

**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

I. Purpose

The purpose of this document (the “Responsiveness Document”) is to respond to the issues and questions raised by commenters on the Proposed Rules and Regulations for the Handling and Storage of Bulk Material Piles, issued by the Chicago Department of Public Health (“CDPH”) on December 19, 2013. This document also explains how the Proposed Rules were modified in the Final Rules and Regulations. The Final Rules and Regulations (the “Final Rules” or “Revised Rules”) are attached to this Responsiveness Document and can also be found at www.cityofchicago.org/EnvironmentalRules.

II. Background

On December 19, 2013, CDPH published a notice and solicitation of written comments with respect to its proposed regulations for the handling and storage of bulk material piles (the “Proposed Rules,”) pursuant to Sections 2-112-160(b), 11-4-760(e), 11-4-770, and 11-4-800 of the Municipal Code of Chicago (“MCC”). The purpose of the Proposed Rules was to prescribe reasonable, specific operating and maintenance practices to minimize emissions of airborne particulate matter from the storage, blending, handling, and processing of Bulk Solid Materials as defined in the Rules, including but not limited to ores, coal, and coke, including petroleum coke (“petcoke”) and metallurgical coke (“metcoke”).

The public comment period on the Proposed Rules was originally scheduled to close on January 24, 2014 but was extended to February 7, 2014. CDPH received more than sixty submissions of written comments. In addition to written comments, CDPH received verbal comments at a special public community hearing held on January 14, 2014, and at various stakeholder meetings held during the public comment period pursuant to the Guidelines for Stakeholder Communications. A complete compendium of all written comments, as well as the Guidelines for Stakeholder Communications, a log and summary of such communications and a transcript from the special public hearing, is available on CDPH’s website at www.cityofchicago.org/EnvironmentalRules.

III. Summary of Comments Followed by the City’s Response

This document summarizes the substantive comments received by the City and includes CDPH’s response to each summarized comment. In cases where multiple comments addressed the same issue, this document summarizes and responds to a comment that is representative of that issue. Commenters included advocacy groups, trade associations, business owners, and individuals.

Some commenters wrote in general support of the Proposed Rules or portions of them. This document does not address the favorable comments, because they do not raise issues that led to any revisions of the regulations. Nor does the document address comments that were not related to the Proposed Rules. Generally, CDPH's response to comments notes how such comments were considered in developing the Final Rules and Regulations. The Final Rules and Regulations are attached to this Responsiveness Document and can also be found at www.cityofchicago.org/EnvironmentalRules.

For purposes of clarity and organization, the comments and responses below are presented in the order in which the subject appeared in the Proposed Rules and Regulations. Section numbers refer to the numbering as they appeared in the Proposed Rules, unless otherwise noted.

A. Scope and Purpose (Section 1.0)

Several commenters, particularly residents and community representatives, stated that the Proposed Rules do not go far enough. They called for an outright ban or moratorium on the storage of petcoke in and near residential neighborhoods. In addition, the environmental and public health advocacy non-governmental organizations (hereafter collectively referred to as the "Health and Environmental NGOs") raised the broader issue of land use. Noting that the Proposed Rules do not address land use considerations, they urged the City to exercise zoning authority to address bulk storage operations.

Many commenters from the business community stated that the scope of the Proposed Rules and, relatedly, the definition *Bulk Solid Material* was overly broad. Many of these commenters noted that recent press coverage had focused on the issue of petcoke and, therefore, non-petcoke materials should not be subject to the same restrictions as petcoke. They stated that they already have air pollution controls and practices in place, and, therefore, the Proposed Rules are not necessary. They further stated that the inclusion of ores and other non-petcoke materials will cause a severe economic hardship without any public health benefit.

On the other hand, some trade associations argued that the City should not target petcoke. They stated that petcoke is a non-toxic, non-hazardous commodity that is already subject to numerous state and federal regulations at all stages of its life-cycle. Further, they stated that the Proposed Rules are not only unnecessary, but also discriminatory against carbon-based products and potentially detrimental to the many end-users who rely on these products.

In addition, some commenters stated that the definition of *Bulk Solid Materials* was vague and that it was not clear what types of materials were covered under the definition, nor was it clear how the regulations affected non-petcoke materials, such as grain, salt or gravel, or why certain products were treated differently under the Proposed Rules while other products were included. Representatives of salt companies (and others, such as Kindra Marine Towing) noted that salt is not an airborne particulate, that road salt is too large to create airborne dust concerns, and that the proposed dust suppression system in the Proposed Rules is inappropriate for salt. Representatives of concrete and aggregate companies asked for clarification regarding the exemption for construction and demolition materials.

Finally, in the list of activities that the Proposed Rules cover, KCBX proposed to strike the word “transport,” stating that “transportation” does not occur inside the boundaries of a Facility, but rather occurs to and from a Facility.

City Response:

As some commenters noted, land use decisions fall within the scope of the City’s zoning authority and, therefore, are beyond the jurisdiction of the Health Commissioner. Thus, these regulations are not the appropriate vehicle for a ban, moratorium, or other restriction on property uses. However, as explained below, the Health Commissioner does have the authority to prescribe reasonable regulations on any activity that has the potential to cause windborne dust.

Commenters were correct that the original impetus for the creation of the Proposed Rules was the increase in citizen complaints about petcoke dust invading their homes and properties, as well as the knowledge that petcoke production would be greatly increasing at Indiana’s BP Whiting Refinery, located just across the state line from Chicago. In evaluating the City’s options to address this issue, it became clear that there existed a lack of specific regulations around the handling of petcoke and other bulk materials in Chicago. Construction site stockpiles are subject to numerous limitations and requirements to prevent dust and other nuisances; and recycling facilities, concrete reprocessing facilities, and waste handling facilities are subject to specific ordinances¹ and detailed permit conditions to ensure that they operate in an environmentally-protective manner that prevents public nuisances. However, when it comes to coke, coal, and other bulk solid materials, no local rules are in place. Currently, there are no limits on the size of piles. There are no specific requirements to tarp vehicles, to run water sprinklers, to monitor for dust, to clean roadways, to keep records on dust control activities, or to implement any of the other measures required in the Final Rules.

The MCC provides authority for the creation of such regulations. Among other ordinances, section 11-4-770 of the Code provides that:

For the purpose of minimizing air pollution, the Commissioner may prescribe, by rules and regulation, reasonable, specific operating and maintenance practices for buildings, structures, premises, open areas, automobiles and/or truck parking and sales lots, private roadways, rights-of-way, storage piles of materials, yards, vessels, vehicles, construction, sandblasting, alteration, building, demolition or wrecking operations and any other enterprise which has or involves 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.

Thus, the City’s intent was, and is, to prescribe such rules for the protection of public health and the environment. Furthermore, the purpose of the Proposed, and Final, Rules is to regulate existing businesses that are lawfully operating under current Chicago land use laws.

¹ See, for example, MCC Article IX, “Solid and Liquid Waste Control;” Article XIV, “Reprocessable Construction/Demolition Material;” Article XX, “Recycling Facility Permits;” and, for each article, the Rules and Regulations promulgated pursuant thereto.

The purpose of the regulations is not, however, to put law-abiding companies out of business. The City understands that different types of materials and different material handling operations may call for different dust-control measures. Therefore, while still requiring strong protections and accountability on the part of all bulk storage material facility owners and operators, the Revised Rules build in more flexibility for businesses to implement measures that make sense for their operations.

During the rulemaking process, the City commissioned the environmental consulting company CDM Smith to conduct a fugitive dust study (hereafter the CDM Study)². The purpose of the CDM Study was to evaluate the potential mechanisms of dust generation associated with bulk material piles and inform the City concerning the importance of activities that, if unmitigated, could produce excessive dust and adversely affect ambient air quality. Using procedures developed by the U.S. Environmental Protection Agency (EPA), the consultants estimated potential dust emissions from common material handling and storage activities for four different material types, including petcoke. Specifically, the CDM Study shows the potential emissions from the storage of materials outdoors (i.e. surface wind erosion from stockpiles); bulldozing and grading activities (i.e. shaping and forming stockpiles); material “dropping” operations (e.g., from truck dumping, front-end loader use, and conveyors); equipment travel upon the surface of a stockpile; and vehicle travel on paved roads. The predicted emissions were then used in conjunction with air dispersion modeling to estimate potential levels of dust in ambient air that can result from operation of a bulk solid material storage and processing facility, particularly when the dust is uncontrolled.

It was the conclusion of the CDM Study that, due to the potential emissions from the above-described activities, “substantial mitigation efforts may be required on the part of operators of bulk material processing and storage facilities to ensure that fugitive dust emissions do not lead to localized exceedances of ambient air quality standards.” CDM further concluded that the level of dust emissions from many of these activities depend upon bulk material characteristics such as grain size (primarily silt content), moisture content, and bulk density. Due to its high silt content, petcoke was found to have much higher overall emissions than other bulk materials and, therefore, greater air quality impacts from outdoor storage.

Because of the substantially greater capacity of petcoke to become windborne, the Final Rules require full enclosure of petcoke storage piles. For the reasons explained below, the Final Rules also require coal to be fully enclosed.

The emission rates of coal, though not insignificant, were lower than for petcoke. However, coal presents a number of other concerns. Coal dust, like petcoke, contains particulate matter. Particulate matter, especially fine particulate matter, or PM_{2.5}, can cause short-term health impacts such as coughing, wheezing or shortness of breath, as well as long-term health impacts,

² A copy of the CDM Study, entitled *City of Chicago Fugitive Dust Study*, March 2014, is available on the City’s website at www.cityofchicago.org/EnvironmentalRules.

such as cardiovascular effects and respiratory effects, including the development of asthma or exacerbation of existing asthma.³

Coal dust also contains toxic heavy metals such as arsenic and lead,⁴ whose effects are listed below:

Arsenic

- Longer exposure at lower concentrations can lead to skin effects, and also to circulatory and peripheral nervous disorders. An important concern is the ability of inhaled inorganic arsenic to increase the risk of lung cancer. This has been seen mostly in workers exposed to arsenic at smelters, mines, and chemical factories, but also in residents living near smelters and arsenical chemical factories. People who live near waste sites with arsenic may have an increased risk of lung cancer as well.⁵

Lead

- Exposure is of particular concern in young children.
- Children are susceptible to the impact of lead exposure on neurodevelopment including decreases in IQ and deficits in learning and memory capabilities.
- Children are more likely to exhibit behaviors that would increase exposure to lead such as eating contaminated dirt or engaging in more frequent hand to mouth contact.
- Children spend more time outdoors, on average, and thus are at greater risk to possible contaminants in air, water, and soil.⁶

In addition, coal dust is well documented by the National Institute for Occupational Safety and Health Centers for Disease Control and Prevention (NIOSH) as a hazard to workers in the mining industry due to the small size of the dust and its effects on lung function (causing asthma, bronchitis, and other respiratory diseases) and increased heart disease.⁷

Thus, there is concern that neighborhoods exposed regularly to small amounts of fugitive coal dust over long periods of time may be at risk for health effects due to chronic exposure to heavy metals and other contaminants found in coal dust.⁸

³ <http://www.epa.gov/pm/2012/decfshealth.pdf>; Lepeule, J. et al. (2012). Chronic Exposure to Fine Particles and Mortality: An Extended Follow-up of the Harvard Six Cities Study from 1974 to 2009. *Environmental Health Perspectives*. 120; 7, available at <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3404667/pdf/ehp.1104660.pdf>.

