January 11, 2017

City of Chicago, Department of Public Health
EnvComments@cityofchicago.org

Re: Comments of NRDC, SETF, and SSCBP on S.H. Bell's December 2016 Variance Request

To Whom It May Concern:

Thank you for the opportunity to comment on S.H. Bell's December 2, 2016 application for another variance from the Chicago Department of Public Health's ("CDPH") Rules and Regulations for Control of Emissions from the Handling and Storage of Bulk Material Piles ("Rules"), pertaining to its facility located at 10218 S. Avenue O ("Avenue O facility").[1] These comments are submitted on behalf of the Natural Resources Defense Council ("NRDC") and our over 10,000 members and activists in the City of Chicago, including those who reside on the Southeast Side in the Calumet area; the Southeast Environmental Task Force ("SETF"), an active community group dedicated to improving the Calumet neighborhood's environment; the Southeast Side Coalition to Ban Petcoke ("SSCBP"), a multicultural group comprised of area residents and their families, representatives of community based environmental and social service organizations, and other Chicago area activists who have joined forces to rid the community of harmful pollutants such as petroleum coke; and National Nurses United-Illinois, a union for registered nurses and a member of SSCBP, which supports the effort to rid the Southeast Side of Chicago of petcoke and other harmful toxins that destroy and harm the health and well-being of the community.

In the present request, S.H. Bell asks CDPH for another extension of time – 43 days, until March 1, 2017 – to install particulate matter ("PM") monitors beyond the January 17, 2017 deadline set by the Department's prior variance denial. Attached to the variance request is a copy of the facility's most current "Fugitive Operating Program/Fugitive Dust Plan" dated December 2015. For the reasons set forth below, the request for yet more time to install particulate matter monitors fails to meet the standard for a variance now, as it did two-and-a-half years ago[2]: the continued

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[1] Letter from Kim Walberg, attorney for S.H. Bell, to Dr. Julie Morita, Commissioner, CDPH, December 2, 2016, available at https://www.cityofchicago.org/content/dam/city/depts/cdph/general/VarianceRequestfromS.H.BellCo._10218S.Ave.O_12-2-2016.pdf and supplement dated December 7, 2016 ("December 7 supplement"),available at https://www.cityofchicago.org/content/dam/city/depts/cdph/general/SupplementtoVarianceRequestfromS.H.BellCo._10218S.Ave.O_12-7-2016.pdf.

[2] We incorporate by reference all materials from S.H. Bell's prior 2014 request to avoid PM monitoring requirements, including but not limited to comments submitted by SETF and NRDC, S.H.

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failure to monitor contributes significantly to the Avenue O facility's adverse impact on the community and the environment. S.H. Bell once again has failed to demonstrate that the Avenue O facility's operations "do not result in offsite fugitive dust emissions," a requirement for a PM monitoring variance.[3] Indeed, a body of evidence strongly supports the opposite and the resulting threat to the community's health. This evidence consists of the following:

- a long history of manganese dust health threats from S.H. Bell's East Liverpool, Ohio facility, which continues after nearly a decade of enforcement actions and attempts by the company to address the problem;
- vague, confusing and misleading descriptions of activities and control methods at Avenue O that obscure sources of dust problems and the use of control measures with more limited effectiveness than those employed in East Liverpool and/or that are generally available for dust control;
- inspections of the Avenue O facility by city and federal agencies over a two-year-plus period that found dust violations and failures to comply with work practice standards, even after issuance of a Notice of Violation and filing of a complaint in federal court; and
- air quality monitoring data from nearby stations that register harmful levels of manganese and strongly implicate S.H. Bell as the source, and the high likelihood that levels of manganese in neighborhoods adjacent to Bell are much higher.

The City recognized S.H. Bell's failures and dust problems in its October 2016 rejection of Bell's previous request to avoid the Rules' mandated PM monitoring.[4] S.H. Bell's recent decision to finally install PM monitors, including a filter monitor to track harmful manganese levels, does not change the bases for the City's prior determination or provide additional grounds for further delaying the required monitoring. The City thus should deny the current variance request as well.

More importantly, beyond the variance request at hand, the S.H. Bell Avenue O facility's handling of neurotoxic manganese[5] generally poses an unacceptable threat to the health and well-being of Southeast Side community residents, in particular our children. Experience with S.H. Bell's East Liverpool, Ohio facility indicates that even significant efforts to control manganese dust cannot reduce

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Bell's submissions, and CDPH's October 2016 decision regarding S.H. Bell's prior 2014 variance request ("October 2016 Variance Determination"), all of which are in CDPH's possession and available on the City's website at https://www.cityofchicago.org/city/en/depts/cdph/supp_info/environmental_permitsandregulation/doe_ordinances_rulesandregulationsandsupportingdocuments.html.

[3] *See* Rules at Section 3.0(4).

[4] *See* October 2016 Variance Determination, at 6-9.

[5] While our present comments focus on manganese issues due to the heightened concern about this substance and the evidence to date regarding manganese dust from S.H. Bell, we also note concern with silica exposures from the Avenue O facility's ferrous silica handling, based on the City's August 2016 inspection, which identified a number of issues with dust during handling of this material. *See id.* at Exhibit A. Silica is associated with silicosis, a potentially fatal lung disease, at higher exposure levels.

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levels of the substance in the air sufficiently to protect nearby communities. The ongoing problems at the Chicago Avenue O facility, with a Department of Public Health inspection finding dust issues in August 2016[6] – long after alleged implementation of most of the controls described by the company in its prior communications, controls that themselves have been a long time in coming – provide additional evidence that S.H. Bell cannot control its dust.

The City need not wait for monitoring data to confirm what the East Liverpool and Chicago experiences already show: S.H. Bell cannot apply dust controls at the site in a manner that will consistently and reliably eliminate the threat to health posed by this facility. We thus call on the City to immediately abate this threat to public health.

