DEPARTMENT OF PUBLIC HEALTH
CITY OF CHICAGO

January 6, 2020

Kim R. Walberg
TAFT STETTINIUS & HOLLISTER LLP
111 East Wacker, Suite 2800
Chicago, IL 60601

RE: S. H. Bell Company, 10218 South Avenue O
Request for Variance from 90-day Compliance Requirement for Installation of Monitors Pursuant to the Regulations for Control of Emissions from Handling and Storage of Bulk Material Piles

Dear Ms. Walberg,

The Chicago Department of Public Health ("CDPH") has reviewed submissions from S.H. Bell Company ("S.H. Bell") requesting a "concurrence and alternative request for variance" from requirements of CDPH's Rules and Regulations for Control of Emissions from the Handling and Storage of Bulk Material Piles, effective January 25, 2019 ("Bulk Material Rules" or "Rules"). Specifically, CDPH reviewed S.H. Bell's April 25, 2019 request letter and attached exhibits, including S.H. Bell's 2019 Fugitive Dust Plan. Pursuant to the Bulk Material Rules, CDPH also reviewed written comments on the variance request submitted during a public comment period as described below.

The variance request pertains to the enclosure requirement for manganese-bearing material as it relates to pig iron. Section 5.0 of the Bulk Material Rules requires all non-packaged manganese-bearing bulk material to be maintained in fully enclosed structures in accordance with the enclosure requirements set forth in the Rules. S.H. Bell argues that pig iron is not a "manganese-bearing bulk material" and requests CDPH to concur in this position. The variance request is submitted as an alternative to a concurrence. As set forth in greater detail below, CDPH declines to concur with S.H. Bell's argument regarding the applicability of the manganese-related rules to pig iron. However, CDPH finds that S.H. Bell has demonstrated that, in light of 1) recently collected air monitoring data, 2) the unique nature of the subject pig iron,

and 3) S.H. Bell's description of relevant operations and management of the material, issuance of a variance is not likely to create a public nuisance or adversely impact the surrounding area if certain precautions are taken. Therefore, CDPH grants the variance request subject to certain conditions set forth below.

Please note that pursuant to Section 10.0(3)(d) of the Bulk Material Rules, a variance may be revoked at any time if the Commissioner finds that operation of the facility is creating a public nuisance or otherwise adversely impacting the surrounding area, surrounding environment, or surrounding property uses.

DETAILED DISCUSSION

I. Requirements for Issuance of a Variance

Under Section 10.0 of the Bulk Material Rules, the burden of proof is upon the applicant for the variance to demonstrate that issuance of the requested variance will not create a public nuisance or adversely impact the surrounding area, the surrounding environment, or surrounding property uses. In the event that the applicant does not meet this burden, the variance request will be denied. Pursuant to Section 10.0(2), a variance request must be in writing and must set forth, in detail, all of the following (in pertinent part)[1]:

a) A statement identifying the regulation or requirement from which the variance is requested;

b) A description of the process or activity for which the variance is requested, including pertinent data on location, size, and the population and geographic area affected by, or potentially affected by, the process or activity;

c) The quantity and types of materials used in the process or activity in connection with which the variance is requested, as appropriate;

d) A demonstration that issuance of the variance will not create a public nuisance or adversely impact the surrounding area, surrounding environment, or surrounding property uses;

e) A statement explaining:

[1] Because the instant variance request does not involve a request for an extension of time for full enclosure, requirement 10.0(2)(i) is not relevant to this discussion, and is therefore omitted.

i. Why compliance with the regulations imposes an arbitrary or unreasonable hardship;

ii. Why compliance cannot be accomplished during the required timeframe due to events beyond the Facility Owner or Operator's control such as permitting delays or natural disasters; or

iii. Why the proposed alternative measure is preferable.

f) A description of the proposed methods to achieve compliance with the regulations and a timetable for achieving that compliance, if applicable;

g) A discussion of alternate methods of compliance and of the factors influencing the choice of applying for a variance;

h) A statement regarding the person's current status as related to the subject matter of the variance request[.]

In addition, Section 10.0(3) of the Bulk Material Rules sets forth the criteria for reviewing applications:

In determining whether to grant a variance, the Commissioner [of CDPH] will consider public comments received pursuant to 10.0(4) and will evaluate the information provided in the application to meet the requirements of 10.0(2). Particular consideration will be given to the following information:

i. Inclusion of a definite compliance program;

ii. Evaluation of all reasonable alternatives for compliance;

iii. Demonstration that any adverse impacts will be minimal.