⁴ See, e.g., USEPA's website, <http://www.epa.gov/cleanenergy/energy-and-you/affect/coal.html>, which states that "if rain falls on coal stored in piles outside the power plant, the water that runs off these piles can flush heavy metals from the coal, such as arsenic and lead, into nearby bodies of water."

⁵ U.S. Department of Health and Human Services, Agency for Toxic Substances and Disease Registry ("ATSDR"), Toxicological Profile for Arsenic, August 2007, available at <http://www.atsdr.cdc.gov/toxprofiles/tp2.pdf>.

⁶ U.S. Department of Health and Human Services, ATSDR, Division of Toxicology and Environmental Medicine ToxFAQs, August 2007, available at <http://www.atsdr.cdc.gov/tfacts13.pdf>.

⁷ <http://www.cdc.gov/niosh/mining/topics/RespirableDust.html>.

⁸ See Mobility of heavy metals associated with the natural weathering of coal mine spoils, 118, 3, August 2002, Pg 419–426, available at <http://www.sciencedirect.com/science/article/pii/S026974910100285>; U.S. Environmental Protection Agency. Source Assessment: Coal Storage Piles. May 1978, available at <http://nepis.epa.gov/Exe/ZyNET.exe/91017VHI.txt?ZyActionD=ZyDocument&Client=EPA&Index=1976%20Thru%201980&Docs=&Query=&Time=&EndTime=&SearchMethod=1&TocRestrict=n&Toc=&TocEntry=&QField=&QFieldYear=&QFieldMonth=&QFieldDay=&UseQField=&IntQFieldOp=0&ExtQFieldOp=0&XmlQuery=&File=D%3A\ZYFILES\INDEX%20DATA\76THRU80\TXT\00000025\91017VHI.txt&User=ANONYMOUS&Password=anonymous&SortMethod=hl->

In addition to the above-described concerns about the toxicity of substances found in coal dust, there are practical reasons for requiring the enclosure of coal piles. As dusty, black, carbon-based materials, coal and coke have the same physical appearance. Thus, they are virtually indistinguishable when stored on bulk material sites and when they become windborne and settle on people's homes. The nuisance is the same, whether it is coke or coal. In addition, coke and coal are often handled and stored at the same facilities, and are often mixed together to be used as fuel blend.

In summary, as a result of the CDM Study, which found that petcoke produces greater fugitive dust emissions than other materials, and taking into account the well-documented risks from exposure to coal dust as well as coal's similarity to petcoke, the Revised Rules create a new subcategory of Bulk Material Facility known as "Coke or Coal Bulk Material Facility." As discussed in greater detail below, Coke or Coal Bulk Material Facilities are required to fully enclose their materials. Other materials will be subject to dust-minimizing operating and maintenance practices.

B. Definitions (Section 2.0)

1. *Accumulation*. Some commenters noted that the proposed definition of "Accumulation" (three ounces in one square foot), and the associated requirement in Section 3.0(12) to maintain facilities "free of any Accumulation" in unapproved areas, is not practical. Some businesses stated that the proposed standard is a very small amount of material, which is not a practical standard for heavier materials. For example, a single pig iron casting is approximately 3" to 9" wide and weighs approximately 280 pounds per cubic foot. Therefore, a facility could find themselves in violation if they were to drop a single ingot of metal or single piece of pig iron and not immediately pick it up. Some companies also pointed out that their products have value and that, therefore, they have an incentive to reduce spillage and clean up accumulated spills in a timely manner.

City Response: The origin of the definition of *Accumulation* was the South Coast Air Quality Management District ("South Coast AQMD") Rule 1158, which applies to the storage, handling, and shipment of petroleum coke, coal and sulfur in much of the Los Angeles metro area (hereafter "Rule 1158"). (The City found Rule 1158 to be the most comprehensive and detailed existing local regulation of bulk materials handling in the nation and, therefore, used Rule 1158 as the starting point for the Proposed Rules.) CDPH's purpose in defining and restricting *Accumulations*, using Rule 1158 as a model, was to ensure good housekeeping and timely clean-up of spills—which, in turn, is important to help prevent fugitive dust and track-out of dust and debris. However, the City has determined that the same purpose can be achieved without specifying the weight of material that must be cleaned up (a standard that, in any event, would be difficult to enforce). Therefore, the definition of *Accumulation* was deleted, and the term was replaced in the Final Regulations with the term *Spilled Material*. The term *Spilled Material* was not defined in the Final

Regulation; therefore, the common sense meaning applies. The requirements for addressing spilled material are discussed in Section R below.

2. *Blend or Mix*. The terms *Blend* and *Mix*, which are used in the definition of *Process or Processing* were not defined in the Proposed Rules. Therefore, for clarity, one commenter, KCBX Terminals Co. (hereinafter “KCBX”), suggested that a definition be added.

City Response: A definition was added for the terms *Blend or Mix*.

3. *Bulk Solid Material*. As mentioned above, many business commenters stated that the definition of *Bulk Solid Material* was overly inclusive and vague. In addition, some commenters noted that the wording of the definition would include even small quantities of materials stored at garden centers. American Waterways Operators and others stated that the definition of “bulk solid material” could be interpreted to include a wide range of commodities such as grain, sand, salt, or mulch. Several commenters also stated that the City should define the “construction materials” exemption to clarify the specific materials that would be exempted from the regulation. Finally, some commenters, including Gulf Sulphur Services Ltd, LLP (GSS), stated that additional items should be specifically excluded from the definition. In GSS’s case, they commented that the material they handle, known as “sulphur prill,” generates very little fugitive dust.

City Response: In order to add clarity regarding items that are not within the scope of these regulations, salt and grains were specifically excluded and a definition was added for *Construction and Demolition Materials*. Generally speaking, road salt is not “used as a fuel or as an ingredient in a manufacturing process,” and it does not present the same airborne dust concerns as other materials. With regard to grains, this is a material that is generally stored in silos rather than outdoors. The City is not aware of any significant quantities of grain being stored outside in Chicago. Construction and Demolition Materials, waste, and recycling materials were not included because, as mentioned in Section A above, they are already subject to numerous local regulatory and permitting restrictions. Including them in these regulations would lead to redundancies and potential inconsistencies. (For an explanation of the materials included in the definition of *Construction and Demolition Materials* see paragraph 6 below.)

Notwithstanding the appropriate exclusions, the definition of *Bulk Solid Materials* is still broader than petcoke alone. As demonstrated in the CDM Study, and as some resident commenters asserted, petcoke is not the only material with the potential to cause windborne dust.

However, the City also added a *de minimus* threshold to the definition. Regulation of “bulk materials” is meant to apply to materials stored “in bulk,” meaning, not in a small amount. The *de minimus* amount, which applies to materials other than coke and coal, was set at 25 cubic yards. (See the discussion above regarding the separate treatment of coke and coal.) Twenty-five cubic yards is consistent with the exemption for the storage of landscape waste in the City’s composting ordinance, at Section 7-28-715(3) of the MCC. In other words, 25 cubic yards is the maximum amount of landscape waste that may be present at a garden

composting operation without requiring a recycling facility permit under the MCC. Similarly, 25 cubic yards is the amount of landscape waste, composting material or end-product specified in the State's definition of "garden compost operation" at 35 Ill. Admin. Code Part 830.

With regard to sulphur prill, the City notes that the Final Rules include a variance provision (discussed in Section X below). If GSS submits an application with documentation showing that sulphur prill generates very little fugitive dust, and if they meet the other criteria set forth in the Final Rules, then a variance may be appropriate for this material.

4. *Chemical Stabilizer*. The Health and Environmental NGOs noted that some chemical stabilizers on the market have not been assessed for safety as of yet. Therefore, they suggested that the term "non-toxic" should be deleted.

City Response: The term "non-toxic" was deleted. The definition already includes the requirement that such chemicals meet all applicable specifications required by law.

5. *Coke or Coal Bulk Material Facility*. As mentioned above, several commenters from business sectors commented that the regulations should focus on coke and coal and exclude all other bulk materials.

City Response: After considering all comments, further researching the issues, and reviewing the CDM Study, the City has determined that it is most appropriate to treat coke and coal facilities differently from other bulk material facilities. Specifically, the City has determined that Coke and Coal in Chicago must be fully enclosed regardless of the amount present at a facility. Therefore, a definition was added for the new term *Coke or Coal Bulk Material Facility*.

6. *Construction or Demolition Material*. In the Proposed Rules, the definition of *Bulk Solid Material* excluded "construction and demolition material" but did not define "construction and demolition materials." Some commenters, including the Illinois Association of Aggregate Producers and Ozinga Readi-Mix Concrete stated that it was not clear if the exemption included aggregate stockpiles at permanent or temporary at ready mix concrete or hot mix asphalt plants.

City Response: For clarity, the Final Rules include a definition of *Construction or Demolition Material* that specifically states that such materials include "stockpiles of crushed stone, sand and gravel, hot mix asphalt plants or ready mixed concrete plants."

7. *Fugitive Dust*. KCBX suggested that the definition of *Fugitive Dust* be clarified to exclude particulate matter from engine combustion exhaust.

