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VIA E-Mail

Department of Public Health
Attn: Environmental Permitting and Inspections
333 South State St., Room 200
Chicago, IL 60604

Re: Horsehead's Comments Regarding the Department of Public Health – Rules and Regulations for Bulk Materials Storage Piles Proposed December 17, 2013

On December 19, 2013, the City of Chicago (the “City”) proposed sweeping and costly rules for all facilities that store, blend, handle, process and transport bulk solid materials, entitled “Air Pollution Control Proposed Rules and the Handling and Storage of Bulk Material Piles” (“Proposed Rules”). There was no forewarning or outreach to potentially affected businesses that have been supporters and contributors to the City’s economic viability for many years.

Prior to revealing the Proposed Rules, the City’s public statements had focused exclusively on fugitive emissions from large petroleum coke (“petcoke”) and metallurgical coke (“metcoke”) storage piles at bulk terminals. The City’s December 19, 2013 Press Release on the Proposed Rules similarly explained that the Proposed Rules are specifically targeted to protect residences from petcoke and metcoke dust, without putting on notice the many other types of bulk material operations that may fall within the scope and applicability of the Proposed Rules. Horsehead Corporation (“Horsehead”) does not operate a bulk solids materials terminal. If the sweeping regulations proposed by the City are applied to operations like Horsehead’s, they are not going to improve public health. Instead, the Proposed Rules will arbitrarily and capriciously cause injury to the local business community, as described in more detail below.

I. INTRODUCTION

Horsehead is not a bulk materials terminal. It is a manufacturing facility that recycles zinc-rich air pollution control dust generated by the steel mini-mill industry that would otherwise wind up in landfills and turns them into valuable commercial products. Horsehead’s receipt and

use of this material is already conducted in a fully enclosed process. However, primarily because one of the products Horsehead produces is stored outside before transport, the Proposed Rules would immediately impose substantial, costly and burdensome requirements upon Horsehead's facility that threaten its economic viability with no resulting environmental or public health benefits.

The Proposed Rules raise significant issues regarding fairness, technical and practical feasibility of certain requirements and economic reasonableness. Horsehead's already has enclosed all parts of its materials handling operations, and equipped those enclosures with particulate emissions air pollution control equipment, that could be achieved in a technically feasible and economically reasonable manner. The limited, remaining portions of Horsehead's operations that occur outdoors and would be subject to these Proposed Rules have been consistently operated so as not to cause any public nuisance, public health or environmental concerns. Horsehead's facility has been permitted by both the City of Chicago and the Illinois EPA, including regular inspections by both authorities. It has never been the subject of any public complaints regarding air emissions or any other type of nuisance condition. Horsehead's operations are being unfairly and unnecessarily pulled into a regulatory scheme that is a reaction to concerns that do not apply to Horsehead's operations. The Proposed Rules are an overbroad approach that will unfairly impose significant burdens on facilities like Horsehead's that pose no threat to the public. Horsehead urges the City of Chicago to reconsider its approach to these Proposed Rules and to exclude Horsehead's facility from their application.

I. OVERVIEW OF HORSEHEAD'S CHICAGO OPERATIONS

Horsehead operates a manufacturing facility located on at 2701 E. 114th St. in Chicago, along the Calumet River. Horsehead's facility has operated for more than twenty-five years. The facility currently employs 65 employees, over half of whom are minorities. Several of our employees reside in the local community.

Horsehead's facility is not a bulk terminal of any kind. Horsehead is not in the business of receiving and transferring bulk coke, coal or any other ores. In fact, it does not handle or otherwise use coal at all.

Horsehead is in the business of producing two metals-rich products - called "Waelz Oxide" and Iron Rich Material ("IRM") - from Electric Arc Furnace Dust. Waelz Oxide consists of approximately 60% zinc and represents approximately 35% of Horsehead's production. IRM consists of approximately 45-50% iron and represents the balance of Horsehead's production. Because the proposed rules seek to regulate any bulk solid materials, including generally any "ores" (see Section 1.0 of Proposed Rules), both the feedstocks that Horsehead uses and the products it produces at its facility may be subject to regulation under the

Proposed Rules. However, because Horsehead already conducts most of its operations in enclosed structures, further regulation is neither necessary nor reasonable.

To manufacture its products, a small portion of Horsehead's operations involve the receipt and use of relatively small amounts of petroleum coke ("petcoke") and metallurgical coke ("metcoke") materials. Horsehead does not store petcoke or metcoke long term. At any given time, there is less than 10,000 cu. yds of coke material stored outside at Horsehead's facility. It is brought in on an "as needed" basis for use in Horsehead's production process. Its IRM product is the only other bulk material which Horsehead temporarily stores outdoors until it is loaded onto barges. For all of the bulk materials handled or temporarily stored at its facility, Horsehead operations include all necessary measures to ensure that the handling and temporary storage of these materials is in compliance with its air permit requirements, does not cause any nuisance and is otherwise in compliance with all applicable laws and regulations.

The Proposed Rules unreasonably threaten Horsehead's continued production of IRM, a product which confers substantial environmental benefits. The United States Environmental Protection Agency ("U.S. EPA") looks upon favorably, and has encouraged, the production of IRM because it (i) recovers metals from materials that would otherwise become a waste and allows them "to be used in a beneficial and environmentally sound way;" and encourages the recycling of scrap metal by helping reduce the costs that result from the treatment and disposal of the electric arc furnace dust¹

Horsehead has never received any complaints from neighbors regarding its bulk storage or handing of any of the materials used in or produced by its operations. In fact, not very long ago, when Horsehead provided a tour of its facility to residents of the area, one of the residents said that although she had lived only a few blocks away from Horsehead's facility for many years, she never knew it was there until the tour. Horsehead's strong commitment and demonstrated track record of being a "good neighbor" in its community is a direct result of the numerous environmental controls and safety precautions it has in place at its facility, including systems and equipment to control and eliminate fugitive dust emissions.

Much of the information about Horsehead's operations² provided here has been the subject of prior sworn testimony before, and scrutiny by, the Illinois Pollution Control Board (the "Board"). (See, *In the Matter of Petition of Horsehead Resource and Development Company, Inc. for an Adjusted Standards Under 35 Ill. Adm. Code 720.131(c)*, AS 00-2 (February 17, 2000), a copy of which is attached as Attachment 2). The Board determined that Horsehead's

¹ "Standards for the Management and Use of Slag Residues Derived from HTMR Treatment of K061, K062 and F006 Wastes," Proposed Rules, 59 Fed.Reg. 67256 (December 29, 1994), a copy of which is attached as Attachment 1.

² In 2003, Horsehead purchased the assets of Horsehead Resource and Development Company, Inc. in its then pending bankruptcy proceeding. At the time of the Board's February 17, 2000 decision, Horsehead Resource and Development Company was operating the facility, but Horsehead has continued those operations in all material respects described in the Board's Opinion substantially unchanged since the 2003 asset acquisition.

production process for what was then called “crude zinc oxide” (“CZO”), now simply referred to as “Waelz Oxide,” was not regulated as a solid waste.

A. Description of the Feedstocks Used by Horsehead

Horsehead’s Waelz Oxide product is produced “by recycling a mixture which is about 90 % EAF [Electric Arc Furnace] dust and about 10% hazardous and non-hazardous zinc-bearing feedstocks.” (Board Order, Attachment 2 at p. 4) Approximately 140 tons of this material is used annually. None of these feedstock materials are “coke or coal materials.” The EAF dust is generated from the processing of scrap steel and, if not so used, would generally be disposed of in landfills. (*Id.*)

None of these materials are exposed to the environment from the time of their arrival at Horsehead’s facility through their use in the manufacturing process. All of these materials arrive at its facility via enclosed railcar or truck. (*Id.*) They do not present any risk of emissions either during transport to Horsehead’s facility or after arrival at Horsehead’s facility. All handling of this material is done indoors or within enclosed structures, which are equipped with particulate matter (PM) pollution control equipment. Upon receipt, the feedstocks “are then introduced directly into the curing and blending (C&B) building without being stored.” (*Id.* at p. 4) The C&B building is maintained under negative pressure to prevent any potential emissions. The feedstock materials are conveyed from the C&B building directly to the Waelz kilns - - all within an enclosed structure. (*Id.*) At no time are these materials stored or handled outside.

As the Board found, “Horsehead changes EAF dust, a product with negative value [because “generators of EAF dust pay for it to be either disposed or recycled”], into Waelz Oxide and IRM, products with substantial positive values. (*Id.*; see also p. 12) Horsehead’s “recycling of EAF dust conserves natural resources by decreasing the need to mine non-renewable zinc ores. In addition, Horsehead’s recycling process means that less EAF dust is sent to landfills.” (*Id.* at p. 15).

B. Horsehead Uses Petcoke/Metcoke Solely as an Ingredient and no Product Substitution Options are Available.

As the Board’s opinion correctly described, “[j]ust before the feedstocks enter the Waelz kilns, a carbon source (such as coke) is added.” (*Id.* at p. 5, citations omitted) The carbon source used today is a mixture of petcoke or metcoke. Typically, Horsehead maintains an inventory of only 1,000 to 1,200 tons (approximately 2,000-3,000 cu. yds) of petcoke or metcoke materials outdoors at its facility. Horsehead purchases petcoke/metcoke in small amounts, on an “as needed” basis for its operations. Thus, Horsehead does not store the petcoke/metcoke material received at its facility in large amounts or on a long-term basis. The height of its petcoke/metcoke material does not exceed the thirty (30) feet limit contained in the Proposed Rules.

The Waelz kilns, which are also equipped with air pollution control equipment, heat the combined feedstocks and coke source materials mixture “to 1200 degrees Celsius in order to chemically reduce nonferrous metals.” (*Id.*) The process “results in no waste nor water discharges.” (*Id.*) In other words, there is no coke-containing solid waste or wastewater generated from this process.

In the course of the Board’s close scrutiny of Horsehead’s operations, supported by sworn testimony and the rigors of an evidentiary hearing with the opportunity for cross-examination, there were no concerns whatsoever raised by Horsehead’s limited handling and storage of coke materials at its facility and its use of those materials as a carbon source in its production process. Horsehead’s operations have not significantly changed since then.

Horsehead has previously explored whether there are other types of materials that it could substitute for the petcoke/metcoke used in its production process. It has not been able to find a different material that is an effective substitute for providing the thermal input (*i.e.*, BTUs) necessary to creating an adequate reducing environment in the Waelz kilns for production of its zinc products. Accordingly, Horsehead does not have any viable “product substitute” option for avoiding the significant costs that the Proposed Rules will impose due to its limited use of petcoke/metcoke materials.

C. Horsehead’s Waelz Oxide Product is not Stored or Handled Outdoors

The resulting products produced from the Waelz kilns are the Waelz Oxide and “Iron-Rich Material” or “IRM.” (*Id.* at pp.5-6). As was the case in the Board’s findings in 2000, and is still the case today, Horsehead does not store or stockpile Waelz Oxide at its facility. (*Id.* at p. 6) “All transfer points in Horsehead’s Chicago facility have collection equipment and baghouses which allow Horsehead to collect released material and return it to the [Waelz Oxide] manufacturing process.³ Immediately after [the Waelz Oxide] is produced, Horsehead conveys it from the product collectors via an enclosed conveyor to a loading chute that extends into closed pressure differential rail cars for off-site shipment. These railcars are in an enclosed building. Horsehead has 24-hour opacity monitors to measure if any gases escape from the product collectors. Alarms alert plant personnel if there is a release, and the affected part of the product collector can be shut down for repairs to minimize further losses.” (*Id.* at p. 13, citations omitted) As summarized by the sworn testimony presented to the Board, “CZO never sees the light of day.” (*Id.* at p. 9) It is never exposed to the outdoors. The Waelz Oxide is sold directly, or after further purification at another Horsehead facility, for use either as feedstock in zinc production or as an ingredient in the production of micronutrients, such as for animal feed. (*Id.* at pp. 7-8, 12)

³ These product collectors are regulated by Horsehead’s existing Clean Air Act Title V Permit issued by the Illinois EPA. [*Id.* at p. 5]

D. Horsehead's IRM Product

Horsehead produces approximately 76,000 cu. yds. of IRM annually. The IRM is sold for use in asphalt aggregate, cement production, or construction aggregate. (Id. at p. 6) IRM production accounts for approximately 65% of Horsehead's operations - - operations which are threatened by the Proposed Rules.

Upon exiting the kilns, the IRM is conveyed to an enclosed silo on-site for testing. Upon successful testing, it is transferred to an outdoor earthen pad area for loading onto barges. The barge loading area consists of a 300-foot long dock on the Calumet River equipped with a conveyor system and an attached hopper. A front loader is used to feed material into the hopper. Approximately 50 to 70 barges are loaded per year at a rate of approximately 1,500 tons per barge. Pursuant to Section 3.0(3) of the Proposed Rules, Horsehead could accurately certify that its storage capacity does not exceed 100,000, but this would not allow for any significant expansion of Horsehead's IRM operations in the future.

Horsehead's IRM product is very different from coal or coke materials and should be excluded from any regulation under the Proposed Rules. As compared to coal or coke, IRM is a very heavy material (weighing upward of 100 lbs. per cu.ft). Further, when the IRM is sprayed with water, which Horsehead uses to ensure dust control, its surface hardens and forms a crust (due to the lime content in the EAF ingredient used to make it). For this reason, there is no reasonable need to impose wind screening or enclosure requirements upon the IRM stored at Horsehead's facility to prevent windborne dispersion.

II. HORSEHEAD DOES NOT CAUSE ANY PUBLIC NUISANCE OR HEALTH THREATS.

Horsehead's operations have not caused or created any need for the City's Proposed Rules and should be excluded from their scope. Horsehead has the necessary safeguards in place at its facility to protect against potential fugitive emissions and prevent surface discharges. The Horsehead systems and methods for protecting against such emissions or discharges have maintained compliance with all applicable fugitive particulate matter emissions requirements in its Illinois Title V Air Permit,⁴ prevented fugitive dust emissions that would cause a nuisance to the surrounding community and contained surface runoff in its on-site stormwater retention basin. Horsehead's regulation by, and compliance with, existing federal, state and City of Chicago requirements to control emissions and any discharge runoff from its facility has proven more than adequate to prevent any risks of nuisance or environmental harm. For this reason, it is unnecessary and unreasonable to impose on Horsehead's operations the additional requirements contemplated by the Proposed Rules.

⁴ Issued to Horsehead by Illinois EPA on May 15, 2002.

A. Horsehead's Operations are Already Adequately Controlled and Regulated

Horsehead is regulated by both the City of Chicago and the State of Illinois. The existing regulatory controls applicable to Horsehead's operations include:

- City of Chicago Certificate of Operation;
- Clean Air Act Title V Air Permit issued by Illinois EPA, ID No. 031600AFV; and
- Solid Waste Management Site Operating Permit issued by Illinois EPA, Permit No. 1986-08-OP, Supplemental Permit No. 2004-077-SP, ILD040891368

Horsehead's existing systems and procedures are adequately preventing and controlling emissions and discharges.

B. Horsehead Properly Controls its PM Emissions

Horsehead has not been the subject of community complaints because it properly controls the limited amount of petcoke and metcoke materials that it stores on its premises, as well as the IRM product that is temporarily exposed in anticipation of, and during, the barge loading process. Horsehead's systems for controlling PM emissions may not be as extensive as those used at bulk terminals handling much larger volumes of materials, but they are and have proven protective for the limited petcoke/metcoke material maintained on-site and for the temporary storage of IRM product prior to barge loading operations.

Horsehead complies with the current Illinois Fugitive Dust regulations that regulate existing sources and require them to manage fugitive dust from outdoor storage piles. The rules restrict "visible and particulate matter emissions." (35 Ill. Admin. Code § 212.301 *et seq.*)⁵ Pursuant to Horsehead's obligation to comply with the requirements of its Title V Air Permit, which incorporates all applicable federal and Illinois air regulations, these operational safeguards include:

- A Fugitive Particulate Matter Operating Program ("FPMOP") to significantly reduce emissions that is reviewed by Illinois EPA (Permit §5.2.3.a; 35 Ill. Adm. Code §§212.309(a), 212.310 and 212.312). The FPMOP includes details about both the Horsehead facility and how fugitive dust is managed, including a diagram showing the locations of storage piles and traffic patterns, Horsehead's "best management practices" for controlling dust, the frequency of dust suppressant application, as well as other information;
- A PM₁₀ Contingency Measures Plan (Permit §5.2.8; 35 Ill. Adm. Code §§212.703 & 212.704);

⁵It is also noteworthy that for particulate matter, the U.S. EPA has determined that the area in which Horsehead's facility is located is in attainment for both PM₁₀ and PM_{2.5}. The U.S. EPA has designated the Lake Calumet (Southeast Chicago) area to be in attainment for both the PM₁₀ (see 70 Fed. Reg. 55545 (Sept. 20, 2005)) and for the 1997 PM_{2.5} National Ambient Air Quality Standards (NAAQS). See 78 Fed. Reg. 60704 (Oct. 2, 2013).

- Street Sweeping Equipment: A street sweeper vehicle, operational 8 hours/day, routinely sweeps the facility's paved roads and, if necessary, the paved street leading to the entrance of the facility;
- A fire hose water spray system used to spray piles;
- Pile management and grooming - Storage piles are shaped and compacted to manage the potential for wind erosion.

Horsehead's facility must comply with the Visible and Particulate Matter requirements of Part 212 of the Illinois Air Pollution Regulations. These existing regulations, as well as other related regulatory requirements, have been incorporated into Horsehead's Title V Permit requirements to control both fugitive and emissions units PM emissions as follows:

- No PM emissions with an opacity greater than 30% (Permit §5.2.2.b.; 35 Ill. Adm. Code §212.123(a))
- No visible fugitive PM emissions looking generally toward the zenith at a point beyond the Horsehead property line (Permit §5.2.2.a; 35 Ill. Adm. Code §§212.301);
- Hourly and annual PM emissions, operating and process rate limits for equipment (Permit §§7.13.b, 7.1.6, 7.12.3.(c), 7.2.6; 35 Ill. Adm. Code §§212.312(a), 212.321(a), 212.322(b)(1) & (c));
- Required calculations to determine compliance with fugitive PM standards, including but not limited to, emissions from the petcoke/metcoke pile, IRM handling, the conveyor system, and vehicles on facility roadways (Permit §§7.1.12, 7.2.12 & 7.4.12; 35 Ill. Adm. Code §212.304, 212.305, and 212.306);
- Continuous monitoring of emissions from PM pollution control equipment (§7.2.8; 35 Ill. Adm. Code §201.281 & 285.201);
- Good operating practices recordkeeping for PM pollution control equipment (§7.1.9; §39.5(7)(b) of the Ill. Env. Protection Act);
- Prompt notification to Illinois EPA of any deviations from the permit requirements, including the probable cause, corrective action or preventive measures (Permit §§5.7.1, 7.1.10, 7.2.10 & 7.4.10; §39.5(7)(f)(ii) of the Ill. Env. Protection Act);
- All of Horsehead's normal traffic pattern roads and parking facilities are required either to be paved or treated on a regular basis, as needed, with water, oils,⁶ or chemical dust suppressants in accordance with the operating program. (Permit §5.2.3.c; §212.306);
- Recordkeeping for the types, number and mileage traveled of vehicles which travel the facility's roadways (§7.14.9(a); §39.5(7)(b) of the Ill. Env. Protection Act), and
- Periodic inspections of the air pollution control equipment product collectors (§7.1.9.a.i.); and

⁶ Although the use of "oils" is allowed under its Title V Permit, Horsehead does not use oils to treat its roads or parking facilities.

- An Annual Emissions Report submitted to the Illinois EPA (§9.7; 35 Ill. Adm. Code Part 254).

All of the above actions and systems that already apply to Horsehead's facility have proven more than adequate to protect the public welfare and the environment.

