



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 1

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BOSTON, MASSACHUSETTS 02114-2023

March 16, 2001

John J. Duclos, Supervisor
Hazardous Waste Compliance Section
Waste Management Division
N.H. Department of Environmental Services
6 Hazen Drive
P.O. Box 95
Concord, N.H. 03302-0095

Re: Request for Regulatory Interpretation Regarding Spent Foundry Sand

Dear Mr. Duclos:

This is in response to your letter dated May 19, 2000 which requests a Regulatory Interpretation from EPA Region I. In that letter, you state that a foundry in New Hampshire is proposing to ship spent sand to the Noranda Metallurgy, Inc. Home Smelter in Quebec, Canada, a primary copper smelter. The sand reportedly contains 60% silica, 32% copper and 2,000 ppm total lead. It fails the Toxicity Characteristic Leaching Procedure (TCLP) test for lead. You state that the foundry has supplied documentation to the New Hampshire Department of Environmental Services (NHDES) that the smelter will use the sand as a fluxing agent (in addition to reclaiming the copper), that the use as a fluxing agent has been approved by the Canadian Ministry of the Environment, and that the lead will be vitrified and rendered "unleachable" as a result of the smelting process. You ask whether the sand should be considered a hazardous waste subject to regulation when shipped to this primary copper smelter for both use as a fluxing agent and reclamation of the copper. You further ask whether it would make any difference if the sand instead was shipped to a primary lead smelter or to a secondary copper or lead smelter.

In our opinion, the spent foundry sand would be subject to regulation as a hazardous waste when shipped to the primary copper smelter for reclamation of the copper, even if also used as a fluxing agent. It also would be subject to regulation if shipped to a primary lead smelter or to a secondary copper or lead smelter for reclamation of either copper or lead even if also used as a fluxing agent.

Explanation of Position

Under 40 CFR § 261.2(e)(1)(ii), a secondary material being "used or reused" as an "effective substitute" for a commercial product is exempt from regulation under certain circumstances. However, this exemption does not apply if the material must be reclaimed before being used or reused. The definition of "used or reused" in 40 CFR 261.1(c)(5)(i) states that use/reuse is not

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occurring "if distinct components of the material are recovered as separate end products (as when metals are recovered from metal-containing secondary materials)." As the EPA explained in the RCRA/Superfund/OUST Hotline Monthly Report (May 1992)(copy enclosed), the 40 CFR § 261.2(e)(1)(ii) exemption only applies when materials are functioning as raw materials by being directly used or reused, and "a material that must be reclaimed prior to use (or reuse) as an effective substitute for a commercial product is not being directly used (or reused) and so would not qualify for the exemption."

When components of a hazardous spent material are recovered, the spent material is considered to be "reclaimed" (see 40 CFR § 261.1(c)(4)) and is subject to regulation. 40 CFR § 261.2(c)(3) and Table 1. This is so whether it is a hazardous waste component like lead or a non-hazardous waste component like copper that is being recovered. The EPA regulations state that a material is "reclaimed" if it is "processed to recover a usable product." 40 CFR § 261.1(c)(4). Such processing occurs whether it is a hazardous or a non-hazardous component that is being recovered.

Also, spent materials being reclaimed are regulated whether they are sent to primary or secondary smelters. Spent materials sent to operations such as secondary smelters which engage generally in reclamation clearly are subject to regulation. In adopting its current regulations regarding recycling, the EPA also interpreted its regulations to mean that certain secondary materials including spent materials should be regulated when sent to primary smelters. The EPA rejected the argument that all secondary materials sent to primary smelters for material recovery should not be regulated since such materials would be substitutes for normal raw material feedstock. Rather, the EPA stated, "when a secondary material is to be recovered in an operation different from the one in which it was generated, we believe there is a continuum with secondary materials becoming more waste-like the more the recovery operation differs from the original process, and the more physically removed the recovery operation is from the original process." 50 Fed. Reg. 614, 640 (January 4, 1985).

Finally, we are advised that the EPA Office of Solid Waste (OSW) consistently has taken the position that spent materials which are both reused (e.g., as a fluxing agent) and reclaimed (e.g., for recovery of lead or copper) are subject to regulation. When foundry sand is sent for reclamation, the overall transaction has significant aspects of waste management, even if the sand also is useable as a fluxing agent. This is particularly so when foundry sand is sent to a copper smelter, since this transaction involves using the smelter to treat and dispose of the sand's lead as well as to recover the copper.

We recognize that arguments have been advanced in favor of changing EPA's interpretations so as to exempt from regulation materials which are both reused and reclaimed, or materials sent to primary smelters or materials sent to lead smelters. We believe that discussions of these issues should continue, including through the Definition of Solid Waste network. However, we believe that the past EPA interpretations described above should be adhered to unless and until they are changed at the national level.

