



# REYNOLDS METALS COMPANY

Gum Springs Plant  
500 East Reynolds Road • Arkadelphia, Arkansas 71923-8817 • (870)245-2700 • FAX (870)246-7344

April 19, 2010

Certified mail Return Receipt Requested

Bryan Leamons  
Engineer Supervisor, Solid Waste Division  
Arkansas Department of Environmental Quality  
5301 Northshore Drive  
North Little Rock, AR 72118-5317

Dear Mr. Leamons,

First I would like to thank you for taking time last week to discuss the Reynolds Metals Company Gum Springs Plant's (RMC) process and our planned activities of managing refractory materials destined for use as alternate raw materials.

Please reference the attached for a detailed description of the process generating the refractory material, RMC's planned onsite management of the material, our regulatory evaluation relevant to the material, definitions in the applicable APC&EC Regulation 22, and RMC's request for ADEQ's Solid Waste Division's written concurrence and/or comments regarding our regulatory determination.

Should you have questions, desire additional information, etc. regarding this submittal and associated request, please feel free to contact me by phone (870-245-2720) or email ([lyn.shepherd@alcoa.com](mailto:lyn.shepherd@alcoa.com)).

Sincerely,

Lyn Shepherd  
Environmental Manager  
Gum Springs Plant

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Attached: Reynolds Metals Company Gum Springs Plant's Request for Concurrence Regarding Determination That Second Cut (Refractory Material) is a "Recovered Material" Per Definitions of APC&EC Regulation 22

cc: Britt Scheer, Plant Manager, Gum Springs Plant  
Curt Wells, Solid & Hazardous Waste Manger, Alcoa

Reynolds Metals Company  
Gum Springs Plant's  
Request for Concurrence  
Regarding Determination  
That  
Second Cut (Refractory Material)  
Is a "Recovered Material" Per Definitions  
Of APC&EC Regulation 22

## Summary

Reynolds Metals Company Gum Springs Plant (RMC) requests ADEQ concurrence that material management and transfer operations performed on-site involving source separated non-hazardous waste materials destined for use as alternate raw materials (recovered materials) are exempt from ADEQ solid waste permitting requirements.

### Background

Spent Pot Liner (SPL) is a by-product generated from the aluminum smelting process. The aluminum smelting process uses a series of electrolytic cells or "pots" to create metallic aluminum from a refined ore. A typical cell has a life of 4-8 years before it must be replaced. When the cell is removed from service, the unit is disassembled and the various components are reused, recycled, or disposed. The removal of the refractory and carbonaceous lining materials from the steel shell is referred to as "digging" or "digging a pot" and this activity is the process that generates SPL. See Attachment A for a cross sectional depiction of the construction of a typical electrolytic cell or pot. RMC currently receives First Cut SPL (carbonaceous material), Second Cut SPL (refractory material), and mixtures of the two. All this material is managed today as hazardous waste K088 at the RMC TSD facility in Gum Springs.

As per EPA definition (see Attachment B), the First Cut SPL (carbonaceous material) is K088 hazardous waste. The Second Cut SPL (refractory material) is refractory brick and other pot insulating materials such as castables and alumina and is not a listed or characteristic hazardous waste. When the materials are not separated during the pot digging process, the mixed material is all managed as K088 hazardous waste per the mixture rule found at 40 CFR 261.3(a)(2)(iv).

Some of the mixed First Cut and Second Cut K088 material that is manifested to Gum Springs is processed, treated in the onsite kilns and then placed in the onsite RCRA permitted hazardous waste landfill. The rest, of the mixed K088 material is processed, sized, and transported offsite under hazardous waste manifest to be used as alternate fuel in cement kilns. This material is transported to the cement kilns as K088 material; the cement kilns then receive and consume the material in their process under their hazardous waste fuel programs.

