

September 15, 2014

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

Re: Calumet River Terminals Variance Request

To Whom It May Concern:

Thank you for the opportunity to comment on the application of Calumet River Terminals for variances from the Department of Health's Rules and Regulations for Control of Emissions from the Handling and Storage of Bulk Material Piles ("Rules"). These comments are submitted on behalf of the Natural Resources Defense Council ("NRDC") and our nearly 10,000 members and activists in the City of Chicago, including those who reside on the Southeast Side in the Calumet area, as well as the Southeast Environmental Task Force ("SETF"), an active community group dedicated to improving the Calumet neighborhood's environment. For the reasons set forth below, the application is incomplete and fails to demonstrate that the requested variances will not have an adverse impact on the community and environment, and thus the request should be denied.

According to information derived from the demographic feature of U.S. EPA's ECHO database, there are 20,564 people who live within a one mile radius of the applicant's facility. More than 84% of the people who live within this one mile radius are Hispanic (77.42%) or African-American (6.81%). U.S. EPA's ECHO database also indicates a total of 6,216 households in this one mile radius, with a total population of 6,311 children 17 years and younger. The applicant's facility is directly across Burley Avenue from the residential neighborhoods of the East Side. The building itself is 0.17 miles from Wolfe Playground Park.¹ It sits next to a community baseball diamond, less than a quarter mile west of Wolfe Playground Park; just over a half mile west of Jane Addams Elementary School; less than a mile northwest of George Washington Elementary School, George Washington High School, and Annunciata School; and approximately a mile east of Orville T. Bright Elementary School and Trumbull Park. To access the facility, trucks must move through or immediately adjacent to residential neighborhoods. Rail lines are also immediately adjacent to homes along Burley. The applicant's facility is located adjacent to the Calumet River. The Calumet River is used extensively by recreational watercraft.

On or about April 22, 2014, the Illinois EPA issued a Notice of Violation to Calumet River Terminals alleging of violations of requirements that originate in the Clean Air Act. These alleged violations include:

¹ <http://www.chicagoparkdistrict.com/parks/Wolfe-Playground-Park/>

1. Calumet River Terminal failed to obtain a construction permit prior to constructing its truck loading, bulk material handling, and transfer operations;
2. Calumet River Terminal failed to obtain an operating permit for these same operations;
3. Calumet River Terminal failed to develop and implement an operating program designed to significantly reduce fugitive particulate emissions at the source;
4. Calumet River Terminal failed to submit annual and quarterly reports for activities involving fugitive particulate matter control measures.

A true and accurate copy of this NOV is attached and labeled as NRDC/SETF Attachment One.

Industrial Impacts to City Residents and Environment

Earlier this year, the City adopted the new Rules to help address the problem of harmful dust pollution from industrial sources. Dust pollution can cause permanent harm to people's lungs, significantly limit the uses and enjoyment (and so market values) of private property as well as public parks, and inhibit the growth of plants and wildlife.² While a significant impetus for the Rules was the clouds of petroleum coke and coal dust from several handlers along the Calumet River, the City appropriately sought to reduce dust from bulk materials more generally, adopting rules that apply city-wide to handlers of a range of bulk materials. This action represented a much-needed update to the City's existing measures to combat dust.

We continue to believe that the Rules are too lax in some areas; however, they represent a significant step forward in providing increased protections to Chicago communities. Moreover, as set forth below in more detail, we believe it is imperative that the Commissioner stringently assess applications for variances to ensure the purposes of the Rules are not circumvented on a case-by-case basis.

Objections to Variance Provisions

In our prior comments on the City's proposed dust rules, we noted significant concerns with both the scope of the variance provision and the lack of procedural safeguards for making variance determinations.³ We urged the City to dispense with the variance provision altogether, or at minimum to include additional safeguards both in terms of substance and process. The City responded by adding requirements for variance applications, an opportunity for public comment, and criteria for reviewing a variance application.⁴ With these improvements, the Commissioner is empowered to hold

² Comments of NRDC et al. ("Comments") at 3-7, available at http://www.cityofchicago.org/content/dam/city/depts/cdph/environmental_health_and_food/PetCoke_Public_Comments/NRDC_SETF_Alliance_for_the_Great_Lakes_ELPC_Faith_in_Place_RHAMC_and_Sierra_Club_Recvd_2-7-14.pdf.

³ Comments at 38-40.

⁴ Rules Section 8.0

applicants' demonstrations to high standards and to pay close attention to the interests of the public articulated through their written comments.

At the outset, we provide two general comments to guide this review. First, the area of fugitive dust regulation generally is plagued by a history of poor emissions estimates, overblown claims of control efficiencies, and vague requirements. As such, it is especially important that applications for variances are supported by detailed, site-specific information, robust technical demonstrations, and specific, enforceable proposed requirements. Second, obligations and costs above what the facility would have borne under prior city, state and federal obligations are to be expected under this new set of regulations. Mere reference to some increase in burden should not qualify as grounds for a variance.

Pig Iron, Hot Briquetted Iron and Direct Reduced Iron Are Subject to Chicago's Rules For The Handling and Storage of Bulk Materials

According to the applicant, some materials managed at the site including pig iron (also known as blast furnace iron), hot briquetted iron and direct reduced iron are not bulk storage materials subject to CDPH's regulations. NRDC and SETF strongly disagree with the applicant's assertion.

Pig Iron

Pig Iron is also known as Blast Furnace Iron. As acknowledged by the applicant in its Exhibit A, pig iron is "used as the mineral feedstock for steel production"; that "during storage and shipping, oxides of iron rust) form at the surface of these materials and the oxide particles may slough or scale off of the larger pieces during handling" and that iron oxide scale "may become airborne" and form particles in sizes that can travel "a few hundred feet" at wind speeds as low as ten miles per hour. These features of pig iron bring it within the scope of the "bulk solid material" definition.

Fugitive dusts generated from the storage and handling of pig iron can threaten human health and the environment. According to the Material Data Safety Sheet for Blast Furnace Iron, BFI/pig iron contains iron, carbon, manganese, phosphorus, silicon and sulfur, each of which have their own hazard characteristics and corresponding OSHA and Threshold Limit Value standards. The MSDS hazard characterization includes this description "...Potentially hazardous quantities of airborne particulate and fume may be generated...Avoid inhalation of metal dusts and fumes." Chronic inhalation of metallic fumes and dusts are associated with the conditions like benign pneumoconiosis, pulmonary disorders, central nervous system disorders, respiratory irritation, particulate irritation and other irritations of the skin, eyes, lungs and gastrointestinal tract. As to ecological risks, the MSDS notes "...individual components of the product have been found to be toxic to the environment. Metal dusts may migrate into soil and groundwater and be ingested by wildlife." Moreover, "...individual components of the product have been found to be absorbed by plants from soil." See: NRDC/SETF Attachment Two.

In light of the CDPH regulations' plain language, the nature and scope of the potential risks of pig iron to human health and the environment, and the applicant's proximity to waterways, residential neighborhoods and public parks, we urge the Commissioner to conclude that this material is subject to the Rules.

Hot Briquetted Iron (HBI) and Direct Reduced Iron (DRI)

The applicant states, "The composition of both HBI and DRI are similar, mainly 90+% iron, ~5% carbon and traces of carbon, phosphorous or sulphur. During storage and shipping, oxides of iron (rust) form at the surface of these materials and the oxide particles may slough or scale off of the larger pieces during handling. Up to 0.5% weight present of iron oxide scale that may form and separate from the BFI, HBI or DRI." The applicant further acknowledges that trace particles may become windborne, and that particles of this size (greater than 30 micrometers) can travel "a few hundred feet."

According to the MSDS for hot briquetted iron (HBI), "dust and small pieces may cause mechanical irritation, redness and pain in contact with the eyes, which can result in redness and lacrimation. May cause conjunctivitis." The MSDS further states, "Inhalation of dust may cause irritation to the respiratory tracks. Symptoms may include coughing, sneezing, soreness of the throat and breathing difficulties. Repeated or prolonged exposure to this material may result in skin irritations in individuals with sensitive skin. Chronic exposure to iron dust has been associated with benign pneumoconiosis...". In terms of bulk handling, the MSDS cautions, "Broken pieces and dust generated during loading and unloading should be collected and dispose [sic] adequately." The MSDS further asserts, "During handling dust is generated..." See: NRDC/SETF Attachment Three.

In light of the CDPH regulations' plain language, the nature and scope of the potential risks of hot briquetted iron and direct reduced iron to human health and the environment, and the applicant's proximity to waterways, residential neighborhoods and public parks, we urge the Commissioner to conclude that this material is subject to the Rules.