City Response: The City's intent in defining *Fugitive Dust* was not to include combustion exhaust. As with emissions from exhaust stacks, which were specifically excluded in the definition, emissions from engine exhaust are not the subject of these regulations. Therefore, the definition was clarified.

8. *High Wind Conditions.* Many business commenters objected to the 15-mile-per-hour standard set forth in the definition of “High Wind Conditions.” Referencing the National Weather Service’s NOAA website (<http://www.glerl.noaa.gov>), they noted that the average monthly wind speed in Chicago exceeds 10 mph and that there are many days where wind speeds and/or gusts in Chicago exceed 15 mph during daytime hours. They stated that it would not be practical or efficient to cease work so often because of wind. Some commenters referenced a 25 mph standard set forth in Illinois air pollution regulations. Ozinga and others noted there was no provision for wind gusts in the Proposed Rules.

City Response: Fifteen miles per hour is the standard for high wind speeds in South Coast AQMD’s Rule 1158. It is also the standard above which work must be suspended with material piles on construction sites, in accordance with Section 11-4-760 of the MCC, unless alternate measures are implemented to effectively control dust.

Notably, the State rule regarding wind speed does not require work to be suspended or other measures to be taken when wind speed exceeds 25 miles per hour. On the contrary, the State rule allows an exemption from certain dust control measures when winds exceed 25 miles per hour. (See 35 Ill. Admin. Code Part 212.314.) In this instance, the City has determined that it is appropriate to apply a stricter standard. If dust control measures are suspended during high winds, then this is all the more reason that disturbance of bulk materials must be suspended as well.

Figure 1 below depicts wind data for Chicago measured at O’Hare and Midway Airports. This data was obtained from NOAA’s National Climatic Data Center website.⁹ The period of record, according to the source document, may begin and end anywhere between 1930 and 1996. As this data shows, the mean wind speed in Chicago ranges between 8 mph to 12 mph depending on the month. The highest average wind speed of 12 mph occurs over the winter months while the lowest wind speeds of 8 mph and 9 mph occur over the summer.

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
ILLINOIS														
Chicago	DIR	W	W	W	NE	NE	NE	SW	SW	S	S	S	W	S
O’Hare	SPD	12	12	12	12	11	9	9	8	9	10	11	11	11
	PGU	58	54	84	69	55	63	54	64	58	57	62	53	84
Chicago	DIR	W	W	W	W	SSW	SW	SW	SW	S	S	SSW	W	W
Midway AP	SPD	12	12	12	12	10	10	8	8	9	10	11	11	10
	\$PGU	50	51	54	50	54	50	46	54	48	45	60	50	60

Figure 1

More recent meteorological data for Midway Airport (Station ID 72534, base elevation 607 feet and 10 meter anemometer height), Chicago, IL, from January 1, 2008 to December 31, 2008, used in the CDM Study, depicts an hourly wind speed average of 9.7 mph. According to the CDM Study, hourly wind speeds exceed 15 mph 13% of the time.

⁹ <http://www.ncdc.noaa.gov/sites/default/files/attachments/wind1996.pdf>.

CDPH also looked at 5-minute wind data from NOAA’s Real-Time Meteorological Observation Network – Chicago, IL on Lake Michigan at the Harrison-Dever crib.¹⁰ CDPH calculated an average annual wind speed of 16.4 mph based on the 2008 dataset. However, this average likely over-predicts actual wind speeds onshore given the station’s approximate location 2.75 miles offshore from the City of Chicago.

While CDPH remains confident in the appropriateness of the 15 mph wind speed standard, CDPH also wants to minimize as much as possible the potential for frequent disruptions to operations resulting from the High Wind Conditions provision. Thus, the Final Rules no longer require cessation of material handling activities outdoors during High Wind Conditions, but instead, require facilities to implement additional controls during these conditions as described in the Fugitive Dust Plan submitted to CDPH in accordance with the Final Rules.

Finally, in order to confirm that 15 mph is an appropriate standard, CDPH analyzed the CDM Study data and found that hourly wind speeds above 15 mph generated over 35% of the calculated annual emission from drop operations, despite only accounting for only 13% of the total hours studied. See Table 1 below. This suggests that High Wind Conditions produce disproportionately more dust for the shorter duration that they occur and, therefore, merit special attention in the Fugitive Dust Plan.

Table 1

Calculated Emissions ^a from Coal ^b Drop Operations ^c				
Emission Source	PM	PM10	PM2.5	# of Hours
Drop operations (greater than 15 mph)	1.249	0.437	0.066	1158
Drop operations (all wind speeds)	3.559	1.245	0.189	8783 ^d
Ratio (>15 mph/ all wind speeds)	0.35	0.35	0.35	0.13

a) Using EPA AP 42, Section 13.2.4

b) 4.8% Moisture content

c) 2000 tons per day occurring over 5 drops (truck loading, unloading, and 3 points on conveyor system)

d) 2008 hourly wind speeds from Midway Airport. There were 73 during the calendar year that were missing wind speeds.

These were filled in using the average values of wind speeds of the previous and subsequent hours. In addition, calm

conditions of 0 wind speed were assigned .25 m/s (half the lowest measurable wind speed).

9. *Moist Material*. The term *Moist Material*, which is used in the sections covering Transfer Points and Vehicle Tarping was not defined in the Proposed Rules. Therefore, for clarity, some of the Health and Environmental NGOs and KCBX suggested that a definition be added.

City Response: A definition was added for the term *Moist Material*. KCBX noted that in their State permit their material is required to have a 3% moisture content. The City notes that different materials have different moisture contents. Therefore, the definition uses 3% as

¹⁰ See <http://www.glerl.noaa.gov/metdata/chi/archive/>.

the minimum standard, unless State law provides a different standard, in which case the applicable State standard will apply.

10. *Petroleum Coke, or Petcoke.* The NGOs suggested that the definition of petroleum coke include such residues produced by petroleum upgraders in addition to petroleum refining.

City Response: The City agrees that the intent is to include all petcoke, regardless of the production method. Therefore, the suggested new language was added to the definition.

11. *Process or Processing.* Some commenters pointed out that the definition of *Process or Processing* contained activities often not associated with “processing” as the term is typically understood, such as loading, unloading, stockpiling, and handling. They also pointed out that this definition created an inconsistency in the Proposed Rules, in that stockpiling is allowed outdoors in certain circumstances, while processing was not allowed to occur outdoors.

City Response: The City agrees with the comments and has changed the definition accordingly.

12. *Reportable Action Level.* The term *reportable action level* was used in the Proposed Rules in the context of the Fugitive Dust Monitoring requirements. The NGOs commented that, instead of allowing facilities to set the reportable action level on a case-by-case basis without any parameters for guiding the setting of the action level, the City should set numeric particulate matter (PM) levels, exceedances of which would constitute a reportable action level. The NGOs further noted that there should be an explanation as to how background levels will be determined in order to absolve facilities from any PM exceedances to which they did not contribute. KCBX also noted that the term *reportable action level* was not defined, and they suggested a definition that would tie the reportable action level to the difference between PM10 levels entering and leaving a facility. They further suggested that the facility’s Fugitive Dust Plan could specify that action is necessary only when the difference between the incoming and outgoing concentrations is greater than a certain percentage or certain number.

City Response: A definition of *Reportable Action Level* was added in the Revised Rules. Rather than establishing a fixed action level, the City determined that facilities should report and take action anytime the monitors detect fugitive dust leaving a facility that is above the level of fugitive dust in the ambient air (as detected by the facility’s upwind monitor). Although this may mean that an action level will sometimes be triggered when fugitive dust levels are low (i.e. when the background levels are so low that even a slight contribution from the facility will result in a total value that is still relatively low), the City notes that the facility’s Fugitive Dust Plan should include a range of possible response actions from “no action required” to “suspend operations.” (Notably, even when minimal response is warranted, the monitoring result and associated action will be documented in accordance with the recordkeeping requirements set forth in the Final Rules.) See Section L below for additional discussion of dust monitoring.

13. *Road*. In the Proposed Rules, the definition of *Road* was “any route with evidence of repeated prior travel by Vehicles.” And Section 3.0(10) in the Proposed Rules required all roads within the Facility to be paved. KCBX proposed to revise the definition of “road” to apply only to areas used by vehicles transporting material to or from a Facility, and not to bulk material storage areas. KCBX further requested that Section 3.0(10) be revised so that bulk material storage areas need not be paved. (See Section P below.)

City Response: For clarity, the term *Road* was changed to *Internal Road*, which means a route used for transport by a vehicle *within* the facility. In the Final Rules, Internal Roads are required to be paved. (Relatedly, there is a requirement that new facilities receive truck deliveries only from trucks that travel on paved surfaces within one-quarter mile of the facility. See the discussion on Transport in Section U below. There is also a requirement, for both new and existing facilities, that roadways outside the facility be cleaned with street sweepers. See Section Q below.)

14. *Separation Pond*. The NGOs suggested that this definition, which stated a *Separation pond* is “a container for separating coke from water by gravity...” be changed to include other materials besides coke.

City Response: The term *Separation Pond* was used only in the definition of *Accumulation* which has since been removed (see explanation above). Therefore, the definition of *Separation Pond* has been removed.

15. *Transfer Point*. KCBX proposes to strike the words “transport” and “transported” from the definition of “transfer point” to clarify that transportation does not occur inside the boundaries of a facility.

City Response: The intent of the definition and requirements for transfer points was to prescribe best management practices at points where material is transferred within a Facility. Therefore, and because the term *transport* was removed from the stated scope of the regulations, the term was removed here.

16. *Vehicle*. In the Proposed Rules, the term *Vehicle* included “off-road mobile heavy equipment” as well as vehicles used for transportation. KCBX proposed removing “off-road mobile heavy equipment” from the definition to clarify that a “road” (upon which “vehicles travel) does not include an area on a storage pad or other areas inside a Facility where off-road mobile heavy equipment operates. Thus, the requirement to pave vehicle-movement areas would then apply to roads only.

City Response: As discussed in Section P below, the City has clarified that internal roads must be paved, but storage areas need not be paved. Thus, for consistency, the term *Vehicle* should not include off-road equipment. In addition, the section on vehicle tarping was not meant to include off-road equipment. Therefore, the definition of *Vehicle* was modified to remove “off-road mobile heavy equipment.”