C. Horsehead has no Wastewater or Stormwater Discharges

Horsehead's solid waste operating permit was issued by the Illinois EPA based on the express condition that no process discharge to water of the State or to a sanitary sewer will occur at Horsehead's facility. (Horsehead Illinois EPA Operating Permit at para. 7, p. 4). Horsehead has and continues to be in compliance with this permit. Horsehead's facility includes a lined, stormwater retention pond which collects and prevents runoff discharges from its facility that might otherwise be discharged to the adjacent Calumet River. There is also an earthen berm around Horsehead's property that provides additional protection against stormwater runoff discharges. The Proposed Rules are not necessary to control any runoff discharges from Horsehead's facility. Such discharges are already prevented and contained.

D. Horsehead Materials do not Present Health or Environmental Risks

Additional regulatory requirements are particularly unwarranted because both the petcoke/metcoke materials used by Horsehead and the IRM product it produces do not present any human health or environmental risks. Both materials have been studied by the United States Environmental Protection Agency without any finding that potential emissions of airborne particulate matter would pose an identified human health risk.

All available scientific evidence confirms that petcoke and metcoke do not present human health or environmental risks that warrant regulation under the Proposed Rules. Both materials have been used for decades without significant impacts. Recent reports by both the United States Environmental Protection Agency (U.S. EPA) and the Congressional Research Service (CRS) found that potential emissions of airborne particulate matter from pet coke dust pose no identified risk to human health.⁷ The CRS Report concluded that "petcoke has a low health hazard potential in humans."⁸ Regarding human health effects, there are no specific effects or potential harm from petcoke dust particles as compared to dust particles generally.⁹ As also has been reported, test results from soil and surface sampling in the neighborhoods around the KCBX facilities, collected and tested in accordance with ASTM and EPA methods by

⁷ U.S. EPA, *Screening Level Hazard Characterization, Petroleum Coke Category*, June 2011 (available at: http://www.epa.gov/chemrtk/hpvis/hazchar/Category_Petroleum%20Coke_June_2011.pdf); *Petroleum Coke: Industry and Environmental Issues*, by Anthony Andrews & Richard K. Lattanzio., CRS Report R43263, October 29, 2013 (available at <https://www.hsdl.org/?view&did=746955>)

⁸ CRA Report at p. 9;

⁹ *Id.* at p. 10.

independent environmental professionals and laboratories, showed no evidence of key chemical indicators of pet coke or coal on surfaces or in soil in those neighborhoods.

IRM also does not present human health or environmental risks that warrant regulation under the Proposed Rules. The IRM produced by Horsehead falls into a category of materials which the U.S. EPA refers to generally as “high temperature metals recovery” slag residue or “HTMR.” In the 1990’s, the U.S. EPA conducted a risk assessment on HTMR materials as part of a U.S. EPA rule-making governing the use and management of these materials.¹⁰ The risk assessment was conducted to determine the potential human and ecological health impacts from placing HTMR materials on land. The risk assessment specifically included an evaluation of Horsehead’s IRM product, because Horsehead is one of the major producers of this material.¹¹ Also particularly relevant here is that the U.S. EPA’s risk assessment evaluated a number of potential release and exposure scenarios associated with the generation and management of storage piles of HTMR. The potential environmental release scenarios relevant to Horsehead’s operation that were assessed included the potential for particulate emissions, releases to groundwater, releases that are deposited onto a neighboring residential area, and releases deposited into neighboring surface waters from : (1) outdoor pile storage directly on the ground; (2) the process of adding HTMR slag residuals to the outdoor storage pile; and (3) loading/unloading operations associated with transport of the HTMR slag.¹² In conducting its risk assessment, the U.S. EPA assumed that the HTMR storage pile remained in place during a one-year period and was regenerated with the new slag each year over a thirty-year period.¹³ The U.S. EPA reported on the results of this assessment as follows:

The results from EPA’s very conservative risk assessment for the relevant management practices and uses of HTMR slags indicate that constituents of concern in HTMR slags pose little or no risk to human health or the environment. Based on this assessment, no significant risks were found for storage, transport, disposal, and encapsulated uses of HTMR slags (use as subbase, as an ingredient in cement or concrete/asphalt) that meet the [proposed “generic exclusion levels” in the U.S. EPA rules].

59 Fed. Reg. 67256, 67261 (December 29, 1994)

¹⁰ See Proposed Rules, “Standards for the Management and Use of Slag Residues Derived from HTMR Treatment of K061, K062, and F006 Wastes,” 59 Fed.Reg. 67256 (December 29, 1994) (“1994 Proposed HTMR Rules”), a copy of which is attached as Attachment 1; See also “Assessment of Potential Risks to Human Health and the Environment from Management and Uses of HTMR Slag,” Draft Report, U.S. EPA, November 30, 1994 (“1994 HTMR USEPA Report”).

¹¹ 1994 HTMR USEPA Report at p. 25.

¹² 1994 HTMR USEPA Report at pp. 25-27

¹³ 1994 HTMR USEPA Report at p. 27.

Horsehead's predecessor, Horsehead Resource Development Co., commissioned a complete evaluation of the U.S. EPA's HTMR risk assessment by an independent company, Gradient Corporation ("Gradient").¹⁴ Gradient evaluated the U.S. EPA's methodology, assumptions and conclusions, in addition to assessing HTMR product applications not assessed by the U.S. EPA. It concluded that the U.S. EPA was correct in its determination that the HTMR slag products poses "little or no risk to human health or the environment," even though U.S. EPA had employed generally conservative assumptions to predict media concentrations and for deriving health-based reference concentrations.¹⁵ The results of Gradient's analysis similarly concluded that the storage and loading of IRM piles "pose an insignificant threat to human health and the environment."¹⁶ Moreover, Gradient specifically evaluated "an additional direct pathway of public concern today, the tracking of exterior dust into the house and subsequent ingestion as a constituent of house dust."¹⁷ Gradient's evaluation "determined that this pathway also poses insignificant risks to human health, because EPA implicitly accounted for it in their soil ingestion analysis."¹⁸

In sum, the scientific studies show that there is nothing unique or specific to petcoke emissions nor is there any need to regulate IRM handling and storage as intended by the Proposed Rules in order to protect human health or the environment.

III. THE PROPOSED RULES WILL IMPOSE TECHNICALLY INFEASIBLE, ARBITRARY AND ECONOMICALLY UNREASONABLE BURDENS ON HORSEHEAD.

The Proposed Rules will have a substantial, negative impact on Horsehead's operations. They would impose excessive and, in some cases, impossible, burdens on Horsehead's facility. Although the Proposed Rules clearly borrow extensively from the provisions of California rules, even under the California rules, IRM would not be regulated. The California rules do not regulate materials other than "coke, coal or sulfur."¹⁹

Moreover, the Proposed Rules threaten to arbitrarily interfere with the internal operations of businesses. They set forth an extensive list of requirements for how operations and maintenance are to be conducted within the confines of a facility's property boundaries, without any scientific or other persuasive evidence to demonstrate that such requirements are necessary

¹⁴ Gradient Corporation, "Critical Evaluation of EPA's Risk Assessment in the Proposed HTMR Slag Product Rulemaking (Fed. Reg. 59:67256: December 29, 1994)," Revised April 26, 1995 ("Gradient Corp. HTMR Assessment Report").

¹⁵ Gradient Corp. HTMR Assessment Report at p. ES-1 to ES-2.

¹⁶ Gradient Corp. HTMR Assessment Report at p. 178.

¹⁷ Gradient Corp. HTMR Assessment Report at p. ES-3.

¹⁸ Id.

¹⁹ See South Coast Air Quality Management District (South Coast AQMD) Rule 1158(b), "Storage, Handling, and Transport of Coke, Coal and Sulfur,"

to prevent unacceptable levels of fugitive emissions from exiting the facility. As applied to Horsehead's facility, these Proposed Rules lack any justification.

A. Arbitrary and Unreasonable Provisions in the Proposed Rules

The Proposed Rules essentially set forth a list of what the City considers "best management practices" for outdoor bulk solid material storage. Horsehead already implements appropriate best management practices as set forth in its approved Fugitive Dust Operating Plan. Many of the practices in the Proposed Rules are either unnecessary for the protection of public health, or economically and/or technologically infeasible. The following are specific examples of the arbitrary and unreasonable burdens that would be imposed by the Proposed Rules:

1. **Proposed Section 3.0(2) Fugitive Dust – Prohibited:** Section 3.0(2) prohibits the discharge of fugitive dust "for a period or periods aggregating more than three minutes in any one hour which is equal to or greater than 10% opacity." This proposed fugitive emissions limit is impossible to implement. The Proposed Rules define "fugitive dust" as "any solid particulate matter that becomes airborne by natural or man-made activities, excluding particulate matter emitted from a properly permitted exhaust stack equipped with a pollution control device." It will be impossible to differentiate for opacity purposes between contributions from a permitted stack's PM emissions and prohibited "fugitive dust" emissions. The proposed rule also does not provide any point of reference, such as height or property boundary locations, for how this proposed limit is to be monitored for compliance. There is no justification for the rule's apparent intent to impose this 10% opacity limit within the facility's property boundaries. Further, there is no rational basis provided for why the existing Illinois 30% opacity limits are not adequate to protect the public welfare.

2. **Proposed Section 3.0(5) Outdoor Storage Requirements:** The Proposed Rules do not allow any "material processing" (*e.g.*, "blending, mixing, crushing and screening") of bulk solid materials outdoors. For this reason, although Horsehead's small petcoke/metcoke pile would satisfy the quantity and height limitations for outdoor storage under the Proposed Rules, Horsehead does "blend" these coke materials together when they are added to the pile. Accordingly, it appears Horsehead would not be allowed to continue storing its petcoke/metcoke outdoors. Similarly, outdoor storage of the IRM pile also would be prohibited because a portion of the IRM material must be screened and crushed prior to being added to the pile. But for the proposed prohibition on "material processing" contained in proposed Section 3.0(5), Horsehead could continue to store these materials outside, as it has done to date without incident.²⁰

²⁰ This assumes that only Horsehead's petcoke/metcoke pile, and not its EAF dust that is not exposed to the environment from the time of its receipt, is subject to the 5-day Materials Received limitation of 10,000 tons. Subject to that understanding, both Horsehead's petcoke/metcoke pile and IRM pile would be in compliance with the total outdoor bulk solid material storage capacity limitation of 100,000 cubic yards. (Proposed Section 3.0(5)(a) and (b)). The storage capacity limitation of 100,000 cu. yds., however, will likely limit any significant expansion of Horsehead's current operations.

The Proposed Rules seek to preclude all outdoor Bulk Solid Material storage by imposing arbitrary and capricious requirements such as an arbitrary 10,000 ton limit on Materials Received (on a five-day basis), a maximum outdoor storage capacity of 100,000 cubic yards²¹ and stringent setback requirements for existing facilities located in industrial areas. Further, it is unclear whether the 5-day “Materials Received” limitation of 10,000 tons applies to all materials received at a facility or only those to be stored outside. (Proposed Section 3.0(5)(a)). If the limitation is limited to those “Materials Received” for outdoor storage, then Horsehead’s petcoke/metcoke pile would be in compliance. However, because more than 10,000 tons of EAF dust may be received in any 5-day period, the inclusion of materials that are not handled or stored outside would impose a severe limitation on Horsehead’s operations without any benefit conferred. Finally, although Horsehead would currently be below the proposed Section 3.0(5)(b) total outdoor bulk solid material storage capacity limitation of 100,000 cu. yds., the storage capacity limitation will limit any significant expansion of Horsehead’s Chicago operations.

(a) Setbacks: The proposed setback requirement of “100 feet from public ways,” if intended to include the Calumet River as a “public way,” is impossible to comply with because the IRM is stored within 100 feet of the river’s edge for barge loading purposes. As previously stated, because of the presence of both an earthen berm at the property’s edge, and the collection of stormwater in the facility’s on-site retention basin, discharge runoff from the IRM pile is not directed to the river. Hence, if the river is not considered a “public way” and instead proposed Section 3.0(6)(b) for “protection of waterways” is applicable, then Horsehead’s IRM pile location would not present a compliance issue.

(b) Height Limitation: At times, the 30’ height limit for outdoor storage in proposed Section 3.04(6) is exceeded by the IRM pile. Because the heavy weight of IRM does not make it susceptible to windborne emissions, and it can be adequately contained through appropriate dust suppressant methods, the proposed height limit for IRM is arbitrary and unnecessary. Further, the proposed 30’ height limit is also arbitrary when considered in connection with the Proposed Rules’ dual requirements to have both a wind barrier that surrounds the entire pile and a dust suppressant system. (Proposed Sections 3.0 (6)(c) and (h))

(c) Wind Barrier: The wind barrier requirement for outdoor storage also may present a major obstacle for Horsehead’s operations. Proposed section 3.0 (6)(c) requires that “[t]he barrier shall completely surround the storage pile and immediately adjacent material handling area(s).” Such a wind barrier will be very costly for Horsehead to install and to maintain around both its IRM and petcoke/metcoke piles. It also presents a feasibility issue if the “immediately adjacent material handling area(s)” is intended to include the IRM barge loading operation. Horsehead is unaware of a technically feasible means to surround its barge loading operation with such a wind barrier. The Proposed Rules do not allow for reasonable alternatives

²¹ It is unclear why the five-day limit is stated in “tons” but the capacity limit is stated in “cubic yards.”

to wind barriers, such as an adequate dust suppressant system or tarping. The effective tarping of outdoor storage piles is a demonstrated effective control technology that's been utilized, for example, in the storage of salt.

(d) High Wind Conditions: The required suspension of any disturbance to the petcoke/metcoke piles or the IRM pile during "High Wind Conditions," defined as "wind speeds exceeding 15 miles per hour," threatens to significantly restrict Horsehead's operations. (Proposed Sections 2.0(8) and 3.0(6)(e)). There are several issues with this proposed restriction. First, there is no height reference regarding where the wind speed is to be measured, making it impossible for a facility to determine compliance. Further, if this proposed restriction includes wind "gusts," as it appears to, it also will be impossible to maintain compliance without shutting down operations whenever wind gusts and/or wind speeds exceeding 15 miles per hour are predicted in Chicago. In just the period from January 23 through 6, 2014, there were several days where wind speeds and/or gusts in Chicago exceeded 15 mph during daytime hours, which would have necessitated shutting down operations on all of these days.²² Facilities like Horsehead's which rely on scheduled loading and unloading of its bulk solid materials will either have to plan shutdowns whenever weather forecasts predict wind or wind gusts in excess of 15 miles per hour or risk noncompliance when operations cannot be immediately shutdown when such wind conditions occur. The City has not presented any information indicating that operations like Horsehead's cannot conduct loading and unloading operations in an acceptable manner when wind speeds exceed 15 miles per hour. In sum, defining High Wind Conditions within the normal range of wind speeds in the City of Chicago, and then proposing a complete prohibition on disturbing outdoor bulk solid material piles (including loading and unloading) during any High Wind Conditions, constitutes arbitrary and capricious rulemaking.

(e) PM₁₀ Monitors: Even though it maintains only a small pile of petcoke/metoke on its premises, Horsehead also would be required to install at least four real-time PM₁₀ dust monitors around the perimeter of the facility equipped with data logger. (Proposed Section 3.0(6)(f)). In the 1990's, pursuant to its then existing air permit, Horsehead conducted ambient air monitoring for lead at its Chicago facility and in a nearby community location over an extended period of time. After submitting the results to the Illinois EPA showing that the monitoring did not detect any noncompliant air emissions, the Illinois EPA notified Horsehead in 1997 that it could cease its ambient air monitoring program. Those air monitoring stations have since been removed. Now the City of Chicago's proposed rules would require Horsehead to resume ambient air monitoring when there is no basis for concluding that Horsehead's operations are contributing to any threat to the public health and welfare.

²² National Oceanic and Atmospheric Administration, Great Lake Environmental Research Laboratory ("NOAA"), archived data for 2014, available at: <http://www.glerl.noaa.gov/metdata/chi/2014.html>

Moreover, Horsehead understands that such PM₁₀ continuous emission monitor systems (CEMS) are not scientifically proven to accurately monitor PM10 emissions. The City has not made available any information demonstrating that it is either economically or technologically feasible to employ such monitoring systems for the purpose envisioned by the Proposed Rules. The available literature indicates that such a demonstration would not be possible. A study by Carla Ferguson and Asok Jain, titled “Particulate Matter Continuous Emission Monitors – Do They Really Work?” presented at the 2003 TAPPI International Environmental Conference evaluated all known PM CEMS studies. Ferguson and Jain concluded that those studies disclosed serious concerns regarding PM CEMS accuracy, stability, poor correlation evaluations and poor calibration below ISO and U.S. EPA’s standards. The study also found that PM CEMS fail to meet U.S. EPA response calibration audit requirements.

Further, the monitoring results from these systems will not be limited to the subject facility’s contribution to ambient fugitive dust levels. The Proposed Rules unreasonably omit any opportunity whatsoever for the facility owner or operator to make a showing that an exceedence of the proposed fugitive emissions standard has been caused by a source or conditions arising from a location other than the facility itself. There is simply no means or allowance for determining whether the monitors are detecting off-site sources of fugitive emissions. The automatic determination that any exceedence monitored at the facility’s property boundary is caused by the facility’s operations is plainly arbitrary and capricious.

(f) Time Limit on Piles: Horsehead’s IRM pile is already subject to the restrictions imposed pursuant to the “speculative accumulation” prohibitions under the federal Resource Conservation and Recovery Act (RCRA) regulations. The “speculative accumulation” requirements provide that during a one-year period, the amount of secondary material recycled, or shipped off-site for recycling, must be at least 75 percent of the amount accumulated at the beginning of the calendar year.²³ Although Horsehead’s IRM pile material is generally removed in less than one year, there are times where some of the IRM in the pile may be present for more than one year. (Proposed Section 3.0(6)(g)) Accordingly, the Proposed Rules threaten to place additional restrictions on Horsehead’s production of IRM and its ability to maintain IRM on-site to service future customer demands.

(f) Dust Suppressant System: Because Horsehead has been able to prevent unacceptable fugitive PM emissions from its facility with its existing use of a fire hose water spray system, it does not have the dust suppression system described in the Proposed Rules. (Proposed Section 3.0(6)(h)). The addition and operation of such a system for both the small petcoke/metcoke pile and the IRM pile will involve significant additional capital and operating costs. Moreover, the requirement to have both a wind screen and a dust suppressant system is unreasonable.

²³ See 40 C.F.R. §§261.1(c)(8), 261.2(c)(4).

2. **Proposed Section 3.0(4) Enclosure of Bulk Solid Materials:** If Horsehead is not able to comply with the “outdoor storage” requirements of the Proposed Rules, it will be required to construct and operate two separate fully enclosed structures – one for its small petcoke/metcoke pile and one for its much larger IRM product pile – and equip each structure with emission control equipment and entrances that must be closed. For its IRM product, the enclosed silo that is used to store IRM pending testing results prevents both windblown and runoff IRM, but it does not have the control equipment specified in the Proposed Rules. The requirement to add such control equipment to the silo is unnecessary and arbitrary. So too is the two-year deadline from the Proposed Rules’ effective date for completing the fully enclosed structures. This two year period is arbitrary and capricious given the lengthy time typically needed to obtain a building permit from the City of Chicago, as well as any required permitting for the required pollution control equipment from Illinois EPA. There is nothing in the Proposed Rules which extends the deadline to account for permitting delays which are beyond the applicant’s control.