CDPH Must Deny The Applicant's Request To Avoid Installing PM Monitors

The scope of the Commissioner's authority and responsibility is broad, extending to "...any matter, material or substance susceptible to being windborne and for the handling, transportation, disposition or other operation with respect to any material subject to being windborne." Municipal Code of Chicago 11-4-770. As pointed out by CDPH in its March 13, 2014 Response To Public Comments, the intent in establishing regulations is to protect public health and the environment from activities that have the potential to cause windborne dust, even "...existing businesses that are lawfully operating under current Chicago land use laws." City of Chicago Department of Public Health, Official Response to Public Comments on the Proposed Rules and Regulations For The Handling and Storage of Bulk Material Piles, March 13, 2014, at 3. As asserted by CDPH, there are four categories of material and handling and storage activities that its own experts concluded can create airborne dust as part of the outdoor storage of materials - bulldozing

and grading, material dropping operations, equipment travel on the surfaces of stockpiles and vehicle travel on paved roads. Id. at 4.

Consistent with the MCC, CDPH appropriately requires that these facilities have the capacity to prevent, detect and respond to potential releases of windborne material. To this end, CDPH mandates the development and implementation of a proactive fugitive dust plan. Every fugitive dust plan must contain some required elements, but CDPH also expressly allows flexibility for businesses to develop plans that make the most sense based on their unique operations. Id. at 21. However, the actual success of a fugitive dust plan is not left to guesswork. For CDPH, the most reliable means to demonstrate the success of a fugitive dust plan for operators, regulators and residents is through uniform, empirically verifiable PM monitoring. It is not an exaggeration to state that PM monitoring is the lynchpin of the new CDPH protocol. As stated by CDPH:

The requirement for fugitive dust monitoring is a critical component of the regulations to ensure that the facility's dust control measures are working. CDPH inspectors cannot observe facility operations on a daily basis. And facility workers who are occupied in doing their jobs may not always realize when there is a dust problem. Therefore, the PM monitors are important for alerting facility operators when there might be an issue with their dust control systems. They are also important to ensure compliance with the fugitive dust prohibition, as well as to give neighbors a level of comfort in knowing the air is being monitored. Id. at 23.

Because of the importance of PM monitoring, the variance standard is the most difficult of any requirement in the CDPH regulations. In addition to the exacting variance standards in Section 8.0, the standard for a variance from PM monitoring is also addressed in Section 3.0(4), which establishes the following threshold criteria:

Unless...the Facility Owner or Operator establishes that the Facility's operations do not result in off-site fugitive dust emissions, the Facility Owner or Operator must install, operate, and maintain, according to manufacturer's specifications, permanent, continuous Federal Equivalent Method (FEM) real-time PM 10 monitors around the perimeter of the facility...

Simply, the applicant in this case must establish its operations do not result in off-site fugitive dust emissions as a result of any of its activities, for example, bulldozing and grading, material dropping operations, equipment travel on the surfaces of stockpiles and vehicle travel on paved roads. The applicant must establish these kinds of operations do not result in off-site fugitive dust emissions over the full range of weather and operating conditions. The applicant must establish "no off-site fugitive dust emissions" for every compass point around the perimeter of its facility, be it a waterway, public road, or residential neighborhood. If the applicant fails to establish "no fugitive off-site dust emissions", it cannot be granted a variance from the requirement to establish a PM monitoring system in accordance with the regulations.

This does not mean a variance is impossible; instead, it means the applicant cannot meet this exacting standard now. Without irony, we would point out that the best way for the applicant to attempt to demonstrate there are no off-site fugitive dust emissions is to establish the PM monitoring network now required by the regulations. If PM monitoring establishes there are “no off-site fugitive dust emissions” (at the locations and in the range of particle sizes measured by the monitors) over a representative period of time and range of conditions, then this is the point at which to seek a variance from an ongoing obligation to continue this monitoring. The monitoring would establish an objective empirical basis for the variance that would have credibility for regulators, other regulated entities and residents. In the meantime, in the event the monitoring system detects off-site dust emissions not anticipated by the applicant, it will provide a basis for further refinement of its fugitive dust plan. In any event, it is much more likely the task of developing and implementing a fugitive dust plan will be taken seriously if the results are verified by perimeter PM monitors, operated according to a uniform regulatory protocol.

The Applicant Has Not Met The Standard for Receiving A Variance From Several Operational Requirements

In addition to its variance request from PM monitoring requirements, the applicant also requests variances from other requirements of the CDPH regulations.

There are three other variance requests that NRDC and SETF oppose – 1) a request for a variance from requirements related to the truck cleaning; 2) a request to avoid operating a facility wind monitoring system, and 3) a request for a variance from transfer point requirements. These requests should be denied because they are directly contrary to the purpose of the regulations and do not meet the standard for the issuance of a variance.

In its variance application, the applicant must describe the process or activity for which the variance is sought, and demonstrate why the variance will not result in a public nuisance or “adversely impact the surrounding area, the surrounding, environment, or surrounding property values.”⁵ The applicant also must explain why compliance would impose an arbitrary or unreasonable hardship.⁶ In turn, in making a determination on a variance application, the Commissioner is to consider public comments, and give particular consideration to, among other things, whether a demonstration has been made that any adverse impacts will be minimal.⁷ Because the application falls short in many

⁵ Rules Section 8.0(2)(b) and (d).

⁶ *Id.* at (e)(i). While Section 8 does not lay out additional guidance on what constitutes an arbitrary or unreasonable hardship, guidance may be found in the City’s parallel criteria for review of a variation from the zoning ordinance, as summarized in City of Chicago, Dept. of Housing and Economic Development, “Zoning Board Rules and Regulations,” August 2011, at 12-13, available at http://www.cityofchicago.org/content/dam/city/depts/zlup/Administrative_Reviews_and_Approvals/Publications/ZBA_Rules_and_Regulations.pdf.

⁷ See Rules Section 8.0(3)(a).

respects, we urge the Commissioner to deny the variance requests related to wind monitoring and transport.⁸

First, the applicant seeks to avoid wheel washing and rumble strip requirements. These requirements are designed to help prevent the tracking of material onto public roadways. This could be material which is handled and stored on the site or dust and debris that is derived from this material (for example, iron oxide particles). It could also be material that adheres to vehicles from unpaved areas of the applicant's facility, which can also create dust and be deposited on public streets. These requirements are especially important for Calumet River Terminals because of its location. The facility is located on Burley Avenue directly across from a densely populated neighborhood. Trucks must move on public roads and through or immediately adjacent to residential areas to gain access to the facility. Because of this configuration, the risk of public exposure to any materials adhering to trucks and subsequently deposited on roadways is particularly acute. The proximity of residential neighborhoods increases the risk of direct public exposure to materials on the wheels and associated undercarriage of trucks.

Google map photos appear to show material deposited on Burley Street, a residential public street that runs along the eastern side of Calumet River Terminal. Google maps also appear to show material at the applicant's entrance from South Calumet River Street onto 106th Street, a major road that runs north of its facility. Consequently NRDC and SETF question the claim that "...inspections are implemented to ensure trucks will not cause track out of bulk solid materials to public streets." The proposed protocol that relies on visual inspections to mitigate dust is inadequate because it does not include any information about how its inspections will be executed and what will happen if material is detected on a truck. The stakes are high - according to the applicant, 95% of its ferro-alloy shipments arrive by truck - it is unclear if these trucks are covered- and ship out in "covered trucks." The applicant further acknowledges that the majority of its non-ferroalloy materials are also received by truck - it is unclear if these trucks are covered - and are stored in outdoor piles on pavement. Although the applicant never states the total number of trucks that enter-and-exit its facility, based on the tonnage of materials (17,062 tons in 2013), this is a frequent activity, suggesting it is not plausible that visual inspections will be able to thoroughly inspect each truck.

The second request to which NRDC and SETF object is to avoid the installation of a permanent device to monitor wind speed and direction. As an alternative, the applicant proposes using wind data derived from a water intake crib located several miles away in off-shore Lake Michigan, or from Midway airport, which is more than 10 miles inland, far to the northwest of the applicant's facility. By virtue of distance and location, neither of these alternatives is likely to be as representative as properly designed onsite monitor

⁸ See Rules Section 8.0(3)(b). At most, the Commissioner should only grant the portions of the variance for which the applicant has provided the requisite supporting information and require supplemental information to be provided moving forward, upon which the variance is conditioned. *Id.* at (3)(c) ("The Commissioner may grant a variance in whole or in part, and may attach reasonable conditions to the variance to ensure minimization of any adverse impacts.")

that characterizes the risk of the release of materials from the applicant's facility into nearby residential neighborhoods, public lands or waterways. Moreover, even though the applicant asserts no individual load of material is stored outside for any significant length of time before being moved indoors, the piles on the docks and in the storage yards are constantly being replenished. The outdoor piles are a permanent feature of facility operations, even if any individual load is moved into an indoor enclosure within a defined period of time.