As set forth in our September 2014 comments on S.H. Bell's prior variance request, nearly 20,000 people reside within a 1-mile radius of the Avenue O facility. This is about *seven times* the number of people within the same radius of Bell's Ohio facility, and includes over 6,000 children, more than double the total population within a mile of the Ohio facility. Moreover, a recent federal analysis of the nearby KCBX facilities by the Agency for Toxic Substances and Disease Registry ("ATSDR") found over 35,000 residents within a one-mile radius, including about 10,000-11,000 children under the age of six and women of child-bearing age, using a more refined spatial technique.[7] The vast majority of these Southeast Side residents are Hispanic and/or African-American. To quote the Department of Justice, the S.H. Bell facility "is located directly across the street from homes in an environmental justice residential area."[8] This community has battled environmental health threats long enough. Having spent years fighting petcoke and coal dust (a battle that continues even after the ATSDR confirmed that petcoke dust is harmful to public health in its August 2016 health consultation[9] and despite air quality data and new research showing an ongoing problem[10]), it should not have to spend years more going back-and-forth over ineffective control measures for neurotoxic dust.

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[6] *See id.*, at 7 and Exhibit A.

[7] Ex. 1, ATSDR, Health Consultation: Review and Analysis of Particulate Matter and Metal Exposures in Air, KCBX, August 22, 2016 ("ATSDR KCBX"), at Figure 2, page 32, available at https://www.atsdr.cdc.gov/hac/pha/KCBXPetroleumCoke/KCBX_Petroleum%20Coke_HC_508.pdf

[8] Letter from Nicholas McDaniel, Trial Attorney, Environmental and Natural Resources Division, U.S. Department of Justice, to Scott R. Dismukes, Eckert, Seamans, Cherin & Mellot, LLC, Attorney for S.H. Bell, April 22, 2016 (exhibit to D the City's October 2016 Variance Determination, incorporated by reference above).

[9] *See* ATSDR KCBX, at 24.

[10] Monitoring data from the KCBX North Facility after its decommissioning shows both high daily and hourly PM levels, with one daily average reaching nearly 200 μg/m3, ostensibly related to the layer of uncontrolled petcoke still remaining at the site. *See* U.S. EPA, "KCBX Fenceline Air Monitoring Data," available at https://www.epa.gov/petroleum -coke-chicago/kcbx-fenceline-air-monitoring-data. In addition, research from the University of Washington shows that open-top coal trains like those serving KCBX can be significant sources of local particulate matter pollution, creating on average roughly twice as much PM as other freight trains. *See* Ex. 2, Plaven, George, "Study: coal trains pollute twice as much as freight trains," East Oregonian, November 23, 2015, available at

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This comment letter begins with an overview of the negative health impacts of manganese. Then, it details past and ongoing manganese dust concerns and enforcement actions at S.H. Bell's East Liverpool, Ohio operations. We next review S.H. Bell's operations at Avenue O, along with its variance requests and non-compliance with the City's Rules. Finally, we discuss monitoring data from the nearby KCBX facilities with respect to S.H. Bell's manganese dust. We close by urging the City to protect city residents' health now by banning the handling of manganese materials by S.H. Bell and at any other Chicago location in proximity to residential neighborhoods.

Negative Health Impacts of Manganese

When inhaled, manganese has profoundly negative impacts on human. A recent court decision by the Northern District of Ohio summarizes these impacts as follows:

> According to the Environmental Protection Agency… and the Ohio Environmental Protection Agency…, inhaled manganese and inhaled chromium adversely affect a person's health. Long-term inhalation of manganese can harm a person's central nervous system, reduce visual reaction time, reduce hand steadiness, and reduce eye-hand coordination. Chronic exposure to manganese can result in feelings of weakness, lethargy, tremors, a mask-like face, and psychological disturbances.[11]

While the more significant impacts on health are seen at high manganese exposure levels, such as in occupational settings, a growing body of literature indicates that negative neurological impacts are also associated with lower-level community exposures.

For instance, a study of eight communities in a mining district in Mexico found an association between manganese concentrations in air and altered neuromotor function in residents.[12] Another community study from Quebec examined areas near a closed ferro and silico-alloy plant, concluding that elevated blood manganese was

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http://www.eastoregonian.com/eo/local-news/20151123/study-coal-trains-pollute-twice-as-much-as-freight-trains and the website of the Jaffe Research Group, available at http://www.atmos.washington.edu/jaffegroup/modules/news/.

[11] *Elmer v. S.H. Bell Co.*, 127 F.Supp.3d 812, 817 (N.D. Ohio, 2015) (internal citations omitted). This action is stayed pending a decision by the Sixth Circuit in *Abrams, et al v. Nucor Steel Marion, Inc.*, N.D. Ohio Case No. 3:13-cv-00137-JZ (N.D. Ohio Nov. 30, 2015), Sixth Circuit Case No. 15-4422.

[12] Ex. 3, Rodriguez-Agudelo, Y., et al. "Motor alterations associated with exposure to manganese in the environment in Mexico." *Science of the Total Environment* 368, nos. 2-3 (2006): 542-556, available at http://fulltext.study/preview/pdf/4433863.pdf.

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associated with deficits in nervous system function.[13] And most recently and notably for present purposes, a study of East Liverpool – home to another S.H. Bell manganese handling facility, discussed in more detail below – found that increasing modeled levels of manganese were associated with lower neuropsychological test scores, as well as tremor and poorer motor function.[14] The study also found associations between exposure to manganese and use of prescription and over-the-counter medications, with increasing manganese exposure associated with an increased likelihood of taking pain medications.[15]

Moreover, the evidence supports that the impacts of manganese exposure fall particularly hard on children and their developing brains. For instance, a 2007 review of the literature on manganese exposure found studies that reported associations between manganese exposure and cognitive functions and behavior in children.[16] Several studies conducted between 2000 and 2011 support that "unborn babies, nursing infants, and young children are more likely to experience potentially damaging deposition of manganese in the brain than adults exposed to manganese."[17] Due to evidence that manganese deposits on the brain through an olfactory path, a conservative approach is especially warranted.

A comprehensive summary of the health literature on manganese is beyond the scope of these comments; however, in addition to the above discussion, we are providing a list of other articles and reports on the topic in Attachment A, along with the articles (or abstracts where we do not have access to full-text versions) themselves.