Prior Consistent Guidance

By letter dated March 8, 1995 to the American Foundrymen's Society (copy enclosed), OSW determined that spent foundry sand being reclaimed was subject to regulation. OSW currently is reexamining whether spent foundry sand which undergoes only limited processing prior to being reused on site should continue to be subject to regulation. However, nothing in this reexamination calls into question the Agency's longstanding view that spent materials sent off site for reclamation are subject to regulation.

On page 8 of the March 8, 1995 letter, OSW stated that, "there is one circumstance where spent foundry sands are not solid wastes. Spent foundry sand is not a solid waste under RCRA when legitimately used or reused without reclamation as an effective substitute for a commercial product, 40 CFR § 261.2(e)(1)(ii). It is our understanding that some foundry sands are currently being used as a substitute for virgin silica sand as a fluxing agent in primary copper smelter operations in North America." However, as emphasized to this Region by Paul Borst, one of the authors of the letter (with whom this Region has consulted), this exemption was stated as applying only if there was legitimate reuse without reclamation. In contrast, in the situation inquired about in your letter, any reuse will occur along with reclamation.

That the current company's foundry sand is 32% copper and is to be reclaimed also distinguishes this situation from that addressed in this Region's regulatory interpretation to the NHDES dated March 4, 1994, involving foundry sand that contained only 2-5% copper which was not going to be reclaimed. Rather, the situation inquired about is similar to that about which this Region and the NHDES consulted last year, regarding the proposed shipment by the DM Electronics Recycling Corporation (DMC) of CRTs to a smelter for lead reclamation. By letter to DMC dated June 2, 2000, you correctly noted that the CRTs were subject to regulation since they were being sent for reclamation, even if they also were going to be used as a fluxing agent. As explained above, we believe that the same rules that apply when spent CRTs are sent for reclamation of lead should apply when spent foundry sand is sent for reclamation of copper.

Additional Issue

There may be an additional reason why the foundry sand should not be exempt from regulation. Even if the foundry sand was being sent for reuse as a fluxing agent without reclamation, the reuse would have to be shown to be "legitimate" for the section 261.2(e)(ii) exemption to apply. It is not clear that the proposed reuse of the sand as a fluxing agent has been shown to be "legitimate" in accordance with the criteria set out in the April 26, 1989 Memorandum from then OSW Director Sylvia Lowrance (Lowrance Memorandum).

It should be emphasized that the Region is not making any determination on this issue. The Region does not have the company's request in front of us or the State's complete file. Also, the Region has not sought to resolve this issue since, for the reasons explained above, it is our opinion that the foundry sand will be subject to regulation whether or not its proposed use as a

fluxing agent is "legitimate."

However, we note that all of the criteria in the Lowrance Memorandum would need to be considered to determine whether the proposed reuse is "legitimate." In particular, the following issues would need to be addressed. First, the State would need to determine whether the smelter will pay the foundry for the sand or the foundry will need to pay the smelter to take the sand. If the foundry must pay the smelter to take the sand, the foundry would need to address the perceived conflict between classifying the sand as an effective substitute for a product and having to pay the smelter to take the "product." See Lowrance Memorandum, criteria (3). At minimum, the foundry and smelter would need to demonstrate that the smelter would decrease purchases of an equivalent amount of virgin sand when using the foundry sand, i.e., that the foundry sand truly would take the place of another product. See also Lowrance Memorandum, criteria (1). This is a particular concern here since the percentage of silica sand in the company's spent material (60%) is below the percentages typically found in spent foundry sand (80 - 90% range). Second, the foundry would need to address how the spent sand would be handled throughout its life cycle, if exempted from regulation. If the sand was mishandled (e.g., stored on the ground), this would be inconsistent with its claimed status as a valuable product. See Lowrance Memorandum, criteria (5). Finally, the foundry would need to address the "toxics along for the ride" issue raised by the fact that the spent sand differs from virgin silica in that it contains high quantities of lead. See Lowrance Memorandum, criteria (1) and (6). In particular, the foundry and smelter would need to document whether the lead content in the smelter's slag would be significantly affected as a result of using a fluxing agent containing lead (and not reclaiming the lead). In that regard, it also would be appropriate for the State to further examine the claim that any lead contained in the sand will be rendered unleachable as a result of the smelting process. It is not clear that smelting processes uniformly produce slag which passes the TCLP test for lead.

Conclusions

In line with the guidance provided above, the foundry will need to follow hazardous waste management requirements in storing and shipping the sand, including all applicable requirements regarding foreign shipments and the use of a hazardous waste manifest. However, this does not preclude the foundry from sending the sand to the Canadian smelter, with the continued approval of the Canadian government.