Moreover, even though the applicant asserts that it unloads its materials "either indoors, in the storage yard, or at the dock, and stages them either indoors or in piles in the paved yard area", there are still opportunities for emissions. There are open doors on each side of the building where the applicant unloads its materials, which are pathways for fugitive emissions to escape the building. CDPH specifies that any "other devices" used at entrances and exits must be shown to be equivalent to or better than that of the overlapping flaps or sliding doors. The applicant's current open doors are not equivalent or better than the other devices that prevent fugitive emissions, and the applicant has not provided an alternative other than the current structure. Having the ability to monitor facility-specific wind conditions that could contribute to a greater risk of a release of dust is essential to trigger the proactive, protective measures in any credible fugitive dust plan.

The applicant also fails to provide adequate support for its request for a variance from the provisions of Section 3.0(7) regarding transfer points, arguing it should be exempt by virtue of storing ferroalloy materials in a building, using covered conveyances, and receiving some shipments by covered barge. However, the applicant acknowledges handling a wide variety of non-ferroalloy materials, but does not specify if it is seeking a variance for these materials as well. In addition, the applicant fails to provide adequate information about the effectiveness of its control measures for the building (which has large open doors), covered conveyances, the outdoor staging area, or vehicles. As to covered barges, the applicant concedes that the majority of its non-ferroalloy materials are received by truck (it is unclear if these trucks are covered) and are stored in outdoor piles on pavement. Section 3.0(7) provides four alternative mechanisms by which a facility may comply: (a) total enclosure, (b) water spray systems, (c) venting to air pollution equipment, or (d) maintenance of a moisture content of 3%. The applicant has not provided sufficient information of how it plans to mitigate dust from the full range of its transfer activities, and should be required to employ one of these four alternatives to comply with the Rules and ensure public safety.

For these reasons, we respectfully request that the Commissioner deny this application for a variance. Please do not hesitate to contact us if you have any questions.

Sincerely,



Keith Harley
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Chicago Legal Clinic, Inc.
kharley@kentlaw.iit.edu
(312) 726-2938



Ann Alexander
Attorney, Midwest Program,
Natural Resources Defense Council
(312) 663-9900

Menu



Detailed Facility Report

Facility Summary

CALUMET RIVER TERMINAL
10740 S BURLEY AVE, CHICAGO, IL 60617

Facility Information (FRS)

FRS ID: 110056367701
 EPA Region: 05
 Latitude: 41.700257
 Longitude: -87.544984
 Industry:
 Indian Country: N

Regulatory Interests

Clean Air Act: Operating Minor (1703106220)
 Clean Water Act: No Information
 Resource Conservation and Recovery Act: No Information
 Safe Drinking Water Act: No Information

Also Reports

Air Emissions Inventory (EIS): No Information
 Greenhouse Gas Emissions (eGGRT): No Information
 Toxic Releases (TRI): No Information

Enforcement and Compliance Summary

Statute	Insp (5 Years)	Date of Last Inspection	Current Compliance Status	Qtrs in NC (of 12)	Qtrs in Significant Violation	Informal Enforcement Actions (5 years)	Formal Enforcement Actions (5 years)	Penalties from Formal Enforcement Actions (5 years)	EPA Cases (5 years)	Penalties from EPA Cases (5 years)
CAA	1	11/19/2013	Noncompliance	0	0	1	--	--	--	--

Facility/System Characteristics

Facility/System Characteristics

Statute	Identifier	Universe	Status	Areas	Permit Expiration Date	Indian Country	Latitude	Longitude
--	110056367701	--	--	--	--	N	41.700257	-87.544984
CAA	1703106220	Other Minor	Operating	SIP	--	N	--	--

Facility Contact Information

System	Identifier	Facility Name	Facility Address
FRS	110056367701	CALUMET RIVER TERMINAL	10740 S BURLEY AVE, CHICAGO, IL 60617
AFS	1703106220	CALUMET RIVER TERMINAL	10740 S BURLEY AVE, CHICAGO, IL 60617

Facility SIC Codes

System	Identifier	SIC Code	SIC Desc
AFS	1703106220	9999	--

Facility NAICS Codes

System	Identifier	NAICS Code	NAICS Desc
AFS	1703106220	339999	All Other Miscellaneous Manufacturing

Facility Tribe Information

Tribal Name	EPA Tribal ID	Distance to Tribe (miles)
No data records returned		

Enforcement and Compliance

Compliance Monitoring History (5 years)

Statute	Source ID	System	Inspection Type	Lead Agency	Date	Finding
CAA	1703106220	AFS	STATE CONDUCTED FCE/ON-SITE	State	11/19/2013	--

Entries in italics are not considered inspections in official counts.

Compliance Summary Data

Statute	Source ID	Current SNC/HPV	Description	Current As Of	Qtrs in NC (of 12)
CAA	1703106220	No	--	09/06/2014	0

Three Year Compliance Status by Quarter

Statute	Program/Pollutant /Violation Type	QTR 1	QTR 2	QTR 3	QTR 4	QTR 5	QTR 6	QTR 7	QTR 8	QTR 9	QTR 10	QTR 11	QTR 12
CAA	(Source ID: 1703106220)	07/01-09/30/2011	10/01-12/31/2011	01/01-03/31/2012	04/01-06/30/2012	07/01-09/30/2012	10/01-12/31/2012	01/01-03/31/2013	04/01-06/30/2013	07/01-09/30/2013	10/01-12/31/2013	01/01-03/31/2014	04/01-06/30/2014
	Facility-Level Status	No Viol	No Viol	No Viol	No Viol	No Viol	No Viol	No Viol	No Viol	No Viol	No Viol	No Viol	No Viol
	HPV History	--	--	--	--	--	--	--	--	--	--	--	--
	Program/Pollutant in Current Violation												
CAA	SIP	--	--	--	--	--	--	--	--	--	--	--	--

Statute	Program/Pollutant /Violation Type	QTR 1	QTR 2	QTR 3	QTR 4	QTR 5	QTR 6	QTR 7	QTR 8	QTR 9	QTR 10	QTR 11	QTR 12
	FACILITY-WIDE PERMIT REQUIREMENTS	--	--	--	--	--	--	--	--	--	--	--	V-EM&PRO

Informal Enforcement Actions (5 Years)

Statute	Source ID	Type of Action	Lead Agency	Date
CAA	1703106220	STATE NOV ISSUED	State	04/22/2014

Formal Enforcement Actions (5 Years)

Statute	Source ID	Type of Action	Lead Agency	Date	Penalty	Penalty Description
No data records returned						

ICIS Case History (5 years)

Primary Law/Section	Case No.	Case Type	Lead Agency	Case Name	Issued/Filed Date	Settlement Date	Federal Penalty	State/Local Penalty	SEP Cost	Comp Action Cost
No data records returned										

Environmental Conditions

Water Quality

Permit ID	Watershed (HUC 8)	Watershed Name (HUC 8)	Watershed (HUC 12)	Watershed Name (HUC 12)	Receiving Waters	Impaired Waters	Combined Sewer System?
No data records returned							

Air Quality

Non-Attainment Area?	Pollutant(s)
Yes	Ozone
No	Lead
Yes	Particulate Matter

Pollutants

TRI History of Reported Chemicals Released in Pounds per Year at Site

TRI Facility ID	Year	Total Air Emissions	Surface Water Discharges	Off-Site Transfers to POTWs	Underground Injections	Releases to Land	Total On-site Releases	Total Off-site Releases
No data records returned								

TRI Total Releases and Transfers in Pounds by Chemical and Year

Chemical Name
No data records returned

Demographic Profile

Demographic Profile of Surrounding Area (1 Mile)

This section provides demographic information regarding the community surrounding the facility. ECHO compliance data alone are not sufficient to determine whether violations at a particular facility had negative impacts on public health or the environment. Statistics are based upon the 2010 US Census and American Community Survey data, and are accurate to the extent that the facility latitude and longitude listed below are correct. The latitude and longitude are obtained from the EPA Locational Reference Table (LRT) when available.