Currently, most generators of SPL wastes dig the First & Second Cut materials together and classify all as K088 hazardous waste. However, some SPL generators deliberately separate the two materials during the pot digging process and manage the First Cut (carbonaceous material) as K088 hazardous waste while the separated non-hazardous waste Second Cut material is sent for direct landfilling as non-hazardous waste or to non-hazardous waste permitted cement kilns for use as alternate raw material. In its ongoing efforts to minimize wastes and develop recycling/reuse opportunities for SPL materials, RMC is encouraging this separation of First Cut and Second Cut material at the source, digging activities at the aluminum manufacturing facility, toward increasing the use of the Second Cut material as alternate raw material at cement kilns. As noted, RMC's work with non-hazardous waste consuming cement kilns indicates that the Second Cut non-hazardous waste refractory material has value in the cement making process due to its significant levels of alumina and silica, both of which are necessary ingredients in the manufacture of cement. In addition, the fluoride component acts as a fluxing agent in the cement

kilning process, potentially reducing processing temperatures and fuel usage. Additionally, source separation of the Second Cut refractory material enhances the BTU/lb value of the First Cut carbonaceous material used as hazardous waste derived fuel at hazardous waste permitted cement kilns.

For these reasons, RMC plans to modify its handling activities at the facility as follows. The First Cut K088 material and some non-source separated mixed First Cut & Second Cut K088 waste would continue to be either 1) processed and placed in the onsite kilns for subsequent onsite landfill disposal or 2) processed and manifested to cement kilns. The Second Cut non-hazardous waste source separated material, would be transported to RMC Gum Springs as a non hazardous waste material, received, processed, and stored, then, as requested by the cement kiln end users, the containers of material will be loaded onto truck or rail and/or transferred to other containers for shipment by truck or rail to the consuming facilities as an alternate raw material. All management of segregated source separated material would be through an independent material flowpath that is separate and distinct from the existing First Cut/Mixed Cut material flowpath.

RMC has reviewed APC&EC Regulation 22 (Solid Waste Management Regulations) to determine the possible regulatory applicability to the above described source separated Second Cut refractory material activities and determined that the material meets the APC&EC Regulation 22 definition of "recovered materials". As this definition states "Recovered materials as described above are not solid waste for purposes of this regulation". Therefore, RMC has determined that its planned activities of receipt, processing, onsite storage, container transfer, and subsequent offsite shipment of the material to end users as alternate raw materials does not require solid waste permitting. (Attachment C contains the relevant APC&EC Regulation 22 definitions)

RMC requests ADEQ's Solid Waste Division's written concurrence and/or comments regarding this determination.

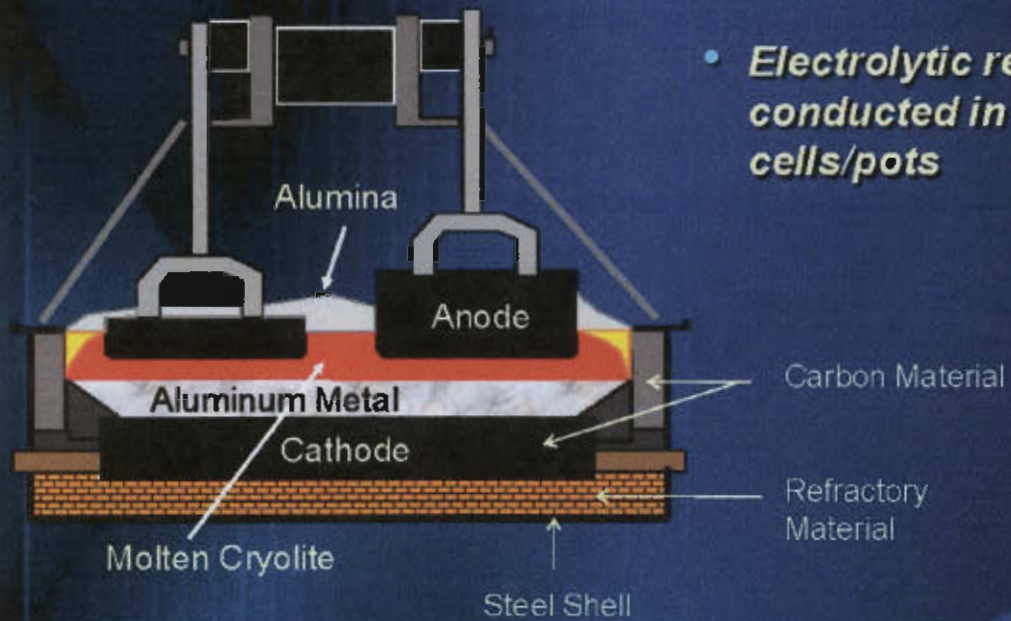
RMC has verbally discussed the Gum Springs Plant's activities of receipt, onsite storage, processing, and subsequent offsite shipment of the material to end users as alternate raw materials with Derick Warrick, Engineer Supervisor, of ADEQ's Hazardous Waste Division's Technical Branch. It is RMC's understanding that the Hazardous Waste Division has no issues with the activity but noted that if the above described recoverable material is stored under roof in areas currently permitted as hazardous waste storage areas then the material counts toward RMC's permitted maximum amount of onsite stored hazardous waste. RMC request ADEQ's Hazardous Division's written concurrence and/or comments regarding the understanding noted above.