3. **Proposed Section 3.0(9) Barge and Boat Loading and Unloading:** The Proposed Rules would require barge loading of the IRM to occur through an “enclosed chute” that is equipped with “a water spray system, or an air pollution control system, sufficient to control fugitive dust emissions during operations, and which is extended to within five feet of the top of the pile; or is at least five feet below the hatch coaming.” (Proposed Section 3.0(9)). Proposed Section 3.0(12) similarly requires that “[a]ll conveyors shall be enclosed conveyors.” Horsehead’s current barge loading operation does not have an “enclosed” chute or the other systems required by the Proposed Rules. However, consistent with the requirements of its Title V Air Permit, which is based on 35 Ill.Adm.Code §212.305, Horsehead’s conveyor operations utilize water spray methods to control dust. This has proven adequate to contain any fugitive emissions. Horsehead would need an adjustable chute to maintain its loading operations and there are significant technical questions surrounding whether enclosure is feasible. The absolute requirement to enclose all conveyors without any consideration for whether the material in question would become windborne at unacceptable levels during its conveyance is arbitrary.

4. **Proposed Section 3.0(10) Paving:** The Proposed Rules require paving of “[a]ll non-road ground surfaces within the facility where material accumulations routinely occur” and “[a]ll roads and vehicle movement areas within the facility that are used for transporting or moving material.” Although Horsehead’s facility has paved roads, its petcoke/metcoke and IRM pile areas are not paved. Because the meaning of “vehicle movement areas” is unclear, Horsehead cannot determine the full extent of any additional paving work that may be required for its facility. Further, because there are effective methods of dust suppression on unpaved roads, this proposed requirement to pave these unpaved areas is arbitrary and economically unreasonable.

5. **Proposed Section 3.0(11) Roadways:** Horsehead has controlled dust on its roadways by using a street sweeper on a regular basis. However, the Proposed Rules arbitrarily

require street sweeping every 4 hours (*i.e.*, “not more than 4 hours elapses between each street sweeper cleaning”) and “not less than one time daily when the facility is open for business” regardless of whether cleaning is necessary. The Proposed Rules would unnecessarily require Horsehead to increase the use of its street sweeper to 4-hour intervals seven days a week. Also, the requirement to “record whether for that day the facility operator is street sweeping every four hours or every 100 trucks” will require additional personnel to perform this recordkeeping and to watch out for “material spills of more than three pounds, or that cover more than a square foot” in order to meet the requirement of cleaning them up “within one hour.” There is no rational basis for this requirement, which unreasonably assumes, without any basis, that all such spills constitute a nuisance or create fugitive PM emissions. It is also completely unnecessary when there is already an adequate road maintenance program in place at Horsehead’s facility.

6. Proposed Section 3.0(14) Transfer Points: The Proposed Rule requires that transfer points are maintained with one of the following: total enclosure, water spray system, permitted control equipment, “moist material” transfer in overhead truck trailer or railcar loader, or chute or hopper. Not all of Horsehead’s transfer points would comply with this requirement and it arbitrarily assumes that emissions which require such controls occur from all such transfer points without any information whatsoever to support such a finding.

7. Proposed Section 3.0(15)(c): The requirement that “[a]ll outgoing material transport trucks, whether loaded or empty, are cleaned” so that their entire “exterior surface” is “free of all loose material” is patently unreasonable and unnecessary. Compliance with this requirement appears to require that a “truck wash” structure akin to a “car wash” facility will need to be established. Constructing such a structure will involve significant cost both to construct and operate, including additional operating personnel, and will lead to wasting potable water to clean the entire exterior of trucks, when such extensive truck cleaning requirements are not necessary to protect the public welfare or the environment. Moreover, this proposed requirement is particularly unreasonable and unnecessary given the Proposed Rules’ other requirements for both street sweeping and a “wheel wash station and rumble strips that will vibrate the trucks and shake off loose material and dust.” (Proposed Rule Section 3.0(15)(d)). Horsehead does have an indoor area where it washes the wheels on trucks before they leave the facility. However, this indoor wheel washing area is not safely operating during freezing weather conditions. Hence, Horsehead either would be forced to cease all truck traffic operations during such weather conditions, causing additional revenue losses.

B. The Proposed Rules Impose Unreasonable Economic Burdens on Industry.

Horsehead has not had sufficient time since the Proposed Rules were published to fully evaluate the potential costs they would impose upon its operations. From a preliminary costs review, the added potential costs would impose an unreasonable economic burden, particularly when Horsehead has operated for years in a manner that has not caused any grounds for concern

at the state or local level. The estimated costs associated with the “operation and maintenance procedures” set forth in Section 3.0 of the Proposed Rules are as follows:

- **3.0(4) Enclosures:** If Horsehead has to enclose its IRM pile, it is estimated that it would need an approximately 30,000 square feet enclosure at an estimated cost of approximately \$2,500,000 to \$3,000,000 to cover the structure itself, utilities, the required air pollution control equipment, such as a baghouse, and ventilation system. Horsehead did not have sufficient time to estimate the additional enclosure costs for its petcoke/metcoke pile.
- **3.0(6)(c) Wind Barriers:** Horsehead estimates that it would need a 200 ft. long by 36 ft high 50% porous wind barrier to surround its IRM pile as required by the Proposed Rules. The estimated cost is \$85,000 to \$100,000. Horsehead did not have sufficient time to determine an estimated cost for a wind barrier for the petcoke/metcoke pile.
- **3.0(6)(c) “High Wind Conditions”:** Suspension of Horsehead’s operations during “high wind conditions” due to the inability to conduct any activities that disturb either its petcoke/metcoke or IRM pile threatens to cause significant losses to our business. Horsehead does not maintain a large inventory of petcoke/metcoke, which is one of the ways it minimizes the amount of these materials stored at its facility at any given time. Accordingly, the interruption of the removal of petcoke/metcoke from the storage pile for more than a day or so could shutdown Horsehead’s production process. Similarly, the inability to add IRM to the IRM pile from the silos for more than 1 or 2 days, also threatens to cause a shutdown of the IRM production process. In addition, because barge loading operations that require disturbing the IRM pile would be prohibited during “high wind conditions,” Horsehead could be required to pay significant demurrage charges as barges wait to be loaded until after the “high wind conditions” cease. Because it is unclear from the Proposed Rules what the extent and nature of the wind monitoring would need to consist of, the cost of a weather station or other permanent device to monitor wind speed at the facility could not be determined.
- **3.0(6)(f) Air Monitoring System:** The capital cost (without installation or O&M costs) of four (4) air monitoring devices is approximately \$50,000. Additional cost and employee time would be required to maintain, monitor (*e.g.*, computer hookups) and conduct the recordkeeping required for this air monitoring equipment.
- **3.0(6)(h) Mobile Water Cannons:** Based on vendor information, Horsehead estimates that the capital cost of installing water spray technology to comply with this requirement would be approximately \$60,000. The additional water supply costs associated with the Proposed Rules have not yet been determined.
- **3.0(9) Enclosed Barge Loading Chute:** Horsehead does not know with any certainty whether an enclosed chute for its IRM barge loading operations is technically feasible. If feasible, the estimated cost of a chute with a water suppressant system is approximately \$1,000,000.

- **3.0(10) Paving:** Horsehead does not have a paved area where it can relocate its IRM pile or petcoke/metcoke pile while a paved area is created. In order to create the paved area, Horsehead will likely have to shut down its operations during the construction of these paved pads resulting in the loss of significant income while it cannot service its customers. An estimated paving cost could not be completed by the deadline for submitting these comments.
- **3.0(15)(d) Wheel Wash Station:** Estimated cost of \$170,000 - \$200,000
- **Additional Personnel Requirements:** In order to conduct the air and wind monitoring, other added operation and maintenance (*e.g.*, more frequent street sweeping; truck cleaning and cleanup of spills) and also the Section 4.0 recordkeeping required by the Proposed Rules, Horsehead would need to hire at least two additional employees. It is estimated that the minimum additional personnel costs would be approximately \$50,000 per employee per year or a total of approximately \$100,000 annually.

Based on the above estimated costs, Horsehead’s capital cost of complying with the Proposed Rules is estimated to range from approximately \$4.0 to \$4.4 million, with added annual personnel costs of at least \$100,000 along with losses caused by the shutdown of operations required by the Proposed Rules due to “High Wind Speeds.” These estimated costs do not include annual operation and maintenance of the additional equipment required by the Proposed Rules, including but not limited to, added utilities costs.

IV. LEGAL ARGUMENTS

A. The Proposed Rules are Unconstitutional and Exceed the City’s Legal Authority

Sec. 11-60-2 of the Illinois Municipal Code authorizes municipalities like the City to “define, prevent, and abate nuisances.” (65 ILCS 5/11-60-2). For several reasons, the breadth of Section 1.0 of the Proposed Rules goes beyond the authority vested in the City under Section 11-60-2 of the Illinois Municipal Code. First, the Proposed Rules do not even adequately define what constitutes the “nuisance” that they seek to prevent or abate. The Proposed Rules include operations that handle any “ores” when “ores” generally have not been found to cause any threat to the public health or welfare, or more specifically, the concerns that prompted the City’s Proposed Rules. Second, the Proposed Rules would regulate operations well beyond those that maintain the very large coke or coal piles which are the basis for the City’s perceived need for these rules. The Proposed Rules regulate any facility that “stores, blends, handles, processes, transports, or uses any amount of the defined “bulk solid materials,” regardless of whether those activities involve using coke as an ingredient to an industrial process, produce a product, like IRM, containing “ores” that is much heavier than coal or coke or which store coke in limited quantities that do not present any threat to the public health or welfare.

Third, the Proposed Rules include many requirements, such as the arbitrary and absolute prohibition of pile operations during winds exceeding 15 miles per hour, that have not been shown to cause a nuisance from the breadth of the various businesses included in the Proposed Rules. Similarly, the Proposed Rules include an overly restrictive 10% opacity standard that is not necessary to prevent or abate nuisances and which is wholly unsupported by any scientific data. Finally, the Proposed Rules contain redundant requirements, such as those for wind screens, dust suppression systems, truck cleaning operations, and paving requirements, that as a whole are clearly unnecessarily burdensome. The Proposed Rules impermissibly contain requirements that “will not promote the safety and general welfare of the public.” See *Garcia v. City of Chicago*, 240 Ill.App.3d 199, 202, 608 N.E.2d 239, 242, 181 Ill.Dec. 166, 169 (1st Dist. 1992).

For similar reasons, the Proposed Rules also go beyond the powers that are invested in the City’s Commissioner of Health pursuant to Section 2-112-160 of the City Code. Section 2-112-160 (b)(6) authorizes the Commissions “[t]o issue rules and regulations necessary or proper for the implementation of environmental ordinances and to accomplish the purposes of Chapter 11-4.” As explained above, many of the requirements of the Proposed Rules are neither necessary nor proper for the implementation of the City’s Air Pollution Control Ordinance in order to reduce the risk of harm to the public or the environment from air pollution. The materials handled and stored by Horsehead’s facility and any emissions from those operations do not threaten to harm the public or the environment. The City also has not shown that existing laws and regulations do not already adequately protect against air pollution.

As applied to operations like Horsehead’s, the Proposed Rules are unconstitutional because they do not bear a rational relationship to a legitimate governmental purpose and are arbitrary or unreasonable. *Napleton v. Village of Hinsdale*, 374 Ill.App.3d 1098, 1102, 872 N.E.2d 23, 28-29, 313 Ill.Dec. 263, 268 - 269 (2nd Dist.2007) (citations omitted). For example, there is no rational basis provided to support Proposed Section 6.0(1)’s 10% opacity standard nor is it applied in any reasonable manner, lacking as it does any point of reference, such as height or property boundary locations, or other clarification as to how compliance with the standard is to be determined. The Proposed Rules’ enclosure, paving and other requirements arbitrarily and unreasonably exclude, or are in addition to, reasonable alternatives for controlling dust emissions, such as tarping and dust suppression systems.

As explained above, Horsehead’s operations will be directly injured by these Proposed Rules, either through curtailed operations resulting in loss of revenue or through the resulting added and unreasonable operating costs they impose. Horsehead urges the City to refine the “Scope and Purpose” language of Section 1.0 of the Proposed Rules so that operations which are not contributing to its public nuisance concerns are not arbitrarily and unlawfully included.

B. The Proposed Rules are Impermissibly Vague and Overbroad.

The scope and applicability of the Proposed Rules is both overly broad and vague, beginning at their core with the language of the definition of “bulk solid material” in Section 2.0(2). The definition of “bulk solid material” broadly encompasses “any solid substance or material which can be used as a fuel or as an ingredient in a manufacturing process....” As noted above, even the California rules on which the Proposed Rules are based do not regulate materials other than coal, coke and sulfur. The terms “used as a fuel or as an ingredient” or “ore” are particularly vague because numerous substances and materials may qualify as a “fuel,” an “ingredient,” or an “ore” in a manufacturing process. Moreover, the Proposed Rules do not define the terms “fuel,” “ingredient” and “ore.” Horsehead is still uncertain whether the IRM it produces will in fact be deemed by the City to be regulated under the Proposed Rules. It is impossible to determine from the Proposed Rules whether the term “ore” does or does not include the handling and storage of commercial products like Horsehead’s IRM product that contains metals such as iron. The City’s Proposed Rules are impermissibly vague because they fail to clearly identify what facilities and what materials are regulated. Therefore, the Proposed Rules improperly open the door to their future arbitrary enforcement.

C. The Proposed Rules Impermissibly Burden Interstate Commerce.

Several of the requirements in the Proposed Rules threaten to adversely impact commerce both within the City and the State of Illinois, as well as across state lines. The increased operating costs imposed by the Proposed Rules and the interruptions their requirements will cause in the interstate transportation of Horsehead’s product and its delivery of products to its out-of-state customers for use in further manufacturing threaten both upstream and downstream producers, consumers and transporters. The resulting effects include higher material costs to Horsehead and either a shortage of or higher price for the products Horsehead produces. The Proposed Rules also threaten to cause a loss of jobs both within and outside of the State of Illinois as upstream and downstream businesses who cannot afford these increased costs either curtail or cease operations.

Horsehead submits that the Proposed Rules threaten to place an unconstitutional burden on interstate commerce under the Dormant Commerce Clause of the U.S. Constitution because the burden imposed is “clearly excessive in relation to the putative local benefits.” *Pike v. Bruce Church, Inc.*, 397 U.S. 137, 142 (1970). Further, the Proposed Rules apply to trucks, railcars and marine vessels (see Proposed Section 2.0(19) definition of “vehicle”), which are all instrumentalities of commerce. Their cover and enclosure requirements for such vehicles, which will include out-of-state vehicles, impose an impermissible burden on interstate commerce. See, e.g. *Kassel v. Consol. Freightways Corp. of Delaware*, 450 U.S. 662 (1981) (Iowa law imposing regulations with illusory safety benefits on tractor trailers impermissibly burdened commerce).

D. Lack of Due Process and Request to Withdraw the Proposed Rules

Although the City extended the original comment period on the Proposed Rules from January 31 to February 7, the notice and comment afforded does not satisfy the spirit and intent of the notice and hearing requirements set forth in Section 2-112-160(b)(6) of the City Code. That section requires that where written comments are requested on proposed rules, as is the case here, the minimum comment period is “30 days from the date of the notice.” Moreover, where hearings are held, not less than ten days’ notice of the hearing is required. Here, while the City technically may be able to satisfy the 30-day notice comment period requirement, the fact remains that many businesses did not receive notice that the handling of materials other than petcoke/metcoke, or that even small quantities of petcoke/metcoke, would be affected by the rules until less than thirty days before the February 7 comment deadline. The City’s December 19, 2013 Press Release on the Proposed Rules misleadingly stated that the Proposed Rules are specifically targeted to protect residences from petcoke and metcoke dust, quoting Mayor Emanuel as stating “...we are working to force these petroleum coke facilities to either clean-up or shut down.” Even the instructions for how to submit comments focused only on coke material, providing the e-mail address of: “petcokecomments@cityofchicago.org”.

This proposed rule was publicly noticed on December 19, 2013, on the eve of the Christmas and New Year's holidays. Ending the public comment period on February 7, effectively provided less than thirty days (and far fewer normal working days) to review and understand the Proposed Rules. In this very short time period, all the necessary steps to developing and completing the preparation of full and informed comments were not reasonably possible. Horsehead has made a diligent attempt to evaluate the potential impacts of the Proposed Rules, consult with technical resources on issues of technical feasibility and economic reasonableness and assess the ability of its facility to comply. However, as identified in its comments above, Horsehead still does not have a full and clear understanding of the Proposed Rules nor of their technical and economic impacts on its operations.

The City’s limited public notice efforts regarding the Proposed Rules failed to inform all affected facilities of their full breadth and impact. The reach of the Proposed Rules extends well beyond limiting fugitive emissions from petcoke or metcoke storage piles at terminals to encompass all “bulk solid material.” The public announcements regarding the proposed rules failed to reasonably apprise and inform facilities which handle bulk materials other than or in addition to coke materials of the scope, extent and impact of the Proposed Rule on the operation of their facilities. Similarly, the City’s announcement on Thursday, January 9, 2014 that it would hold a meeting for affected businesses on Friday, January 10, 2014 failed to provide stakeholders like Horsehead with either any meaningful notice or the ability to discuss and understand the substance of the Proposed Rules with the City.

There has been no opportunity for, nor the benefits derived from, businesses and citizens working together with the City to draft Proposed Rules which appropriately identify and fill true

“gaps,” if any exist, in the City’s current air pollution regulations. Perhaps such opportunities were afforded to coal or coke terminals, but they certainly were not provided to companies like Horsehead which use minimal quantities of petcoke/metcoke as an ingredient to its production processes and which store metals-containing products like IRM at its facility. When neither adequate notice nor equal opportunity to engage in the rulemaking process is afforded to all interested stakeholders, the process becomes discriminatory and renders meaningless due process protections.

The City’s “rush to judgment” here is particularly prejudicial because the Proposed Rules will have a severe and unreasonable impact on existing facilities that can result in cessation of operations leading to job loss and erosion of the local tax base. The City should withdraw, or at least suspend moving forward with, the Proposed Rules and engage in a stakeholder process regarding whether and how the City should approach fugitive emissions from “bulk solid material” before proposing rules that have an immediate and substantial negative impact on businesses and the employees of those businesses.

V. CONCLUSIONS AND RECOMMENDATIONS

For the many reasons identified above, the Proposed Rules are arbitrary and capricious. They are not reasonably related to their expressed purpose because of their generic application to all bulk material handling facilities. The City has no just cause or other need to regulate businesses like Horsehead’s that are fully permitted, have an approved fugitive dust operating plan and a contingency measure plan, and which have sufficient record keeping to demonstrate compliance with those plans.

If the City nevertheless intends to proceed with this rulemaking, the proposed scope and purpose language of the proposed rules should be revised so that compliant operations are not unnecessarily and arbitrarily regulated by these proposed rules. This can be achieved by revising the Proposed Rules to limit their scope and applicability to apply only to:

- Large bulk coal or coke terminal operations, *i.e.*, those operations that receive or transfer coke or coal from any type of vehicle without using the coke or coal as an ingredient or fuel source in its operations;
- Coal or coke that is stored in significant amounts, which amount should at least be in excess of 20,000 tons.
 - In the alternative, include a solid materials weight threshold that will exclude heavier materials which are not prone to windborne dispersion

It is critical to the continued viability of Horsehead’s existing and compliant operations that the Proposed Rules not apply to the temporarily storage or handling of petcoke/metcoke for use as an ingredient in a production process. Similarly, because the outside storage of Horsehead’s IRM product has not and does not cause any nuisance conditions or violations of any applicable environmental laws, regulations or ordinances, Horsehead requests that the

Proposed Rules be revised to exclude the storage of products such as IRM. This can be accomplished in a number of ways, such as by limiting the scope of the Proposed Rules to apply only: (i) to bulk solid materials terminals that do not produce a product; or (ii) to the storage of coal or coke materials only.