Radius of Area:	1	Land Area:	94%	Households in Area:	6,216
Center latitude:	41.700257	Water Area:	6%	Housing Units in Area:	6,805
Center Longitude:	-87.544984	Population Density:	6,993/sq.mi.	Households on Public Assistance:	114
Total Persons:	20,564	Percent Minority:	84%	Persons Below Poverty Level:	11,835
Race Breakdown		Persons (%)		Age Breakdown	
White:	10,758 (52.31%)	Child 5 years and younger:	1,674 (8.14%)	Minors 17 years and younger:	6,311 (30.69%)
African-American:	1,401 (6.81%)	Adults 18 years and older:	14,253 (69.31%)	Seniors 65 years and older:	2,143 (10.42%)
Hispanic-Origin:	15,921 (77.42%)				
Asian/Pacific Islander:	69 (.34%)				
American Indian:	198 (.96%)				
Other/Multiracial:	8,137 (39.57%)				
Education Level (Persons 25 & older)		Persons (%)		Income Breakdown	
Less than 9th Grade:	2,917 (22.82%)	Less than \$15,000:	972 (15.19%)	\$15,000 - \$25,000:	944 (14.75%)
9th through 12th Grade:	1,730 (13.53%)	\$25,000 - \$50,000:	1,731 (27.04%)	\$50,000 - \$75,000:	1,369 (21.39%)
High School Diploma:	4,247 (33.22%)	Greater than \$75,000:	1,385 (21.64%)		
Some College/2-yr:	2,692 (21.06%)				
B.S./B.A. or More:	1,199 (9.38%)				



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-2829

PAT QUINN, GOVERNOR

LISA BONNETT, DIRECTOR

TDD 217/782-9143

APR 22 2014

Certified Mail # 7009 3410 0002 3750 1077
Return Receipt Requested

Frank McNicholas
Calumet River Terminal
10740 S Burley Ave
Chicago, Illinois 60617

**RE: Violation Notice A-2014-00031
I.D. 031600GZM**

Dear Mr. McNicholas:

This constitutes a Violation Notice pursuant to Section 31(a)(1) of the Illinois Environmental Protection Act ("Act"), 415 ILCS 5/31(a)(1), and is based upon a review of available information and an investigation by representatives of the Illinois Environmental Protection Agency ("Illinois EPA").

The Illinois EPA hereby provides notice of alleged violations of environmental laws, regulations, or permits as set forth in Attachment A to this letter. Attachment A includes an explanation of the activities that the Illinois EPA believes may resolve the specified alleged violations, including an estimate of a reasonable time period to complete the necessary activities. Due to the nature and seriousness of the alleged violations, please be advised that resolution of the violations may also require the involvement of a prosecutorial authority for purposes that may include, among others, the imposition of statutory penalties.

A written response, which may include a request for a meeting with representatives of the Illinois EPA, must be submitted via certified mail to the Illinois EPA within 45 days of receipt of this letter. If a meeting is requested, it shall be held within 60 days of receipt of this notice. The response must include information in rebuttal, explanation, or justification of each alleged violation and a statement indicating whether or not the source wishes to enter into a Compliance Commitment Agreement ("CCA") pursuant to Section 31(a) of the Act. If the source wishes to enter into a CCA, the written response must also include proposed terms for the CCA that contains dates for achieving each commitment and may also include a statement that compliance has been achieved for some or all of the alleged violations. In order to increase the likelihood of the Illinois EPA accepting such terms, the written response should specifically propose them in a manner that can be formalized into an enforceable agreement between the Illinois EPA and the source. As such, proposed conditions should be as detailed as possible, including steps to be taken to achieve compliance, the manner of compliance, interim and completion dates, etc.

NRDC/SETF ATTACHMENT ONE

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Violation Notice A-2014-00031

Calumet River Terminal I.D. 031600GZM

The Illinois EPA will review the proposed terms for a CCA provided by the source and, within 30 days of receipt, will respond with either a proposed CCA or a notice that no CCA will be issued by the Illinois EPA. If the Illinois EPA sends a proposed CCA, the source must respond in writing by either agreeing to and signing the proposed CCA or by notifying the Illinois EPA that the source rejects the terms of the proposed CCA.

If a timely written response to this Violation Notice is not provided, it shall be considered a waiver of the opportunity to respond and meet, and the Illinois EPA may proceed with referral to the prosecutorial authority.

Written communications should be directed to KEN EREWELE, Illinois EPA, Bureau of Air, Compliance Unit, P.O. Box 19276, Springfield, Illinois 62794-9276. All communications must include reference to the Violation Notice number in this matter.

Questions regarding this matter should be directed to JOSEPH KOTAS at 847/294-4023.

Sincerely,

A handwritten signature in black ink, appearing to read "Yasmine Keppner-Bauman". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Yasmine Keppner-Bauman
Acting Section Manager
Compliance Section
Bureau of Air

YKB: KE

Violation Notice A-2014-00031
Calumet River Terminal I.D. 031600GZM

ATTACHMENT A

Per observations by Joseph Kotas on November 19, 2013, and other available information:

VIOLATIONS:

1. Section 9(b) of the Act and 35 Ill. Adm. Code 201.142: Calumet River Terminal failed to obtain a construction permit from the Illinois EPA prior to constructing its truck loading, bulk material handling, and transfer operations.
2. Section 9(b) of the Act and 35 Ill. Adm. Code 201.143: Calumet River Terminal failed to obtain an operating permit from the Illinois EPA prior to operating its truck loading, bulk material handling, and transfer operations.
3. Section 9.14 of the Act and 35 Ill. Adm. Code 201.175: Calumet River Terminal may have failed to register for the Registration of Smaller Sources (“ROSS”) program.
4. Section 9.12 of the Act: Calumet River Terminal failed to pay applicable construction permit application fees.
5. Section 9(a) of the Act, 35 Ill. Adm. Code 212.309(a), 212.310, and 212.312: Calumet River Terminal failed to develop, implement and submit to the Illinois EPA an operating program designed to significantly reduce fugitive particulate emissions at the source.
6. Section 9(a) of the Act and 35 Ill. Adm. Code 212.316 (g)(2), and (g)(4): Calumet River Terminal may have failed to document and maintain the records required by 35 Ill. Adm. Code 212.316(g)(2).
7. Section 9(a) of the Act and 35 Ill. Adm. Code 212.316(g)(1) and (g)(5): Calumet River Terminal failed to submit annual and quarterly reports for activities involving fugitive particulate matter control measures.
8. Section 9(a) of the Act and 35 Ill. Adm. Code 201.302(a) and 254.132(a): Calumet River Terminal failed to submit Annual Emissions Reports (“AERs”) to the Illinois EPA for calendar years 2004 through 2013.

Violation Notice A-2014-00031
Calumet River Terminal I.D. 031600GZM

ATTACHMENT A (continued)

RECOMMENDATIONS:

The Illinois EPA suggests that Calumet River Terminal, take the following actions to address the violation stated above:

1. Within 45 days of receipt of this Violation Notice, submit to the Illinois EPA, Bureau of Air, Compliance Section, the dates of construction, and subsequent operation of the truck loading, bulk material handling, and transfer terminal.
2. Within 45 days of receipt of this Violation Notice, submit to the Illinois EPA, Bureau of Air, Compliance Section, records of the amount of each type of bulk material received and shipped annually.
3. Within 45 days of receipt of this Violation Notice:
 - a. If the source qualifies for the ROSS program, submit to the Illinois EPA, Bureau of Air, Permit Section, Attn: Lori Pennington, a complete, true, accurate, and acceptable registration for the ROSS program. Additionally, submit a copy of the registration for the ROSS program to the Illinois EPA, Bureau of Air, Compliance Section, Attn: Ken Erewele.
 - b. If the source is not eligible for the ROSS program, submit to the Illinois EPA, Bureau of Air, Permit Section, a complete, true, accurate, and acceptable operating permit application for emission units and operations located at the facility. Additionally, submit a copy of the operating permit application to the Illinois EPA, Bureau of Air, Compliance Section, Attn: Ken Erewele.
4. Within 45 days of receipt of this Violation Notice, develop, implement and submit to the Illinois EPA, Bureau of Air, Compliance Section a complete, true, accurate, and acceptable operating program in accordance with 35 Ill. Adm. Code 212.309 and 212.310.
5. Within 45 days of receipt of this Violation Notice, develop, implement, and submit to the Illinois EPA an internal policy to ensure that the operating program is documented and maintained, as specified in 35 Ill. Adm. Code 212.309, 212.310, and 212.312.
6. Within 45 days of the receipt of this Violation Notice, submit to the Illinois EPA, Bureau of Air, Compliance Section, the applicable avoided construction and operating permit fees for the truck loading, bulk material handling, and transfer operations. Note that the construction fee calculation forms can be found at: <http://www.epa.state.il.us/air/permits/construction-fees.html>.