The Commissioner may deny the variance if the application for the variance is incomplete or if the application is outside the scope of relief provided by variances.

The Commissioner may grant a variance in whole or in part, and may attach reasonable conditions to the variance, or require alternative measures, to ensure minimization of any adverse impacts.

Issuance of a variance is at the sole discretion of the Commissioner. A variance may be revoked at any time if the Commissioner finds that operation of the Facility is creating a public nuisance or otherwise adversely impacting the surrounding area, surrounding environment, or surrounding property uses.

II. Variance Process and Public Comments

In addition to the requirement that the Commissioner of CDPH ("Commissioner") consider public comments, as set forth in Section 10.0(3)(a) of the Bulk Material Rules, Section 10.0(5) also provides that the Commissioner will not grant any variance until members of the public have had an opportunity to submit written comments on the variance application. This section further provides that public notice will be provided by publication in a newspaper of general circulation published within the City and by publication on the City's website, and that the Commissioner will accept written comments for a period of not less than thirty (30) days from the date of the notice.

On May 1, 2019, public notice of S.H. Bell's variance request was provided by publication in the Chicago Sun-Times and on the City's website at www.cityofchicago.org/environmentalrules. This notice stated that, to be considered, written comments were to be received by CDPH on or before May 31, 2019. On May 17, 2019, a subsequent public notice was published in the same manner, notifying the public that the comment period had been extended upon request of members of the public. The new deadline for public comments was June 20, 2019. During the public comment period, CDPH received one written submission from the public, which is posted on the website referenced above.

The public comment letter, dated July 1, 2019, was submitted jointly by the Natural Resources Defense Council ("NRDC"), the Southeast Environmental Task Force ("SETF"), and the Chicago South East Side Coalition to Ban Petcoke (hereafter collectively referred to as "NRDC *et al*"). In their comment letter, NRDC *et al* opposed the variance request, stating that S.H. Bell's request should be considered "in the context of its historic manganese dust emissions, as well as ongoing soil contamination and manganese dust emissions." (Public Comment Letter, p. 3.) They stated that S.H. Bell has a poor record of controlling air emissions and that the company has provided "no support for the assertion that pig iron is not a source of emissions containing manganese." *Id.* Thus, the public commenters urged CDPH not to categorically exclude pig iron from the definition of manganese-containing material.

NRDC *et al* also stated that S.H. Bell failed to meet the standards for a variance, because the company did not describe the potentially affected population (which is "an environmental justice residential area") (*Id.* at 7), and also failed to provide sufficient detail regarding the quantity and the method of storing pig iron handled at the facility. *Id.* at 9-10. The commenters

further asserted that S.H. Bell did not adequately demonstrate that compliance would pose a hardship, nor offer any alternative methods of compliance. *Id.* at 13-14. In addition, the commenters suggested some alternative methods of compliance regarding storage and monitoring of pig iron. *Id.*

With regard to the potentially affected population, and the commenters' statement that it is an environmental justice community, whose residents are primarily Hispanic and/or African-American and who have "a high cumulative burden from its ongoing exposures to a variety of industrial sources" including manganese emissions (*Id.* at 8), CDPH agrees that this is an important point. CDPH acknowledges that there are nearby residents who should not be subjected to any adverse impacts from the businesses in their neighborhood. That said, CDPH believes that the relevant question is still whether or not manganese dust is emitted from pig iron to the extent that it would cause off-site levels in violation of any applicable standard. This question is discussed below.

III. Request for Concurrence Regarding Pig Iron

As mentioned above, S.H. Bell asserts that pig iron is not a "manganese-bearing bulk material" as defined in the Bulk Material Rules. Section 2.0(14)[2] of the Rules provides that *manganese-bearing bulk material* "means ferrous manganese, manganese silicate, manganese alloy, manganese ore, or any other material from which manganese is extracted or emitted or otherwise becomes airborne." S.H. Bell stated that manganese is neither extracted nor emitted from pig iron.

First, it appears that there is at least the potential for manganese to be extracted from pig iron. An EPA Report entitled *Locating and Estimating Air Emissions from Sources of Manganese* (issued September 1985) found that "Low-grade manganese ores are directly charged to blast furnaces to [r]ecover the contained Mn in the pig iron."[3] Nevertheless, CDPH is more concerned with the potential for pig iron to produce emissions that might contain manganese.

