

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

**RECEIVED**  
CLERK'S OFFICE

SEP 08 2006

STATE OF ILLINOIS  
Pollution Control Board

IN THE MATTER OF:

PETITION OF BIG RIVER ZINC  
CORPORATION FOR AN ADJUSTED  
STANDARD UNDER 35 ILL. ADM. CODE  
720.131(c)

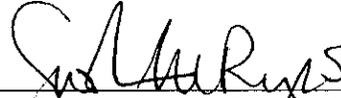
AS 06-04  
(Adjusted Standard - Land)

**NOTICE OF FILING**

To: See Attached Certificate of Service

PLEASE TAKE NOTICE that on September 8, 2006, we filed with the Clerk of the Illinois Pollution Control Board the attached **Amended Petition of Big River Zinc Corporation**, copies of which are attached hereto and hereby served upon you.

Dated: September 8, 2006



One of the Attorneys for Petitioner  
Big River Zinc Corporation

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**AMENDED PETITION OF BIG RIVER ZINC CORPORATION**

Petitioner, Big River Zinc Corporation ("BRZ"), by its attorneys, Baker & McKenzie LLP, hereby amends its Petition to the Illinois Pollution Control Board (the "Board") under 35 Illinois Administrative Code 720.130(c) and 720.131(c). BRZ seeks a determination that the electric arc furnace dust ("EAFD") that BRZ will receive at its facility (the "Facility" or the "BRZ Facility") in Sauget, St. Clair County, Illinois and use as feedstock for a new zinc recycling process to be employed in its operations at the Facility, is not a solid waste.

BRZ filed its Petition on June 29, 2006. On August 4, 2006, the Board entered an order granting BRZ expedited review in this matter and finding that BRZ had met the jurisdictional requirement of providing newspaper notice of the Petition. Thereafter, on August 17, 2006, the Board entered an order (the "Order") directing BRZ to file an amended Petition providing additional information, as enumerated in the Order. BRZ responds to the five questions posed by the Board as follows<sup>1</sup>:

1. Pre-acceptance Process

a. BRZ has established a two step process to ensure that EAFD received at the BRZ Facility is suitable for processing in the LSXEW zinc recovery system. In the first instance,

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<sup>1</sup> BRZ is allowed in its Amended Petition to incorporate by reference the original Petition, rather than repeating the complete text and accompanying Exhibits of the Petition. Also, because this Amended Petition makes no substantive change in the relief requested in the original Petition, re-notice of the Amended Petition pursuant to 35 IAC 104.408 is not required. See 35 IAC 104.418(a) and (d).

BRZ intends to solicit EAFD source material only from facilities that can demonstrate that the recovered material contains zinc concentrations of acceptable grade for reclamation by BRZ. This solicitation will be based first on a historical review of zinc concentrations in EAFD recovered at a given facility. Given the supply agreement between BRZ and EnviroSAFE Services of Ohio, Inc. (“ESOI”) and ESOI’s broad customer base, historical analysis already exists for EAFD from most potential suppliers of this zinc source material to BRZ. For potential suppliers where analysis is not already available, samples will be collected over a sufficient period of time prior to any EAFD being shipped to BRZ to determine the appropriateness of the facility as a supplier of recovered EAFD to BRZ.

The second step in the verification process provides for the sampling of incoming EAFD to confirm the ongoing suitability of a supplier’s EAFD material for recycling at the BRZ Facility. BRZ will regularly collect and analyze samples during the unloading of EAFD at the BRZ Facility. BRZ will analyze the collected samples utilizing X-ray fluorescence or similar sampling methodologies commonly employed at RCRA permitted disposal facilities, such as ESOI’s Ohio facility, to obtain an elemental fingerprinting and determine the corresponding zinc concentrations of the EAFD upon receipt. The results of this sampling will be reviewed on a regular basis. If the grade becomes non-economically recoverable, BRZ will discontinue the use of that EAFD source until such time that current source facility analysis once again demonstrates that the recovered material contains zinc concentrations of acceptable grade for reclamation by BRZ. Any EAFD shipped from a nonconforming source for any reason would be rejected through the hazardous waste manifest process either to an alternate facility or back to the generator. Given ESOI’s role in the supply of the EAFD, it is anticipated that many of the rejected loads would be redirected to the ESOI facility in Oregon, Ohio.