Violation Notice A-2014-00031
Calumet River Terminal I.D. 031600GZM

ATTACHMENT A (continued)

RECOMMENDATIONS (continued):

7. Within 45 days of receipt of this Violation Notice, develop, implement, and submit to the Illinois EPA, Bureau of Air, Compliance Section an internal policy to ensure the documentation of the records of fugitive emission control measures required by 35 Ill. Adm. Code 212.316(g)(2) and these records are maintained and readily accessible upon inspection in accordance with 35 Ill. Adm. Code 212.316(g)(4).
8. Within 45 days of receipt of this Violation Notice, submit to the Illinois EPA, Bureau of Air, Compliance Section a fugitive particulate matter control measures reports covering calendar years 2004 through 2013. Specifically, these reports will list the dates that fugitive particulate matter control measures were and were not implemented, a listing of those control measures implemented, the reasons that the control measures were not implemented, and any other corrective actions taken.
9. Within 45 days of receipt of this Violation Notice, develop, implement, and submit to the Illinois EPA, Bureau of Air, Compliance Section, an internal policy that will ensure the quarterly fugitive particulate matter control measures reports, required by 35 Ill. Adm. Code 212.316(g)(5) are submitted to the Illinois EPA within 30 calendar days from the end of a quarter (Quarters end March 31, June 30, September 30, and December 31).
10. Within 45 days of receipt of this Violation Notice, develop, implement, and submit to the Illinois EPA an internal policy to ensure that the annual report containing the written records of the application of control measures as may be needed for compliance with opacity limitations will be prepared and submitted timely.
11. Within 45 days of receipt of this Violation Notice, submit complete, true, and accurate AERs for calendar years 2004 through 2013, to the Illinois EPA, Bureau of Air, Compliance Section, Attn: Ken Erewele. Alternatively, if you believe these AERs have been submitted to the Illinois EPA, please provide a copy of the AERs along with a demonstration that it was timely submitted.
12. Within 45 days of receipt of this Violation Notice, develop, implement, and submitted to the Illinois EPA, Bureau of Air, Compliance Section, Attn: Ken Erewele, an internal policy that will ensure future AERs will be complete, true, accurate, and timely.



ArcelorMittal

Material Safety Data Sheet

Section 1 - Chemical Product and Company Identification

Product/Chemical Name: Blast Furnace Iron

MSDS ID Number: AM USA - 013

Synonyms: Molten Iron, Blast Furnace Hot Metal, Pig Iron, Cold Iron, Cast Iron

CAS Number: Mixture

Manufacturer: ArcelorMittal USA LLC
1 South Dearborn Street
Chicago, IL 60603-9888

General Information: 1-219-787-4901 or email at: msdssupport@arcelormittal.com

Original Issue Date: 12/06/2002

CHEMTREC (Day or Night): 1-800-424-9300

Revised: 01/01/2013

Emergency Contact: 1-760-476-3962, 3E Company Code: 333211

Section 2 - Composition / Information on Ingredients

Ingredient Name	CAS Number	Percentage by wt.	OSHA PEL ¹	ACGIH TLV ²
Iron	7439-89-6	93 – 94	10 mg/m ³ - Iron oxide fume	5.0 mg/m ³ - Iron oxide dust and fume
Carbon	7440-44-0	4 – 5.5	15 mg/m ³ (as total dust, PNOR ³) 5.0 mg/m ³ (as respirable fraction ⁶ , PNOR)	10 mg/m ³ (as inhalable fraction ⁴ , PNOS) ⁵ 3.0 mg/m ³ (as respirable fraction, PNOS)
Manganese	7439-96-5	0.2 – 1.0	“C” 5.0 mg/m ³ (as fume & Mn compounds)	0.2 mg/m ³
Phosphorus	7723-14-0	0.04 – 0.2	0.1 mg/m ³	0.1 mg/m ³
Silicon	7440-21-3	0.1 – 4.0	15 mg/m ³ (as total dust) 5.0 mg/m ³ (as respirable fraction)	10 mg/m ³
Sulfur	7704-34-9	0.02 – 0.3	15 mg/m ³ (as total dust, PNOR) 5.0 mg/m ³ (as respirable fraction, PNOR)	10 mg/m ³ (as inhalable fraction, PNOS) 3.0 mg/m ³ (as respirable fraction, PNOS)

Notes:

- All commercial steel products contain small amounts of various elements in addition to those specified. These small quantities frequently referred to as “trace” or “residual” elements generally originate in the raw materials used. Individual trace elements vary in concentration by weight, and may include antimony, arsenic, cadmium, chromium, cobalt, copper, lead, molybdenum, nickel, titanium, vanadium, and zirconium.
 - Percentages are expressed as typical ranges or maximum concentrations of trace elements for the purpose of communicating the potential hazards of the finished product. Consult product specifications for specific composition information.
- OSHA (Occupational Health and Safety Administration) PELs (Permissible Exposure Limits) are 8-hour TWA (time-weighted average) concentrations unless otherwise noted. A “C” designation denotes a ceiling limit, which should not be exceeded during any part of the working exposure unless otherwise noted. A STEL (Short Term Exposure Limit) is defined as a 15-minute exposure, which should not be exceeded at any time during a workday.
 - TLV (Threshold Limit Values) established by ACGIH (the American Conference of Governmental Industrial Hygienists) are 8-hour TWA concentrations unless otherwise noted.
 - PNOR (Particulates Not Otherwise Regulated) - All inert or nuisance dusts, whether mineral, inorganic, or organic, not listed specifically by substance name are covered by the PNOR limit which is the same as the inert or nuisance dust limit of 15 mg/m³ for total dust and 5.0 mg/m³ for the respirable fraction.
 - Inhalable fraction - The concentration of inhalable particulate for the application of this TLV is to be determined from the fraction passing a size-selector with the characteristics defined in the ACGIH 2009 TLVs® and BEIs® (Biological Exposure Indices) Appendix D, paragraph A.
 - PNOS (Particulates Not Otherwise Specified) - Particulates identified under the PNOS heading are “nuisance dusts” containing no asbestos and <1% crystalline silica. A TWA-TLV of 10 mg/m³ for inhalable particulate and 3.0 mg/m³ for respirable particulate has been recommended.
 - Respirable fraction - The concentration of respirable dust for the application of this limit is to be determined from the fraction passing a size-selector with the characteristics defined in the ACGIH 2009 TLVs® and BEIs® Appendix D, paragraph C.

Section 3 - Hazards Identification

☆☆☆☆☆ Emergency Overview ☆☆☆☆☆

This molten metal product poses a significant and immediate burn and fire hazard. Potentially hazardous quantities of airborne particulate and fume may be generated. These operations should be performed in well-ventilated areas. Avoid inhalation of metal dusts and fumes. Iron foreign bodies imbedded in the cornea of the eye will produce rust stains unless removed promptly. If appropriate, respiratory protection and other personal protective equipment should be used.

Potential Health Effects

Primary Entry Routes: Inhalation and skin. Iron in the molten state presents an inhalation and contact hazard and may result in the following effects if exposures exceed recommended limits as listed in Section 2.

Target Organs: Respiratory system

Acute Effects:

- **Inhalation:** Excessive exposure to high concentrations of dust/fume may cause irritation to the eyes, skin and mucous membranes of the upper respiratory tract. Excessive inhalation of fumes of freshly formed metal oxide particles sized below 1.5 microns and usually between 0.02-0.05 microns from many metals can produce an acute reaction known as "metal fume fever". Symptoms consist of chills and fever (very similar to and easily confused with flu symptoms), metallic taste in the mouth, dryness and irritation of the throat followed by weakness and muscle pain. After excessive exposures, onset of symptoms present after a few hours and usually last from 12 to 48 hours. Long-term effects from metal fume fever have not been noted. Freshly formed oxide fumes of manganese have been associated with causing metal fume fever. Sulfur compounds, present in generated fumes, may irritate the respiratory or gastrointestinal tract. Phosphorus oxide compounds are respiratory tract irritants.
- **Eye:** Contact with molten metal will cause severe burns and blindness. Particles of iron or iron compounds, which become imbedded in the eye, may cause irritation to the eyes. Sulfur compounds, present in generated fumes, may irritate the eyes.
- **Skin:** Skin contact with molten metal will cause severe burns. Sulfur compounds, present in generated fumes, may irritate the skin.
- **Ingestion:** Ingestion of harmful amounts of molten iron is unlikely, however it will cause severe burns. Ingestion of dust/fume may cause nausea or vomiting.