A major problem with the Proposed Rules is that they represent a “scorched earth” approach to addressing the situation which occurred in the summer of 2013. The Proposed Rules apply a broad stroke of “one size fits all” requirements, from wind barriers, enclosures, dust suppressant systems, height requirements, control equipment, road paving, streets sweeping and truck cleaning, that for many facilities is simply duplicative “overkill” that is unnecessary to maintain adequate control of fugitive dust or PM emissions and will not confer any real or significant environmental or public welfare benefits. There is no flexibility within these Proposed Rules to allow businesses to determine how best to achieve the stated goals.

The existing state law and regulations are certainly more than adequate to regulate non-bulk terminal operations like Horsehead’s. Horsehead therefore reasonably requests that before the City enacts these Proposed Rules, that Horsehead be afforded the opportunity to demonstrate that its compliance with those existing legal requirements, which are specifically applied to Horsehead’s operations through its existing Title V Air Permit, provides adequate safeguards against causing any harm to the public health or welfare. Horsehead has been a good citizen of the City of Chicago and it respectfully submits these comments with the goal of being able to continue operate and thrive within its borders.

Respectfully submitted,



Ali Alavi

Senior Vice President - Corporate &
Environmental Affairs
Horsehead Corporation

Cc: Alderman John A. Pope

**Horsehead Corporation's Comments Regarding the
Department of Public Health – Rules and Regulations for
Bulk Materials Storage Piles Proposed December 17, 2013**

ATTACHMENT 1

List of Subjects in 40 CFR Part 170

Administrative Practice and Procedures, Occupational Safety and Health, Pesticides and Pests.

Dated: December 16, 1994.

Daniel M. Barolo,

Director, Office of Pesticide Programs.

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40 CFR Parts 261, 266, and 268

[SW-FRL-5127-2]

RIN 2050-AE15

Standards for the Management and Use of Slag Residues Derived From HTMR Treatment of K061, K062, and F006 Wastes

AGENCY: Environmental Protection Agency.

ACTION: Proposed rule and request for comment.

SUMMARY: The Environmental Protection Agency (EPA or the Agency) is proposing to allow materials resulting from the treatment of certain hazardous wastes to be used as a product in road construction and as an anti-skid/deicing material on road surfaces. These materials are residues ("slags") generated from the treatment of pollution control dusts resulting from scrap metal recycling (electric arc furnace dust). The Agency evaluated the potential risks that might arise from the use of these "slags" and determined that these uses do not present a significant risk. This action would reclassify these treated materials as nonhazardous and allow these uses, but only if the toxic metals in the waste are reduced to safe levels by treatment.

The Agency is proposing this action to clarify two seemingly inconsistent parts of the regulations governing residual materials generated from the treatment of hazardous wastes. This rule clarifies what uses of the treatment residues are allowed, and specifies what conditions must be met for these materials to be used in this manner. Furthermore, this action partially fulfills a settlement agreement entered into by the Agency with the Natural Resources Defense Council (NRDC) and the Hazardous Waste Treatment Council (HWTC) to resolve the apparent inconsistency in the regulations.

The Agency believes these proposed actions will promote recycling and resource recovery in two ways. This action will directly encourage the recovery of metals from the hazardous

electric arc furnace dust and other metal wastes by allowing the "slag" residuals to be used in a beneficial and environmentally sound way.

Furthermore, this proposed rule will encourage the recycling of scrap metal by helping to reduce the costs that result from the treatment and disposal of the electric arc furnace dust. The Agency believes that this rule would satisfy the goals of resource recovery, while also ensuring protection of human health and the environment.

DATES: EPA will accept public comments on this proposed rule until February 13, 1995. Comments postmarked after this date will be marked "late" and may not be considered.

ADDRESSES: The public must send an original and two copies of their comments to EPA RCRA Docket Number F-94-SRTP-FFFFF room 2616 (Mail Code 5305), 401 M Street S.W., Washington, DC 20460. The docket is open from 9:00 a.m. to 4:00 p.m., Monday through Friday, except on Federal holidays. The public must make an appointment to review docket materials by calling (202) 260-9327. A maximum of 100 pages may be copied at no cost. Additional copies cost \$0.15 per page.

FOR FURTHER INFORMATION CONTACT: For general information contact the RCRA Hotline, toll free at (800) 424-9346, or at (703) 412-9810. For specific questions concerning this notice, contact Narendra Chaudhari, Office of Solid Waste (Mail Code 5304), U.S. Environmental Protection Agency 401 M Street, S.W., Washington, DC 20460, (202) 260-4787.

SUPPLEMENTARY INFORMATION:**I. Background**

A. Existing Regulations for Hazardous Wastes Used in a Manner Constituting Disposal

Currently, hazardous wastes that are used in a manner constituting disposal (applied to or placed on land), including waste-derived products that are produced in whole or in part from hazardous wastes and used in a manner constituting disposal, are not subject to hazardous waste disposal regulations provided the products produced meet two conditions. First, the hazardous wastes must undergo a chemical reaction in the course of becoming products so as to be inseparable by physical means (see § 266.20(b)). A second condition for exemption is that the waste-derived products must meet best demonstrated available technology (BDAT) treatment standards under the

land disposal restrictions program for every prohibited hazardous waste that they contain before they are placed on land (see § 266.20(b)).

The exemption in § 266.20 is used for slag residues (slags) generated from the treatment of hazardous waste K061 (and, to a limited extent, K062 and F006) using high temperature metal recovery (HTMR) processes. Section 266.20 is applicable because the majority of this slag is used in highway construction materials (e.g., as road subbase), and a limited amount is also used by directly applying it to road surfaces (i.e., top grade and as an anti-skid or deicing agent). (See 56 FR 15020, April 12, 1991.)

On August 19, 1991 and August 18, 1992 (see 56 FR 41164 and 57 FR 37194), EPA finalized "generic exclusions" for nonwastewater slag residues generated from the HTMR treatment of several metal-bearing hazardous wastes (K061, K062, and F006). These HTMR slag residues are excluded from the hazardous waste regulations provided they meet designated concentration levels (generic exclusion levels) for 13 metals, are disposed of in Subtitle D units, and exhibit no characteristics of hazardous waste (see § 261.3(c)(2)(ii)(C)). The generic exclusion levels for the metals were based on the use of the EPA Composite Model for Landfills (EPACML), which predicts the potential for groundwater contamination from wastes that are placed in a landfill. EPA limited the generic exclusion to residues disposed of in a Subtitle D unit because, at that time, the Agency could not properly evaluate concerns over potential releases to other media resulting from uses of the HTMR slag as product, especially as an anti-skid material on road surfaces (see 56 FR 41164, August 19, 1991).

As EPA noted in the final rule for the initial generic exclusion for K061 residues (see 56 FR 41164, August 19, 1991), the use of HTMR residues as anti-skid material was not prohibited, provided the residue meets the exemption conditions given in § 266.20. EPA also noted in the same notice that it would further evaluate the uses of K061 HTMR residues that constitute disposal, and would consider amendments to § 266.20 for HTMR slags that might require further controls on such uses.

B. Summary of Petition and Settlement Agreement

The Natural Resources Defense Council (NRDC) and the Hazardous Waste Treatment Council (HWTC) filed a petition for review challenging EPA's

decision not to apply "generic exclusion levels"—levels at which K061 slags are deemed nonhazardous—to K061 slags used as waste-derived "products" and applied to or placed on land. The generic exclusion levels established for some metals in the K061 HTMR slags are lower than the BDAT standards that apply to K061. Therefore, while the generic exclusion requires that the nonhazardous K061 slag that meets exclusion levels be disposed of in a Subtitle D unit, K061 HTMR slag that may exhibit metal levels above the exclusion levels (but below BDAT) may be used as a product in a manner constituting disposal under the exemption in § 266.20(b). The petitioners pointed out the seeming anomaly of the slag used in an uncontrolled manner being effectively subject to lesser standards than slag disposed in a controlled landfill.

On August 13, 1993, EPA entered into a settlement agreement with these petitioners which would address their concerns through two separate notice-and-comment rulemakings. EPA agreed to propose the first rule within 6 months of the settlement date (and issue a final rule within 12 months) to either establish generic exclusion levels for "non-encapsulated" uses of K061 slags, or effectively prohibit such uses of K061 slags on the land. EPA also agreed to propose a second rule within 16 months of the settlement date (and issue a final rule within 28 months), to establish generic exclusion levels for encapsulated uses of K061 slags on the land. The agreement specified that the generic exclusion levels for K061 slags will be based on an evaluation of the potential risks to human health and the environment from the use of K061 slags as waste-derived products, taking into account all relevant pathways of exposure.

C. Implementation of Settlement Agreement

This action represents the second proposed rule required under the settlement agreement. EPA has promulgated the first rules required under the settlement agreement. (See 59 FR 8583, February 23, 1994 (proposed) and 59 FR 43496, August 24, 1994 (final)). The final rule will effectively prohibit, beginning on February 24, 1995, anti-skid/deicing uses of HTMR slags derived from K061, K062, and F006, as waste-derived products placed on land. Today's proposal contains EPA's risk-based determinations for all major K061, K062, and F006 HTMR slag uses, including anti-skid/deicing uses, and thus implements the remaining portion of the agreement.

II. Overview of Production, Processing, and Uses

A. Production of HTMR Slags

According to information available to EPA, HTMR slags are by-products of metal recovery operations (which involve recovery of metals from metal-bearing hazardous wastes) produced primarily at two facilities, Horsehead Resource Development Company Inc. (HRD) and International Metal Reclamation Company (Inmetco). HRD is currently the major generator of HTMR slags which are at issue in this proposed rule. In 1992, HRD processed 376,000 tons of electric arc furnace (EAF) dust, which is reportedly 68 percent of the EAF dust generated domestically. From this amount of EAF dust, HRD produced 120,000 tons of zinc calcine, 19,000 tons of lead concentrate, and 237,000 tons of slag (see EPA's Report to Congress on Metal Recovery, Environmental Regulation & Hazardous Waste; EPA 530-R-93-018). Inmetco provided information that it processed a total of 58,100 tons of wastes in 1993, recovering 22,196 tons of metals and producing 15,000 tons of slag (See docket for information submitted by Inmetco at a meeting with EPA on March 10, 1994).

B. Process Description

There are a number of HTMR processes, all of which are multi-step processes. The rotary kiln is the HTMR process primarily used to recover metals from K061, K062, and F006 wastes. The process steps are generally these: (1) wastes are mixed with coal or coke and fluxes to prepare feed materials, (2) high temperature processing is used to reduce metal oxides to their metallic form, (3) volatile metals (primarily cadmium, zinc, and lead) are recovered by collection systems, and (4) residual materials are discharged from the process and cooled to form a slag (see BDAT Background Document for K061). It should be noted that not all metal-bearing hazardous wastes are amenable to recovery by HTMR processes, possibly because their metal content is too low or because of significant quantities of impurities or contaminants that cannot be removed due either to economic or technical limitations. Therefore, metal reclaimers usually set specifications for materials that they will accept for processing (see EPA's Report to Congress on Metal Recovery Environmental Regulation & Hazardous Waste; EPA 530-R-93-018).

C. Properties and Uses of HTMR Slags

According to information provided by the generators on the physical/chemical

properties of HTMR slags (see RCRA docket), these slags are highly dense, chemically stable (inert), and highly durable (resistant to breakdown). These are all properties which the generators claim make HTMR slags desirable construction materials.

HTMR slags are primarily used as subbase materials (e.g., in construction of roads, parking lots, and driveways) and as additive ingredients in cement or concrete/asphalt mixtures. Because the subbase is covered by a relatively hard/impermeable material and cement or concrete/asphalt mixtures lock in any additive ingredients, EPA considers these uses of HTMR slags to be "encapsulated" uses. A smaller portion of HTMR slags (believed to be less than 25 percent) are used as anti-skid/deicing materials, as top grade or surfacing materials (e.g., in construction of roads), and for other similar uses. Because anti-skid/deicing materials are dispersed freely on roads (during icy or snowy conditions to provide traction for vehicles) and top grade materials result in uncovered (unpaved) roads, parking lots, driveways, and the like, EPA considers these uses of HTMR slags to be "non-encapsulated" uses.

III. Proposed Standards for the Management and Use of HTMR Slags

EPA is proposing that risk-based generic exclusion levels in § 261.3(c)(2)(ii)(C), in addition to being exclusion standards for disposing HTMR slags derived from hazardous wastes K061, K062, and F006 in a Subtitle D unit, also become exclusion standards for managing these slags and for using these slags as follows: 1) covered subbase materials (e.g., in construction of paved roads, parking lots, and driveways), 2) additive ingredients in cement or concrete/asphalt mixtures, 3) top grade or surfacing materials (e.g., in construction of roads, parking lots, and driveways), and 4) anti-skid/deicing materials.

The Agency is proposing this action for the following reasons. Based on the results of a very conservative risk assessment completed by EPA for the relevant management practices and end-uses of HTMR slags (see Section IV for details), EPA has tentatively determined that the wastepile, transport, road subbase, and landfill waste management scenarios for HTMR-derived slags do not require regulation in order to protect human health and the environment, if these slags meet the generic exclusion levels. In addition, EPA is proposing that use of HTMR slags as additive ingredients in cement or concrete/asphalt mixtures would also not require regulation, if these slags meet the

generic exclusion levels. This is primarily because the cement or concrete/asphalt mixtures would mix with and chemically bind or encapsulate the portion of HTMR slags that are added, and any significant releases of slag constituents into the environment are unlikely. Finally, the risk assessment results, which are based on very conservative release and exposure assumptions, indicated little potential risk for the top grade and anti-skid/deicing end-uses of HTMR slags that meet the generic exclusion levels. Therefore, EPA is also proposing that uses of HTMR slags as top grade and anti-skid/deicing materials would also not require regulation, if these slags meet the generic exclusion levels.

As a consequence of the above proposed changes, EPA is also proposing to amend the existing regulations under § 266.20 that conditionally exempt hazardous waste-derived products used in a manner constituting disposal from RCRA Subtitle C regulation. Specifically the language of § 266.20 would be revised to prohibit the uses of products containing HTMR slags derived from hazardous wastes K061, K062, and F006 when these slags are still hazardous wastes, i.e., contain hazardous constituents at concentrations exceeding the exclusion levels. This prohibition implements RCRA section 3004(g)(5) and 3004(m), which require EPA to prohibit land disposal of hazardous wastes that have not been pre-treated so as to minimize the short-term and long-term threats posed by their land disposal. In addition, EPA is including a cross-reference in the table "Treatment Standards for Hazardous Wastes" in § 268.40 (the Land Disposal Restriction treatment standards) which notes the changes concerning utilization of HTMR slags in §§ 261.3 and 266.20.

As described in section IV.C, the Agency is also taking this opportunity to update the generic exclusion levels to reflect the changes in the drinking water Maximum Contaminant Levels (MCLs) for some of the metals of concern. Therefore, the Agency is proposing to amend the generic exclusion levels for antimony, beryllium, and nickel.

EPA requests comments on the proposed changes. EPA also requests comments on the data used in the risk assessment, the methodology and

assumptions used in the risk assessment, and other analysis supporting the proposed rule. Further, EPA requests comments on whether the uses of HTMR slags identified in this proposal are the only uses in practice or whether there are other uses practiced or planned. If EPA is alerted to other significant uses, the Agency could use the information to determine whether or not further analysis of those uses would be required.

IV Overview of Risk Assessment Supporting This Proposal

EPA performed a very conservative assessment of the potential risks to human health and the environment from the relevant management practices and uses of K061, K062, and F006 HTMR slags. This section summarizes the methods and results of EPA's risk assessment. A more detailed presentation of the risk assessment and uncertainties involved is provided in a technical background document entitled "Assessment of Potential Risks to Human Health and the Environment from Management and Uses of HTMR Slags," which is included in the docket for this proposed rulemaking.

A. Methodology of Risk Assessment

EPA's methodology consisted of four primary steps. First, a lifecycle analysis for the HTMR slags was performed, starting from the point of manufacture and ending at the point of disposal, to identify potential contaminant release scenarios (air, ground water, surface water, and soil) associated with slag management, use, and disposal practices. Second, based on the release scenarios, exposure pathways and receptor locations relevant to contaminants in HTMR slags were identified. Third, appropriate release, fate, and transport models were used to compute contaminant concentrations at receptor points for each release and exposure pathway. Finally the media-specific concentrations for air, ground water, surface water, and soil were compared to the appropriate human health and ecological effects reference concentrations to determine the quantitative risks from exposures to contaminants in HTMR slags.

EPA focused on selecting high-end values for use in the models to estimate the individual risk for those persons at

the upper end (>90th percentile of the population distribution) of the risk distribution. The Agency chose this very conservative approach in order to identify any pathways or chemicals which would warrant a more in depth risk assessment and characterization. A summary of the data sources and risk assessment methodology for HTMR slags is provided below.

1. Sources of Constituents Data for HTMR Slags

The constituents of concern in HTMR slags were identified in the Land Disposal Restrictions for Electric Arc Furnace Dust (K061) Final Rule (56 FR No. 160, p 41164) and supported by the Best Demonstrated Available Technology (BDAT) Background Document for K061 (US EPA, 1988). Specifically the K061 Final Rule identified fourteen metals requiring BDAT treatment standards for K061, including: antimony, arsenic, barium, beryllium, cadmium, chromium, lead, mercury, nickel, selenium, silver, thallium, vanadium, and zinc. However for various reasons discussed in the K061 Final Rule, EPA promulgated the standard for vanadium as "reserved."

For the purposes of the risk assessment, total concentrations of constituents of concern in HTMR residuals were based on the EPA-collected data base presented in the BDAT Background Document for K061 (US EPA, 1988). For each constituent of concern, the 95th percentile upper confidence limit of the mean (95th UCLM) was calculated for the total metal concentration (in ppm or, equivalently mg constituent per kg HTMR residual). EPA selected this value to represent a reasonable high-end measure of constituent concentrations in HTMR residuals. Table 1 presents the total concentrations and summary statistics for that data set, including maximum concentration, mean, and the range of concentrations.

For exposure scenarios involving HTMR leachate (e.g., landfilling of HTMR-derived slag), the leachate concentration was assumed to be equal to the maximum levels allowed under the generic exclusion established in the K061 final rule. Table 1 also presents the generic exclusion levels (in mg/L).

TABLE 1 — SUMMARY STATISTICS FOR CONSTITUENT CONCENTRATIONS FOR HTMR RESIDUALS

Constituent	Total constituent concentrations in HTMR residuals from rotary kiln incinerator			Generic exclusion levels for leachate (mg/L)
	Range (ppm)	Mean (ppm)	95% UCLM (ppm)	
Antimony	111-405	195	266	0.10

TABLE 1.—SUMMARY STATISTICS FOR CONSTITUENT CONCENTRATIONS FOR HTMR RESIDUALS—Continued

Constituent	Total constituent concentrations in HTMR residuals from rotary kiln incinerator			Generic exclusion levels for leachate (mg/L)
	Range (ppm)	Mean (ppm)	95% UCLM (ppm)	
Arsenic	75-113	86	98	0.50
Barium	331-467	374	408	7.6
Beryllium	1.7-4	2	3	0.01
Cadmium	<15	<15	<15	0.05
Total Chromium	205-978	612	797	0.33
Lead	365-4270	1926	2863	0.15
Mercury	<0.1	<0.1	<0.1	0.009
Nickel	422-952	588	727	1.0
Selenium	2.5-8.8	5	6	0.16
Silver	32-59	39	46	0.30
Thallium	<0.5-1.0	<1	<1	0.02
Zinc	4550-27400	14634	22117	70

Note: Concentration of chromium VI was estimated to be 1% of total chromium, based on leaching data for total chromium.