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[13] Ex. 4, Mergler, D., et al. "Manganese neurotoxicity, a continuum of dysfunction: results from a community based study." *Neurotoxicity* 20, nos. 2-3 (1999): 327-42, abstract available at https://www.ncbi.nlm.nih.gov/pubmed/10385894.

[14] Ex. 5, Colledge, M.A., et al. "Characterization of air manganese exposure estimates for residents in two Ohio towns." Journal of the Air & Waste Management Association 65, no. 8 (2015): 948-957, available at https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4803377/pdf/nihms766981.pdf; Ex. 6, Bowler, R.M., et al. "Environmental exposure to manganese in air: Associations with cognitive functions." *NeuroToxicology* 49 (2015): 139-148, available at https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4803288/pdf/nihms767000.pdf; Ex. 7, Bowler, R.M., et al. "Environmental exposure to manganese in air: Associations with tremor and motor function." *The Science of the Total Environment* 541 (2016): 646-54, full-text pdf available at https://www.researchgate.net/publication/282584167_Environmental_exposure_to_manganese_in_air_Associations_with_tremor_and_motor_function.

[15] Ex. 8, Bowler, R.M., et al. "Medication use associated with exposure to manganese in two Ohio towns," Int'l. Journal of Environmental Health Research 26 (2016): 483-496, abstract available at https://www.ncbi.nlm.nih.gov/pubmed/27295281.

[16] Ex. 9, Zoni, S. "Neuropsychological testing for the assessment of manganese neurotoxicity: A review and a proposal." *American Journal of Industrial Medicine* 50, no. 11 (2007): 812-830, available at https://www.researchgate.net/publication/5927221_Neuropsychological_testing_for_the_assessment_of_manganese_neurotoxicity_A_review_and_a_proposal.

[17] Ex. 10, Letter from Michelle Colledge, Environmental Health Scientist, ATSDR, to Ed Nam, Acting Director, Air and Radiation Division, U.S. EPA Region 5, September 22, 2016 ("ATSDR East Liverpool 2016"), at 8, available at: https://www.atsdr.cdc.gov/HAC/pha/SHBell/SH_Bell_LHC_to_ARD_Region_5_v_9-22-16_508.pdf.

Ongoing Manganese Health Hazard at S.H. Bell's Ohio Facility

S.H. Bell is no stranger to health concerns over manganese dust pollution from its facilities, and was aware of its dust problems well in advance of the City's adoption of its 2014 dust regulations. Experience at the company's Ohio facility shows that Bell cannot control its dust in a manner sufficient to protect public health and welfare.

S.H. Bell's Ohio handling of manganese has drawn substantial concern from state and federal enforcement agencies for almost 10 years. In 2007-2008, the Ohio Environmental Protection Agency ("Ohio EPA") brought an administrative enforcement action against Bell's two facilities in East Liverpool, Ohio, known as the Little England and Stateline facilities. Like Bell's Avenue O Facility in Chicago, the Little England site was located across the street from a relatively dense residential area (though as described above, the area around the Little England site contains a fraction of the population of the area around the Avenue O site).

The Ohio EPA's April 2008 order, brought under a state public nuisance provision and requiring S.H. Bell to comply with a number of dust control measures, centered on concentrations of manganese in the air many times higher than the U.S. EPA's reference concentration. The order required S.H. Bell to store all manganese materials in storage buildings that minimize fugitive dust, as well as to conduct all truck load out in a shed equipped with a baghouse while constructing a new truck load out building "equipped with a capture and control system to eliminate emissions of fugitive dust into the ambient air from the dumping of material into trucks."[18] The order noted that these requirements accounted for the "technical feasibility and economic reasonableness of complying" with the measures.[19]

Still, in February 2010, the Ohio EPA issued S.H. Bell another order, again finding the company in violation of state law for causing or significantly contributing to unacceptable ambient air concentrations of manganese.[20] The 2010 order, like the 2008 order, contained a number of measures that Bell was required to take to address manganese dust.

According to subsequent news reports, S.H. Bell voluntarily eliminated all of its manganese-handling operations from the Little England facility,[21] which it then closed down in 2010.[22] It is our understanding that these operations moved further out of town to the Stateline facility.

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[18] Ex 11, In the Matter of S.H. Bell Stateline Facility and Little England Facility, Director's Final Findings and Orders, April 14, 2008, at paragraphs 18 and 19.
[19] *Id.* at paragraph 5.
[20] Ex 12, In the Matter of S.H. Bell Stateline Facility and Little England Facility, Director's Final Findings and Orders, February 8, 2010, at paragraph 4.
[21] Ex 13, "S.H. Bell to cut manganese emissions," The Business Journal (Youngstown, Ohio), February 9, 2010, available at http://archive.businessjournaldaily.com/sh-bell-cut-manganese-emissions-2010-1-26.
[22] *See Elmer*, 127 F.Supp.3d at 817.

In November 2010, the Agency for Toxic Substances and Disease Registry (ATSDR) issued a health consultation evaluating the air quality in East Liverpool.[23] The consultation concluded that "[e]xposure to manganese concentrations in this community poses a public health hazard" and recommended that "Ohio EPA and/or U.S. EPA should take immediate actions to reduce community exposures to manganese from fugitive dust emissions from the SH Bell facility."

Despite efforts taken by S.H. Bell to control manganese dust in response to the Ohio EPA and federal agency actions starting in 2008, and the apparent resulting improvements in air quality between 2011 and 2013, manganese levels in the air near S.H. Bell's East Liverpool facility continue to pose a health hazard and appear to be increasing, according to a September 2016 follow-up health evaluation by ATSDR.[24]

In this evaluation, ATSDR concluded that ***the latest available air quality monitoring data near the site shows average levels in excess of both U.S. EPA's and the ATSDR's health guidelines for manganese for every month out of the year in 2015-2016.***[25] This evaluation also found that manganese levels were highest: (a) at the monitor closest to the remaining S.H. Bell State Line facility, (b) during weekdays, when the facility was in operation, and (c) at homes closest to the Stateline facility. The agency concluded that "**[p]revious enforcement actions have not successfully reduced long term exposure to airborne [manganese]**" and "**[t]he exposures in this community represent a public health hazard and should be mitigated as soon as possible to reduce harmful exposures**."[26]