Chronic Effects: Chronic inhalation of metallic fumes and dusts are associated with the following conditions:

- **IRON OXIDE:** Chronic inhalation of excessive concentrations of iron oxide fumes or dusts may result in the development of a benign pneumoconiosis, called siderosis, which is observable as an X-ray change. No physical impairment of lung function has been associated with siderosis. Inhalation of excessive concentrations of ferric oxide may enhance the risk of lung cancer development in workers exposed to pulmonary carcinogens. Iron oxide is listed as a Group 3 (not classifiable) carcinogen by IARC (The International Agency for Research on Cancer).
- **CARBON:** Chronic inhalation of high concentrations to carbon may cause pulmonary disorders.
- **MANGANESE:** Chronic exposure to high concentrations of manganese fumes and dusts may adversely affect the central nervous system with symptoms including languor, sleepiness, weakness, emotional disturbances, spastic gait, mask-like facial expression and paralysis. Animal studies indicate that manganese exposure may increase susceptibility to bacterial and viral infections.
- **PHOSPHOROUS:** Inhalation of phosphorous oxides may cause respiratory irritation.
- **SILICON:** Silicon dusts are a low health risk by inhalation and should be treated as a nuisance dust. Eye contact with pure material can cause particulate irritation. Skin contact with silicon dusts may cause physical abrasion.
- **SULFUR:** Sulfur compounds, present in the fumes, may irritate the skin, eyes, lungs and gastrointestinal tract.

Long-term inhalation exposure to high concentrations (over-exposure) of pneumoconiotic agents may act synergistically with inhalation of oxides, fumes or dusts of this product to cause toxic effects.

Carcinogenicity: IARC, NTP (The National Toxicology Program), and OSHA do not list blast furnace iron or any of its constituents as a carcinogen.

Medical Conditions Aggravated by Long-Term Exposure: Individuals with chronic respiratory disorders (i.e., asthma, chronic bronchitis, emphysema, etc.) may be adversely affected by any fume or airborne particulate matter exposure.

SARA Potential Hazard Categories: Immediate Acute Health Hazard, Delayed Chronic Health Hazard

Section 4 – First Aid Measures

Inhalation: For over-exposure to airborne fumes and particulate, remove exposed person to fresh air. If breathing is difficult or has stopped, administer artificial respiration or oxygen as indicated. Seek medical attention promptly.

Eye Contact: Flush with large amounts of clean water to remove particles. Seek medical attention if irritation persists. If thermal burn has occurred, flush area with cold water and seek medical attention.

Skin Contact: Remove contaminated clothing. Wash affected areas with soap or mild detergent and water. If thermal burn has occurred, flush area with cold water and seek medical attention.

Ingestion: Not a probable route of industrial exposure; however, if ingested obtain medical advice.

Section 5 - Fire-Fighting Measures

Flash Point: Not Applicable

LEL: Not Applicable

Flash Point Method: Not Applicable

UEL: Not Applicable

Burning Rate: Not Applicable

Auto-ignition Temperature: Not Applicable

Flammability Classification: Non-Flammable, Non-Combustible

Extinguishing Media: Molten metal may react violently with water. Use extinguishers appropriate for surrounding materials.

Unusual Fire or Explosion Hazards: Avoid having molten iron run onto or trap water under molten iron. Sudden violent release of steam and gases can occur when water is trapped under molten iron.

Hazardous Combustion Products: Fumes containing metal oxides and other alloying elements may be liberated.

Fire-Fighting Instructions: Do not release runoff from fire control methods to sewers or waterways.

Fire-Fighting Equipment: Wear a self-contained breathing apparatus (SCBA) with a full facepiece operated in pressure-demand or positive-pressure mode and full protective clothing.

Section 6 – Accidental Release Measures

Spill/Leak Procedures: Not applicable to iron in solid state. For spills involving molten iron, personnel should be protected against contact with eyes and skin and avoid inhalation of dust/fume. Fine, dry material should be removed by vacuuming or wet sweeping methods to prevent spreading of dust. Do not release into sewers or waterways. Collect material in appropriate, labeled containers for recovery or disposal in accordance with federal, state, and local regulations.

Regulatory Requirements: Follow applicable OSHA regulations (29 CFR 1910.120) and all other pertinent state and federal requirements.

Disposal: Any excess product can be recycled for further use, disposed in an appropriately permitted waste landfill, or disposed by other methods, which are in accordance with local, state, and federal regulations.

Section 7 – Handling and Storage

Handling Precautions: Operations with the potential for generating high concentrations of airborne particulates should be evaluated and controlled as necessary. Practice good housekeeping. Avoid breathing metal fumes and/or dust. Avoid contact with molten iron.

Storage Requirements: Store away from incompatible materials.

Section 8 - Exposure Controls / Personal Protection

Engineering Controls: Use controls as appropriate to minimize exposure to metal fumes/dusts and heat during handling operations.

Ventilation: Provide general or local exhaust ventilation systems to minimize airborne concentrations. Local exhaust ventilation is preferred to prevent contaminant dispersion into the work area by controlling it at its source.

Administrative Controls: No Information found (NIF).

Respiratory Protection: Seek professional advice prior to respirator selection and use. Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, wear a NIOSH (National Institute for Occupational Safety and Health)-approved respirator. Select respirator based on its suitability to provide adequate worker protection for given working conditions, level of airborne contamination, and presence of sufficient oxygen.

Protective Clothing/Equipment: For molten iron or the generation of airborne particulates, use protective clothing (flame retardant–molten), gloves (aluminized–molten) and safety glasses to prevent skin and eye contact as required. Contact lenses should not be worn where industrial exposures to this material are likely. Wash skin that has been exposed with soap and water or waterless hand cleaner.

Section 9 - Physical and Chemical Properties

Physical State: Molten >1537.8°C, (>2800 °F)	Water Solubility: Insoluble
Appearance and Odor: Greyish as solid/Orange as molten	Other Solubilities: Not Applicable
Odor Threshold: Not Applicable	Boiling Point: 2760°C, (5000 °F)
Vapor Pressure: Not Applicable	Viscosity: Not Applicable
Vapor Density (Air = 1): Not Applicable	Refractive Index: Not Applicable
Formula Weight: Not Applicable	Surface Tension: Not Applicable
Density: 7.85	% Volatile: Not Applicable
Specific Gravity (H₂O = 1, at 4 °C): 7.0	Evaporation Rate: Not Applicable
pH: Not Applicable	Freezing/Melting Point: Not Applicable

Section 10 - Stability and Reactivity

Stability: Molten iron is stable under normal storage and handling conditions.

Polymerization: Hazardous polymerization cannot occur.

Chemical Incompatibilities: Encapsulating water with molten iron may cause an explosion.

Conditions to Avoid: Water when iron is in molten state.

Hazardous Decomposition Products: Thermal oxidative decomposition can produce fumes containing oxides of iron and manganese as well as other elements.

Section 11- Toxicological Information

Toxicity Data: * No Information Found (NIF) for the product as a mixture.

Eye Effects: Eye contact will cause burns and irritation and the individual components may cause particulate irritation. Implantation of iron particles in guinea pig corneas have resulted in rust rings with corneal softening about rust ring.

Skin Effects: Skin contact with the individual components may cause burns, irritation, dermatitis, ulcerations and sensitizations.

Acute Inhalation Effects: Inhalation of the individual components has been shown to cause various respiratory effects.

Acute Oral Effects: No Information Found (NIF).

Other: No LC50 or LD50 has been established for the mixture as a whole.

Iron LD50: 30 g/kg oral (rat), Carbon LD50: NIF, Manganese LD50: 9 g/kg oral (rat), Phosphorous LD50: NIF, Silicon LD50: NIF, Sulfur LD50: NIF

Chronic Effects: Refer to Section 3

Carcinogenicity: NIF

Mutagenicity: NIF

Teratogenicity: NIF

* See NIOSH, *RTECS* (NO7400000), for additional toxicity data on iron oxide, (FF5250000) for carbon, (OO9275000) for manganese, (TH3500000) for phosphorous, (WM0400000) for silicon, (WS4250000) for sulfur.

Section 12 - Ecological Information

Ecotoxicity: No information found for the product as a whole; however, individual components of the product have been found to be toxic to the environment. Metal dusts may migrate into soil and groundwater and be ingested by wildlife.

Environmental Fate: No Information Found (NIF).

Environmental Degradation: NIF

Soil Absorption/Mobility: No information found for the product as a whole; however, individual components of the product have been found to be absorbed by plants from soil.

Section 13 - Disposal Considerations

Disposal: This material is considered to be a solid waste, not a hazardous waste. Follow applicable federal, state, and local regulations for disposal of solid waste and airborne particulates accumulated during handling operations of the product.