2. Release, Fate, and Transport Models

To assess the risks from relevant management practices and uses of HTMR slags, EPA used fate and transport models to compute contaminant concentrations at exposure points for each release and exposure scenario. EPA used the appropriate algorithms from the MMSOILS model, a multimedia contaminant fate, transport, and exposure model, to simulate fate and transport of metals in HTMR slags through overland and subsurface transport. The overland transport of metals in HTMR slags incorporated transport to nearby soils and surface water (including dissolved contaminants and contaminants sorbed to slag particles). EPA used the Fugitive Dust Model (FDM) to compute dispersion and transport of particulates in air from ground-based sources. FDM is a computerized air quality model which was specifically designed to calculate air concentrations from fugitive dust sources. The model is based on the Gaussian plume algorithm for computing air concentrations, adapted to incorporate a gradient-transfer deposition algorithm. The MINTEQ metals speciation model was used to estimate soil adsorption coefficients for the metal constituents in HTMR slags whenever possible. The MINTEQ model is an aqueous speciation geochemical model which estimates metal adsorption as a function of Ph, metal concentrations in the dissolved phase, iron oxide content of potential sorbents, organic matter content of potential sorbents, pore water chemistry, and temperature. Further details of the models used are provided in the docket for this proposed rulemaking.

3. Sources of Environmental Releases

EPA identified the potential sources of metals releases from HTMR slags based on known management practices and end-uses of HTMR slags: disposal in landfills, storage in wastepiles, transportation in trucks, use as road construction material underlying pavement (subbase or base material), use as additive ingredient in cement or aggregate in concrete/asphalt mixtures, use as road surface material (top grade), and use as anti-skid/deicing agent on road surfaces. Potential releases under these scenarios are described below.

a. Wastepile—Four practices associated with the generation and management of wastepiles of HTMR slags may result in potential releases to the environment: (1) outdoor storage of an uncovered wastepile, (2) adding HTMR slags to the wastepile, (3) loading/unloading operations associated with transport of the wastepile, and (4) transport of slags from the facility to points of use.

The HTMR slags generated at the manufacturing facility may be stored outside in an uncovered wastepile at the facility until it is transported offsite. Since the wastepiles are uncovered, air releases may occur if particulates from the wastepile become entrained in the atmosphere. The slag particulates also may be eroded from the wastepile as a result of wind and rain. In addition, since the slags could be stored directly on top of the soil (i.e., no liner), release to the ground water may occur if metals from the slags leach as a result of precipitation.

As slags are added to the wastepile, the resulting disturbance may cause particles to become entrained in the atmosphere. Particulate emissions of slag material may also be caused by the loading/unloading operations associated with transport vehicles. Finally,

particulate emissions of slag material may result from the transport of the wastepile, assuming that the transport vehicles are not fully covered.

b. Road Subbase—The HTMR slags may be transported from the manufacturing facility to a site for use as a road subbase material. The subbase layer is then covered by a relatively impermeable road surfacing material, typically asphalt. Although there is potential for environmental releases from the subbase material prior to road surfacing and when road surfaces are broken up for repair, such releases are expected to be short-term, temporary events, and any releases would be relatively minor. Therefore, atmospheric and erosion releases were not modeled for the use of HTMR slags as a road subbase material. However, even while the subbase is covered, the metals in the slag could potentially be released during a high water table event. In this circumstance, the water table may become elevated to the extent that it contacts and saturates the road subbase layer. The metals in the slag could leach from the road subbase, pass through the unsaturated soil zone, and discharge into the groundwater.

c. Additives in Cement or Concrete/Asphalt Mixtures—HTMR slag material may also be used as an ingredient in the production of cement (as a source of iron in cement kilns). Alternatively, the slag may be used as aggregate in the production of concrete or asphalt. In these uses, the cement or concrete/asphalt mixtures would mix with and chemically bind or encapsulate the portion of HTMR slags that are added. Therefore, there is not likely to be any significant releases from this use by any scenario. There is the possibility, if pieces of cement or concrete/asphalt are ultimately disposed in a landfill, that environmental releases may occur. This

type of scenario was considered under disposal of HTMR slags directly in a landfill; this represents a "worst case" for the concrete/asphalt mixtures because the landfill was assumed to contain the HTMR slags, and not slags mixed with or encapsulated in concrete or asphalt.

d. Top Grade—The HTMR slags may be used as a top grade material, as the surface material for an unpaved road. Atmospheric releases of the slag particulate as a result of vehicular traffic, particulate releases resulting from both wind erosion and surface runoff, and contaminant releases from the top grade layer resulting from leaching processes are all possible release pathways, and were considered in the Agency's assessment.

e. Anti-Skid/Deicing—The HTMR slags can be used as anti-skid/deicing agents on ice and/or snow covered roads. A thin layer of the slag material is spread over the road surface in an effort to provide better traction for vehicle tires. During warm periods in which the snow and ice melt, the metals present in the slag material may leach from an unpaved road through the unsaturated zone and into the surficial aquifer. In addition, the slag material may erode from the site by wind and rain and be deposited on adjacent property. Lastly, slag particulates may become entrained in the atmosphere as a result of vehicle traffic, and may result in atmospheric emissions similar to that of the top grade scenario.

f. Disposal in Landfill—One of the lifecycle phases considered in this analysis involves disposal of slag in a solid waste landfill. The potential

leaching of constituents from the slag in the landfill into groundwater was evaluated previously in the rulemaking that established the generic exclusion levels for HTMR slag (see August 18, 1992, 57 FR 37194). Other potential release scenarios from the landfill that were identified include: (1) erosion of particulates from the landfill, and (2) air releases and deposition to nearby soils. Particulates from slag may be eroded from the landfill as a result of the forces of wind and rain. The eroded material may ultimately be deposited onto a nearby residential plot of land or into a nearby surface water body. Particulates entrained in the atmosphere as a result of waste management activities at the landfill may also be transported to off-site receptors.

4. Exposure Pathways

EPA considered various direct and indirect exposure pathways for HTMR slag materials and believes that the potential for risk from most indirect pathways (e.g., food chain pathways) would not be significant. The comparison of risks associated with direct and indirect exposure pathways for metals suggested that the direct pathways typically present higher risks due to the: (1) weak uptake of soil-bound metals in plants, (2) limited ability of metals to bioaccumulate on a whole-body basis (with the exception of mercury; however levels of mercury in HTMR slags, as presented in table 1, are not significant), and (3) tendency of metals to remain bound in the slag matrix in a form that further reduces their bioavailability.

Therefore, EPA evaluated four direct exposure pathways that were identified

as being relevant based on the presence of metal contaminants in HTMR slags and the uses of the material. The four direct exposure pathways of concern are:

- air pathway: emission and dispersion of respirable particulates (<10 microns in size);
- groundwater pathway: release of contaminants to subsurface soils and subsequent leaching into groundwater;
- surface water pathway: overland transport (via runoff and soil erosion) of contaminants to surface water; and
- soil pathway: overland transport of contaminants via soil erosion to offsite residential soils.

In addition to these direct exposure pathways, EPA identified one indirect exposure pathway with respect to potential release scenarios, i.e., release of nonrespirable particulates (30 microns in size) followed by deposition to soil.

EPA did not model each of these four pathways for every source of HTMR slags. The exposure pathways evaluated by EPA for each exposure source/scenario are summarized in matrix form in Table 2. Only those pathways relevant to a given source scenario were modeled for that scenario. For example, as noted previously, direct air pathways for the road subbase scenario were not evaluated because the subbase is essentially a covered source that is not subject to wind erosion, overland transport, or air dispersion. Similarly EPA did not explicitly include HTMR slags contained in cement or concrete/asphalt mixtures for any of the exposure scenarios of concern.

TABLE 2.—EXPOSURE PATHWAYS EVALUATED FOR SOURCES/SCENARIOS ASSOCIATED WITH THE USE OR DISPOSAL OF HTMR SLAG

Exposure pathway	Exposure source/scenario				
	Wastepile	Top grade and anti-skid	Slag landfill	Subbase	Transportation
Ground Water Ingestion	X	X	X	X	
Surface Water	X	X	X		
Soil Ingestion	X	X	X		
Air Deposition to Soil and Ingestion	X	X	X		
Particulate Inhalation	X	X	X		X

¹ Evaluated previously (see 57 FR 37194; August 18, 1992)

5. Evaluation Criteria

EPA used human health and ecological (aquatic) effects criteria to evaluate levels of hazardous constituents in various media.

a. Human Health—The human health reference values for the constituents of concern includes carcinogenic slope

factors (CSFs), reference doses (RfDs), and reference concentrations (RfCs). The CSFs, a measure of carcinogenic potency were used for both the inhalation and ingestion routes of exposure. The RfD is an estimate of the daily intake of a substance, within an order of magnitude, to which the adult

human population (including sensitive subgroups) may be exposed without any adverse noncarcinogenic effects. The RfC is the analog to the RfD for inhalation exposure, although the RfC units are typically converted to concentration (mg/m³), using default exposure assumptions for breathing rate

and body weight. Virtually all the reference values (i.e., CSFs, RfDs, and RfCs) were obtained from the Integrated Risk Information System (IRIS), EPA's primary source for verified human health reference values. Reference values were also identified in the Health Effects Assessment Summary Tables (HEAST). When no verified RfC values were available, the RfC values were extrapolated from RfDs, assuming that a 70 kg adult inhales 20 m³ of air per day. Based on the human health reference values, the Agency calculated the reference concentrations in Table 3 for soil, drinking water, and air. The table includes Maximum Contaminant Levels (MCLs) for drinking water, when available. The human health reference values, and the methods used to calculate the reference concentrations, are summarized in the docket for today's rule. Two constituents of concern, thallium and lead, did not have reference values for ingestion or inhalation in either IRIS or HEAST. The reference value (i.e., RfD) for thallium

was estimated from the lowest reference value of the thallium salts (e.g., thallium sulfate, thallium nitrate). A reference value for lead is not available at this time since Agency consensus has not been reached on how an RfD or RfC should be calculated for lead. However, EPA has established regulatory and recommended levels for lead in the various media, and these are included in Table 3.

b. Ecological (Aquatic) Receptors—A comparison of chemical concentrations in surface water to their aquatic benchmarks was used to determine if any given constituent would pose a threat to aquatic organisms. Those chemicals whose surface water concentrations exceeded their aquatic water quality criteria would be identified as constituents of concern. The National Ambient Water Quality Criteria (NAWQC) were selected as the ecological reference concentrations for the protection of aquatic organisms (e.g., fish and daphnids). Since NAWQC were not available for all constituents, alternate criteria or advisory values

were identified in the open literature. A complete description of the methods used to estimate the advisory NAWQC may be found in *Toxicological Benchmarks for Screening of Potential Contaminants of Concern for Effects on Aquatic Biota on the Oak Ridge Reservation, Oak Ridge, Tennessee* (Suter et al., 1992). Table 3 provides the NAWQC and advisory NAWQC for aquatic organisms for each of the constituents of concern.

6. Characterization of Risk

The modeling results for the ground-water, surface water, soil, and air pathways were compared to the reference concentrations for the different media to assess the potential risk to human health and aquatic receptors. The resulting risk ratios (i.e., media concentration divided by reference concentration) were then evaluated to determine whether any of the metals of concern in HTMR slag would pose significant risks to humans or aquatic receptors for any of the exposure scenarios evaluated.

TABLE 3.—REFERENCE CONCENTRATIONS FOR SOIL, WATER, AND AIR FOR THE HTMR CONSTITUENTS OF CONCERN

Constituent	Reference Soil Concentration (mg/kg)	Reference Drinking Water Concentrations ² (mg/L)	Reference Air Concentrations ³ (ug/m ³)	Reference Surface Water Concentrations ⁴ (mg/)
Antimony	3.2E+01	0.006	1.4E+00	0.018
Arsenic	9.7E-01	0.05	5.7E-04	0.190
Barium	5.6E+03	2	5.0E-01	0.109
Beryllium	4.0E+02	0.004	1.0E-03	0.00061
Cadmium	8.0E+01	0.005	1.4E-03	0.0011
Chromium III	8.0E+04	0.1	3.5E+03	0.210
Chromium VI	4.0E+02	0.1	2.0E-04	0.011
Lead	4.0E+02	0.015	1.5E-01	0.0032
Mercury	2.4E+01	0.002	3.0E-01	0.000012
Nickel	1.6E+03	0.1	7.0E+01	0.160
Selenium	4.0E+02	0.05	1.8E+01	0.035
Silver	4.0E+02	0.18	1.8E+01	0.00039
Thallium	6.4E+00	0.002	2.8E-01	0.0025
Zinc	2.4E+04	10	1.1E+03	0.110

¹ RfDs and CSFs were used to calculate reference soil values, except for lead; the value for lead is a recommended screening level for lead in soil for residential land use which is contained in the Agency's interim soil lead guidance (this guidance suggests use of this screening level to identify sites that do not require further study, and not as a clean up goal).

² Reference values for drinking water are MCLs, when available; the values for thallium and zinc are based on RfDs, and the value for lead is the action level.

³ Air reference values are based on CSFs or RfCs, when available; other values extrapolated from oral RfDs, except for lead, which is based on 10% of the existing National Ambient Air Quality Standard.

⁴ Reference values are National Ambient water Quality Criteria (NAWQC) for aquatic toxicity, except for antimony, barium, beryllium, silver, and thallium, which are based on advisory NAWQC (see Section IV.A.5.b.)

B. Results of Risk Assessment

The results from EPA's very conservative risk assessment for the relevant management practices and uses of HTMR slags indicate that constituents of concern in HTMR slags pose little or no risk to human health or the environment. Based on this assessment, no significant risks were found for storage, transport, disposal, and

encapsulated uses of HTMR slags (use as subbase, as an ingredient in cement or concrete/asphalt) that meet the generic exclusion levels. The non-encapsulated uses of HTMR slags (top grade and anti-skid uses) that meet the generic exclusion levels showed the potential for some excess risk (i.e., risk above 1x10⁻⁶). The risk analysis indicates that direct inhalation exposure

to arsenic from non-encapsulated uses may present an excess risk of cancer of 2.9x10⁻⁶. In other words, a maximum of approximately 3 additional cases of cancer would be predicted per million people exposed to the arsenic in the slag used in this manner. The results also suggest that areal deposition of arsenic from these non-encapsulated uses and subsequent ingestion of contaminated

soil may also present a comparable excess risk of cancer (2.7×10^{-6}). None of the other metals evaluated posed any significant increase in risk for these uses.

These risks (from non-encapsulated uses) are at the low end of EPA's risk range of 1×10^{-4} to 1×10^{-6} . Furthermore, for this assessment, EPA selected very conservative values for use in fate and transport models and for exposure scenarios. If the risk assessment had used a central tendency value (instead of a high-end value) for one of the high-end exposure assumptions, then the calculated risks from these uses would drop below the 1×10^{-6} level. For example, had the Agency used a 9 year exposure period for an individual exposed instead of the 30 year exposure period used in this risk calculation, the risk from non-encapsulated uses would have dropped to 8.7×10^{-7} cancer risk. This risk level is below the typical level of concern used by the Agency.

C. Changes to the Generic Exclusion Levels

The generic exclusion levels promulgated for HTMR slags derived from K061, K062, and F006 were based on the health-based levels and MCLs in effect when the rule was put into place. Since then, the drinking water standards (i.e., MCLs) for some constituents have changed somewhat (see July 17, 1992, 57 FR 231776). Therefore, the Agency is taking this opportunity to propose to update the exclusion levels to reflect these changes. The original exclusion levels were calculated by multiplying the MCLs by a dilution-attenuation factor of 10 (see August 18, 1992, 57 FR 37194). This factor is based on the EPACML model (see July 18, 1991, 56 FR 32993 for a description of the model used). Using this same factor, the new MCLs for antimony (0.006 mg/L) and beryllium (0.004 mg/L) would result in new generic exclusion levels of 0.06 mg/L and 0.04 mg/L for antimony and beryllium, respectively. Therefore, the Agency is proposing to replace the existing exclusion levels in § 261.3(c)(2)(ii)(C) for antimony and beryllium with these values as part of today's rule. The Agency promulgated an MCL for nickel in 1992. That regulatory standard was challenged by a coalition of industry groups in a lawsuit filed in September, 1992. See *Nickel Development Institute et al. v. EPA*, No. 92-1407, 1410, 1416 (D.C. Cir.). For the past two years, the Agency has been involved in discussions with these industry parties in an effort to resolve this litigation. Because of the uncertainties that currently surround the outcome of this litigation over the

nickel MCL, EPA believes it is appropriate to consider alternative criteria to establish the generic exclusion level for nickel. EPA considered using the health-based level for nickel (0.7 mg/L) which is derived from the existing RFD for nickel of 0.02 mg/kg/day (see IRIS). Based on the calculations described in the above paragraph, this would result in a generic exclusion level of 7 mg/L for nickel. The existing BDAT treatment standard for nickel contained in the slags derived from HTMR processing of K061, K062, and F006 wastes is 5 mg/L. Between these two alternative criteria, EPA believes that it is appropriate to use the lower (more conservative) BDAT standard at this time. Therefore, EPA is proposing to replace the existing exclusion level in § 261.3(c)(2)(ii)(C) for nickel with the nickel BDAT treatment standard of 5 mg/L.

V. Conclusions

Based on the results of the risk assessment, EPA is proposing that HTMR slags that meet the generic exclusion levels in § 261.3(c)(2)(ii)(C) will be classified as nonhazardous waste, and also allowed to be managed or used as described in this proposal.

Furthermore, the Agency is also proposing to amend § 266.20 so that all uses constituting disposal of hazardous HTMR slag (i.e., HTMR slag that does not meet the generic exclusion levels) are no longer exempt from RCRA Subtitle C regulation. Because it is highly unlikely that users of hazardous HTMR slag will choose to meet the stringent requirements of Subtitle C, this change would effectively prohibit all uses of slags that do not meet the generic exclusion levels. As a consequence of the proposed changes to the generic exclusion in § 261.3(c)(2)(ii)(C), HTMR slags that are used as described in this proposal would not be affected by the changes in § 266.20, because the HTMR slags used in these ways would not be hazardous waste (provided the slags meet the generic exclusion levels and all of the other requirements specified in § 261.3(c)(2)(ii)(C)).

Finally as described in section IV.C above, the Agency is also proposing to update the generic exclusion levels for changes in MCLs for antimony, beryllium, and nickel.

VI. Effective Date

The Agency is proposing that this rule be effective six months after the date of publication of the final rule. (See RCRA section 3010(a)). The Agency believes that this would provide sufficient time

for affected parties to comply with the proposed changes.

VII. State Authority

A. Applicability of Rule in Authorized States

Under section 3006 of RCRA, EPA may authorize qualified States to administer and enforce the RCRA program within the State. Following authorization, EPA retains enforcement authority under sections 3008, 3013, and 7003 of RCRA, although authorized States have primary enforcement responsibility. The standards and requirements for authorization are found in 40 CFR part 271.

Prior to the Hazardous and Solid Waste Amendments (HSWA) of 1984, a State with final authorization administered its hazardous waste program in lieu of EPA administering the Federal program in that State. The Federal requirements no longer applied in the authorized State; and EPA could not issue permits for any facilities that the State was authorized to permit. When new more stringent Federal requirements were promulgated or enacted, the State was obliged to enact equivalent authority within specified time frames. New Federal requirements did not take effect in an authorized State until the State adopted the requirements as State law.

In contrast, under RCRA section 3006(g), new requirements and prohibitions imposed by HSWA take effect in authorized States at the same time that they take effect in nonauthorized States. EPA is directed to carry out these requirements and prohibitions in authorized States, including the issuance of permits, until the State is granted authorization to do so. While States must still adopt HSWA-related provisions as State law to retain final authorization, HSWA applies in authorized States in the interim.

B. Effect on State Authorization

EPA views today's proposed rule as a HSWA regulation. The proposed rule can be viewed as part of the process of establishing land disposal prohibitions and treatment standards for K061, K062, and F006 hazardous wastes. (See 56 FR 41175). The ultimate goal of the land disposal prohibition provisions is to establish standards which minimize short-term and long-term threats to human health and the environment posed by hazardous waste land disposal. (See RCRA section 3004(m)(1)). In addition, EPA must ensure that land disposal of hazardous wastes K061, K062, and F006 are ultimately protective. (See RCRA § 3004(g)(5)). The

proposed exclusion levels would implement these provisions by assuring that these types of land disposal are ultimately protective and establish levels at which pretreatment minimizes the threats to human health and the environment posed by these types of land disposal.