Less than a month later, in early October 2016, the Ohio EPA once again issued S.H. Bell's Stateline facility an order finding that "emissions from [the facility] still cause or significantly contribute to unacceptable ambient air concentrations of manganese."[27] And once again, the Ohio EPA directed S.H. Bell to take additional measures, including conducting another engineering study of emissions and additional control actions. While the October 2016 order refers to violations found during a February 2016 inspection as "minor " and "housekeeping" violations,[28] the inspection report itself identifies the *same* failure to properly operate a wet suppression system during dusty vehicle loading and unloading that the CDPH inspector noted in his August 2016 report for the Avenue O facility.[29] Other violations and manganese issues noted by Ohio EPA in its NOVs and inspection

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[23] Ex 14, ATSDR, Health Consultation: East Liverpool Air Quality – East Liverpool, Ohio, November 9, 2010 ("ATSDR East Liverpool 2010"), available at https://www.atsdr.cdc.gov/HAC/pha/EastLiverpoolHC/EastLiverpoolHealthConsultation11210.pdf.
[24] ATSDR East Liverpool 2016, at 2.
[25] *Id.* at 7.
[26] *Id.* at 9.
[27] Ex 15, In the Matter of S.H. Bell Company, Stateline Facility, Director's Final Findings and Orders, October 4, 2016.
[28] *See id.* at par. 8 and 10.
[29] Ex. 16, Letter from Kevin Fortune, Ohio EPA Division of Air Pollution Control, to John Bedeck, Project Manager & Director of Quality, SH Bell Co., Notice of Violation, February 11, 2016.

reports include failure to maintain PVC strips that seal buildings where processing and handling occurs; failure to tarp outgoing trucks; and filling of warehouse material bins that are exposed to the environment to capacity.[30]

In sum, years before the current manganese dust concerns surfaced in Chicago, S.H. Bell was aware of health concerns with manganese dust, that its operations could be causing high levels of manganese in the air, and that it could be taking significantly more steps to eliminate manganese dust, including enclosing operations and installing air pollution controls or moving the operations away from residential areas altogether. Instead of taking proactive measures to end dust threats to the Southeast Side, it apparently decided to wait until the City developed its dust regulations to take additional actions here. Even then the company sought to avoid a number of the control measures called for by the City's regulations (measures it apparently had agreed to undertake in Ohio, like storing all manganese materials indoors and conducting all truck load out in enclosures) and monitoring that might better characterize its ability to control dust and the threat to health from its site. Moreover, the continuing problems around the East Liverpool site indicate that controlling manganese dust sufficiently to protect the health of nearby communities may not be feasible in general – raising serious questions about whether such a facility should be allowed to continue operating in a densely-populated urban neighborhood like the Southeast Side.

Avenue O Operations: Inadequate Proposed Fugitive Dust Plan and Controls, with History of Unpermitted Operations, Uncontrolled Dust and Violations, and Unsupported Variance Requests

Inadequate Proposed Fugitive Dust Plan and Controls. It appears that dust problems at the Avenue O facility (as with the East Liverpool site) arise in large part from S.H. Bell's (a) failure to use an enclosed system or systems for moving materials around its sites, loading/unloading vehicles and/or storing dusty materials, and (b) inability to consistently wet materials of concern or wet them at all. Indeed, the company's vague and internally inconsistent proposed Fugitive Dust Plan, attached to its variance request as Exhibit B, leaves Bell significant discretion to:

- store any dusty bulk material, and most notably for present purposes alloys containing manganese, in outdoor piles with no direct wetting to control dust;
- move such materials around the site from enclosures and long-term outdoor storage piles to temporary piles to vehicle loading and unloading areas (with only some truck loading occurring in enclosed structures) using excavators and front end loaders, with only a mobile system to aim at dust that operations generate; and

[30] *Id.*; Ex 17, Letter from Kevin Fortune to John Bedeck, Facility Inspection, July 14, 2016.

- conduct vehicle loading and unloading operations in the open air, again with mobile systems to supposedly control any dust that arises.

And the public must rely on S.H. Bell to ensure that at each point in this process, personnel are taking a high level of care in communicating with customers about which materials can and cannot be wetted; in deploying mobile spraying systems around multiple working areas; in determining when weather conditions are acceptable for conducting dust-generating activities; and in conducting opacity and visible emissions testing, among other activities.

Specifically, the proposed fugitive dust plan states with regards to "Materials and Products":

> Materials processed and/or stored at the facility are transported to the facility by barge, rail and truck. ***Typical*** materials handled at SH Bell Chicago ***include***: ferroalloys, pig iron, silicon carbide, magnesite, refractory products, graphite electrodes and primary nonferrous materials such as copper, zinc, and aluminum, ***typically*** in ingot form.
>
> Alloy materials (bulk ***or*** supersacks) unloaded are stored within bulk material storage buildings ***or*** under roof in an exterior three-sided (covered) bin prior to processing and/or reloading for customer shipment. ***Typical*** alloys include ferrosilicon, ferromanganese, silico-manganese and ferrochromium. These materials (alloys) ***typically*** cannot be watered…
>
> Bulk materials stored outside ***include*** aluminum ingots, pig iron, HBI and ***other materials*** (aka ***alloys designated by customer preference***) and can ***generally*** be watered as needed. Inbound shipments of DRI fines are no longer accepted for storage or re-loading at the facility. The maximum outdoor storage capacity is around 140,000 tons. Typically, outdoor storage piles cover approximately half of the available outdoor storage area. The ***number, size and composition of outdoor piles vary*** based on customer requirements and specifications…

(emphases added).[31] Under this language, ferromanganese and silico-manganese may be handled in bulk and stored in outdoor piles of indeterminate size (if designated by customer preference), without watering to control dust. The language is also confusing as to whether alloys can or cannot be watered, stating on the one hand that "typical alloys" "typically cannot be watered" and on the other that "alloys designated by customer preference" "can generally be watered as needed." (Later

[31] Exhibit B to S.H. Bell's variance request, "Fugitive Operating Program," December 2015 ("Fugitive Dust Plan"), at 3.

with respect to barge loading, the proposed plan says that ferroalloys are materials "that cannot be watered."[32])