Disposal Regulatory Requirements: No Information Found (NIF).

Container Cleaning and Disposal: Follow applicable federal, state and local regulations. Observe safe handling pre-cautions.

Section 14 - Transport Information

DOT Transportation Data (49 CFR 172.101):

Molten Iron is **Not Listed** as a hazardous substance under 49 CFR 172.101.

Shipping Name: Cast Iron

Shipping Symbols: "HOT"

Hazard Class: Not Applicable

ID No.: Not Applicable

Packing Group: Not Applicable

Label: Not Applicable

Special Provisions (172.102): Not Applicable

Packaging Authorizations

a) **Exceptions:** Not Applicable

b) **Non-bulk Packaging:** Not Applicable

c) **Bulk Packaging:** Not Applicable

Quantity Limitations

a) **Passenger, Aircraft, or Railcar:** Not Applicable

b) **Cargo Aircraft Only:** Not Applicable

Vessel Stowage Requirements

a) **Vessel Stowage:** Not Applicable

b) **Other:** Not Applicable

Section 15 – Regulatory Information

Regulatory Information: *The following listing of regulations relating to an ArcelorMittal USA LLC product may not be complete and should not be solely relied upon for all regulatory compliance responsibilities.*

This product and/or its constituents are subject to the following regulations:

OSHA Regulations: Air Contaminant (29 CFR 1910.1000, Table Z-1, Z-2, Z-3): The product is not listed; however, individual components of the product are listed (Refer to Section 2).

EPA Regulations:

RCRA: The product and components are not regulated under this act.

CERCLA Hazardous Substance (40 CFR 302.4): The product is not listed; however, individual components of the product are listed: Manganese compounds and Phosphorous are listed under SARA 302.

SARA 311/312 Codes: Immediate (acute) health hazard and delayed (chronic) health hazard

SARA 313: Manganese and Phosphorous are subject to SARA 313 reporting requirements. Please also note that if you prepackage or otherwise redistribute this product to industrial customers, SARA 313 requires that a notice be sent to those customers.

Clean Water Act: The product and components are not regulated under section 307, Priority Pollutants. However, Phosphorus is a Section 311 Hazardous Chemical.

Safe Drinking Water Act: The product and components are not regulated under this act.

State Regulations: The product is not listed in any state regulations; however, individual components of the product are listed in various state regulations.

Pennsylvania Right to Know: Contains regulated material in the following categories:

- Hazardous Substances: Silicon and Sulfur.
- Environmental Hazards: Manganese and Phosphorous.
- Special Hazard Substances: Not regulated.

New Jersey Right to Know: Contains regulated material in the following categories:

- Environmental Hazardous Substance: Manganese and Phosphorous.
- Special Health Hazard Substances: Not regulated.

California Prop. 65: Does not Contain elements known to the State of California to cause cancer or reproductive toxicity.

Other Regulations: The product may not be listed in any state regulations. However, individual components of the product may be listed in various state regulations.

WHMIS (Canadian): D2B Product Classification

Section 16 – Other Information

Prepared By: ArcelorMittal USA LLC

Hazard Rating Systems:

NFPA Code: 0-0-0

HMIS Code: 0-0-0

PPE: See Section 8

ABBREVIATIONS/ACRONYMS:

ACGIH	American Conference of Governmental Industrial Hygienists
BEIs	Biological Exposure Indices
CAS	Chemical Abstracts Service
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CNS	Central Nervous System
GI, GIT	Gastro-Intestinal, Gastro-Intestinal Tract
HMIS	Hazardous Materials Identification System
IARC	International Agency for Research on Cancer
LC50	Median Lethal Concentration
LD50	Median Lethal Dose
LD _{Lo}	Lowest Dose to have killed animals or humans
LEL	Lower Explosive Limit
µg/m ³	microgram per cubic meter of air
mg/m ³	milligram per cubic meter of air
mppcf	million particles per cubic foot
MSDS	Material Safety Data Sheet
MSHA	Mine Safety and Health Administration
NFPA	National Fire Protection Association

NIF	No Information Found
NIOSH	National Institute for Occupational Safety and Health
NTP	National Toxicology Program
ORC	Organization Resources Counselors
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
PNOR	Particulate Not Otherwise Regulated
PNOC	Particulate Not Otherwise Classified
PPE	Personal Protective Equipment
ppm	parts per million
RCRA	Resource Conservation and Recovery Act
RTECS	Registry of Toxic Effects of Chemical Substances
SARA	Superfund Amendment and Reauthorization Act
SCBA	Self-contained Breathing Apparatus
STEL	Short-term Exposure Limit
TLV	Threshold Limit Value
TWA	Time-weighted Average
UEL	Upper Explosive Limit

Disclaimer: This information is taken from sources or based upon data believed to be reliable. Our objective in sending this information is to help you protect the health and safety of your personnel and to comply with the OSHA Hazard Communication Standard and Title III of the Superfund Amendment and Reauthorization Act of 1986. ArcelorMittal USA LLC makes no warranty as to the absolute correctness, completeness, or sufficiency of any of the foregoing, or any additional, or other measures that may not be required under particular conditions. ARCELORMITTAL USA LLC MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY, OR ANY IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, AND ANY IMPLIED WARRANTIES OTHERWISE ARISING FROM COURSE OF DEALING OR TRADE.

LABEL

Blast Furnace Iron

GENERAL HAZARD STATEMENT: This molten metal product poses a significant and immediate burn and fire hazard. Potentially hazardous quantities of airborne particulate and fume may be generated. These operations should be performed in well-ventilated areas. Avoid inhalation of metal dusts and fumes. Iron foreign bodies imbedded in the cornea of the eye will produce rust stains unless removed promptly. If appropriate, respiratory protection and other personal protective equipment should be used.

CAUTION

IRON IN THE MOLTEN STATE PRESENTS AN INHALATION AND CONTACT HAZARD

CONTACT WITH MOLTEN METAL WILL CAUSE SEVERE BURNS AND BLINDNESS

Consult MSDS for more information

PRECAUTIONS: Operations with the potential for generating high concentrations of airborne particulates should be evaluated and controlled as necessary. Practice good housekeeping. Avoid breathing metal fumes and/or dust. Avoid contact with molten iron. Wear appropriate personal protective equipment.

FIRST AID:

INHALATION - For over-exposure to airborne fumes and particulate, remove exposed person to fresh air. If breathing is difficult or has stopped, administer artificial respiration or oxygen as indicated. Seek medical attention promptly.

EYE CONTACT - Flush with large amounts of clean water to remove particles. Seek medical attention if irritation persists. If thermal burn has occurred, flush area with cold water and seek medical attention.

SKIN CONTACT Remove contaminated clothing. Wash affected areas with soap or mild detergent and water. If thermal burn has occurred, flush area with cold water and seek medical attention.

INGESTION - Not a probable route of industrial exposure; however, if ingested, obtain medical advice.

For additional information refer to appropriate Material Safety Data Sheet available at:

<http://arcelormittal-environment.com/Default.aspx?tabid=103>

Product Name: Blast Furnace Iron

ArcelorMittal USA LLC

1 South Dearborn Street Chicago, IL 60603-9888

General Information:

**msdssupport@arcelormittal.com or
1-219-787-4901**

Original Issue Date: 01/01/2011

Revised: 01/01/2013

MANUFACTURER'S MATERIAL SAFETY DATA SHEET

SECTION I – PRODUCT AND COMPANY IDENTIFICATION

Product Identification

Product Name: Hot Briquetted Iron (HBI)
Trade Name: Hot Briquetted Iron (HBI)
Chemical Name: Iron
Product Use: Iron and Steel Production

**Description as per IMO IMSBC
Code Appendix 1:**

Proper Shipping Name: Direct Reduced Iron (A), Briquettes, hot-molded
IMO Class: Material Hazardous only in Bulk (MHB)
Group: B

US Coast Guard Special Permits: Issued to each shipper pursuant to 46 CFR 148.01-9 of the U.S. Coast Guard (USCG) Carriage of Solid Hazardous Materials in Bulk Regulations.