S.H. Bell noted the low manganese content in the pig iron it handles, saying that it typically only handles "high purity/nodular pig iron that has a manganese content of less than or

[2] S.H. Bell mistakenly stated that the definition is set forth in Section 2.0(16) of the Rules.
[3] https://www3.epa.gov/ttnchie1/le/manganes.pdf

equal to 0.05%." (Variance Request, p. 9). Further, the company pointed to its air monitoring data, collected over the past two years, to argue that "its current CDPH-approved fugitive dust controls for pig iron (along with all of the other bulk commodities handled at the Facility) are highly effective in ensuring that there is no impact to the surrounding community." *Id.* at p. 2.

CDPH notes that the air monitoring data is a good indication that the dust controls are working. However, they do not prove that there would be no emissions in the absence of controls. Thus, CDPH has not seen evidence that manganese is never emitted or never "otherwise becomes airborne" from pig iron.

In the past, some companies have argued that pig iron should not be considered a bulk solid material under the Rules, stating that pig iron may not "become airborne or be scattered by the wind," which is a component of the definition of *bulk solid material* in Section 2.0(3) of the Rules. CDPH rejected that position, noting in one variance response, for example, that "it is commonly understood that pig iron has the potential to produce dust, which is why it is routinely watered during transport, handling, and storage."[4] Further, NRDC *et al.* noted the brittle quality of pig iron, which can result in fines during handling of the material. Accordingly, CDPH finds that if a material meets the definition of *bulk solid material,* and it contains manganese, then it is a *manganese-bearing bulk material.* Therefore, pig iron is considered a manganese-bearing bulk material under the Bulk Material Rules.

IV. Variance Request Determination Detailed Analysis

A. Detailed Summary of Variance Request: S.H. Bell requested a variance from Part D, Section 5.0 of the Bulk Material Rules, which requires the enclosure of manganese-bearing bulk material. The company stressed that it is not requesting a variance with respect to the majority of the manganese-containing materials at the facility, including bulk ferromanganese and silicomanganese. S.H. Bell seeks only to continue its practice of storing pig iron outdoors.

As stated in the request, "The pig iron at the Facility consists of large ingots that weigh upwards of 10 lbs and typically have a diameter greater than 4 inches (the dimensions vary from producer to producer)." *Id.* at 12. At any one time, the maximum pig iron storage at the facility represents typically less than 10% of its total outdoor storage capacity of 139,000 tons—i.e. less than 13,900 tons. *Id.* at 13. The company further stated that, "due to the large size, density, and

[4] CDPH Determination on Variance Request from Kinder Morgan Variance Request 5-3-17, page 10.

nature of the pig iron ingots, the only potential known fugitive emissions from pig iron are of iron oxides from rust that can scale off when working a pile if it is not properly managed through appropriate fugitive dust controls." *Id.* at 14. The company pointed to its Fugitive Dust Plan, which describes its dust controls, including wetting of pig iron.

In addition, S.H. Bell cited the low manganese content in its pig iron, as well as its air monitoring data, as support for the assertion that there are no manganese emissions from pig iron. Both of these points are discussed in Section B, below.

Finally, S.H. Bell stated that compliance with the rules would impose an arbitrary or unreasonable hardship, because the company "would have to spend approximately $2.1 million in capital costs to build a new 27,000 sq. ft. building and to purchase a new dust collector as SHB does not have enough indoor storage capacity for pig iron." *Id.* at 15. They stated this is unreasonable considering the small amount of manganese in pig iron (especially as compared with other materials) and because "pig iron is not a source of fugitive emissions containing manganese." *Id.* at 16.

B. Minimization of Adverse Impacts. Section 10.0(2)(d) of the Rules requires a demonstration that issuance of the variance will not create a public nuisance or adversely impact the surrounding area, environment, or property uses. S.H. Bell stated that issuance of a variance will not create a public nuisance or adversely impact the surrounding area, because 1) in its view, "any potential fugitive dust resulting from pig iron does not contain manganese," (*Id.* at 14), and 2) air monitoring data shows that the facility's fugitive dust controls are effective in limiting manganese emissions. As indicated above, since March 2017, S.H. Bell has been collecting and submitting PM10 data collected both from its four fenceline monitors and from its filter-based metals monitor.