Today's proposed rule will result in more stringent Federal standards under § 266.20, since it prohibits uses of hazardous HTMR slags. Section 271.21(e)(2) requires that States that have final authorization must modify their programs to reflect Federal program changes and must subsequently submit the modifications to EPA for approval.

Authorized States are only required to modify their programs when EPA promulgates Federal regulations that are more stringent or broader in scope than the existing Federal regulations. For those Federal program changes that are less stringent or reduce the scope of the Federal program, States are not required to modify their programs. This is a result of section 3009 of RCRA, which allows States to impose regulations in addition to those in the Federal program. EPA has determined that the proposed changes to the generic exclusion are less stringent or reduce the scope of the Federal program. Therefore, authorized States are not required to modify their programs to adopt regulations that are equivalent or substantially equivalent.

States with authorized RCRA programs may already have requirements similar to those in today's proposed rule. These State regulations have not been assessed against the Federal regulations being proposed today to determine whether they meet the tests for authorization. Thus, a State is not authorized to implement these requirements in lieu of EPA until the State program modifications are approved. Of course, States with existing standards could continue to administer and enforce their standards as a matter of State law. In implementing the Federal program, EPA will work with States under agreements to minimize duplication of efforts. In many cases, EPA will be able to defer to the States in their efforts to implement their programs rather than take separate actions under Federal authority.

VIII. Regulatory Impact

A. Executive Order 12866

Under Executive Order 12866 (see 58 FR 51735, October 4, 1993), EPA must determine whether the regulatory action is "significant" and therefore subject to

OMB review and the requirements of the Executive Order. The order defines "significant regulatory action" as one that is likely to result in a rule that may:

(1) have an annual effect on the economy of \$100 million or more or adversely affect in a material way the economy a sector of the economy productivity competition, jobs, the environment, public health or safety or State, local, or tribal governments or communities;

(2) create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(3) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or

(4) raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

Pursuant to the terms of Executive Order 12866, it has been determined that this rule is a "significant regulatory action" because it raises novel policy issues in terms of defining when products used in a manner constituting disposal should be regulated. As such, this action was submitted to OMB for review. Changes made in response to OMB suggestions or recommendations will be documented in the public record.

B. Regulatory Flexibility Act

Under the Regulatory Flexibility Act, 5 U.S.C. 601 et seq., whenever an Agency is required to issue a general notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the impact of the rule on small entities (i.e., small businesses, small organizations, and small governmental jurisdictions). No regulatory flexibility analysis is required, however, if the head of the Agency certifies that the rule will not have any impact on any small entities.

This proposed rule will not have any impact on any small entities, since the regulated community will continue to have readily available options for using and managing HTMR slags. Therefore, pursuant to section 605(b) of the Regulatory Flexibility Act, the Administrator certifies that this regulation will not have a significant economic impact on a substantial number of small entities. This regulation, therefore, does not require a regulatory flexibility analysis.

C. Paperwork Reduction Act

The Agency has determined that there are no additional reporting, notification,

or recordkeeping provisions associated with this proposed rule. Such provisions, were they included, would be submitted for approval to OMB under the Paperwork Reduction Act, 44 U.S.C. 3501 et seq.

List of Subjects

40 CFR Part 261

Environmental protection; Hazardous waste; Recycling, Reporting and recordkeeping requirements.

40 CFR Part 266

Energy Hazardous waste; Recycling, Reporting and recordkeeping requirements.

40 CFR Part 268

Hazardous waste; Reporting and recordkeeping requirements.

Dated: December 16, 1994.

Carol M. Browner,
Administrator.

For the reasons set forth in the preamble, 40 CFR Chapter I is amended as follows:

PART 261—IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

1. The authority citation for part 261 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, 6922, and 6938.

2. Section 261.3 paragraphs (c)(2)(ii)(C)(1) and (c)(2)(ii)(C)(2) are revised as follows:

§ 261.3 Definition of hazardous waste.

(c)
(2)
(ii)

(C)(1) Nonwastewater residues, such as slag, resulting from high temperature metals recovery (HTMR) processing of K061, K062, and F006 waste, in units identified as rotary kilns, flame reactors, electric furnaces, plasma arc furnaces, slag reactors, rotary hearth furnace/electric furnace combinations or industrial furnaces (as defined in paragraphs (6), (7), and (13) of the definition for "Industrial furnace" in 40 CFR 260.10)—provided that these residues meet the generic exclusion levels identified in the tables in this paragraph for all constituents, and exhibit no characteristics of hazardous waste and are disposed in Subtitle D units, or used as covered subbase materials (e.g., in construction of paved roads, parking lots, and driveways) or as additive ingredients in cement or concrete/asphalt mixtures, or as top-grade (e.g., surfacing material for roads, parking lots, and driveways), or as anti-skid/deicing materials. Testing

requirements must be incorporated in a facility's waste analysis plan or a generator's self-implementing waste analysis plan; at a minimum, composite samples of residues must be collected and analyzed quarterly and/or when the process or operation generating the waste changes. Persons claiming this exclusion in an enforcement action will have the burden of proving by clear and convincing evidence that the material meets all of the exclusion requirements.

Constituent	Maximum for any single composite sample-TCLP (mg/l)
Generic exclusion level for K061 and K062 nonwastewater HTMR residues	
Antimony	0.06
Arsenic	0.50
Barium	7.6
Beryllium	0.04
Cadmium	0.05
Chromium (total)	0.33
Lead	0.15
Mercury	0.009
Nickel	5
Selenium	0.16
Silver	0.30
Thallium	0.02
Zinc	70

Generic exclusion level for F006 nonwastewater HTMR residues.	
Antimony	0.06
Arsenic	0.50
Barium	7.6
Beryllium	0.04
Cadmium	0.05
Chromium (total)	0.33
Cyanide (total) (mg/kg)	1.8
Lead	0.15
Mercury	0.009
Nickel	5
Selenium	0.16
Silver	0.30
Thallium	0.02
Zinc	70

(2) A one-time notification and certification must be placed in the facility's files and sent to the EPA region or authorized state for K061, K062, or F006 HTMR residues that meet the generic exclusion levels for all constituents and do not exhibit any characteristics that are sent to Subtitle D units, or used as described in paragraph (c)(2)(ii)(C)(1). The notification and certification that is placed in the generators or treaters files must be updated if the process or operation generating the waste changes and/or if the subtitle D unit receiving the waste changes. However, the generator or treater need only notify the EPA region or an authorized state on an annual basis if such changes occur. Such

notification and certification should be sent to the EPA region or authorized state by the end of the calendar year, but no later than December 31. The notification must include the following information: The name and address of the subtitle D unit receiving the waste shipments; the EPA Hazardous Waste Number(s) and treatability group(s) at the initial point of generation; and, the treatment standards applicable to the waste at the initial point of generation. The certification must be signed by an authorized representative and must state as follows: "I certify under penalty of law that the generic exclusion levels for all constituents have been met without impermissible dilution and that no characteristic of hazardous waste is exhibited. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

PART 266—STANDARDS FOR THE MANAGEMENT OF SPECIFIC HAZARDOUS WASTES AND SPECIFIC TYPES OF HAZARDOUS WASTE MANAGEMENT FACILITIES

3. The authority citation for part 266 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6924, and 6934.

Subpart C—Recyclable Materials Used in a Manner Constituting Disposal

4. Section 266.20 is amended by revising paragraph (c) to read as follows:

§ 266.20 Applicability.

(c) Slags generated from high-temperature metals recovery (HTMR) processing of hazardous waste K061, K062, and F006, that are used in a manner constituting disposal are not covered by the exemption in paragraph (b) of this section and remain subject to regulation. However, these slags are not hazardous wastes if they meet the concentration levels as specified in § 261.3(c)(2)(ii)(C) and are used or disposed of as specified in § 261.3(c)(2)(ii)(C);

PART 268—LAND DISPOSAL RESTRICTIONS

5. The authority citation for part 268 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, and 6924.

6. Table "Treatment Standards for Hazardous Wastes" in § 268.40 is amended by adding a footnote "8" at the end of the table and in the second column in the table, "Waste Description

and Treatment/Regulatory Subcategory" for waste codes F006, K061, and K062 to read as follows:

§ 268.40 Applicability of treatment standards.

⁸ See also restrictions on use of slags in § 261.3(c)(2)(ii)(C) and § 266.20(c).

[FR Doc: 94-31617 Filed 12-28-94; 8:45 am]

BILLING CODE 6560-50-P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Health Care Financing Administration

42 CFR Chapter IV

[BPD-822-N]

Medicare Program; Hospice Wage Index.

AGENCY: Health Care Financing Administration (HCFA), HHS.

ACTION: Notice of Establishment of a Negotiated Rulemaking Advisory Committee.

SUMMARY: The Health Care Financing Administration announces the establishment of the Negotiated Rulemaking Advisory Committee on the Medicare Hospice Wage Index. The Committee will negotiate the wage index used to adjust payment rates for hospice care under the Medicare program to reflect local differences in area wage levels. A new wage index is needed because the index currently used is based on 1981 wage and employment data.

FOR FURTHER INFORMATION CONTACT: Janice Flaherty, (410) 966-4637

SUPPLEMENTARY INFORMATION: Under the authority of the Negotiated Rulemaking Act of 1990 (Pub. Law 101-648, 5 U.S.C. 581-590), the Secretary of the Department of Health and Human Services has established the Negotiated Rulemaking Advisory Committee on the Medicare Hospice Wage Index. The Committee will provide advice and make recommendations with respect to the content of a proposed rule on the wage index used to adjust payment rates for hospice care under the Medicare program to reflect local differences in area wage levels. The Committee consists of representatives of interests that are likely to be significantly affected by the proposed rule.

Hospice care was included as a Medicare benefit in the Tax Equity and Fiscal Responsibility Act of 1982, and implemented effective November 1, 1983. The statutory authority for payment of hospice care under

Medicare is contained in section 1814(i) of the Social Security Act.

On October 14, 1994, we published a notice of intent in which we requested public comment on use of the negotiated rulemaking process to develop a wage index for hospice care (59 FR 52129). As a result, we received 8 public comments. The commenters supported our decision to establish a negotiating committee and utilize the negotiated rulemaking process for this purpose.

All Committee meetings are open to the public. The dates, locations, and agendas for the meetings will be announced in the **Federal Register** in accordance with the requirements of the Federal Advisory Committee Act and 45 CFR 11.4(c)(3).

(Section 9(a) of Public Law 92-463 (5 U.S.C. App 2, section 9(a)); 45 C.F.R. Part 11)

(Catalog of Federal Domestic Assistance Program No. 93.773 Medicare—Hospital Insurance Program)

Dated: December 21, 1994.

Bruce C. Vladeck,

Administrator, Health Care Financing Administration.

[FR Doc. 94-32069 Filed 12-28-94; 8:45 am]

BILLING CODE 4120-01-P

42 CFR Chapter IV

[BPD-823-N]

Medicare Program; Hospice Wage Index

AGENCY: Health Care Financing Administration (HCFA), HHS.

ACTION: Notice of meeting.

SUMMARY: In accordance with section 10(a) of the Federal Advisory Committee Act (FACA), this notice announces a meeting of the Negotiated Rulemaking Advisory Committee on the Medicare Hospice Wage Index. The meeting is open to the public.

DATES: The meeting is scheduled for January 17-18, 1995, from 9 a.m. until 5 p.m. e.s.t.

ADDRESSES: The meeting will be held at the Comfort Inn, 6921 Baltimore-Annapolis Blvd., Baltimore, MD 21225.

FOR FURTHER INFORMATION CONTACT: Janice Flaherty, (410) 966-4637

SUPPLEMENTARY INFORMATION: Under the authority of the Negotiated Rulemaking Act of 1990 (Pub. Law 101-648, 5 U.S.C. 581-590), the Secretary of the Department of Health and Human Services has established the Negotiated Rulemaking Advisory Committee on the Medicare Hospice Wage Index. The Committee will make recommendations with respect to the content of a

proposed rule on the wage index used to adjust payment rates for hospice care under the Medicare program to reflect local differences in area wage levels. The Committee consists of representatives of interests that are likely to be significantly affected by the proposed rule.

A meeting of the Committee will be held on January 17-18, 1995. The following topics will be discussed:

- Presentation of information on possible sources of wage and employment data including discussion of the wage indexes currently applied elsewhere in the Medicare program.

Implementation options. Individuals or organizations who wish to make oral presentations may do so. However, the number of presentations may be limited by the time available. Individuals may also submit written statements for the Committee's consideration. For information on how to do this, please contact the committee facilitator, Judy Ballard at (202) 690-7419.

(Section 10(a) of Public Law 92-463 (5 U.S.C. App. 2, section 10(a)); 45 C.F.R. Part 11)

(Catalog of Federal Domestic Assistance Program No. 93.773 Medicare—Hospital Insurance Program)

Dated: December 21, 1994.

Bruce C. Vladeck,

Administrator, Health Care Financing Administration.

[FR Doc. 94-32068 Filed 12-28-94; 8:45 am]

BILLING CODE 4120-01-P

DEPARTMENT OF THE INTERIOR

Bureau of Reclamation

43 CFR Part 432

RIN 1006-AA34

Fish and Wildlife Service

50 CFR Chapter I

Central Valley Project—Purposes, Uses, and Allocation of Water Supplies

AGENCY: Department of the Interior, Bureau of Reclamation and Fish and Wildlife Service.

ACTION: Advance notice of proposed rulemaking.

SUMMARY: The Bureau of Reclamation (Reclamation) and the Fish and Wildlife Service (Service) have initiated the preparation of proposed rules and regulations concerning implementation of certain provisions of the Central Valley Project Improvement Act (CVPIA). The CVPIA applies to the Central Valley Project (CVP), California,

and to the use and allocation of CVP water. Comments are invited at this time on what the substantive content of proposed rules and regulations should be.

DATES: The deadline for receiving written comments is February 1, 1995.

ADDRESSES: Written comments should be sent to Gary Sackett, Attention: MP-400, Mid-Pacific Region, Bureau of Reclamation, 2800 Cottage Way Sacramento, CA 95825.

FOR FURTHER INFORMATION CONTACT: Ron Brockman at (916) 979-2323 or Gary Sackett at (916) 979-2317

SUPPLEMENTARY INFORMATION: The CVPIA (Title XXXIV of P.L. 102-575, 106 Stat. 4706) provides for a number of changes in the purposes and operation of the CVP and in the use and allocation of CVP water. Subsection 3408(a) of the CVPIA authorizes the Secretary of the Interior to promulgate “* such regulations as may be necessary to implement the intent, purposes and provisions *” of the CVPIA. Reclamation and the Service have been authorized by the Secretary to act on his behalf in this regard.

The Service and Reclamation published a notice in the **Federal Register**, 59 FR 39316, Aug. 2, 1994, which stated that they had tentatively concluded that the following provisions of the CVPIA should be considered for rulemaking:

Subsection	Title
3404(c)	Renewal of Long-Term Contracts.
3405(a)	Transfer of CVP Water.
3405(d)	Water Pricing.
3405(e)	Water Conservation Standards.
3406(b)(2)	800,000 Acre-Feet for Fish, Wildlife, and Habitat Restoration.
3406(b)(22)	Incentives to Flood Fields for Waterfowl Habitat.
3407(a)-(d)	Restoration Fund.
3408(c)-(d)	Exchanges, Storage, Conveyance, and Banking.
3408(h)	Land Retirement.
3408(i)	Cost Sharing of Water Conservation Projects.

This notice also announced public meetings, and invited written comment, on the questions of: (1) whether these are appropriate provisions of the CVPIA to address through rulemaking, and (2) whether there are other provisions of the CVPIA that should be addressed.

The public comments received have suggested that, in addition to the above identified provisions of the CVPIA, rules and regulations should be considered for the following seven subsections:

**Horsehead Corporation's Comments Regarding the
Department of Public Health – Rules and Regulations for
Bulk Materials Storage Piles Proposed December 17, 2013**

ATTACHMENT 2

ILLINOIS POLLUTION CONTROL BOARD
February 17, 2000

IN THE MATTER OF:)
)
PETITION OF HORSEHEAD RESOURCE) AS 00-2
AND DEVELOPMENT COMPANY, INC.) (Adjusted Standard - RCRA)
FOR AN ADJUSTED STANDARD UNDER)
35 ILL. ADM. CODE 720.131(c))

JOHN N. MOORE OF THE LAW OFFICES OF JOHN N. MOORE, P.C. AND PAUL E. GUTERMANN OF AKIN, GUMP, STRAUSS, HAUER & FELD, L.L.P. APPEARED ON BEHALF OF PETITIONER; and

PETER E. ORLINSKY APPEARED ON BEHALF OF THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY.

OPINION AND ORDER OF THE BOARD (by N.J. Melas):

Petitioner Horsehead Resource and Development Company, Inc. (Horsehead) operates a permitted solid waste management facility at 2701 E. 114th St. in Chicago, Cook County, Illinois. Horsehead recycles a hazardous waste, which is a byproduct of steel production, to make zinc-bearing materials. Horsehead has petitioned the Board to determine that its crude zinc oxide (CZO) product from the Chicago facility be classified as a commodity-like material rather than a "solid waste" or "hazardous waste" under the Resource Conservation and Recovery Act (RCRA) and corresponding Illinois hazardous waste rules and regulations¹. Horsehead wants to sell CZO without being subject to Illinois hazardous waste requirements.

Horsehead has filed a petition for an adjusted standard pursuant to 35 Ill. Adm. Code 720.131(c). Section 720.131(c) allows the Board to determine that certain materials are excepted from the definition of solid wastes (and therefore not hazardous wastes) if the materials meet certain criteria. Horsehead claims that its CZO recovered from electric arc furnace dust (EAF dust) by a high temperature metals recovery (HTMR) process meets the criteria. The Illinois Environmental Protection Agency (Agency) has recommended that the Board grant Horsehead's petition for an adjusted standard.

The Board finds that CZO is excepted from the definition of solid waste. The Board therefore grants Horsehead's petition for an adjusted standard subject to the conditions set forth in this order.

PROCEDURAL HISTORY

¹ RCRA is the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976, as amended, 42 U.S.C. 6901 *et seq.* Board regulations at issue in the instant opinion and order are nearly identical to US Environmental Protection Agency (USEPA) regulations promulgated pursuant to RCRA.

On July 20, 1999, Horsehead filed a petition for an adjusted standard (petition) with the Board under 35 Ill. Adm. Code 720.131(c). However, Horsehead failed to timely cause publication of the required notice. As a result, the Board dismissed the petition, but allowed Horsehead leave to refile the petition. See In re Horsehead Resource and Development Company, Inc. (August 5, 1999), AS 00-1.

On August 6, 1999, Horsehead refiled the petition for the adjusted standard with the Board. On that same date, Horsehead filed a motion requesting that the Board incorporate the record from docket AS 00-1 into a new docket which the Board numbered docket AS 00-2. Pursuant to Board regulations, Horsehead caused timely publication of the required notice on August 7, 1999, and filed a certificate of publication with the Board on August 11, 1999. See 35 Ill. Adm. Code 106.711 and 106.712.

On July 20, 1999, the Board received a motion to appear *pro hac vice* from attorney John N. Moore, and on September 7, 1999, the Board received a motion to appear *pro hac vice* from attorney Paul E. Gutermann.