17. *Water Spray System*. The proposed definition for *Water Spray System* included a requirement that water or water-based solutions be delivered through pipes, tubes, or hoses that are fitted with one or more nozzles and operated at pressures ranging from 1 to 1500 psi. The NGOs commented that there was no clear basis for the upper limit in the range of pressures and that systems are available that operate at pressures up to 2000 psi. Horsehead Corporation commented it “has been able to prevent unacceptable fugitive PM emissions from its facility with its existing use of a fire hose water spray system.” KCBX proposed to clarify the definition of “water spray system” by using the word “system” rather than “technique” and by adding “cannons, bars, [and] misters” to the list of mechanisms by which water can be applied for dust suppression.

City Response: The source of the definition of *Water Spray System* in the Proposed Rules was South Coast AQMD’s Rule 1158, and the term was used in Section 3.0(6)(h), entitled “Dust Suppression System.” The Dust Suppression System provision (discussed in Section N below) required the Facility Owner or Operator to “apply Chemical Stabilizers and/or maintain and operate water spray bars, a misting system, Water Spray Systems and/or water trucks” to control Fugitive Dust emissions. The City’s intent was to provide a broad range of effective measures to apply water or other dust suppressants. Upon review, the City has determined that a definition for *Water Spray System* is unnecessary. As long as a facility is applying water or another solution in a manner that effectively suppresses fugitive dust, it does not matter whether they use a hose, a cannon, a mister, or another technology. Therefore, the definition was removed.

C. Fugitive Dust Prohibited (Section 3.0(2))

Some businesses stated that the proposed 10% opacity standard was unreasonable and inconsistent with the State standard of 30%. KCBX suggested that the language be revised to match the most stringent State of Illinois opacity limit on particulate matter from bulk material storage piles found at 35 Ill. Admin. Code. 212.316(d), which prohibits fugitive dust that “exceeds 10% opacity” for storage piles in certain areas of the state and does not include the three-minute requirement. KinderMorgan stated that the City “has no rational basis to control opacity within the property boundaries. Fugitive emissions that are contained within the property boundaries do not affect the environment, so long as the emissions do not cross the property line.”

The NGOs stated that the standard should be more rigorous, considering that there are a number of fugitive dust sources in close proximity to neighborhoods. The NGOs suggested a 5% standard, consistent with the standard for barge loading in Granite City, Illinois. The NGOs further stated that the Rules should include monitoring, testing, and reporting protocols for determining compliance with the visual emissions restrictions, which testing should occur at least quarterly. In addition, some commenters noted that the method of measuring opacity should be specified.

City Response. The original opacity standard was modeled after Rule 1158 which provides that “The facility operator shall not cause, or allow the discharge into the atmosphere of, fugitive dust

for a period or periods aggregating more than three minutes in any one hour which is equal to or greater than 10% opacity (equivalent to 10% opacity under EPA Method 9 or one half of No. 1 on the Ringelmann Chart, as published by the United States Bureau of Mines).” In crafting the original standard, the City also took into consideration the 10% standard set forth in 35 Ill. Admin. Code 212.316.

In the Revised Rules, the City has determined that it is appropriate to maintain consistency with State rules. Accordingly, the 10% standard was maintained, with the language revised to more closely match the State rule, and a reference to the appropriate State rule was inserted. However, language was also inserted to account for instances when a different State standard may be applicable (whether that different State standard is 5% or something higher). In response to the comment that the City has no basis to place restrictions on opacity within the facility’s property boundaries, the City notes that, unless there is a roof above the facility’s property, emissions may still escape into the atmosphere. This is the reason that the State and other jurisdictions establish opacity limits even within the property lines of private facilities.

With regard to a monitoring plan for fugitive dust, the Revised Rules include a requirement that the facility owner or operator perform tests of visual dust and opacity measurements in accordance with a protocol set forth in the approved Fugitive Dust Plan. Accordingly, the Fugitive Dust Plan provisions now require a plan for this purpose, including the requirement that such testing be conducted on a quarterly basis during a range of weather conditions, and by a trained professional. (See Section 3.0(3)(e)(ii) in the Revised Rules.)

D. Fugitive Dust Plan (Section 3.0(3))

The NGOs commented that, as a critical component of the Proposed Rules, the Fugitive Dust Plan should have a clear standard by which to judge its sufficiency. Further, citing Rule 1158, the NGOs stated that the Commissioner should be required to disapprove the plan unless the standard is met. The NGOs suggested that the standard for approval include, at a minimum, compliance with applicable laws and a determination that the facility will not create a nuisance or any adverse impacts. The NGOs also requested that the public be afforded an opportunity to comment on submitted Fugitive Dust Plans.

Additional comments regarding the Fugitive Dust Plan (from the NGOs and from the Cook County Department of Environmental Conservation (DEC)) included a suggestion that the timing of the submission be clarified, that there be a requirement that facility staff be trained, that the required map include the location of all control devices and monitoring stations, and that the plan expire at the end of one year.

Some commenters also proposed changes to the requirements for a dust monitoring plan. These comments will be included in Section L below, regarding Fugitive Dust Monitoring.

City Response: In the Final Rules, Section 3.0(3) was modified to incorporate some of the commenters’ suggestions, including the requirement that appropriate facility staff have been trained on the proper operation of all control measures, devices, and technologies. The Final Rules also require that the Dust Plan include a factsheet or executive summary designed to

inform the public of the Facility's plan to control and minimize fugitive dust. The Department will post the summary, together with the approved Fugitive Dust Plan, on the City's website so that any member of the public can view the plan and learn about the action steps the facility will be taking to prevent dust emissions.

In addition, some components of the Fugitive Dust Plan were removed, because the associated provisions were removed in the Final Rules. Specifically, the references to a limit on capacity, a statement on the maximum quantity of materials received in any five-day period, and a wind barrier were removed from the Dust Plan requirements. (See Sections F and J below.)

E. Enclosure Requirements (Section 3.0(4))

The Proposed Rules set forth certain requirements for the required bulk solid materials storage building, including, among other things, the requirements that 1) the building be equipped with an air pollution control system; 2) the building be situated on an impermeable base or pad; and 3) entrances and exits be equipped with overlapping flaps, sliding doors, or other devices.

Some residents commented that they do not believe that enclosure will be sufficient to protect the residents of the Southeast side.

With respect to the requirement to install an air pollution control system, the NGOs commented that the sufficiency of the air pollution control system should be tied to an objective standard, such as a control efficiency for the bagfilter or baghouse that would control emissions (99.95% or similar reduction) or an outlet concentration standard in terms of micrograms per cubic meter or grains per dry standard cubic foot (e.g., 0.005 grains per cubic foot or lower) that can be met by technologies such as negative air pressure systems that pull air into the building. KCBX commented that air pollution control equipment would be prohibitively expensive, in light of the vacuum that would have to be created inside an enclosure, particularly for the size of the building in question. They stated that water application inside the enclosure would be just as effective to control potential dust emissions and also could be used to moisten material prior to transfer. Therefore, KCBX proposed to revise this requirement to allow water application in addition to "air pollution control equipment" in order to "control fugitive dust emissions at designed vents and at any other openings."

With respect to the requirement that the building be situated on an impermeable base, BP Products North America (BP) commented that this requirement would simply add additional costs without adding any protections against a demonstrated health concern. KCBX noted that, since the enclosure would eliminate any potential air emissions, the reason for requiring an impermeable base or pad must be related to groundwater in order to be justified. They further commented that it is unreasonable to require an impermeable base or pad where a facility is located on fill material and has Class 2 groundwater. They stated that constituent chemicals in coal and pet coke do not pose a risk to groundwater quality, but that, even if they did, the City of Chicago prohibits the use of groundwater within City limits for potable purposes. (MCC Section 11-8-390.) Thus, according to KCBX, no one in the City of Chicago will come in contact with any groundwater underlying a bulk material handling facility in the City.

With respect to the requirement that doors have overlapping flaps, sliding doors or other devices, the NGOs stated that the term “other device(s)” is unenforceably vague. They suggested that the term be defined to state that the performance for dust control at the openings must be shown to be equivalent to or better than that of the overlapping flaps or sliding doors used in conjunction with the required air pollution controls, as determined by the Commissioner.

The NGOs further commented that the requirement for a “fully enclosed structure” does not include a definition. They pointed out that Rule 1158 defines “enclosed storage” as follows: “any completely roofed and walled structure or building... surrounding an entire coke, coal or sulfur pile.”

City Response: As explained above, the enclosure requirement now applies only to Coke or Coal Bulk Material Facilities. Therefore, this section is now in Part C of the Final Rules. In response to the concern that enclosure will not be sufficiently protective, the City asked CDM to review the effectiveness of the Rule 1158 enclosure requirements in California. Based on two studies that measured air emissions surrounding Southern California’s petcoke storage facilities, it was concluded that Rule 1158 was successful in reducing the environmental impacts of coke processing facilities. Specifically, the studies showed a decrease in petcoke emissions following the 1999 amendments to Rule 1158, which required various measures including enclosure of all petcoke piles. (A copy of CDM’s memorandum on this topic is available upon request.)

After considering the above-described comments regarding the technical details of enclosure, the City added additional language to the requirements for full enclosure. As suggested by the NGOs, the City adopted the Rule 1158 requirement that enclosures be completely roofed and walled structures or buildings that entirely surround the enclosed materials. The City also specified 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. However, the City also determined that requiring an impermeable base, such as concrete, inside the building need not be a requirement of the regulations, as it would not provide protection from fugitive dust. In addition, in order to allow businesses flexibility in selecting the best interior dust control method, an option to use watering systems was added in this section. With the continuous dust monitoring, the opacity limits, and other requirements in the Final Rules, there are a number of checks to ensure that facilities use a method that works.

F. Outdoor Bulk Solid Material Storage / Capacity Limits (Section 3.0(5))

Under the Proposed Rules, the largest and busiest existing facilities, and any new facility, would have been required to maintain bulk solid materials in fully enclosed structures, while smaller, less busy existing facilities would be allowed to store bulk materials outdoors subject to the best management practices set forth in the Proposed Rules. In order to differentiate between larger, busier facilities and smaller, less busy facilities, the Proposed Rules established thresholds, or triggers, for enclosure based on three measures: the quantity of materials received over a rolling five-day period (which was similar to a throughput measure), the total area of outdoor storage capacity, and various setback distances between the facility and neighboring property uses.