The proposed Fugitive Dust Plan uses similarly vague, confusing and misleading language with respect to "Material Transfer Operations." For instance, the proposed plan says the following for truck loading and unloading:

1. Truck Loading
   Bulk truck load out operations of dry material are completed within a loadout shed ***or*** within a bulk material storage building…

2. Truck Unloading
   Materials carried by in-house drayage trucks are batch unloaded within a bulk material storage building ***or*** directly to outdoor storage piles…

(emphases added).[33] This language not only obscures which materials are handled in what manner, but also is misleading in its descriptions of truck loading happening in one of two enclosures: elsewhere, the proposed Fugitive Dust Plan states that (unidentified) "[m]aterials which are stored outside that are damp are loaded [to trucks] outside."[34]

The proposed plan describes loading and unloading of barges and railcars in like manner, e.g., bulk unloading of barges is done by a dock excavator that "places a batch of material directly into trucks ***or*** dockside for bulk processing"; super sack barges "may be unloaded directly to storage ***or*** at the customer's direction opened and stored as a bulk material" (presumably outside); and material unloaded from railcars "is moved to a temporary storage pile ***or*** directly to the final storage location."[35]

As an initial matter, the above language and other similar portions of the proposed Fugitive Dust Plan fail to clearly describe which materials are handled in what variety of ways at the facility, obscuring whether any of the operations may be contributing to harmful levels of emissions and whether more effective controls may be needed. It therefore renders the plan unacceptably vague and unenforceable. Given the heightened concerns with materials like manganese, such a vague plan fails to meet the intent and explicit requirements of the City's fugitive dust plan provision, and the City therefore must reject the proposed Fugitive Dust Plan, which we understand the CDPH has not approved to date.[36] These same concerns render the proposed Fugitive Dust Plan inadequate to support the present request for a variance, as it fails to demonstrate that the facility will operate in a

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[32] *Id.* at 10.
[33] *Id.* at 4.
[34] *Id.* at 9.
[35] *Id.* at 10-11.
[36] We note that we have not had adequate time to fully review the proposed Fugitive Dust Plan in the context of this variance request, and may raise additional concerns about the proposal with CDPH.

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manner that does not result in offsite fugitive dust emissions and/or create an adverse impact on the community and environment.

Moreover, it appears from this vague language that S.H. Bell is not employing or planning to employ the full range of preventive steps at Avenue O that it has taken or intends to take at the Ohio site, or that are generally available for dust control. In addition to moving its manganese operations further out of town in East Liverpool, it is our understanding that S.H. Bell does not store any manganese materials outside at its current Ohio facility,[37] and it appears that this facility employs more protective structures for storage than does Avenue O.[38] In addition, the most recent December 2016 Engineering Evaluation from the company for the East Liverpool site discusses pursuing enclosures for barge unloading and rail car loading and unloading,[39] which to our knowledge the company does not employ at and has not proposed for Avenue O. A full comparison of the measures taken or under consideration in Ohio to those in Chicago is beyond the scope of these comments, but we strongly encourage CDPH to require S.H. Bell to explain why it does not or cannot apply the same level of control or better (including halting handling of manganese products) at the Avenue O facility as at East Liverpool for each dust-generating source.

The December 2016 Engineering Evaluation also repeatedly emphasizes that use of wet suppression to control dust at the East Liverpool site is limited by technical considerations related to the products themselves, calling this issue a "key technical feasibility drawback with respect to S.H. Bell Co.'s specific application."[40] In addition, it references "operational constraints" and "variable activity locations" as limiting the use of stationary air pollution control equipment like baghouses.[41] In other words, the very nature of S.H. Bell's activities at East Liverpool – and by extension at Avenue O – limits the company's ability to deploy the most effective and consistent dust control options. To the extent that product specifications limit use of controls, that Bell's multiple products require it to maintain a "flexible" operation without more rigorous control infrastructure specific to certain high-risk

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[37] Ex. 18, "Response to Director's Final Findings and Orders (October 2016) – Engineering Study to Evaluate Additional Actions to Address Airborne Manganese Emissions," S.H. Bell Company Stateline Terminal, East Liverpool, Ohio, Prepared by Amec Foster Wheeler, December 14, 2016 ("December 2016 Engineering Evaluation"), at 25 ("Air pollution control equipment or measures currently applied to these material handling operations…are summarized as follows: … 7. Material storage – all affected materials stored inside at warehouse-type buildings…") and 27 ("… the original [director's order] requires that all ferromanganese materials at the Stateline Terminal be stored in buildings whose only openings to the ambient air are through access doors for vehicles transporting materials").

[38] Compare *id.* to proposed Fugitive Dust Plan at 3 ("Alloy materials (bulk or super sacks) unloaded are stored within bulk material storage buildings or *under roof in an exterior three-sided (covered) bin*…" (emphasis added)).

[39] *See* December 2016 Engineering Evaluation, at 27-29 (noting that it is not clear to us from the description why the consultant deemed enclosure of barge unloading feasible but enclosure of barge loading infeasible.)

[40] *Id.* at 20; *see also id.* at 9 and 12.

[41] *Id.* at 26.

products and/or that space constraints make certain controls infeasible at the Avenue O site and harmful levels of manganese in the air result, operating this business at this site is incompatible with and threatens the community's health.

Not only is the proposed Fugitive Dust Plan itself vague and unenforceable, with less than reliable and robust controls described, but S.H. Bell's performance to date at Avenue O (discussed below), as well as in East Liverpool (discussed above), demonstrates that the company does not in fact consistently manage its operations and deploy work practice and other measures "as needed" (a phrase used throughout the proposed Fugitive Dust Plan) to keep dust under control.