With regard to PM10 (i.e. particulate matter less than or equal to ten microns in diameter), the national ambient air quality standard (NAAQS) is 150 micrograms per cubic meter. In its dust monitoring contingency plan, which is part of its Fugitive Dust Plan, S.H. Bell established a Reportable Action Level (RAL) of 125 micrograms per cubic meter, because it is less than the NAAQS. Thus, if on any day in which the facility is operating, an upwind monitor and a downwind monitor record a positive difference of 125 micrograms per cubic meter, the company must report the event to CDPH and enact its contingency plan. Over the past two and a

half years, S.H. Bell's monitors have recorded daily levels below the 24-hour average for NAAQS, and the company has never experienced an RAL event.

With regard to the metals monitor, the Bulk Material Rules set forth a Manganese Limit (ML), above which a measured concentration of manganese is deemed to be a "condition detrimental to health" in violation of Section 7-28-060 of the Chicago Municipal Code. Per section 2.0(16) of the Rules, the ML "is the concentration of manganese equal to or greater than 0.30 micrograms per cubic meter as averaged over a rolling three-month period." As explained in CDPH's response to comments on the Amended Bulk Material Rules, this standard was based on the federal Minimal Risk Level (MRL) for manganese emissions.[5] In its variance request, S.H. Bell asserted that "the fact that the 3-month rolling average of the manganese monitoring data has remained at less than half of the Manganese Limit for over 17 consecutive months demonstrates the absence of an adverse impact or public nuisance." (Variance Request, p. 14-15.) CDPH agrees that the data is reassuring.

NRDC *et al.* stated that "CDPH should consider S.H. Bell's request in the context of its historic manganese dust emissions, as well as ongoing soil contamination and manganese dust emissions." (Comment letter p. 3.) However, there is no indication that historic manganese emissions, or manganese levels found in surrounding soils, have any relation to the storage or handling of pig iron. Rather, the materials of concern in this regard have primarily been ferromanganese and similar materials with a much higher manganese content than pig iron. Indeed, the fact that the air monitoring data shows a reduction in manganese emissions since S.H. Bell implemented more stringent controls for such "Affected Materials" indicates otherwise. As S.H. Bell stated, an analysis of the data "shows that measured hourly PM10 levels improved after implementing the enhanced dust controls in the late summer/fall of 2017." (Variance Request, p. 5.)

NRDC *et al* also urged that CDPH should not consider granting the requested variance without conducting an inspection of S.H. Bell's facility, to "evaluate current housekeeping and dust management, both in general and with respect to pig iron." (Comment letter p. 12.) CDPH does conduct periodic inspections of the facility and has not observed fugitive dust from the pig iron. CDPH will continue to inspect the site in the future.

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[5] https://www.chicago.gov/content/dam/city/depts/cdph/InspectionsandPermitting/CDPH_Resp_Com_BulkMaterialAmendments_January2019.pdf

Finally, the public commenters pointed out that "S.H. Bell provides little detail about the pig iron quantities handled at the facility." *Id.* at 9. They further stated that quantity is "a critical factor in understanding the extent of possible fugitive dust emissions." *Id.* On this point, CDPH notes that Section 17-9-0117-D of the Chicago Municipal Code requires certain facilities to submit quarterly throughput reports certifying the amount of non-packaged manganese-bearing material received by, shipped from, and stored at the facility. For purposes of this ordinance, the term *manganese-bearing material* does not include any material which contains an amount of manganese that is less than 1 percent by weight. (See Section 17-17-0105-H of the Code.) However, CDPH believes that such information would be useful in order to better understand the relationship of a facility's pig iron quantities with its reported fugitive dust emissions. S.H. Bell already submits throughput reports for ferromanganese and other Affected Materials handled at the facility. Thus, as a condition for the requested variance, and as further described below, CDPH requests that S.H. Bell also begin reporting on the quantity of pig iron handled at the site.

C. Alternative Compliance Program. Section 10.0(2)(g) of the Rules requires applicants to describe alternate methods of compliance. S.H. Bell cited its approved Fugitive Dust Plan (FDP) dated December 2017, along with its updated FDP and its manganese monitoring filter-based program, both of which were submitted with the variance request. The company noted that the FDP:

> "dictates required watering for pig iron storage piles and provides for ongoing observations for active operations, a daily monitoring and action plan, three times per working shift visual emissions inspections by EPA Method 9 certified personnel, and quarterly EPA Method 9 opacity testing… to ensure that opacity is not exceeding 20% [sic][6] and that visible emissions are not crossing the boundary line of the Facility." [Variance Request, p. 16.]