The NGOs commented that outdoor piles at smaller facilities can still generate significant dust. They asserted that there was no correlation between the thresholds and setbacks and the risk from fugitive dust. They also argued that the proposed dust control requirements for outdoor piles would be insufficient to reduce risks from fugitive dust. Therefore, they stated that all facilities should be subject to the enclosure requirements.

Business commenters stated that the maximum storage capacity of 100,000 cubic yards stifles growth potential. They noted that, if material is properly contained, there is no reason to limit the amount. They further stated that the 10,000 tons per 5-days limit will effectively eliminate the discharging of U.S. and Canadian registered ships in Chicago, which normally carry 30,000 tons of cargo and can discharge that cargo in one day. Finally, they stated that the throughput limit would also adversely impact the unloading of unit-car trains and barges which can arrive in groups and exceed the threshold in the Proposed Rules.

City Response: Based on the CDM Study referenced above, the City determined that all petcoke and coal facilities must be fully enclosed. For these facilities, the exemption for small facilities was eliminated. Other facilities will be responsible for monitoring and controlling dust, but will not be required to construct enclosures. Therefore, the capacity-based and other thresholds were removed in the Final Rules.

G. Setbacks (Section 3.0(5)(c))

The NGOs commented that the Proposed Rules failed to fully address “the incompatibility between noxious industries like bulk material storage and handling and thriving, healthy urban communities.” They objected to the setbacks set forth in the Proposed Rules, stating that they should provide greater distances between the facilities and residential uses. The NGOs also proposed that the City exercise its zoning authority to mandate that a special use determination be required before approving any new or modified bulk storage operations.

Other commenters asked for an explanation as to how the setback distances were determined and why they are sufficient. Some community members felt that the distances were not great enough. By contrast, many business commenters stated that the setbacks were so restrictive that the businesses would be unable to continue operating at their current locations.

City Response: In order to avoid inconsistencies with existing Chicago Zoning Ordinance requirements, the Final Rules removed specific numbers and, instead, provide that bulk material storage piles shall be located in accordance with setback limits established in the Zoning Ordinance. Furthermore, the Final Rules require all coke and coal materials to be fully enclosed regardless of the distance between a facility and other uses, such as residential uses.

H. Height Limit (Section 3.0(6)(a))

The NGOs stated that the City should provide the basis for allowing a maximum pile height of 30 feet. They further stated that “It is not clear that an open pile of this height, containing pet coke or coal, can be effectively managed by a wind barrier, given the wind gusts that can occur at these heights.”

Some business representatives, including the Illinois Manufacturers' Association, stated that the 30-foot limit will cause an economic burden for operators. KCBX suggested that facilities be allowed to obtain a variance allowing piles as high as 45 feet, if they can effectively control dust at a pile height greater than 30 feet. They also proposed that the height limit apply only to "finished, dressed" piles and not piles that, during the building and shaping process, may temporarily become higher than a desired height limit as material is added to or moved on the pile. GSS commented that existing facilities with previously approved height maximums should be grandfathered to allow continued operation at the previously approved height maximum.

City Response: In determining an appropriate height limit, the City first looked at other ordinances and regulations that include stockpile height limits. For example, the City's Construction Site Stockpile Regulations¹¹ set forth a twenty-foot stockpile height limit when certain setbacks are met and a ten-foot stockpile height limit when the specified setbacks are not met. The ordinance regulating facilities that reprocess construction and demolition material¹² establishes a height limit of 30 feet, but also allows operators to apply for a variance from this limit. During the approximately two decades that this ordinance has been in effect, the City is aware of only one instance in which a facility sought a temporary variance from the 30-foot height limit.

The City also considered whether the height of a pile influences the amount of dust that might blow off of the pile through wind erosion. Using data from the CDM Study, CDPH calculated the annual particulate emissions from wind erosion of hypothetical coal piles. Figure 2 shows the percent increase in annual dust emissions from wind erosion of a coal pile of varying base lengths and angles. The data label at the end of each series in Figure 2 represents the total annual emissions in tons per year (tpy) for a 50-foot high pile (except in the case of a pile having a diameter of 200 feet and a 24-degree angle of repose, where 40 feet is the maximum possible height).

¹¹ Construction Site Cleanliness Rules and Regulations for the Maintenance of Construction Site Stockpiles and Prevention of the Off-Site Dispersion of Dust and Debris from Construction Sites, *available at* www.cityofchicago.org/environmentalrules (promulgated in accordance with MCC Section 13-32-125).

¹² MCC Section 11-4-2000(D), *available at* www.amlegal.com.

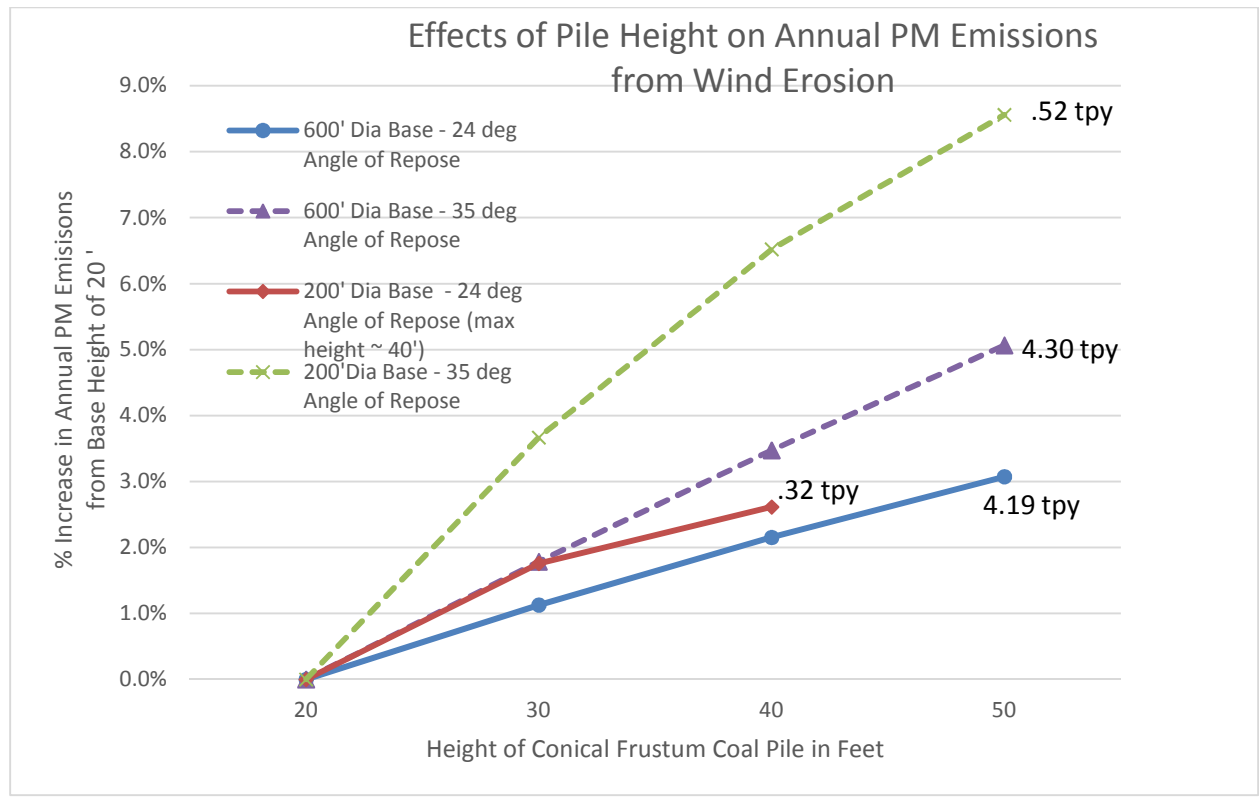


Figure 2

As shown in Figure 2, the average increase in annual emissions ranges from about 1% to 3% for every 10 foot rise in elevation. It should be noted that although smaller piles have greater percent increases, they create only a small fraction of the emissions that are generated from a larger pile. For example, the emissions from the 200' diameter pile with a 35 degree angle of repose is 12% of the emissions from a 600' pile with the same angle ($.52 \text{ tpy} / 4.3 \text{ tpy} = .12$).

In addition to emissions from wind erosion, greater wind speeds at higher elevations may also produce more emissions from drop operations and other activities that may occur on top of the pile. Using the wind profile power-law formula¹³ (a mathematical formula, used in air dispersion modeling and wind turbine design, to approximate the wind speed profile in a non-complex terrain up to 200 meters above ground level), winds at 15.24 meters (50 feet) can be 1.11 times greater than wind speeds at 10 meters (33 feet).¹⁴ Multiplying 1.11 by the hourly wind speeds in the 2008 Midway meteorological data (see Section B(8) above), shows that winds above 15 mph (High Wind Conditions) increase from 13% to 23% in frequency.

In summary, CDPH has concluded that taller pile heights lead to greater dust emissions due to increased surface areas and higher wind speeds. Therefore, the Final Rules do not increase the pile height limit from thirty feet. A 30-foot height limit has worked for high volume operations such as reprocessible construction and demolition facilities that handle and crush hundreds of

¹³ See http://www.webmet.com/met_monitoring/625.HTML.

¹⁴ This value assumes a power-law exponent of .25 associated with a neutral (Class D), urban wind profile.

thousands of tons of material each year, as supported by the absence of variance requests and limited number of nuisance complaints associated with dust over the past five years. As always, facility owners and operators will be responsible for ensuring compliance with the fugitive dust restrictions. Therefore, they will be required to manage dust when working at the top of the storage piles. For example, if there are wind gusts that distort the spray pattern of watering systems, the facility will need to compensate by applying more water pressure, adjusting the spray angle and/or spray distance, or otherwise ensuring that dust is suppressed. Further, the facility may have to temporarily cease operations as necessary during High Wind Conditions or implement alternate dust control measures in accordance with the facility's Fugitive Dust Plan.

I. Protection of Waterways (Section 3.0(6)(b)) and Runoff Management (Section 3.0(6)(i))

The Proposed Rules included two sections to address water concerns stemming from outdoor bulk material storage. The section entitled Protection of Waterways contained a prohibition on materials falling into navigable waterways and required piles to be set back a sufficient distance from waterways. The section entitled Runoff Management required facilities to install and maintain stormwater management controls to prevent runoff from piles.