History of Operating Avenue O Facility in Chicago without a Permit. S.H. Bell hardly has an exemplary compliance record in Chicago. As noted in our September 2014 comments to the City, the Illinois Attorney General brought an enforcement action against S.H. Bell in 2012 for failing to obtain a required federal operating permit for air emissions between 2006 and 2012. The complaint focused on S.H. Bell's "absence of due diligence" in complying with the 39.5(6)(b) of Illinois Environmental Protection Act, 415 ILCS 5/39.5(6)(b) (2010), by operating a Clean Air Act Program source without a CAAPP permit.[42]

2014 Variance Request and U.S. EPA Notice of Violation. Moreover, the past two to three years of experience with the Avenue O facility show a pattern of underwhelming control response to manganese and other dust, concerted attempts to avoid monitoring of the site's impact on air quality, and a series of violations demonstrating failure to adhere to work practice standards (themselves a key component of Bell's fugitive dust plan). Much of this history is described in our September 2014 comments and CDPH's October 2016 variance determination, which we summarize for present purposes below.

Timeline:

June 2014. In June 2014 – six years after the first East Liverpool order – S.H. Bell submitted a variance request seeking to avoid requirements pertaining to PM monitoring and truck loading/unloading, along with a long list of other items. S.H. Bell claimed its existing Fugitive Operating Program had "effectively controlled Fugitive Dust emissions" at the Avenue O Facility. It also listed a number of updates to that program adopted in response to the City's March 2014 dust regulations (again notably six years after the first Ohio EPA order).

July 2014. A month later in July 2014, as described in our prior S.H. Bell comments, U.S. EPA issued S.H. Bell a Notice of Violation (NOV), listing a number of dust-related violations of the federally-enforceable Illinois State Implementation Plan at the Avenue O Facility. EPA's NOV detailed several compliance concerns: (1) dry, dusty

[42] *People of State of IL vs. S.H. Bell*, PCB 12-120 (Enforcement) (April 5, 2012).

roads, (2) visible emission observations from a storage pile, and (3) observations of fugitive dust crossing the property line.[43]

September 2014. In September 2014, NRDC and SETF submitted comments to the City opposing S.H. Bell's variance request. We highlighted the community surrounding S.H. Bell, the Attorney General's action, and U.S. EPA's NOV. We also noted the many ways in which Bell's variance application fell short, e.g., by failing to make the required and exacting demonstration that the facility's operations "do not result in offsite fugitive dust emissions" necessary to avoid PM monitoring requirements; vaguely stating that it was "unclear" whether construction of a truck loadout shed could meet right-of-way and setback requirements; asserting prohibitive costs while providing no cost information; and proposing that "high wind event" should mean something else for S.H. Bell than for everyone else based on operational inconvenience to the company.

March 2015. After receiving a request for additional information from the City in January 2015, S.H. Bell submitted a response in March 2015 that narrowed its variance request to avoiding PM monitoring and the 50-foot setback for outdoor storage piles. Notably, the company apparently had determined by this time that it could better control fugitive dust from truck loading and unloading structures after all, committing to install baghouses on two truck loading buildings.[44]

The day after Bell's March response to the City, U.S. EPA issued the company a Section 114 request under the Clean Air Act, calling for the facility to install perimeter PM monitors by approximately mid-April 2015.

April 2016. U.S. EPA issued a letter to S.H. Bell one year after its unfulfilled Section 114 request, emphasizing the agency's ongoing concern that dust measures allegedly being taken at the S.H. Bell facility are inadequate to address potential violations of the state implementation plan and Bell's permit. The letter also noted the inadequacy of quarterly opacity measurements for ensuring compliance, particularly in light of the observed dust problems at the facility.

August 2016. More than one year later, and due to the company's ongoing resistance to U.S. EPA's efforts, in particular the request for PM monitoring, the agency filed a complaint in the Northern District of Illinois, outlining both opacity/visible emissions limit and Section 114 violations.[45] EPA's Complaint notes that during multiple inspections—including May 19 and May 20, 2014, and December 8, 2015—it observed visible PM pollution crossing the property line and/or opacity readings

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[43] In the Matter of S.H. Bell Company, Notice of Violation, EPA-5-14-IL-15, at 2 (July 15, 2014) (exhibit B to the City's October 2016 Variance Determination, incorporated by reference above).
[44] Our reference to the S.H. Bell response of March 2016 is not intended as any comment on the controls' actual sufficiency in terms of compliance with the City's dust ordinance.
[45] Ex. 19, Complaint, *United States v. S.H. Bell Co.*, Civil Action No. 16-7955 (N. D. Ill., August 9, 2016), available at https://www.epa.gov/sites/production/files/2016-08/documents/shbell-complaint-20160809-12pp.pdf

that exceed the standard.[46] It also alleges S.H. Bell's continued failure to install PM10 monitors, despite EPA's March 2015 request and follow up communications.

October 2016. The City issued its decision on S.H. Bell's March 2015 revised variance request in October 2016. While the City granted (with conditions) S.H. Bell's request for a variance with respect to the setback, it denied S.H. Bell's request to avoid PM air monitoring requirements on the basis that the company had failed to demonstrate that the variance would not create a nuisance or adversely impact the surrounding area. Specifically, CDPH reasoned that S.H. Bell "has not established that the facility's operations do not result in off-site fugitive dust emissions."[47] It rejected S.H. Bell's claims that its dust measures were working and cited its own and EPA's inspections finding violations of fugitive dust requirements along with ATSDR's evaluation of monitoring data from the nearby KCBX sites, and reinforced the need for PM10 monitoring as a way to ensure compliance with the City's dust regulations.[48]

In sum, in the over two years since CDPH adopted its fugitive dust regulations, S.H. Bell has attempted to avoid some requirements while failing to comply with others. It has repeatedly tried to make the case to agencies that PM monitoring is not needed, an argument that the agencies have rightfully rejected based on documented dust problems and air quality monitoring data implicating S.H. Bell (the latter as discussed in more detail below). Given S.H. Bell's failures, CDPH's October Variance Determination requires S.H. Bell to install PM monitors by January 17, 2017, citing the 90-day timeframe for installing monitors set forth by the City's dust regulations. This deadline is 31 months, or *over two-and-a-half years*, after the original monitoring deadline for PM monitoring set by the regulations, and nearly two years since the deadline for complying with U.S. EPA's Section 114 request. Nothing in S.H. Bell's current request changes the basis for that determination, let alone excuses the lack of monitoring for the past two-and-a-half years and justifies another month-and-a-half of delay.