Also on July 20, 1999, Horsehead filed an application for non-disclosure of confidential data (non-disclosure application). Horsehead sought to protect certain confidential financial data in the petition pursuant to Section 101.161 of the Board's procedural rules. See 35 Ill. Adm. Code 101.161. Horsehead asked for non-disclosure of certain financial data in its petition pursuant to 35 Ill. Adm. Code 101.161(a)(3) which provides that confidential data may be protected in a Board non-disclosure order. Specifically, Horsehead sought to prevent disclosing the prices that it charges for CZO to two of its customers, Zinc Nacional and Zinc Corporation of America (ZCA). Horsehead also sought to protect certain information on CZO's economic value. App. at 2. Horsehead claimed that disclosure of the information would inhibit its ability to competitively market CZO. App. at 3.

On September 9, 1999, the Board accepted Horsehead's refiled petition for the adjusted standard, granted Horsehead's request to incorporate the record from docket AS 00-1 into docket AS 00-2, granted motions from attorneys John N. Moore and Paul E. Gutermann to appear *pro hac vice*, and granted Horsehead's non-disclosure application. See In re Horsehead Resource and Development Company, Inc. (September 9, 1999), AS 00-2.

On August 27, 1999, the Illinois Environmental Protection Agency timely filed its response to Horsehead's petition. In the response, the Agency recommended that the Board grant the petition assuming that Horsehead provided more information on chlorine content in CZO and Horsehead's response in the event of an accidental release of raw material or CZO.

On September 10, 1999, Horsehead filed its reply to the Agency's response. In the reply, Horsehead addressed the Agency's concerns regarding chlorine and procedures in the event of an accidental release.

On October 28, 1999, Board Hearing Officer John Knittle held the required hearing in this matter. See 35 Ill. Adm. Code 106.415(a). Horsehead presented one witness, James M.

Hanrahan, one of its corporate vice presidents. Tr. at 8-10.² Knittle found Hanrahan to be credible. Tr. at 34. Horsehead also introduced three exhibits, and Knittle admitted all of them. Tr. at 6-7. At hearing, Hanrahan further addressed the Agency's concerns regarding accidental releases. He also answered Agency questions on the value of CZO and Horsehead's internal manufacturing processes. Tr. at 27-32. At hearing, counsel for the Agency stated that the questions raised in the response had been answered and recommended that the Board grant the requested adjusted standard to Horsehead. Tr. at 34. The Agency offered no exhibits, and the parties chose not to file posthearing briefs.

LEGAL FRAMEWORK

Under Subtitle C of RCRA and corresponding Illinois laws and regulations, hazardous wastes are a subset of solid wastes. A material that is not a solid waste cannot be regulated as a hazardous waste. Illinois hazardous waste regulations govern those who generate, treat, store, dispose, recycle, or transport hazardous waste. See 35 Ill. Adm. Code 722-726, 728.

A solid waste is generally "any discarded material". See 35 Ill. Adm. Code 721.102. A solid waste can become a hazardous waste in two ways. A solid waste can exhibit a "characteristic" of hazardous waste (i.e., toxic, corrosive, ignitable, or reactive). Secondly, the solid waste can be a "listed" hazardous waste if, for example, it comes from a certain type of process such as electroplating. 35 Ill. Adm. Code 721.103; also see generally 35 Ill. Adm. Code 721 Subparts C and D.

Board regulations at 35 Ill. Adm. Code 720.131(c)³ establish criteria that allow the Board to make exceptions for certain partially-reclaimed materials that would otherwise be considered solid or hazardous wastes. If the partially-reclaimed material in question meets these criteria, then it is not considered a solid or hazardous waste. Section 720.131(c) provides that:

The Board will determine that those materials that have been reclaimed but must be reclaimed further before recovery is completed are not solid wastes if, after initial reclamation, the resulting material is commodity-like (even though it is not yet a commercial product, and has to be reclaimed further). This determination will be based on the following criteria:

- 1) The degree of processing the material has undergone and the degree of further processing that is required;
- 2) The value of the material after it has been reclaimed;
- 3) The degree to which the reclaimed material is like an analogous raw material;

² The transcript of the hearing is cited as "Tr. at __."

³ The corresponding federal rule is 40 CFR § 260.31(c) (1998).

- 4) The extent to which an end market for the reclaimed material is guaranteed;
- 5) The extent to which the reclaimed material is handled to minimize loss; and
- 6) Other relevant factors. 35 Ill. Adm. Code 720.131(c).

Horsehead claims that its CZO product is not a solid nor hazardous waste. It claims that CZO, which is partially reclaimed from EAF dust, is commodity-like pursuant to the criteria in 35 Ill. Adm. Code 720.131(c). Exh. 1 at 5.⁴

FINDINGS OF FACT

Horsehead is the largest operator of HTMR facilities and the primary recycler of EAF dust in the United States. Tr. at 7, 11; Exh. 1 at 6. Horsehead has traditionally used Waelz rotary kilns to produce zinc products from zinc ores and other materials containing zinc. In the 1970s, operators of Waelz kilns discovered that EAF dust was an effective alternative feedstock to zinc ores. Exh. 1 at 6. Horsehead operates two Waelz rotary kiln HTMR units at its Chicago facility. Tr. at 14; Exh. 1 at 7.

EAF Dust

Most EAF dust is an airborne byproduct of a process in which scrap steel (usually coated with zinc) is melted in an electric arc furnace or mini mill and recycled to form new steel products. The EAF dust is collected in baghouses at the steel plants. Tr. at 11; Exh. 1 at 6, Att. 13; 35 Ill. Adm. Code 721.132. EAF dust contains zinc, in addition to recoverable quantities of cadmium and lead. Tr. at 11; Exh. 1 at 6. In the past, most EAF dust was disposed. Exh. 2 at 3.

Horsehead's Production Process

Horsehead produces CZO by recycling a mixture which is about 90% EAF dust and about 10% hazardous and non-hazardous zinc-bearing feedstocks. Tr. at 12; Exh. 1 at 1, 7. The EAF dust and other feedstocks arrive at Horsehead via enclosed railcar or truck. Upon arrival, Horsehead tests the feedstocks including generator-specific tests for metal content. Tr. at 13; Exh. 1 at 7, Att. 1.

Feedstocks are then introduced directly into the curing and blending (C&B) building without being stored. Tr. at 13, 28-29; Exh. 1 at 7-8, Att. 1. Water is added to the feedstocks before they are cured, blended, and then sent by conveyor belt to a feed hopper. The feedstocks now have a uniform feed composition which allows for optimal efficiency once the feedstocks are introduced into the Waelz kiln HTMR units. Tr. at 13, 28; Exh. 1 at 8. From the feed bins, another conveyor belt supplies the

⁴ Horsehead's petition, which was entered into evidence at hearing as an exhibit, is cited as "Exh. 1 at _." Likewise, the Agency's response is cited as "Exh. 2 at _.", and Horsehead's reply is cited as "Exh. 3 at _."

Waelz kilns. Just before the feedstocks enter the Waelz kilns, a carbon source (such as coke) is added. Tr. at 13-14, 28; Exh. 1 at 8, Att. 1.

During the HTMR process, the feedstocks are heated to 1200 degrees Celsius in order to chemically reduce nonferrous metals. Waelz kilns are essentially long rotating tubes with one end higher than the other. As the feedstock flows down the length of the tube, the zinc material is reduced. As it volatilizes, it rises up from the feedstocks into a countercurrent airstream. This airstream carries the zinc material out of the upper end of the Waelz kiln. Tr. at 14; Exh. 1 at 8-9, Att. 1.

The HTMR process results in no waste nor water discharges. Exh. 1 at 8; Exh. 2 at 4; Exh. 3 at 3.

CZO and IRM

The resulting zinc material from the upper end of the Waelz kiln is CZO. It is cooled and collected in Agency-permitted product collectors. An enclosed screw conveyor then transfers the CZO to fully-enclosed pressure differential railcars for shipment. Tr. at 14; Exh. 1 at 8-9, Att. 1; Exh. 3 at 5.

CZO has a much higher zinc content and much lower iron content than the EAF dust. CZO is approximately 60% zinc as opposed to the HTMR feedstocks which are only about 15% zinc. Tr. at 16; Exh. 1 at 11. The chart below details the change in the constituency from the Waelz kiln HTMR feedstock to CZO.

<u>Major Constituents</u>	<u>HTMR Feedstock (% weight)</u>	<u>CZO (% weight)</u>
Zinc	14.9	58.8
Iron	26.5	5.3
Calcium	5.0	1.0
Manganese	2.2	0.5
Magnesium	2.0	0.4

Silicon	1.5	0.4
Sulfur	1.1	0.9
Chlorine	0.9	4.5
Lead	0.8	3.6
Sodium	0.7	1.7
Potassium	0.6	2.1
Aluminum	0.5	0.1
Fluorine	0.3	0.3

Exh. 1 at 12.

At the lower end of the Waelz kiln, Iron-Rich Material (IRM) is collected. The IRM is about 50% iron, which is double the percentage of iron in the feedstock. IRM is sold for use in asphalt aggregate, cement production, or construction aggregate. Tr. at 11-12, 14-15, 16; Exh. 1 at 8, Att. 1.

Value of CZO

Horsehead changes EAF dust, a product with negative value, into CZO and IRM, products with substantial positive values. EAF dust has a negative value because generators of EAF dust pay for it to be either disposed or recycled. Tr. at 11, 22, 27-28; Exh. 1 at 18, 22. CZO is valuable because it is high in zinc and low in constituents such as iron that cannot be processed at zinc production plants. Exh. 1 at 18, 22-23. Demand for Horsehead's CZO is strong, and, as a result, Horsehead has never stored or stockpiled CZO. Tr. at 20, 24; Exh. 1 at 25.

Worldwide zinc prices are set on the London Metals Exchange (LME). The value of CZO is based on its zinc percentage and the fluctuating price of zinc set by the LME. Zinc purchasers, such as ZCA and Zinc Nacional, may revise this equation and deduct a processing charge from CZO. The value of non-zinc constituents in CZO also affect its price. Exh. 1 at 18-19, 25.

Although the Board determined that Horsehead was not required to disclose the prices that it charges its customers for CZO (See In re Horsehead Resource and Development Company, Inc. (September 9, 1999), AS 00-2), Horsehead's adjusted standard petition included prices that other CZO manufacturers have charged to their customers. Although Horsehead did not disclose its CZO prices in its petition, at hearing Hanrahan admitted that Horsehead's prices for its CZO are "in the same range" as the price that AmeriSteel charged to Big River Zinc (BRZ) for a zinc product virtually identical CZO. Hanrahan also admitted that the value of CZO is comparable to roasted zinc concentrates produced from mined ore. Tr. at 20-21, 25; Exh. 1 at 21, 22; Exh. 2 at 3; In re Big River Zinc Corporation (April 15, 1999), AS 99-3, slip op. at 13.

CZO Compared to Roasted Zinc Concentrates

Sulfide zinc ores extracted from the ground are typically 3% to 5% zinc. Before zinc ores can reach the quality of CZO, they must be mined, crushed, and milled. The ores are then

subject to sequential floatation/separation, dewatering, and drying which results in a zinc concentrate. Although CZO contains more salts, iron, and lead than zinc concentrates, zinc concentrates contain more sulfur than CZO. Exh. 1 at 24. Zinc concentrates must be roasted to produce roasted zinc concentrates and recover sulfur in the form of sulfur dioxide gas. Exh. 1 at 14, 24, Att. 4. Roasted zinc concentrates are similar enough to CZO that both are suitable as a feedstock in zinc production. Exh. 1 at 23-24.

Markets for CZO

Zinc refineries are not able to process EAF dust, but they are able to process CZO. Exh. 1 at 11, 18. Plants in Japan, Germany, Italy, Spain, France, Mexico, and the United States produce hundreds of thousands of tons of CZO annually. If the plant is an integrated zinc manufacturing complex, the CZO is used on site. If not, the CZO is sold to other companies that manufacture zinc. The Commodities Research Unit, a London-based research firm, issued a report predicting that demand for CZO will continue to grow. In fact, CZO is increasingly replacing the need for zinc ores in European smelters. Exh. 1 at 19-21, 25, Att. 7.

Zinc and Zinc Calcine Production

Horsehead sells CZO to ZCA for use as a feedstock in zinc production at ZCA's plant in Monaca, Pennsylvania.⁵ Exh. 1 at 13.

Horsehead also sends CZO to its facility in Palmerton, Pennsylvania to be used as a feedstock for calcining. Tr. at 17; Exh. 1 at 6, 13, 15; Exh. 3 at 3. Calcining further purifies the CZO by washing out salts and removing lead. This washing results in a product called zinc calcine. Compared to CZO which is a little less than 60% zinc, zinc calcine is about 60% to 65% zinc. Horsehead then sells zinc calcine to ZCA. Tr. at 17-18; Exh. 1 at 15, Att. 6; Exh. 3 at 3.

To ensure efficiency in the zinc manufacturing process, ZCA blends CZO, zinc calcine, roasted zinc concentrates, and other zinc-bearing materials into a uniform feedstock. Exh. 1 at 15; Exh. 3 at 3. This uniform feedstock requires some additional processing at a zinc refinery - namely sintering and thermal reduction. Exh. 1 at 13, 14, Att. 4.

Sintering densifies and hardens the zinc oxides and reduces some of the other constituents in the zinc feed. The zinc oxides are mixed with a carbon source (for fuel) and a silica (to bind the materials together). The sintering machine heats the materials to 900 - 1,200 degrees Celsius. Sintering produces zinc sinter and lead concentrate. The lead concentrate is a feedstock for another process. The zinc sinter is feedstock for an electrothermic furnace. Tr. at 19; Exh. 1 at 13, 14, Att. 4; Exh. 3 at 2.

⁵ Horsehead and ZCA are separate companies both owned by Horsehead Industries, Inc. Tr. at 32; Exh. 1 at 13.

The electrothermic furnace removes oxygen and minor constituents of the zinc sinter. The furnace vaporizes and condenses the zinc sinter which produces zinc metal and non-hazardous slag. Exh. 1 at 14, Att. 4. ZCA makes zinc metal slabs and ingots from the zinc metal. Exh. 1 at 13, Att. 4.

Removing Salts. The Agency asked Horsehead to comment on the higher chlorine content in CZO compared to mined concentrates and also asked if the chlorine posed any pollution control problems. Exh. 2 at 3. Horsehead responded that although CZO requires additional processing because it has more salts (the source of the chlorine) than zinc concentrates, zinc concentrates require additional processing because they have far more sulfur than CZO. CZO is a more predictable and uniform feedstock than zinc concentrates because the percentage of zinc in CZO is less variable than in zinc concentrates. Tr. at 22-24; Exh. 1 at 13, 24, Att. 10.

Salts in CZO are removed after CZO has left Horsehead's Chicago facility - both during the calcining process and during the zinc production process. Calcining is essentially a purifying step that increases zinc concentration and reduces the salt content in CZO. As a result, calcining also leads to a reduction in the amount of salts charged to ZCA's sinter machine. Exh. 1 at 16. The salts removed during the calcining process attach to a lead concentrate material which is shipped to another facility in Oklahoma. Tr. at 18. That facility processes the lead concentrate to recover metals. The salts are removed from the lead concentrate into a non-hazardous water stream. This stream is injected into a permitted non-hazardous deep well in Oklahoma for disposal. Tr. at 18-19; Exh. 3 at 3.

Even though most salts are removed from zinc calcine, there are salts in the other zinc-bearing feedstocks (including CZO) prior to sintering. During sintering, much like during calcining, the salts primarily attach to a lead concentrate. Incidental salts in water from this part of the process are sent to an NPDES permitted outfall at the ZCA facility. Tr. at 19; Exh. 3 at 2-3.

Micronutrient Production

CZO is also suitable as an ingredient in the production of micronutrients. Tr. at 17; Exh. 1 at 13. Horsehead sells CZO to Zinc Nacional, a pyrometallurgical facility in Monterey, Mexico. Horsehead transports CZO to the Mexican border where Zinc Nacional takes title to it. Zinc Nacional pelletizes the CZO. The pellets are then subject to a two step calcining process which volatilizes certain metal compounds, washes out salts, and produces zinc oxide. Zinc Nacional sells the zinc oxide to agricultural firms which use it as a micronutrient in animal feed. Tr. at 17; Exh. 1 at 17-18.

Loss Minimization and Emergency Procedures

Horsehead claims to have equipment which eliminates, wherever possible, loss of the product into the environment during the manufacturing and shipping processes. Exh. 1 at 26 -28. Horsehead manages its feedstocks in an enclosed negative pressure environment. All transfer points have collection equipment and Agency-permitted baghouses to prevent loss of the material and to recycle any material that is collected. Exh. 1 at 7, 8, 26; Exh. 2 at 4; Exh. 3 at 3. CZO is pneumatically conveyed from permitted product collectors through pipes that extend into enclosed pressure differential rail cars. The rail car loading tank is in an enclosed building. These cars leave Horsehead immediately after CZO is

produced. Off-site transport of CZO must comply with U.S. Department of Transportation regulations. Exh. 1 at 25, 26; Exh. 2 at 4; Exh. 3 at 3, 5.

Horsehead has two Agency-permitted product collectors. Each collector has several compartments, and each compartment has several bags. A compartment or bag can be repaired without interrupting the work of the other compartments. Exh. 3 at 5. Horsehead also has a 24 hour opacity monitors to measure gases exiting from the product collectors. An alarm connected to the opacity monitor alters the Waelz kiln operator if opacity levels increase. Exh. 3 at 4.

To quote Hanrahan, CZO “never sees the light of day”. Tr. at 25.

The Agency asked that Horsehead explain its procedures for loss minimization and explain its plans to address an accidental spill, ruptured baghouse, or other loss of CZO. Exh. 2 at 4. Horsehead has implemented several programs that aim to prevent the accidental release of CZO or its constituents. These include: employee training, inspection and monitoring, preventative maintenance, and comprehensive housekeeping. Tr. at 29-30; Exh. 3 at 4. One of the preventative maintenance programs involves constant temperature monitoring of the Waelz kilns. Tr. at 29-30.

Horsehead is also prepared to handle an accidental release. If a release were to occur, trained Horsehead personnel would respond. The area where CZO is managed is completely paved with either asphalt or concrete which would contain a CZO spill. The paved surface also allows for easier cleanup of the spilled material with vacuum trucks, road sweepers, or other equipment. Horsehead has also made arrangements with the proper regulatory agencies, fire departments, hospitals, and third party vacuum companies. The recovered CZO would be returned to the recycling process. Tr. at 30-31; Exh. 3 at 4.

DISCUSSION

In this section, the Board will first address whether CZO is a solid waste. Next, the Board discusses if the provision at 35 Ill. Adm. Code 720.131(c) is available to Horsehead. Lastly, the Board evaluates the factors at 35 Ill. Adm. Code 720.131(c).

Is CZO a Solid Waste?

Section 720.131(c) of the Board’s rules allows the Board to except materials that would otherwise be defined as solid wastes⁶. The Board must first determine if CZO is a solid waste. If CZO is not a solid waste, Horsehead does not need an adjusted standard.

A “solid waste” is any “discarded material” which the regulations do not otherwise exclude. See 35 Ill. Adm. Code 721.102(a)(1). One way that a material may be deemed “discarded” is by being “recycled” in a manner described at Section 721.102(c) of the Board’s rules. See 35 Ill. Adm.

⁶ As previously noted, hazardous wastes are a subset of solid wastes pursuant to RCRA Subpart C.

Code 721.102(a)(2). Section 721.102(c)(3) and Appendix Z to Part 721 of the Board's rules provide that if a "listed sludge" is "recycled" by being "reclaimed", it is a solid waste.⁷

Employing the definition set forth above, the Board finds that CZO is a solid waste. CZO is considered a "listed sludge." A "sludge" is defined as a "solid . . . waste generated from [an] . . . air pollution control facility . . ." 35 Ill. Adm. Code 721.101(c)(2); 35 Ill. Adm. Code 720.110. Horsehead recovers CZO from EAF dust. EAF dust is collected in air pollution control facilities at steel plants and is therefore a sludge. EAF dust is "listed" because it is listed as a hazardous waste from a specific source. EAF dust is listed as code K061, "emission control dust/sludge from the primary production of steel in electric furnaces". 35 Ill. Adm. Code 721.132.