Both the NGOs and the business commenters found the undefined setback to be vague and recommended that this section specify a numeric setback distance. The NGOs further recommended that the setback from navigable waterways include all waters of the United States, potable water wells, and public water supply reservoirs and intakes. With regard to the Runoff Management provision, the NGOs commented that it lacked necessary specificity, and they suggested several requirements for runoff controls. KCBX proposed a setback distance of 50 feet between bulk material piles and waterways, as this distance is consistent with the current practices of bulk material handling facilities in staging piles, and that 50 feet is a sufficient distance to protect waterways. They also noted that when material is in the process of being unloaded from or loaded to a barge, the material must be temporarily located closer to the waterway due to the type of equipment that is used for such activities.

City Response: The City incorporated several of the recommendations made by commenters to these sections. The Final Rules include a 50-foot setback from waterways, except during loading and unloading, so long as no materials will fall into the waterways during the loading or unloading activity. The City also expanded the type of waterways that must be protected by changing the term "navigable waterway" to "any waterway." The City did not, however, deem it necessary to include potable water wells, because the Chicago Municipal Code prohibits the use of potable water wells. (See MCC Section 11-8-390.) For this reason, the reference to groundwater was also removed from the section on Runoff Management. In addition, public water supply intakes are located in Lake Michigan far from any land where bulk material storage piles may be located. With regard to runoff management, the Revised Rules include an expanded and more detailed list of requirements for runoff management.

J. Wind Barrier (Section 3.0(6)(c))

The Proposed Rules included a requirement that outdoor bulk material piles be completely surrounded by a strong, engineered wind barrier that is higher than the top of the pile. Many

residents and the NGOs expressed doubt about the effectiveness of a wind barrier. The NGOs further stated that the wind barrier requirement should include an objective performance metric by which to judge its sufficiency. They also asked for an explanation regarding the range of porosities allowed and the placement and setback distance for the barrier.

Many businesses commented that the wind barrier requirement would likely present a major obstacle to their operations. In some cases, it was claimed that construction of a wind barrier would cost millions of dollars. In addition, because of the barrier setback requirements, installation of a barrier would remove a substantial amount of the facilities' available square footage for outdoor storage. North America Stevedoring Co., LLC commented that the regulations should allow materials to be covered with tarps as an alternative to storing material inside or behind barriers.

City Response: In crafting the requirements for a wind barrier, the City consulted with experts in the field and reviewed technical white papers¹⁵ and other vendor-provided data that discussed the effectiveness of wind barriers. The City believed that, if properly located and properly constructed, a wind barrier could greatly reduce fugitive dust emissions from a 100,000 cubic yard, 30 foot high stockpile (the volume trigger and maximum pile height specified in the Draft Rules) when used in conjunction with other dust control measures such as covered conveyors, adequate wetting, and minimization of drop heights. Based on CDPH's research, these wind barriers are commonly implemented in California and other western states to control dust emissions from bulk material storage piles such as coal. One such installation is a 100' tall wind barrier in Pueblo, Colorado.

Regarding the range of porosities allowed, 30% to 50% porosities are used in the industry, depending on site-specific conditions and the type of material stored. CDPH understands that these two porosities are sometimes used in tandem to improve performance and cost effectiveness. In general, the lower the porosity the greater the reduction in wind speed. However, this results in a narrower sheltered region leeward of the barrier due to increased turbulence near the barrier. Conversely, higher porosities allow more wind to get through but provide for a much broader sheltered region, albeit at a lower level of protection. In crafting the Draft Rules, CDPH tried to ensure that such barriers, when allowed, would be properly designed and implemented to ensure adequate protection while allowing for flexibility.

Ultimately, the City removed this requirement in the Final Rules for several reasons, including 1) the lack of existing wind barrier installations in the City in order to observe actual local performance; 2) the absence of any standardized performance metrics to ensure sufficiency in reducing emissions; and 3) the removal of the volume trigger on which this requirement was based. Non-coke and coal facilities may still install wind barriers if they wish. The Revised Rules allow more flexibility for businesses to design a Fugitive Dust Plan that makes the most sense based on their unique operations. As discussed above, the facilities will need to implement effective controls in order to remain compliant with the fugitive dust prohibition set forth in Section 3.0(2) of the Revised Rules. But those controls need not include a wind barrier.

K. High Wind Events (Section 3.0(6)(e))

¹⁵ Copies of the white papers the City considered are available upon request.

As discussed in Section B(8) above, the definition of *High Wind Conditions* refers to a wind speed that exceeds 15 miles per hour. Many business commenters stated that the requirement to suspend operations every time the wind speed exceeds 15 miles per hour would result in a significant negative impact on the facility's operations. S.H. Bell Company stated that, under this rule, affected facilities would need to shut down operations on average 40% to 60% of the time, which, they implied, would result in many of their workers being left without jobs.

KCBX recommended revising this section to provide that disturbance of bulk material piles does not need to be suspended during High Wind Conditions where "alternate measures are implemented to effectively control dust." They noted that this is consistent with MCC Section 11-4-760(c) regarding material piles on construction sites. They further stated that their water cannon systems are effective in controlling potential dust emissions at winds above 15 mph.

City Response: As explained in Section B(8) above, the City determined that 15 miles per hour is the appropriate speed to trigger a special response to wind conditions. However, as previously stated, the key factor in determining compliance is the prohibition on fugitive dust. Therefore, the City determined that if a facility has measures in place to effectively prevent fugitive dust emissions during high wind conditions, they need not stop work. The Final Rules adopt the language set forth in Section 11-4-760 of the Municipal Code, which requires work to be suspended during high winds, unless alternate measures are implemented.

L. Fugitive Dust Monitoring (Section 3.0(6)(f))

Some business commenters, such as S.H. Bell, objected to the requirement to install multiple real-time PM10 monitors. They stated that this requirement "is not reasonably relevant for demonstrating compliance" and "not rationally related to improving public health, as the area is in attainment with federal ambient air standards." Horsehead Corp. noted that the Illinois EPA had notified Horsehead in 1997 that they could cease their air monitoring program, because monitoring results did not detect any noncompliant air emissions. Some business commenters, including BP, also noted that the Proposed Rules did not take into account ambient wind direction and speed. Some businesses were concerned that there would be no way to determine the source of PM detected by the monitors and, therefore, they could be blamed for dust that had blown onto their site from outside sources. KCBX proposed to revise the Fugitive Dust Monitoring provision to incorporate a definition of Reportable Action Level, which would be based on a comparison between measurements of upwind and downwind monitors.

The NGOs, likewise, commented that the Proposed Rules lacked clear requirements regarding the placement and operation of the monitors. They suggested that all facilities should be required to initially install and operate monitors at the four cardinal locations and collect weather data for one year. Then, at the end of the first year, facilities should submit proposed PM monitoring plans based on the observed data, with monitors located at a minimum of two upwind and two downwind locations, with additional monitors required as appropriate. The NGOs further stated that the Rules should reference US EPA ambient monitoring practices; that the Rules should include an objective standard for assessing what level of PM constitutes an action

level; that the Rules should include a requirement to monitor for PM2.5; and that the monitoring requirement should apply to all facilities, not just those with outdoor storage.

City Response: 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 feasibly 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 that the air is being monitored. If a facility, such as Horsehead, has documentation to demonstrate that their operations do not result in off-site fugitive dust emissions, they may apply for a variance from this requirement. However, whether or not the region is in attainment or non-attainment of the National Ambient Air Quality Standards for PM10 or PM2.5 has no bearing on the ability of a facility to cause localized impacts from fugitive dust emissions.

The NGOs correctly pointed out that facilities subject to the full enclosure requirement still have the potential to cause fugitive dust emissions. Therefore, the Final Rules extend the dust monitoring requirement to all facilities, including enclosed coke and coal facilities. However, the Final Rules remain focused on PM10 and do not include a separate monitoring requirement for PM2.5. Monitoring for PM10 is preferable due to the prevalence of PM2.5 in ambient air. In any event, PM10, which refers to particles that are less than 10 micrometers in diameter, includes both coarse and fine particles. Therefore, PM10 monitors will detect dust that is PM10 and smaller, including PM2.5.

The Proposed Rules had contemplated that the placement of the PM10 monitors would be determined by facilities when preparing their Fugitive Dust Plans. It was assumed that monitors would be thoughtfully placed at upwind and downwind locations, as approved by the Commissioner, in order to ensure that the monitoring system accurately reflected the facility's contribution to PM detected by the upwind monitors. However, the City agrees the Proposed Rules were not clear. Therefore, the Revised Rules incorporate the NGOs' proposal of a one-year monitoring period to collect data in order to determine the best placement of the monitors in subsequent years. The Revised Rules also specify that ambient monitoring practices must comply with US EPA protocols and guidance.

M. Time Limit on Piles (Section 3.0(6)(g))

Some businesses objected to the one-year time limit placed on material piles. GSS commented that the one-year limit "will likely be unworkable in practice, because for most facilities there will be a constant addition to and removal of materials from storage piles, so while the 'substance' of the piles will be constantly changing, its 'form' may remain relatively constant over a period of months or even years." Horsehead noted that this restriction threatened the ability of the business to maintain materials to service future customer demands. This commenter noted that, in any event, their operation is already subject to the speculative accumulation restrictions set forth in the federal Resource Conservation and Recovery Act (RCRA) regulations, which provide that, during a one-year period, the amount of secondary

material recycled, or shipped off-site for recycling, must be at least 75 percent of the amount accumulated at the beginning of the calendar year.

In contrast, the NGOs, also citing RCRA regulations, stated that the accumulation time limit should be six months.

City Response: The original purpose of including a one-year time limit had been to ensure that off-specification or other unmarketable material did not accumulate on a site and remain as improperly disposed waste, as has happened at some facilities in the past. The one-year time frame was taken from the Illinois Environmental Protection Act time limit for the maintenance of construction and demolition debris¹⁶. However, upon reconsideration, the City has determined that waste-related violations are better addressed through waste-related laws and rules, rather than these regulations. Therefore, this section was removed from the regulations.