Date of MSDS: April 2008

Company Identification

Manufacturer's Name:
Address:

Phone Numbers:
Fax Numbers:
Emergency Numbers:

SECTION II – Composition/Information on Ingredients
CHEMICAL DATA: (percentages by weight)

Total Iron (TFe):	90 -94 %
Metallic Iron (MFe):	83 - 88 % Minimum
Carbon (C):	0.8-2.0 %
Sulfur (S) as sulphide:	0.003 – 0.03 %
Phosphorus (P) as P ₂ O ₅ :	0.02 – 0.13 % Maximum
Gangue:	1.95 – 5.10 % Maximum

INGREDIENTS

Ingredient	National Institute of Standards and Technology Chemical Abstract System (CAS) Number	Concentration
HBI (Iron Furnace)	65996-67-0	
IRON	7439-89-6	81-88%
IRON (II) OXIDE	1345-25-1	4-8%
IRON (III) OXIDE	1309-37-1	2-8%
METAL OXIDE	Not Available	<4%
CARBON	7440-44-0	0.4-2.0%

SECTION III – Hazards Identification Including Emergency Overviews
HAZARD INFORMATION

Class	Not Classified as Dangerous. Material Hazardous only in Bulk (MHB) as per IMO IMSBC Code.
Ingredients	No known hazardous ingredients
Poisons Schedule	Not scheduled

HEALTH EFFECTS

Acute Ingestion	If swallowed, dust or small pieces may cause gastrointestinal disturbances. An overdose of iron may cause irritation to the mouth, esophagus and stomach. Symptoms may include nausea, vomiting, abdominal pain, bloody diarrhea and shock.
Excessive Eye contact	Dust and small pieces may cause mechanical irritation, redness and pain in contact with the eyes, which can result in redness and lacrimation. May cause conjunctivitis.

Acute Skin Contact	Dust and small pieces may cause mechanical irritation in contact with the skin, which can result in slight redness.
Excessive Inhalation	Inhalation of dust may cause irritation to the respiratory tracks. Symptoms may include coughing, sneezing, soreness of the throat and breathing difficulties.
Chronic	Repeated or prolonged exposure to this material may result in skin irritation in individuals with sensitive skin. Chronic exposure to iron dust has been associated with benign pneumoconiosis, not affecting lung function. Persons with impaired respiratory functions may be more susceptible to the effects of the substance.
Decomposition	May produce toxic iron fumes when heated to decomposition (1,535 °C)

SECTION IV – First Aid Measures

FIRST AID

If Swallowed Inhalation	Induce vomiting immediately. Seek medical attention. Remove person to fresh air. Get medical attention in case of breathing difficulty.
Eyes	If contact with eye(s) occurs, wash with copious amounts of water for approximately 15 minutes holding eyelid(s) open. If irritation develops and persists seek medical attention.
Skin	Wash gently and thoroughly with water and soap. Ensure contaminated clothing is washed before re-use or discard. If irritation develops and persists seek medical attention.
First Aid Facilities	Eye wash fountains and normal wash room facilities

ADVICE TO DOCTOR

Advice to Doctor	Treat symptomatically or consult a Poison Information Center
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SECTION V – Fire Fighting Measures

FIRE AND EXPLOSION HAZARD DATA

- Material may slowly evolve hydrogen after contact with water and reacts more rapidly with salt water. Proper surface ventilation shall be provided for material in enclosed spaces. Temporary small increase in temperature may be expected after material handling in bulk. Maximum allowed shiploading temperature 65°C. If temperature exceeds 65°, provide adequate surface ventilation to remove any hydrogen gas generation. Do not allow any hot work/spark

generation on deck or surroundings.

- Non-flammable when correctly piled. May self-heat if piled incorrectly. In fire situation, evacuate area and contact emergency services. Remain upwind and notify those downwind of hazard.

FIRE FIGHTING PROCEDURES

- Wear fire protective clothing
- Wear self-contained breathing apparatus when entering enclosed spaces with HBI.
- Wear non-sparking footwear.
- Avoid all sources of ignition.
- Remove the hot material from the stack. On a ship, a clamshell bucket may be used.
- Divide hot material into small piles and spread it out to less than 0.5 m deep. The material will quickly cool below the ignition point.
- In case it is not practical to spread the material over a wide area such as in a hold of a ship, coverage using a non-oxidant material (e.g. sand, and finely crushed slag) could be used, for smothering the fire and hindering the air supply. This technique would need to be decided depending on the emergency because it would contaminate the material.
- Do not use CO₂ as CO may be formed. Do not use dry chemical.
- **DO NOT USE EITHER FRESH WATER OR SEAWATER TO COOL DOWN HOT MATERIAL** in enclosed spaces such a cargo hold on a ship, unless strictly necessary to keep integrity of vessel and under Master's expertise. If water is used: i) use large amount of water to flood the material and ii) provide adequate ventilation to let hydrogen gas generated escape to atmosphere.
- In fire situation, evacuate area and contact emergency services
- Emergency Schedule to follow for packaged material: GOLF, as per IMDG Code

SECTION VI – Accidental Release Measures

Material in bulk:	Broken pieces and dust generated during loading and unloading should be collected and dispose adequately.
Material in packaged form: e.g. samples	Ventilate area if spilled into enclosed space. Use protective equipment specified in Section 8. Pick-up and place in a suitable container for reclamation or disposal. Avoid contact with strong oxidizers.
Emergency Schedule to follow for Spillage for packaged material:	November / Oscar / Papa, as per IMDG Code

SECTION VII – Handling and Storage

Storage Precautions	Store in cool, dry, well ventilated area removed from oxidizing agents, flammable materials (e.g. coke, wood), sources of heat (e.g. steam lines) and foodstuffs. The HBI can be stored in open yards uncovered.
Handling	The HBI can be handled substantially the same as scrap. It can be moved from one side to another, stored and transported safely in all types of weather due to its density and good physical and chemical stability.

SECTION VIII – Exposure Controls, Personal Protection

Respirator Type (NIOSH N95)	During handling dust is generated; and if ventilation is inadequate, the use of an N95-type respirator is advisable.
Eye Protection	During handling dust is generated, e.g. loading, unloading, cutting or sanding; the use of safety goggles is advisable.
Hand Protection	Use of canvass gloves is advisable.
Head Protection	During handling, material can spill and use of helmet is advisable.

SECTION XIX – Physical and Chemical Properties

Physical State	Solid
Appearance	From Light Gray to Gray Black
Odor	Odorless
Apparent Density (gm/cm³)	5.0 Minimum
Bulk Density (MT/m³)	Range 2.5 – 2.8
Stowage factor (m³/MT)	0.35 – 0.40
Angle of Repose	38°
Fines under 6.35 mm	5% max.
Porosity	15 % Maximum
Water Pick-up	3.0 % Maximum
Dimensions (mm)	110 x 50 x 30
Solubility in water	Insoluble
Melting Point	APPROX. 1500 DEGREES CENTIGRADE
Boiling Point	APPROX. 3000 DEGREES CENTIGRADE
Vapour Pressure	NOT AVAILABLE
Specific Gravity	APPROX. 5 (WATER = 1)
Flash Point	NOT APPLICABLE
Flammable Limit LEL	NOT APPLICABLE
Flammable Limit UEL	NOT APPLICABLE
Solubility in Water	INSOLUBLE

OTHER PROPERTIES

Corrosiveness	NOT CORROSIVE TO ALUMINIUM
Stability	STABLE UNDER NORMAL CONDITIONS OF USE
Hazardous Polymerization	WILL NOT OCCUR
Materials to Avoid	STRONG ACIDS AND OXIDIZING AGENTS

SECTION X – Stability and Reactivity Data

STABILITY AND REACTIVITY DATA

Exposure Limits	No exposure standards have been established for this material.
Reactivity	Stable in dry air and under normal conditions but oxidizes in fresh water and more readily in seawater forming rust and generation of hydrogen gas. Incompatible with oxidizing agents, e.g., acids, hydrogen peroxide and nitrogen dioxide.

SECTION XI – Toxicological Information

Toxicology	No toxicity data is available for this material
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SECTION XII – Ecological Information

This material is not considered a contaminant to the environment.
It can be recycled.
HBI or any dust generated during handling if left in the atmosphere will oxidize and eventually return to its natural state: Iron oxide.
Avoid spillage in land or water.
Local environmental regulations should be followed.

SECTION XIII – Disposal Consideration

Waste Disposal	Recycle where possible. Alternatively, it can be traded as a raw material for iron or steel production.
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SECTION XIV – Transport Information

Truck and Rail Road Transportation	It should be transported in the same way as with other bulk materials. Local transportation regulations should also be followed.
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Maritime Transport	Classified as MHB, Briquettes Hot Molded under the regulations for ocean transport contained in the International Maritime Organization publication "International Maritime Solid Bulk Cargoes Code (IMSBC Code)" US Coast Guard Special Permits pursuant to 46 CFR 148.01-9 of the U.S. Coast Guard (USCG) Carriage of Solid Hazardous Materials in Bulk Regulations.
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SECTION XV – Regulatory Information

OSHA / EPA	Not provided
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SECTION XVI – Other Information

Others	Not provided
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