While this listing applies to EAF dust rather than CZO, a material derived from the treatment of a listed hazardous waste is itself also a listed hazardous waste. 35 Ill. Adm. Code 721.103(c)(2)(A), (d)(2). In promulgating the federal RCRA regulations which are the basis for these State regulations, USEPA emphasized that "all of the residues from treating the original listed wastes are likewise considered to be the listed waste . . ." 54 Fed. Reg. 1,056, 1,063 (Jan. 11, 1989). Thus, CZO is also considered a listed sludge.

Next, the Board finds that EAF dust and the resulting CZO are being recycled by reclamation. USEPA stated that materials are considered reclaimed if "material values . . . are recovered as an end-product of a process (as in metal recovery from secondary materials)" or if they are "processed to remove contaminants in a way that restores them to their original usable condition." 50 Fed. Reg. 614, 633 (Jan. 4, 1985). Horsehead processes EAF dust via HTMR to remove contaminants and recover CZO. After further treatment of CZO including further removal of contaminants, the resulting zinc materials can be processed into zinc metal or used in animal feed.

CZO is a listed sludge that is recycled by being reclaimed. Therefore, CZO is a solid waste.

Applicability of Section 720.131(c)

USEPA stated that, generally, a waste which is being reclaimed remains a waste until the entire reclamation process is completed. 50 Fed. Reg. 614, 620, 633, 634, 655 (Jan. 4, 1985). Section 720.131(c) of the Board's rules is an exception to this principle. USEPA explains that the federal counterpart to Section 720.131(c) is for those situations in which "the initial reclamation step is so substantial that the resulting material is more commodity-like than waste-like even though no end-product has been recovered." 50 Fed. Reg. 614, 655 (Jan. 4, 1985).

The Board finds that EAF dust that has been processed in the Waelz kiln HTMR units has been initially reclaimed but not fully reclaimed. After treatment in the Waelz kilns, CZO contains much more

⁷ A detailed discussion of how materials becomes solid waste can be found at Petition of Chemetco, Inc. for an Adjusted Standard From 35 Ill. Adm. Code. 720.131(a) and (c) (March 19, 1998), AS 97-2, slip op. at 11-12.

zinc that EAF dust contains. In addition, the Waelz kilns decrease the amount of IRM and contaminants such as calcium and manganese. Exh. 1 at 12.

However, CZO requires further processing in order to recover end products. Salts are removed from the CZO that is sent to Horsehead's Pennsylvania facility to make zinc calcine. ZCA blends CZO, zinc calcine, and other materials; sinters these blended materials; and then send them to an electrothermic furnace. The finished products are zinc slabs and zinc ingots. The CZO that Horsehead sends to Zinc Nacional is pelletized and calcined before it suitable as a micronutrient in animal feed.

The Board finds that Section 720.131(c) of the Board's rules is applicable in this case. Once EAF dust has been initially processed in a Waelz kiln HTMR unit, it has only been initially reclaimed, not fully reclaimed.

Section 720.131(c) Factors

The Board must determine whether CZO is commodity-like based on the factors at Section 720.131(c) of the Board's rules. Based on the analysis of the factors below, the Board finds that CZO is commodity-like. The Board addresses each of the factors herein.

The Degree of Processing the Material has Undergone and the Degree of Further Processing that is Required

USEPA has explained the federal counterpart to each of the Section 720.131(c) factors. In explaining this factor, USEPA stated "the more substantial the initial processing, the more likely the resulting material is to be commodity-like." 50 Fed. Reg. 614, 655 (Jan. 4, 1985). In the instant case, the initial processing of the EAF dust begins in the C&B building at Horsehead's Chicago facility where EAF dust is blended with small amounts of other zinc bearing materials and treated in order to provide a uniform composition for the Waelz kiln HTMR units. Tr. at 13, 28-29; Exh. 1 at 7-8, Att. 1. The primary initial processing occurs in the Waelz kilns, where the HTMR process separates out IRM and contaminants from the EAF dust to form CZO. HTMR increases the percentage of zinc from about 15% in EAF dust to nearly 60% in CZO. Tr. at 14; Exh. 1 at 8-9, 12, Att. 1. The primary input into the Waelz HTMR kiln unit is EAF dust, a material that generally cannot be used as a feedstock in zinc production. After treatment in the Waelz kiln HTMR units, two of the resulting products are IRM and CZO. CZO can be used a feedstock in zinc production.

As discussed above, despite the initial processing at the Horsehead Chicago facility, CZO must undergo further processing before it becomes either zinc ingots, zinc slabs, or a micronutrient in animal feed.

The Board need not determine whether all of the subsequent processing constitutes reclamation under RCRA. The Board finds that the processing at Horsehead's Chicago facility which turns EAF dust into CZO is substantial. The Board therefore finds that this factor supports Horsehead's claim that CZO is commodity-like.

The Value of the Material After it has been Reclaimed

USEPA stated that “the more valuable a material is after initial processing, the more likely it is to be commodity-like.” 50 Fed. Reg. 614, 655 (Jan. 4, 1985). EAF dust has a negative value because generators typically pay others to take it away. Tr. at 11, 22, 27-28; Exh. 1 at 18-22. Although Horsehead’s contract terms for CZO are protected by non-disclosure, at hearing and in its petition Horsehead indicated that CZO is valuable. Tr. at 20-21, 25; Exh. 1 at 2, 21. Horsehead claimed and the Agency agreed that the sales price for CZO is similar to the sales price for roasted zinc concentrates. Tr. at 20-21, 25; Exh. 1 at 21; Exh. 2 at 3.

The Board finds that CZO has significant value.

The Degree to which the Reclaimed Material is Like an Analogous Raw Material

USEPA stated “[i]f the initially-reclaimed material can substitute for a virgin material, for instance as a feedstock to a primary process, it is more likely to be commodity-like.” 50 Fed. Reg. 614, 655 (Jan. 4, 1985).

A good deal of processing, notably HTMR, is required before EAF dust becomes CZO. Likewise, a good deal of processing is required before mined sulfide zinc ores become roasted zinc concentrates, which have a constituency similar to CZO. Such processing includes crushing, milling, sequential flotation/separation, dewatering, drying, and roasting. Exh. 1 at 14, Att. 4.

Although they are not identical, both CZO and roasted zinc concentrates are suitable as feedstock for zinc production processes such as the ones described above at ZCA and Zinc Nacional. CZO has the advantage of containing a narrower range of zinc (56% to 61%) than zinc concentrates (48% to 61%) which makes CZO a more predictable and uniform feedstock. CZO contains more salts than zinc concentrates, and, as a result, much CZO is calcined before the sintering step at a zinc refinery. However, zinc concentrates contain more sulfur than CZO, and, as a result, zinc concentrates must be roasted before sintering. Exh. 1 at 16, 24.

The Board finds that CZO is similar to mined zinc concentrates and can be substituted for roasted zinc concentrates in zinc production processes.

The Extent to which an End Market for the Reclaimed Material is Guaranteed

USEPA stated “[i]f the [petitioner] can show that there is an existing and guaranteed end market for the initially reclaimed material (for instance, value, traditional usage or contractual arrangements), the material is more likely to be commodity-like.” 50 Fed. Reg. 614, 655 (Jan. 4, 1985).

Horsehead currently has contracts with ZCA and Zinc Nacional for the sale of its CZO. Exh. 1 at 22, Att. 8, Att. 9. Horsehead’s CZO is sent either to its facility in Palmerton, Pennsylvania, ZCA, or Zinc Nacional. Horsehead has never stored or stockpiled CZO. Tr. at 20, 24; Exh. 1 at 25. Horsehead either transfers or sells all of the CZO that it produces.

At least a dozen plants all over the world produce hundreds of thousands of pounds of CZO every year. Exh. 1 at 20. Obviously, such large scale production indicates that markets exist for CZO.

In its response to Horsehead's petition, the Agency stated that end markets for CZO appear to be guaranteed. Exh. 2 at 3. The Board agrees and finds that there is an end market for Horsehead's CZO and an end market for CZO in general.

The Extent to which the Reclaimed Material is Handled to Minimize Loss

USEPA stated that "the more carefully a material is handled, the more it is commodity-like." 50 Fed. Reg. 614, 655 (Jan. 4, 1985). When a material is handled to minimize loss, it indicates that the material has value. Loss minimization methods also reduce environmental hazards because they aim to prevent releases of material. Exh. 2 at 3.

All transfer points in Horsehead's Chicago facility have collection equipment and baghouses which allow Horsehead to collect released material and return it to the CZO manufacturing process. Exh. 1 at 7, 8, 26; Exh. 2 at 4; Exh. 3 at 3. Immediately after CZO is produced, Horsehead conveys it from product collectors via a pipe that extends into closed pressure differential rail cars for off-site shipment. These railcars are in an enclosed building. Tr. at 25; Exh. 1 at 18, 26. Horsehead has 24-hour opacity monitors to measure if any gases escape from the product collectors. Alarms alert plant personnel if there is a release, and the affected part of the product collector can be shut down for repairs to minimize further losses. Exh. 3 at 4.

In the event of an accidental release, Horsehead is prepared to clean up any spilled CZO and return it to the recycling process. In the event of a spill, trained personnel would use vacuum trucks, road sweepers, and other equipment to gather the CZO. Any area in which a CZO spill could occur is paved. Paved surfaces allow for an easier and much more complete cleanup of spilled CZO than non-paved surfaces. Tr. at 30-31; Exh. 3 at 4.

The Board finds that Horsehead handles CZO in order to minimize loss.

Other Relevant Factors

BRZ's Adjusted Standard. Horsehead claims that the Board's recently-granted adjusted standard for the Big River Zinc Corporation (BRZ) supports its petition for an adjusted standard. See *In re Big River Zinc Corporation* (April 15, 1999), AS 99-3; *In re Big River Zinc Corporation* (May 6, 1999), AS 99-3. In that adjusted standard, the Board held that the EAF zinc oxide to be received by BRZ for further processing was commodity-like instead of a solid waste. Horsehead claims that the EAF zinc oxide received and processed by BRZ is virtually identical to the CZO produced by Horsehead. Both EAF zinc oxide and CZO are produced from EAF dust in an HTMR process, contain very similar concentrations of zinc, and are used as a primary feedstock in the production of zinc products. Tr. at 8, 26; Exh. 1 at 2, 10, 28, 33, Att. 11; Exh. 3 at 1-2. Furthermore, in the BRZ opinion, the Board examined EAF zinc oxide and engaged in a nearly identical analysis - including

consideration of the factors at Section 720.131(c) of the Board rules - to determine that the EAF zinc oxide that BRZ was to receive and process was excepted from the definition of solid waste. In re Big River Zinc Corporation (April 15, 1999), AS 99-3, slip op. at 9-15.

There is one difference between BRZ's petition for an adjusted standard and Horsehead's petition. BRZ is a zinc refinery. It petitioned to have EAF zinc oxide declassified as an input to its production process. Horsehead, on the other hand, is seeking to have CZO declassified as an output of its production process. According to USEPA

“[a]pplicable regulatory requirements for the waste before initial reclamation are unaffected. The initial reclaimer will thus be a RCRA storage facility, and have to obtain a permit to store the wastes before reclaiming them. If a variance should be granted, however, the recovered material is not a waste and the subsequent reclaimer is not a RCRA facility.” 50 Fed. Reg. 614, 655 (Jan. 4, 1985).

In other words, Horsehead is an initial reclaimer and BRZ is a subsequent reclaimer. The Board finds it irrelevant whether the initial reclaimer or the subsequent reclaimer is asking for the adjusted standard. The adjusted standard does not relieve the initial reclaimer from complying with RCRA. Thus, the Board's adjusted standard for BRZ's EAF zinc oxide is a relevant factor supporting Horsehead's contention that CZO is commodity-like.

AmeriSteel Variance. Horsehead points out that in 1998 the Tennessee Department of Environmental Conservation (TDEC) provided AmeriSteel a variance from the definition of solid waste for its EAF zinc oxide product. AmeriSteel supplies this product to BRZ. Tr. at 26-27; Exh. 1 at 30-31, Att. 12. In its petition Horsehead cites a letter signed by the Director of TDEC's Division of Solid Waste Management attesting that AmeriSteel's EAF zinc oxide is granted a variance from classification of a solid and hazardous waste for five years, beginning September 11, 1998. Exh. 1 at Att. 12. TDEC determined that the EAF zinc oxide satisfied the Tennessee regulations for a variance from the classification of hazardous waste. The Tennessee regulations are nearly identical to federal and Illinois regulations. Exh. 1 at Att. 12; Tenn. Comp. R. & Regs. tit. 1200, ch. 1-11-.01(4)(a)(3), ch. 1-11-.01(4)(b) (1999). However, Horsehead does not provide any evidence of TDEC's analysis of Tennessee's regulations. There is no discussion of the factors that Tennessee should have applied in making the variance determination. As a result, the Board will not cite to TDEC's variance for AmeriSteel as a relevant factor.

SCDR Exclusion. Horsehead also states that USEPA excluded a material called splash condenser dross residue (SCDR) from the definition of solid waste. Horsehead claims that this should also be a relevant factor. Exh. 1 at 31; 56 Fed. Reg. 41164, 41173-41174 (Aug. 19, 1991). SCDR is the partially reclaimed small-volume byproduct of certain HTMR processes which use K061 hazardous waste as an input. SCDR is collected from a splash condenser and stored for up to two weeks before being sold to either zinc refiners or reused on-site in the HTMR process. SCDR also contains a significant amount of zinc (50% to 60%). USEPA did not grant a variance for SCDR, but

instead excluded it by rule from the definition of solid waste. In doing so, USEPA applied the federal equivalent of the Section 720.131(c) factors. 40 C.F.R. § 260.31(c); 56 Fed. Reg. 41164, 41174 (Aug. 19, 1991). The analysis, however, is cursory at best. The Board finds that the SCDR exclusion is not a relevant factor.

Conserving Natural Resources. Horsehead correctly points out that recycling EAF dust conserves natural resources by decreasing the need to mine non-renewable zinc ores. In addition, Horsehead's recycling process means that less EAF dust is sent to landfills. Tr. at 27; Exh. 1 at 1, 2, 28, 32, Att. 13; Exh. 2 at 4. Although the Board encourages increased recycling, it cannot be classified as a "relevant factor" because it is not relevant to the determination that CZO is commodity-like.

The Board finds that the only "other relevant factor" which supports the commodity-like nature of CZO is the Board's 1999 adjusted standard for BRZ's EAF dust zinc oxide.

Conditions on the Adjusted Standard

The Board is setting conditions on Horsehead's adjusted standard. The conditions are similar to those placed on BRZ for its adjusted standard. See In re Big River Zinc Corporation (May 6, 1999), AS 99-3.

The adjusted standard only applies to CZO produced from EAF dust via HTMR at Horsehead's Chicago facility and only applies to the CZO while it remains in Illinois.

As noted above, Horsehead claims that the EAF zinc oxide that BRZ receives and processes is virtually identical to the CZO that Horsehead produces. As the Board did with BRZ, the Board will require Horsehead to sample and test the material as a condition of the adjusted standard. Horsehead must test the CZO it produces for its percentage by weight of zinc, lead, iron, total gangue materials (silica plus calcium plus magnesium), and chloride. These are the same constituents for which BRZ must test its EAF zinc oxide under its adjusted standard. See In re Big River Zinc Corporation (May 6, 1999), AS 99-3, slip op. at 6. As a result, the Board mandates that Horsehead regularly test samples of its CZO for content according to generally accepted practices such as procedures outlined by USEPA. The Board also mandates that Horsehead maintain records of the sampling and test results. This will allow the Agency to assess whether Horsehead is indeed processing EAF dust via HTMR.

The Board wants to ensure that the adjusted standard only applies to CZO that is destined to undergo processing for recovery of an end product at either another Horsehead facility or another entity's facility. In addition, the Board also wants to ensure that Horsehead will not accumulate CZO at its Chicago facility. Section 720.131(c) of the Board's rules only applies to situations in which initial reclamation has taken place and further reclamation must take place in order to recover an end product. Thus, the adjusted standard only applies to CZO that (1) is destined for or has arrived at another Horsehead facility, (2) is under a legally binding contract for sale from Horsehead to another entity, or (3) has been acquired by another entity under a legally binding contract for sale from Horsehead. The Board also mandates that Horsehead maintain records regarding the destination of all CZO that it

produces under this adjusted standard. These conditions are similar to conditions that the Board placed on BRZ's adjusted standard, but have been tailored to the facts of this case.

Horsehead has several options if it objects to the conditions that the Board has placed on its adjusted standard. First, under the Board's procedural rules, Horsehead may file a motion to reconsider with the Board. Second, Horsehead may appeal the adjusted standard to the Illinois Appellate Court. Third, Horsehead may consider CZO a solid waste instead of handling the material under the conditions of the adjusted standard.

CONCLUSION

The Board finds that Horsehead has established that CZO, which is produced by subjecting EAF dust to an HTMR process, is commodity-like. Thus, the Board finds that CZO is excepted from the definition of solid waste. The Board grants Horsehead's petition for an adjusted standard pursuant to Section 720.131(c) of the Board's regulations subject to the conditions set forth in this order.

This opinion constitutes the Board's findings of fact and conclusions of law in this matter.

ORDER

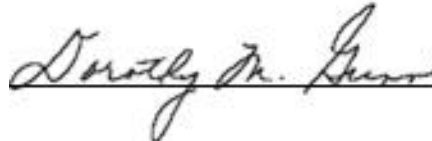
1. The Board finds that crude zinc oxide (CZO), which is produced by subjecting electric arc furnace (EAF) dust from the primary production of steel (K061 under 35 Ill. Adm. Code 721.132) to a high temperature metals recovery (HTMR) process, is excepted from the definition of solid waste and grants Horsehead Resource Development Company (Horsehead) an adjusted standard pursuant to 35 Ill Adm. Code 720.131(c).
2. The adjusted standard is subject to the following conditions:
 - a. The determination described in paragraph one of the order applies only to CZO:
 - (1) that has been subject to Horsehead's HTMR process at its facility in Chicago, Illinois and that will undergo further processing for the eventual recovery of an end product;
 - (2) that is in Illinois; and
 - (3) that will depart or has departed from Horsehead's Chicago facility and that:
 - (a) is destined for or has arrived at another Horsehead facility;
 - (b) is under a legally binding contract for sale from Horsehead to another entity; or

- (c) has been acquired by another entity under a legally binding contract for sale from Horsehead ;
- b. Horsehead must maintain records identifying the destinations, including purchasers, of all CZO that Horsehead produces under this adjusted standard;
- c. Each month, Horsehead must take representative samples of the CZO that it produces. Horsehead may composite the samples. Horsehead must test each sample on a monthly basis to determine the percentage by weight of zinc, lead, iron, total gangue materials (silica plus calcium plus magnesium), and chloride in the sample. Each sample must be collected and tested in accordance with generally accepted practices, such as those specified in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," USEPA Publication No. SW-846 (Third Edition, Updates I, II, IIA, IIB, and III); and
- d. Horsehead must maintain records of the information required in paragraphs 2(b) and 2(c) of this order for a period of three years and must make them available for the Illinois Environmental Protection Agency (Agency) to inspect and copy at any reasonable time during normal business hours upon the Agency's request.

IT IS SO ORDERED.

Section 41 of the Environmental Protection Act (415 ILCS 5/41 (1998)) provides for the appeal of final Board orders to the Illinois Appellate Court within 35 days of service of this order. Illinois Supreme Court Rule 335 establishes such filing requirements. See 172 Ill. 2d R. 335; see also 35 Ill. Adm. Code 101.246, Motions for Reconsideration.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above opinion and order was adopted on the 17th day of February 2000 by a vote of 6-0.



Dorothy M. Gunn, Clerk
Illinois Pollution Control Board