N. Dust Suppressant System (Section 3.0(6)(h))

Several commenters questioned the requirement in the Proposed Rules that a dust suppression system be operating at all times. The NGOs requested more specificity regarding quantity, frequency, and duration for operation of the spray system, and further commented that the Rules should require activity to cease and piles to be tarped when spray systems are out of operation. KCBX proposed that this section use the defined term “water spray system” rather than the undefined term “dust suppression system.” KCBX further proposed to revise this Section to state that water spray systems “shall be operable and able to dispense” at all times rather than such systems “shall be operating and dispensing” at all times. KCBX and others noted that it would not make sense for water spray systems to be applying water to piles even when it is raining, when product moisture levels are already high based on past precipitation or water application, when snow covers a pile, etc. In addition, S.H. Bell stated that adding water and moisture content to ferro alloys used in production of steel can result in a significant explosion hazard when the material is used at the steel mills.

City Response: Taking into consideration the above-described comments, the City modified this section to clarify the requirements for dust suppression. Dust suppressant systems must be operable, not necessarily dispensing, at all times. The key is compliance with the opacity limit and fugitive dust prohibition set forth in Section 3.0(2) of the Final Rules. If material is already moist, as that term is defined in the Final Rules, then of course there is no need to continue watering it. When temperatures are below freezing, a facility must use chemical stabilizers or water heating systems to ensure that dust suppression systems are operable and dispensing if necessary to ensure compliance with Section 3.0(2). Finally, if any part of the dust suppressant system is undergoing maintenance or otherwise becomes inoperable, the facility must suspend disturbance of bulk material piles until the system is operable again.

O. Loading and Unloading (Sections 3.0(7); 3.0(8); and 3.0(9))

¹⁶ 415 ILCS 5/3.330(a)(14).

The NGOs commented that the requirements for loading and unloading should explicitly reference the visual emissions and opacity requirements as metrics for performance. With regard to barge unloading, they stated that the rules should require use of vacuum technology.

With regard to railcar loading, Holcim (US) Inc. stated that the requirement to have overlapping flaps or sliding doors in the railcar loading area is “unnecessary given the highly effective and efficient dust collection system that is on the railcar loading process.”

The American Waterways Operators and Illinois Marine Towing, Inc. stated that “The provisions requiring barge loading and unloading in an enclosed area are impractical.” Similarly, KCBX, North American Stevedoring, and others noted that there is no technology available to allow barges or ocean-going vessels that carry most types of ores and coal to be unloaded using an enclosed chute. S.H. Bell further noted that use of an excavator for material removal from a barge can ensure minimal emissions. They stated that “Using an excavator to unload bulk material from barges allows the terminal to minimize the handling of the material and to minimize drop heights. The excavator scoops material from the barge, and places it directly into the bed of a waiting truck. The excavator operator is able to maneuver the loaded bucket into the bed of the trailer, minimizing the drop height and resulting emissions.”

City Response: The City notes that loading and unloading operations are subject to the rules regarding transfer points. (A *Transfer Point* is the location within a facility where material being moved, carried, or conveyed is dropped or deposited.) In addition, the standard for dust control during loading and unloading operations is the same as the standard for other operations at bulk material facilities: there shall be no visible dust beyond the property line, and there shall be no dust within the property line that exceeds 10% opacity (unless applicable State law sets a different opacity standard). The Proposed Rules included a statement specifying that truck loading and unloading must occur in compliance with the requirements for Transfer Points. The Revised Rules extended this statement to clarify that loading and unloading of railcars and barges must also comply with the requirements for Transfer Points (discussed in Section T below). The Revised Rules also clarify that, except for enclosed coke or coal bulk materials, railcar loading and unloading need not be conducted in an enclosed structure. The Revised Rules also allow barge unloading to be conducted using appropriate technologies that will minimize dust emissions.

P. Paving (Section 3.0(10))

The Proposed Rules required that facility owners or operators pave all non-road ground surfaces where material accumulations routinely occur, as well as all roads and vehicle movement areas within the facility. Vehicle was defined to include off-road heavy equipment. Many businesses commented that paving all these areas would be so extraordinarily costly (in the millions of dollars) as to jeopardize the commercial viability of facilities subject to the Proposed Regulations. Commenters also noted that paving storage areas would increase runoff of stormwater from those areas, and would not in any way reduce the potential for fugitive dust emissions from areas that are covered with bulk material piles.

In addition to expressing the above concerns, KCBX noted that, for facilities that will be building an enclosure, the pavement would become obsolete – and the paving expense wasted – once the enclosure is completed. KCBX proposed to revise the regulations to require paving only of roads within a facility that are used for transporting or moving material, and not to require paving of storage areas.

City Response: In consideration of the comments received regarding paving, the Revised Rules require paving of only Internal Roads within a facility. *Internal Road* is defined in the Revised Rules to include any route that is regularly used by vehicles for moving materials to, from, or within a facility, but does not include material staging and storage areas. Therefore, areas that are used only for material storage need not be paved. In addition, the City changed the term “impermeable material” to “durable material that is not susceptible to becoming windborne.” This will allow the use of permeable, or porous, asphalt, for example, which has long been successfully used to mitigate stormwater runoff.

Q. Roadways (Section 3.0(11))

The Roadways provision in the Proposed Rules specified requirements for street sweeping roadways both inside and outside of facilities. Some businesses, such as Holcim (US) Inc. and Horsehead Corp., commented that the street sweeping requirements were excessive. S.H. Bell commented that the street sweeping requirements were vague and that the requirement to clean roads outside the facility property boundary “would needlessly overlap with similar sweeping required by other facilities.” KCBX proposed to revise this section to clarify that street sweeping need be conducted only on paved roads and, further, that the water spray on a street sweeper may only be used during non-freezing weather. The NGOs commented that the Roadways requirements should be tied to the visual emissions and opacity limits. They further suggested that this provision should include silt limits and require periodic silt collection and evaluation, as required in Rule 1158.

City Response: For clarity, the Revised Rules rename this section “Roadway Cleaning.” The Revised Rules also clarify that the required street sweeping need not occur if the facility owner or operator verifies that the roads are free and clear of any material transported to or from the facility. For safety, clarification was also added that the street sweeper need not spray water in freezing conditions.

With regard to the suggestion that compliance with street sweeping should be tied to the visual dust and opacity limits, as well as include silt evaluation, the City has determined that these additions are not necessary. Whether or not there is dirt, debris, or other track out on a roadway can easily be determined by visual observation.

R. Accumulations / Spilled Material (Section 3.0(12))

As discussed in the Definitions section above, the Proposed Rules included a definition of *Accumulations* that specified a numerical value (three ounces in one square foot) for when accumulations must be cleaned. Section 3.0(12) in the Proposed Rules disallowed such accumulations at all times. Some businesses commented that this was not a practical standard.

KCBX proposed a revision to clarify that bulk material storage areas need not be free of accumulations and that facilities should have up to 24 hours to remove accumulations.

City Response: As explained in Section B above, the definition of *Accumulation* was removed in the Final Rules and the associated provision was renamed to *Spilled Material*. This clarifies that the requirement is not meant to preclude material from being deposited in approved storage areas. In addition, a 24-hour time frame was added to specify that any spilled material must be cleaned within one day.

S. Conveyors (Section 3.0(13))

Some commenters, such as KinderMorgan Terminals, stated that the requirement that all conveyors must be enclosed is infeasible, because certain conveyors must be located outdoors, particularly given barge loading and unloading operations. KCBX proposed to revise this section to provide that conveyors “shall be covered or enclosed.” KCBX noted that covered conveyors were depicted in the PowerPoint presentation given by the City during the January 13, 2014 public meeting on the Proposed Rules, and KCBX agreed that such covered conveyors are sufficient for the purposes of the Proposed Rules.

In contrast, the NGOs stated that this section should be revised to require “fully enclosed conveyors,” which should be defined to mean that there is no ability of fugitive dust emissions from the conveyor to escape to the ambient air.”

City Response: The City’s original intent in requiring enclosed conveyors was that the conveyor itself be covered or enclosed, rather than necessarily being located within an enclosure such as a building. As mentioned, the City provided a photo illustration of such conveyors in the City’s January 13, 2014 presentation, to show that covered conveyors are designed to keep material inside. The City clarified this requirement in the Revised Rules.

T. Transfer Points (Section 3.0(14))

The Proposed Rules provided four options for dust control at transfer points within a facility: total enclosure, use of a water spray system, use of vented air pollution control equipment, or transfer of moist material in an overhead truck trailer or railcar loader, or chute with a hopper, such that the exposed drop does not exceed four feet. KinderMorgan stated that these requirements are infeasible and impractical. Horsehead stated that not all of its transfer points would comply with this requirement and that the Proposed Rules assume “that emissions which require such controls occur from all such transfer points without any information whatsoever to support such a finding.”

The NGOs commented that “Transfer points can be the largest source of emissions at facilities, as material in motion is more prone to becoming airborne.” They stated that the performance of water spray systems and air pollution control equipment at transfer points should be tied to the opacity limit, with an appropriate testing and reporting protocol. They further stated that there should be a testing protocol for determining moisture and that the maximum drop height should be two feet.

City Response: As indicated in the CDM Study, material dropping operations are capable of producing excessive dust that can adversely affect ambient air quality. Moisture content is particularly important if the operation is not enclosed or otherwise controlled. The Proposed Rules provided four options for dust control at transfer points, in order to provide businesses with the flexibility to choose the method that makes the most sense for their operations. In the Revised Rules, the fourth option was revised further to build in additional flexibility, in consideration of the fact that there are varying loading and unloading technologies. Rather than specify a particular moisture content or particular measurement for the exposed drop, the Revised Rules require facilities to ensure the transfer occurs in a manner that complies with the opacity limit specified in Section 3.0(2)(b) of the Revised Rules.

U. Transport (Section 3.0(15))

The Transport section of the Proposed Rules included four requirements relating to the transportation of bulk solid materials by truck: adherence to a facility speed limit of eight miles per hour (mph); use of only paved roads within one quarter mile of the facility (for new facilities only); the cleaning of truck exteriors; and the requirement that trucks pass through a wheel wash station and over rumble strips to shake off loose material and dust.

The NGOs commented that the use of paved roads is important to reduce dust emissions and, therefore should be required of all facilities, not just new facilities. They also requested that the City provide the rationale for an eight mph speed limit.

Some businesses commented that the truck cleaning requirements were excessive and not feasible. Horsehead Corp. commented that requiring trucks to be cleaned so that their entire exterior surface is “free of all loose material” appears to require a truck wash structure akin to a car wash facility, which would involve a significant cost. They stated that this requirement is also unnecessary given the other requirements for both street sweeping, a wheel wash station, and rumble strips. Horsehead, KCBX, and others also noted that operating wheel washes during freezing conditions may not even be possible and, if possible, would result in ice on roads inside and adjacent to facilities, creating a safety hazard.