If the NHDES believes that regulatory relief is appropriate for foundry sand heading for both reuse and reclamation, it should consult further with this Region about whether the NHDES could grant a variance consistent with 40 CFR §§ 260.30 and 260.31. The NHDES will have the authority to grant such variances for Toxicity Characteristic (TC) as well as non-TC wastes, once it obtains authorization of its TC Rule. However, it may be appropriate to limit consideration of any variances to situations where lead is being reclaimed. It is not clear that sending spent sand to a copper smelter is an environmentally preferable outcome which should be encouraged by reducing regulation, given that the sand's lead ends up disposed with the smelter's slag.

For CRTs being sent to smelters, regulatory relief should be provided once the NHDES completes its plan to include CRTs in its Universal Waste Rule. Keeping streamlined UWR regulations in place seems preferable to determining that there is a total exemption.

If you have any questions regarding this letter, please do not hesitate to contact either Stephen Yee of the Hazardous Waste Unit, at (617) 918-1197 or Jeffrey Fowley of the Office of Regional Counsel at (617) 918-1094.

Sincerely,



Marvin Rosenstein, Chief
Chemicals Management Branch

Enclosures

cc: G. Gosbee, Chief, Hazardous Waste Unit, EPA
K. Rota, Chief, RCRA Enforcement Unit, EPA
M. Hoagland, Chief, RCRA Corrective Action Unit, EPA
J. Miller, Chief, Waste Branch, MADEP
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RCRA/Superfund/OUST Hotline Monthly Report Question

May 1992

2. Secondary Materials Used as Effective Substitutes for Commercial Products

Section 261.2(e)(1) excludes certain recycled secondary materials from the definition of solid waste. Section 261.2(e)(1)(ii) excludes materials which are recycled by being used or reused as effective substitutes for commercial products. Can a material that must be reclaimed prior to use or reuse as an effective substitute for a commercial product qualify for the exclusion in 261.2(e)(1)(ii)?

No, this exclusion applies only to materials which are used or reused without prior reclamation. The January 4, 1985, Federal Register (50 FR 619) discusses this exclusion and states that "[w]hen secondary materials are directly used as substitutes for commercial products...these materials are functioning as raw materials...and, thus, are not wastes." A material that must be reclaimed prior to use (or reuse) as an effective substitute for a commercial product is not being directly used (or reused), and so would not qualify for this exclusion.



State of New Hampshire
DEPARTMENT OF ENVIRONMENTAL SERVICES

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May 19, 2000

MAY 30 2000



MAY 30 2000

Mr. Edward K. McSweeney, Associate Director
Office of Waste Policy
USEPA Region 1
1 Congress Street, Suite 1100
Boston, Massachusetts 02114-2023

Dear Mr. McSweeney:

The New Hampshire Department of Environmental Services (NHDES) has received a request for a regulatory determination from a foundry located in New Hampshire. The foundry has a bronze foundry operation that generates spent foundry sand. This foundry sand is hazardous waste for the characteristic of lead at 25 Parts Per Million (PPM) under the Toxicity Characteristic Leaching Procedure. The foundry has proposed delivering this spent foundry sand to Noranda Metallurgy, Inc., Horne Smelter, Rouyn-Noranda, Quebec, Canada (Noranda) as an effective substitute for a commercial product (i.e., silica flux) per 40 CFR 261.2(e)(1)(ii).

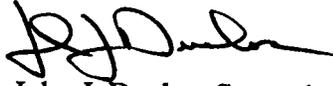
The foundry supplied an assay of the spent foundry sand to confirm that Noranda could use this spent foundry sand as a substitute for silica flux. The spent foundry sand is reported to contain 60% silica sand, 32% copper, 2% bentonite clay, 2,000 ppm total lead and 2,500 ppm total zinc. The foundry applied documentation from Noranda that this material is an effective substitute in their smelting operation as a fluxing agent and would be directly reused without any preparation. The foundry supplied documentation from the Canadian Ministry of the Environment approving this material as a fluxing agent. In addition, the foundry provided documentation that the toxics (lead) contained in the spent foundry sand will be vitrified and unleachable as a result of the smelting process.

Noranda is a primary Copper Smelter, as a primary copper smelter, the copper that is contained in the bronze (32% of the total weight) will be reclaimed. NHDES is requesting EPA's interpretation on the following separate scenarios to clarify the recycling of spent foundry sand issue:

1. The spent foundry sand is sent to a primary copper smelter as an effective substitute for silica flux with reclamation of the copper but no reclamation of the lead. In this scenario would the spent foundry sand be considered a solid waste?
2. As an alternative, the spent foundry sand is sent to a primary lead smelter as an effective substitute for silica flux with reclamation of the lead. In this scenario would the spent foundry sand be considered a solid waste?
3. If the above two scenarios were sent to a secondary smelter, would this change EPA's interpretations?

Should you have any questions, please feel free to contact David Bowen, Waste Management Specialist or myself at (603) 271-2942.

Sincerely,



John J. Duclos, Supervisor
Hazardous Waste Compliance Section
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RCRA/DB

cc: G. Lombardo, EPA/New England
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