December 2016 Variance Request. Against this clear failure to demonstrate that the facility does not result in offsite fugitive dust or pose an adverse impact on the surrounding community and environment, S.H. Bell puts forth two alleged bases for granting the monitoring extension variance request, both of which the City should reject. First, the company claims that it needs additional time to identify an available filter monitor and allocate resources for that monitor, as well as to identify locations for this filter monitor and the other four Federal Equivalent Monitors.[49] Second, Bell claims that it is in the agencies' and public's interest (as well as its own) to not commence monitoring until after it has installed two baghouses on truck loadout sheds, so as to provide "the most accurate monitoring data" of the "effect of the operation of the current Fugitive Dust Plan."

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[46] *Id.*
[47] October 2016 Variance Determination, at 2.
[48] *Id. at 9.*
[49] Variance Request at 3-4.

CDPH should maintain its October 2016 Variance decision and prohibit further delay of PM monitoring at the S.H. Bell Avenue O facility. First, the stipulated settlement and consent order in EPA's enforcement action against S.H. Bell for its Avenue O Facility's violations expressly defers to the City's determinations regarding the monitoring installation date.[50] Moreover, for more than two-and-a-half years, S.H. Bell was on notice of the dust regulations and the need to control and monitor PM emissions. Similarly, for the last two years, and until the most recent settlement, it has been resisting EPA's Section 114 order to install monitors. This request for further delay simply reflects its ongoing resistance to getting the monitoring equipment in place as soon as possible and by January 17, 2017 deadline.

With respect to its baghouse argument, S.H. Bell misunderstands the purpose of the PM monitoring requirement in the City's regulations. While there are connections between the Fugitive Dust Plan required by Section 3.0(3) and the PM monitoring requirements in Section 3.0(4), the latter is a freestanding requirement that exists to help ensure protection of the public at all times and under all operating conditions. It is not simply a measure for gauging the effectiveness of controls once fully implemented. Indeed, the PM monitoring requirements became effective 90 days after the rules' adoption, before deadlines for other requirements of the rules (covered conveyors, paving, and pile enclosures).[51] This timing reflects the independence of the PM monitoring requirement. In addition, the PM monitoring is a necessary component of the Fugitive Dust Plan itself, given that a fugitive dust plan must include a contingency plan for when monitored PM levels exceed a Reportable Action Level.[52]

Even if the PM monitoring requirement were aimed only at gauging the effectiveness of a fully implemented Fugitive Dust Plan, waiting for installation of the baghouses would not be warranted. As explained above, failing to implement PM monitors earlier on has deprived the public and agencies (and S.H. Bell) of baseline data needed to assess the degree to which the implemented measures have in fact reduced the impacts of dust from the facility on air quality.

For these reasons, CDPH should reject the current variance request. The lack of PM monitoring at the site for this extended period places the community at further risk, as supported by the data that exists from nearby KCBX sites, along with the track record at Avenue O and East Liverpool discussed above.

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[50] Attachment to December 7 supplement, at par. 1(A).
[51] Section 6.0(2)-(5).
[52] Sections 3.0(3)(g) and 2.0(20).

High Levels of Manganese Monitored at Nearby KCBX Sites

Monitoring data from the nearby KCBX sites reinforces that S.H. Bell's manganese handling poses a health hazard to the neighboring Chicago community, as recognized by CDPH in its October 2016 determination.

In February 2014, KCBX began PM monitoring at its two handling facilities near the S.H. Bell Avenue O facility. The monitoring included two monitors with filter capabilities for assessing metals. These two monitors, the "NE" (for Northeast) monitors at each KCBX site, operated until January 2016 (North Terminal) and March 2016 (South Terminal). Based on our estimates, the two filter monitors are located approximately 2,800 and 4,200 feet (0.54 and 0.79 miles, respectively) from the eastern boundary of S.H. Bell's Avenue O site and homes immediately across the street.[53] In comparison, the air monitor closest to S.H. Bell's Stateline facility, which had the highest reported manganese levels of the evaluated East Liverpool monitors, is located about 250 feet from the Stateline property.[54]

In August 2016, ATSDR released a health consultation on the KCBX sites using monitoring data collected at the sites between February 2014 and January 2015.[55] ATSDR's analysis of the monitoring data shows elevated health risks driven by manganese in the air.[56] In addition, based on the agency's analysis of wind direction and other factors, it concludes that "there may be a source with high manganese concentrations to the southeast of the North Terminal and northeast of the South Terminal," i.e., in the direction of S.H. Bell.[57]

The ATSDR consultation reports that the KCBX North Terminal monitor exhibited an average manganese concentration of 0.1281 μg/m3.[58] This level is well above U.S. EPA's reference concentration (RfC) of 0.05 μg/m3, and a significant portion of ATSDR's minimal risk level (MRL) of 0.30 μg/m3. Even the more-distant South Terminal monitor likewise exhibited an average manganese concentration above the EPA's reference concentration, at 0.0865 μg/m3.

Given the distance from the Avenue O Bell facility to this monitor, and the degree to which fugitive dust from sites like Bell tends to have the most impact on air quality near the source, there is good reason to believe that levels of manganese in the neighborhood across the street from Bell well exceed both the RfC and the MRL.

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[53] *See* Ex. 20, "Chicago, IL." Google Maps. December 22, 2016.
[54] *See* ATSDR East Liverpool 2010, at 3.
[55] *See* ATSDR KCBX at Ex. 2.
[56] *Id.* at 21.
[57] *Id.* at 23.
[58] *Id.* at 34.

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Conclusion

In sum, S.H. Bell has failed to meet the standard for an additional variance from the PM monitoring requirements, and CDPH should reject the present request. From the perspective of the company's overall efforts to avoid regulatory requirements and obscure the impact of its facility on the Southeast Side community, PM monitors are more than two years overdue. The company has failed to make a convincing case that it does not cause offsite fugitive dust and/or adversely impact the surrounding area and environment.[59] It has deprived the public and agencies of monitoring data that would have characterized the impacts to air quality from its poorly controlled operations prior to its recent efforts to employ additional controls. This deprivation means that the public and agencies could not gauge at the outset whether S.H. Bell's additional investments in controls were in the public's interest, as opposed to some other response. It also continues to limit the public's and agencies' abilities to gauge the overall effectiveness of S.H. Bell's control activities by taking away baseline data. Finally, as highlighted by CDPH in its prior variance denial, the "Bulk Material Regulations require monitors to confirm compliance with the regulations." The company should not be rewarded for its delay and obstruction by being given additional time to install the monitors that it should have installed as part of a first line of action over two years ago.