RMC recognizes that certain of the activities noted above related to the management of the source separated recovered material may require ADEQ Air Division approval and/or permitting. RMC will engage with the ADEQ Air Division on these specific situations as they may arise.

# ATTACHMENT

A

# TYPICAL ELECTROLYTIC CELL OR "POT"



- *Electrolytic reaction conducted in series of cells/pots*



# ATTACHMENT

B

MARCH 6, 1989

J.V. Day, Manager  
Corporate Environmental Affairs  
Kaiser Aluminum  
Mead Works  
East 2111 Hawthorne Road  
Mead, Washington 99021

Dear Mr. Day:

This is in response to your meeting on February 14, with the Office of Solid Waste staff on issues concerning the September 14, 1988 listing of spent potliners from primary aluminum reduction (K088). In that meeting, you requested that the Agency clarify the scope of the K088 listing and you provided Kaiser Aluminum's interpretation.

The Agency agrees with your interpretation that only the carbon portion of the material contained inside the electrolytic reduction cell constitutes the "potliner." The K088 listing does not include other materials contained in the "pot" such as:

- (1) the cell's steel shell,
- (2) steel collector bars,
- (3) cast iron used to place steel collector bars in pre-baked carbon blocks,
- (4) thermal insulation composed of insulating brick or alumina,
- (5) the silicon carbide brick side walls and end walls of a pot, and
- (6) frozen aluminum metal pad and electrolytic bath.

You also proposed a definition for "spent" as it applies to potliners. The Agency already has a regulatory definition for "spent material" in 40 CFR 261.1(c)(1). A spent material is defined 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."

I hope this letter and our recent meeting have addressed your concerns. Should you have any additional questions, please feel free to contact Denise Wright of my staff at (202) 245-3519.

Sincerely,

Devereaux Barnes, Director  
Characterization and Assessment Division



# ATTACHMENT

C

APC&EC Regulation 22, Section 102 Definitions:

Recovered Materials includes but is not limited to metal, paper, glass, plastic, textile, yard trimmings, or rubber materials that have known recycling potential, can be feasibly recycled, and have been diverted and source separated or have been removed from the solid waste stream for sale, use, or reuse as raw materials, whether or not the materials require subsequent processing or separation from each other, but does not include materials destined for any use that constitutes disposal. Recovered materials as described above are not solid waste for purposes of this regulation.

Source separated recovered materials means the recovered materials that have been separated from the solid waste stream at the point of generation or at a solid waste materials recovery facility. The term does not require that various types of recovered materials be separated from each other and recognizes de minimis solid waste, in accordance with industry standards and practices, may be included in the recovered materials.