b. It is proposed that the solid waste determination will take effect once any shipment of EAFD enters the gate and is physically present on the BRZ property.

c. BRZ will institute appropriate recordkeeping procedures to document the results of its pre-acceptance verification and sampling activities as described above. These recordkeeping procedures shall include providing requested access to these records to the Illinois Environmental Protection Agency. The following sampling and recordkeeping conditions are proposed:

- BRZ shall maintain records that document the sources of all EAFD material that BRZ accepts under this adjusted standard;
- BRZ shall maintain records that demonstrate the completion of pre-acceptance evaluations and document the results of testing to determine zinc concentrations in EAFD shipped to the BRZ Facility from individual sources;
- Representative samples shall be collected and tested in accordance with generally accepted practices, such as X-ray fluorescence and those specified in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication No. SW-846 (Third Edition); and
- BRZ shall maintain the records required under this Order for a period of three years and shall make such records available for inspection and copying at any reasonable time during normal business hours upon the Illinois Environmental Protection Agency's request.

## 2. Zinc Concentration in EAFD

Zinc coating of steel (galvanizing) is a highly efficient and widespread way of protecting steel from corrosion, thereby prolonging the life of the steel product. The zinc in EAFD is derived from the zinc associated with galvanized scrap. There are various grades of scrap that are blended together to produce an iron feed mix of the correct composition to suit the final product types being produced by an individual steel mill. The scrap feed blend will use different types and grades of scrap containing differing amounts of galvanized material. Therefore, the grade of zinc in EAFD will vary from one mill to another. Furthermore, the scrap recycling

process and equipment varies throughout the industry and such variations will affect the nature of the EAFD, even assuming the same scrap feed. Typically, the grade of zinc in EAFD will be in the range 15% to 24% as stated in the Petition. However, some mills using zinc rich feeds may have much higher grades of zinc yielding up to 35% or even higher concentrations of zinc in EAFD. The opposite is also true; zinc concentrations in EAFD can fall below the typical 15% to 24% range. Concentrations of zinc in EAFD below this typical range can still nonetheless be processed profitably. Certainly, BRZ is not targeting for solicitation EAFD with very low grades of zinc, as processing of such material would ultimately prove uneconomical. As described above, a two step acceptance evaluation will be conducted on each source to confirm that only economically recyclable grades of zinc are processed at the BRZ Facility.

3. LSXEW process waste streams and pollution control equipment

The LSXEW process directly produces two waste streams: wastewater and filter cake. Two types of pollution control equipment will be used related to the LSXEW process, air pollution controls and wastewater treatment. (Management of the filter cake is discussed below in #4.)

The wastewater will be pre-treated on site through a typical wastewater treatment system to produce: a) effluent that will be discharged to the American Bottoms Regional Wastewater Treatment Facility (“American Bottoms”) under appropriate discharge authorization, and b) wastewater residue that will be landfilled off-site.

BRZ currently has a wastewater treatment plant that uses lime and settling technology to lower the heavy metals content in all process water to categorical standards. The precipitated solids are filtered, tested regularly to ensure that they are non-hazardous, and suitably disposed of in a non-hazardous waste landfill in the area. The processed water is combined with all

sanitary and storm waters, and the mixture is discharged to American Bottoms for additional heavy metals removal and mixing with all other industrial and residential wastewater discharges from the area. The water from the BRZ wastewater plant is sampled hourly and a composite is made for analysis of each shift's results. The flow and composition of the combined water leaving the site is measured daily.

The new LSXEW process will have a wastewater treatment plant. The BRZ Facility will be operated both to allow a sound internal water balance and to meet American Bottoms and/or categorical standards, as appropriate, for any regulated constituents. The new plant will also employ lime and settling technology and will be fitted with additional provisions (potentially such as sulfide addition or ferrous sulfide addition) to control specific problems if encountered from time to time. The residue will be shipped to a non-hazardous waste landfill, and testing and analyses are underway to determine if it will be possible to produce a gypsum product suitable for use by the cement industry. Stormwater discharges associated with the new LSXEW process will also be managed in compliance with applicable requirements and discharged to the new wastewater treatment plant. Sampling of the processed water at the wastewater plant will be hourly, and the overall site discharge will be measured and sampled daily.