Denying S.H. Bell's variance requests is not enough. In light of the very serious risk to the health and welfare of this environmental justice community, and S.H. Bell's historical failure to control or even monitor the manganese dust at its facilities, the City of Chicago should use its authority to enact a zoning ordinance prohibiting operations involving manganese dust from locating in close proximity to densely populated residential areas. An ordinance preventing manganese storage and use in this case fits squarely within the City's home rule, police powers. The benefit to the public far outweighs any burden to S.H. Bell in altering its operations. The reduction in risks to health and well-being – such as diminished neuromotor function, cognitive function and behavior, and lost earning potential – will be substantial. The financial

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[59] While we believe the company's failure to make these variance demonstrations is determinative, we also note that S.H. Bell's showing with respect to undue hardship falls short. The costs of monitoring to Bell should be viewed in the context of the company's original obligations (both with respect to the City and U.S. EPA) to install the PM monitors, and not gauged from the date it finally agreed to comply with city and federal requirements. Nor does S.H. Bell discuss whether it has any means for obtaining used/rented monitors at a lower cost than in the provided quote (which itself is now over two years old). We also note that the company made a blanket assertion in its 2014 variance request that complying with the regulations would lead to the "likely shutdown" of the Avenue O facility, with an unsupported claim that such shutdown would result in the loss of 33 jobs and about $6 million towards the local economy. June 2014 Variance Request at 2. First off, these dire predictions have not come to pass (noting that the City did grant S.H. Bell the requested setback variance). Second, in its 2014 variance request, the company discussed its younger Lake Calumet warehouse terminal along with Avenue O in terms of the company's job and economic impact on the city, obscuring the actual figures attributable to Avenue O. For all of these reasons, CDPH should not give credence to the company's claims of undue hardship.

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burden on S.H. Bell is mitigated by its ability to use the existing facility for handling other, safer materials and in accordance with the City's dust regulations. Alternatively, if S.H. Bell determined that it no longer wanted to operate its Avenue O facility for the purpose of handling safer materials, the City could attract investments by other businesses that are more appropriately placed next to this densely populated community: the City could use this opportunity to create a greener and more sustainable economy in this environmental justice community.

For these reasons, we call upon the City to deny the present variance request and immediately move to protect the Southeast Side and other communities like it by banning the handling of manganese dust-generating products near residential communities.

Respectfully submitted,

Meleah Geertsma
Attorney, Midwest Program
Natural Resources Defense Council
mgeertsma@nrdc.org
312-663-9900

/s/ Keith Harley

Keith Harley
Attorney for the Southeast Environmental Task Force
Chicago Legal Clinic, Inc.
kharley@kentlaw.iit.edu
312-726-2938

Debbie Chizewer
Attorney for the Southeast Side Coalition to Ban Petcoke
Environmental Advocacy Clinic, Bluhm Legal Clinic
Debbie.M.Chizewer@law.northwestern.edu
312-503-4253

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Attachment A:

Additional Health Articles on Manganese

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Haynes, Erin N., et al. (2015). "Manganese Exposure and Neurocognitive Outcomes in Rural School-Age Children: The Communities Actively Researching Exposure Study (Ohio, USA)." *Environmental Health Perspectives*, 22 Apr. 2015.

Haynes, Erin N., et al. "Environmental Manganese Exposure Residents Living Near a Ferromanganese Refinery in Southeast Ohio: a Pilot Study." *Neurotoxicology*, Sept. 2010, 31(5): 468–474.

Henn, Birgit Claus, et al. (2010). "Early Postnatal Blood Manganese Levels and Children's Neurodevelopment." *Epidemiology*, July 2010. 21(4): 433–439.

Hernandez-Bonilla, D., et al. (2011). "Environmental exposure to manganese and motor function of children in Mexico." *Neurotoxicology*, Oct. 2011, 32 (5): 615–621.

Long, Ziayang, et al. (2014). "Vulnerability of welders to manganese exposure – A neuroimaging study." *Neurotoxicology*, 2014, 45: 285–292.

Lucchini, Roberto G., et al. (2012). "Tremor, Olfactory and Motor Changes in Italian Adolescents Exposed to Historical Ferromanganese Emission." *Neurotoxicology*, Aug. 2012, 33(4): 687–696.

Martin, Christopher J. (2006). "Manganese neurotoxicity: Connecting the dots along the continuum of dysfunction." *Neurotoxicology*, 2006, 27: 347–349.

Menezes-Filho, Jose A., et al. (2011). "Elevated manganese and cognitive performance in school-aged children and their mothers." *Environmental Research*, Jan. 2011, 111(1): 156–163.

Meyer-Baron, Monica, et al. (2013). "The neurobehavioral impact of manganese: Results and challenges obtained by a meta-analysis of individual participant data." *Neurotoxicology*, May 2013, 36: 1–9.

Roels, H.A., et al. (2012). "Manganese exposure and cognitive deficits: A growing concern for manganese neurotoxicity." *Neurotoxicology*, Aug. 2012, 33(4): 872-80.

Standridge, J. S., et al. (2008). "Effect of chronic low level manganese exposure on postural balance: A pilot study of residents in southwest Ohio." *J. Occup. Environ. Med.*, Dec. 2008, 50(12): 1421–1429.

Torres-Augustin, R., et al. (2013). "Effect of environmental manganese exposure on verbal learning and memory in Mexican children." *Environmental Research*, Feb. 2013, 121: 39–44.

Zoni, Silvia, and Roberto G. Lucchini. (2013). "Manganese exposure: cognitive, motor and behavioral effects on children: a review of recent findings." *Curr. Opin. Pediatr.*, Apr. 2013, 25(2): 255–60.

Zota, Ami R., et al. (2009) "Maternal Blood Manganese Levels and Infant Birth Weight." *Epidemiology*, May 2009, 20(3): 367–373.

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