Mr. Straus stated that even if the process were considered "reclamation," the entire process or the unit(s) in which the reclamation is conducted may be exempt from permitting under 40 C.F.R. Section 261.6(c)(1). Mr. Straus also stated that alternatively those units that are part of the process, but in which reclamation is not conducted, may be wastewater treatment units and excluded from RCRA permitting or interim status standards pursuant either to 40 C.F.R. Section 264.1(g)(6) or 265.1(c)(10). Since under either analysis the desulfurization process could be excluded from RCRA permitting or interim status requirements, Mr. Straus questioned the need to reach the "reclamation" issue.

RSR believes that the determination of whether the proposed desulfurization process constitutes reclamation for purposes of Section 261.2(e)(1)(iii) is a separate issue from the permitting status of the reclamation process itself, or the units in which reclamation occurs. Otherwise, the phrase "without first being reclaimed" in Section 261.2(e)(1)(iii) is rendered somewhat superfluous. In addition, there is no good reason to characterize this process as reclamation if it is not reclamation, or to avoid characterizing the process at all merely because the dust is reclaimed in a recycling unit and is thus exempt from regulation under current law.

Finally, the characterization of an activity as a form of reclamation could result in unnecessary regulatory scrutiny. An activity that is properly deemed to constitute incidental processing may not be regulated at all, whereas a process that is deemed to constitute "reclamation" may be subject to permit requirements even though the processes are identical. To avoid characterizing the desulfurization process simply because the smelting process itself is a recycling process ignores the "in the field" implications of the term "reclamation" as used in the RCRA context.

Even if RSR concurred with the suggestion that the characterization of the desulfurization process is reclamation by classifying the smelting process as recycling, RSR does not believe

that the entire desulfurization process could be considered an exempt recycling process. The process is described in detail in my letter dated October 4, 1991, to Sylvia Lowrance. Briefly stated, the desulfurization would begin with the dust being conveyed from the baghouse via an enclosed screw conveyor to a 1,000 gallon tank. There, water would be added to the dust, creating a slurry that would be piped to a desulfurizing reactor. The reactor, a 15,000 gallon tank equipped with a mixer, would keep all solids in suspension. Desulfurization of batter wrecker material is already occurring in this tank. Sodium carbonate would be added to the solution for pH adjustment and to react the sulfur in the dust with the carbonate solution. Wastewater generated from the process would be transferred to an on-site wastewater treatment unit and then discharged. The dewatered sludge then would be charged to the reverberatory furnace for reclamation of its metals content.

RSR believes it may be difficult to classify the entire process as a recycling process that is exempt from RCRA permitting or interim status standards. The desulfurization process is a series of steps, some of which may involve recycling, while others may not. For example, arguably no recycling would be conducted in the 1,000 gallon tank, where water would be simply added to the dust to turn it into a slurry.

If the entire process is not an exempt reclamation process, RSR is not convinced that each of the units in which the process would occur could be considered "recycling units' or "wastewater treatment units." For example, the 1,000 gallon tank likely would not be considered a wastewater treatment unit because it does not appear to meet the definition of wastewater treatment in Section 260.10. The tank would not be managing a wastewater or wastewater treatment sludge.

In summary, RSR's proposed process is not "reclamation" for RCRA purposes. The process is good for the environment, and is good for business in that it extends the useful life of pollution control equipment by inhibiting the corrosion process. The desulfurization process itself is distinct from the recycling process, and should be viewed on its own merits. Finally, to the extent that EPA has an opportunity to construe the application of RCRA rules in a way that promotes pollution prevention and helps the economy by conserving business assets, it should do so. This result is consistent with EPA's RCRA Reform Initiative and Mr. Bush's moratorium on Agency initiatives that impose unnecessary burdens on industry.

RSR appreciates the opportunity to discuss this issue with you. Please call me at (214) 631-6070 if you have any questions or

require additional information.

I look forward to hearing from you soon.

Sincerely,
Gerald A. Dumas
Vice President
Environmental Services

cc: Fredric Chanania, Esquire; Mr. Richard Kinch; Lynn L. Bergeson, Esquire; Mr. Chris Bryant

Diagram of Proposed Desulfurization Process Flow--OMITTED

1 EPA believes this dust would meet the K069 hazardous waste listing at 40 C.F.R. 261.32 when disposed.

2 This provision excludes from the definition of solid waste materials that are returned to the primary production process from which they were generated, provided the materials are not reclaimed prior to being returned. Although RSR's operations are "secondary" production processes and ostensibly would not qualify for this exclusion, RSR understands that in the Phase II LDR rule EPA will propose to amend this provision to apply to secondary production processes.