Air pollution controls will also be utilized for the LXSEW process. The EAFD unloading, blending, and slurring will take place in a building maintained under negative pressure and vented through a baghouse. The contents of rail cars and trucks will be conveyed to blending silos, which will also be equipped with baghouses. The dust collected in the baghouses will be recycled back into the start of the process. The slurry tanks will have baghouses with wet filters to reduce emissions within the building. The leaching tanks may produce some acid mist and these tanks will be covered and vented to an alkaline venturi scrubber to remove the fumes.

The EAFD mixing operation will occur within sealed mixing screws in an enclosed building. The Solvent Extraction (SX) system uses new technology that totally encloses the process. This is a great advance over traditional “open tank” SX systems. Therefore, the only emissions of organic materials from the SX system will be from smaller pump tanks and storage tanks, which are closed vessels that vent to a thermal oxidizer emission control device. Finally, a covered conveyor system will be used to transfer the LSXEW filter cake and wastewater treatment residue to the area where these wastes will be loaded for off-site shipment, and this load-out area will also be equipped with baghouses.

#### 4. Management of LSXEW waste residue

As explained above in #3, the leaching step of the LSXEW process will generate a solid waste filter cake. It is possible that a certain quantity of this filter cake may be characteristically hazardous for certain metals. The waste will be characterized in accordance with the RCRA generator standards found at 35 Ill. Adm. Code Section 722.111 and the testing methods at 35 IAC 721. If the filter cake is determined to be non-hazardous, it will be transferred off-site for disposal. If the filter cake is found to be characteristically hazardous, it will either be treated on-site to render it non-hazardous or sent off-site for treatment and disposal at a facility permitted to accept the waste material.

On-site treatment will involve standard stabilization technologies such as pozzolonic, oxidation/reduction, and precipitation reactions. Stabilization reagents will be added to the filter cake, thoroughly mixed, and then transferred for off-site disposal. The treatment will comply with the requirements of 35 IAC 722, including the requirements in 35 IAC 722.134 for the treatment of waste in accumulation tanks or containers.<sup>2</sup> In addition, treatment will be conducted

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<sup>2</sup> Treatment in tanks or containers is permissible, and does not subject a facility to the RCRA treatment facility requirements, as long as the accumulation standards and corresponding tank and container

within a facility building designed to properly manage the filter cake from generation to loading for off-site disposal.

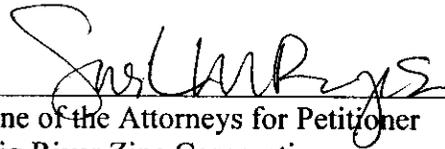
5. Facility Address

The address for the BRZ Facility is: Big River Zinc Corporation, 2401 Mississippi Avenue, Sauget, Illinois 62201.

WHEREFORE, Big River Zinc respectfully requests that the Board grant BRZ an adjusted standard in the form of a solid waste determination that the electric arc furnace dust that BRZ will use as feedstock for a new zinc recycling process to be employed in its operations at the Facility is not a solid waste.

Dated: September 8, 2006

Respectfully submitted,



One of the Attorneys for Petitioner  
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requirements at 35 IAC 722.134 are met and provided that the treatment is not thermal treatment. (56 FR 10146, 10168; March 24, 1986)

**CERTIFICATE OF SERVICE**

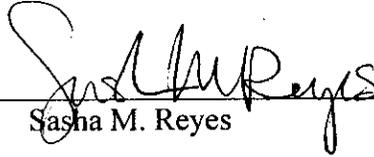
The undersigned certifies that copies of the **Amended Petition of Big River Zinc Corporation** were served on this 8<sup>th</sup> day of September, 2006.

Upon the following by hand delivery:

Dorothy Gunn  
Clerk of the Board  
Illinois Pollution Control Board  
100 West Randolph Street  
Suite 11-500  
Chicago, IL 60601

And upon the following by U.S. First Class Mail:

Mike Roubitchek  
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P.O. Box 19276  
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