Again, as mentioned above, the company pointed to its monitoring data as evidence that its dust control measures are being appropriately implemented. *Id.* CDPH finds that, so long as the data continues to show results in compliance with the Rules, the facility's fugitive dust

[6] The opacity limit set forth in Section 3.0(2)(b) of the Bulk Material Rules is 10%, not 20%. However, CDPH assumes that the mention of 20% in the variance request is a typo. S.H. Bell's actual FDP lists the correct limit of 10%.

control program is sufficient to warrant issuance of the requested variance, on the condition that the facility also begin reporting its pig iron throughput amounts, as described below.

C. CDPH Determination: Pursuant to Section 10.0(3)(c) of the Rules, "[t]he Commissioner may grant a variance in whole or in part, and may attach reasonable conditions to the variance, or require alternative measures, to ensure minimization of any adverse impacts and to accomplish the purposes of Chapter 11-4 of the Code."

Upon review of all submittals from S.H. Bell and the public, and upon analysis of the available monitoring data, CDPH finds that fugitive dust from pig iron can be appropriately controlled to avoid any potential adverse impacts upon the surrounding community. Specifically, CDPH finds that, due to the unique nature of pig iron, including its density and weight, any fugitive dust generated from disturbance of the material can be minimized through consistent use of appropriate dust controls.

In conditionally granting the variance request, CDPH also took into account the relatively low percentage of manganese content in the pig iron handled at S.H. Bell, along with the low levels of manganese collected in the filter-based monitor. As mentioned above, the air monitoring data thus far shows that downwind PM10 concentrations are below the 24-hour limit for PM10, and that average manganese concentrations are below the ML. While NRDC *et al* object to any level of manganese emissions, CDPH believes that public health will be protected if emissions do not exceed the health-based threshold set forth in the Bulk Material Rules. Thus, if the filter-based monitoring data ever shows an exceedance of the Manganese Limit, this variance will be reconsidered.

Going forward, CDPH will continue to evaluate the air monitoring data provided by the facility. In order to better understand the impact of outdoor storage and handling of pig iron, CDPH requests that S.H. Bell provide throughput information for pig iron on a quarterly basis. Therefore, CDPH grants the variance request subject to the following condition which must be incorporated into S.H. Bell's Fugitive Dust Plan: With regard to the pig iron stored at the facility (regardless of its manganese content, which may be below one percent), S.H. Bell must submit quarterly reports to CDPH in the same manner, and containing the information, as the reports required by Section 17-9-0117-D(5) of the Chicago Municipal Code.

Please note that pursuant to Section 10.0(3)(d) of the Bulk Material Regulations, a variance may be revoked at any time if the Commissioner finds that operation of the facility is creating a public nuisance or otherwise adversely impacting the surrounding area, surrounding environment, or surrounding property uses.

CONCLUSION

CDPH's determination regarding S.H. Bell's variance request will be effective as of the date of this letter, and will be posted, along with appendices and supporting materials, on CDPH's website at www.cityofchicago.org/environmentalrules. Please be advised that if S.H. Bell fails to comply with the Bulk Material Rules within the timeframes provided above, S.H. Bell will be subject to enforcement action including daily fines in the amount of $1,000 to $5,000 per violation as provided by Section 11-4-810(a)(7) of the Chicago Municipal Code. Furthermore, CDPH may issue a summary abatement order pursuant to Section 11-4-025(c) of the Chicago Municipal Code, requiring S.H. Bell to correct any violations within a timeframe prescribed by the Commissioner.

Finally, in accordance with Section 10.0(3)(d) of the Bulk Material Regulations, CDPH reserves the right to revoke the variances granted herein if the Commissioner finds that operation of the facility pursuant to a variance is creating a public nuisance or otherwise adversely impacting the surrounding area, surrounding environment, or surrounding property uses.

Please contact Assistant Commissioner Dave Graham at (312) 745-4034 if you have any questions regarding the above.

Sincerely,

Allison Arwady, M.D.
Acting Commissioner

cc: Mort Ames, DOL
Jennifer Hesse, CDPH