City Response: The requirement to use paved roads within one quarter mile of the facility was limited to new facilities, because new facilities are in a position to consider roadways when making their initial siting decisions. With existing facilities, the paving of exterior roadways is not always within their control. However, in the provision setting forth the requirements for a Fugitive Dust Plan, the Revised Rules include a new component that requires facilities to explain how dust will be minimized during transport. (See Section 3.0(3)(c) in the Final Rules.) In addition, both new and existing facilities can ensure that trucks leaving their property are adequately cleaned. In response to the concerns that the truck cleaning requirements were redundant, the Revised Rules allow the Fugitive Dust Plan to specify the measures that will be used to ensure that trucks will not cause material track out.

With regard to the eight mph speed limit, this is the slowest speed limit the City is aware of that has been imposed in facility permits. Laws in other jurisdictions typically establish a speed limit

between 10 and 15 mph.¹⁷ Given the proximity of facilities to neighborhoods in Chicago, the City determined that the slowest speed was appropriate.

V. Vehicle Tarping

The NGOs recommended changing the title of this section to “Vehicle Covering” and to make it clear that solid covers are available and should be used for barges. They also stated the regulations should require the use of covers during loading and unloading to expose a minimal amount of material. Finally, they stated the rules should define moist material and establish testing protocols.

BP stated that the vehicle tarping rule “may lead to an unintended short-term inventory build-up at the terminal,” because operators would need to stop all outbound shipments of barges and rail as they explore tarping options, perform safety assessments, and secure tarping and covering equipment. Noting that there are dust control alternatives in lieu of tarping, such as chemical surfactant and covers, they suggested removing the tarping requirement for railcars and barges and modifying the truck tarp language to match Illinois highway regulations (Ill. Admin. Code Section 212.315) which require “a covering sufficient to prevent the release of particulate matter into the atmosphere.”

The American Waterways Operators, and Illinois Marine Towing, Inc., Ingram Barge Company, and Kindra Lake Towing commented that placing tarps on barges is not physically practical due to their size. Additionally, they noted that if tarps became unsecured, they could “start flapping or blowing away, posing a huge safety risk to the deckhands working on the barge.” They noted that, in such case tarps could also obstruct the clear view of the vessel by captains and pilots. They further cautioned that “It is wholly possible that a tarp could blow off a barge and knock a person into the water, potentially trapping them underneath. Tarps are both infeasible and a safety hazard.”

The barge operating businesses also noted that requiring covers on barges is problematic. They noted that currently, “Dry bulk cargo like coal and petcoke is loaded above the coaming (or rim) of the barge. The fact that these large barges can be loaded with a lot of product and then many of them can be pushed together by one towboat is a major reason why our industry is so economical and environmentally friendly.” They further stated that “Covers on barges are also dangerous because coal could combust and produce a fire during warm weather (or other conditions) if moved in a covered barge.” They also noted that “not enough covers exist in the industry to immediately put them on barges carrying coal, petcoke, or other products not normally protected from the elements.” Thus, requiring such cargo to be covered “would drastically affect the market for covered hopper barges and the rates for products traditionally carried in them, namely grain.”

¹⁷ See, e.g., Wisconsin Admin. Code, Section NR 415.075, which specifies a 10 mph speed limit for onsite paved and unpaved roads at ledge rock quarries and industrial sand mines. (https://docs.legis.wisconsin.gov/code/admin_code/nr/400/415/075/6/a/4?down=1); the California Air Resources Board Fugitive Dust Handbook, page 12, which specifies a 10 to 15 mph speed limit for unpaved roads. (http://www.arb.ca.gov/pm/fugitivedust_large.pdf); Idaho DEQ, which specifies a 10 mph speed limit on unpaved roads (http://www.deq.state.id.us/media/61833-dust_control_plan.pdf).

Finally, Kindra commented that “Uncovered barges can be loaded in a fashion that can control the dust arising from the loading process such as misting the product as it leaves the pouring spout.”

City Response: In the Final Rules, the title of this provision was changed to “Vehicle Covering and other Dust Control.” This acknowledges that there are other methods of controlling dust during transport besides vehicle covering. Notably, the regulations do not allow trucks to leave a site unless they are fully covered. (In fact, the Final Rules eliminate the option for trucks to use a slot-type cover with open surface areas.) However, for safety reasons and other concerns raised by commenters, the loading and unloading of railcars and barges may utilize other best management practices as appropriate.

W. Leaking

The NGOs commented that this section should not be limited to a restriction on liquid leaks, as solids can leak from vehicles too. They further suggested that the Rules should prohibit loading barges such that material leaks into the waterway and that there should be a cleanup provision for any leaks into the waterway.

KCBX proposed to revise this section to provide that only leaks onto roads need to be cleaned. They stated that a leak could occur onto a storage pad, but it would make no sense to clean a storage pad which, by definition, is covered with product and with water applied for dust suppression purposes. Further, KCBX noted that truck trailers that are water-tight and cannot leak inside a Facility are not available in the Chicago market. Kinder Morgan stated the leaking requirements bear no relationship to fugitive dust emissions and are unrealistic.

City Response: For clarity, the title of this section was changed to “Vehicle Leaking.” The Revised Rules incorporate the suggestion to extend this provision to material leaks and to prohibit any leaking material into waterways. It further clarifies that the clean-up requirement applies to internal roads and waterways, and not areas where material is stored.

X. Variances

The NGOs commented that the variance provision was overbroad in that it allowed all facilities, “large and small, existing and new, to avoid a wide range of important control obligations without any public participation, and without a clear standard for guiding the Commissioner’s review.” Residents also commented that the variance provision provided a loophole for companies to avoid compliance with the regulations, and they were concerned about the Commissioner’s discretion in granting variance applications.

City Response: In response to the community’s concerns and the comments received, the Revised Rules add specificity and expand the requirements around the issuance of variances. The Final Rules set forth detailed requirements for variance applications, including the requirement that an applicant explain, in detail, the need for the variance as well as provide 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. Importantly, the Revised Rules also specify that the public will have an opportunity to review and comment on all variance applications and that the Commissioner will not grant a variance without considering the public comments, as well as the other criteria that are specified in Section 8.0 of the Final Rules.

Y. Recordkeeping

The NGOs commented that the recordkeeping provision should include reporting requirements. They stated that, in addition to maintaining records onsite, facilities should be required to submit certified quarterly reports summarizing the required data and a certified annual report, and that these reports should be made available to the public on the City's website.

Some businesses commented that the recordkeeping requirements are onerous. Kinder Morgan stated that the requirements are unfair because facilities would be required to maintain records that are unrelated to fugitive air emissions.

City Response: As with the dust monitoring requirement, the recordkeeping requirement is important to document and ensure compliance with the regulations. In addition, recordkeeping is a common requirement for regulated facilities across numerous industries. However, for law-abiding companies, quarterly reporting to the City is not necessary. In the context of an enforcement action, a consent agreement may include routine reporting. And, during the construction period for Coke and Coal Bulk Material Facilities and other infrastructure improvements, the Final Rules require submission of monthly reports. However, during normal operations, facilities need only maintain records on site, available for inspection for three years from when the record was created.

Z. Implementation Schedule

Many business commenters stated that two years was not sufficient time to obtain all required building permits and environmental permits prior to construction of an enclosure. In addition, some commenters objected to the requirement that some provisions take effect immediately, such as pile height limits and throughput requirements, with no flexibility or time for handlers to adjust their operations.

The NGOs stated that some of the time frames in the Proposed Rules were too long. For example, they said that it isn't clear that one year is needed for complying with vehicle/barge loading and unloading requirements, paving, or enclosing conveyors. They further stated that: "If time is needed to design, purchase and install enclosures and to implement other control measures, then facilities must be required to cease operations, or at minimum significantly curtail them and comply with robust interim controls." Many residents viewed the two-year time period for the enclosure requirement as a "grace period."

With regard to the provision that stated extensions could be granted for good cause, the NGOs stated that there must be "(a) an upper bound of one year on the length of any extension, (b) a standard that an extension can under no circumstances be granted if doing so would violate the

standard proposed above for approval of a fugitive dust plan, and (c) procedural protections, i.e., provision for public participation.”

City Response: Based on the realities of the time it takes for major construction projects to be completed, the Final Rules retain a two-year time period for constructing the required enclosure. The City acknowledges that this is an aggressive schedule, but believes that it is not infeasible. In any event, companies may obtain an extension for good cause through the variance process. However, in order to ensure that neighbors are protected during the construction period, the Revised Rules include a requirement that facilities must adhere to an Interim Fugitive Dust Plan. Section 4.0(1) of the Revised Rules sets forth a number of required components that must be included in the plan, including dust control and dust monitoring. Furthermore, if a facility seeks a variance of the time frame, and is able to demonstrate a valid need for an extension, the facility must submit monthly fugitive dust monitoring reports in addition to complying with all of the other requirements. As mentioned in Section X above, the Final Rules also incorporate several requirements for variances and extension requests, including a provision for public participation.

With regard to other items in the implementation schedule, some time frames were adjusted for consistency with related items. For example, loading and unloading practices, as well as vehicle tarping, are tied to the transfer point requirements. Therefore, these items are now all under the 90-day effective date. In addition, the requirement to install wind monitors is under the 90-day period. Therefore, the provision for taking action during high winds is also under the 90-day time frame.

Other Comments

Penalties. Several residents commented that the Rules should set forth penalties. While fines and penalties must generally be set forth by Ordinance, rather than by Regulation, the Final Rules include a penalty section that references the applicable Ordinance. Thus, the rules state that, in accordance with MCC Section 11-4-810, any person who violates any provision of these regulations shall be fined not less than \$1,000 nor more than \$5,000 per day.

Material Constituents. The NGOs commented that the generator of the materials accepted at bulk material facilities should be required to test the material to determine the constituents in each load of material. The City finds that such a testing requirement is beyond the scope of these rules.

**CITY OF CHICAGO
DEPARTMENT OF PUBLIC HEALTH**

**ARTICLE II. AIR POLLUTION CONTROL
RULES AND REGULATIONS**

For Control of Emissions from the Handling and Storage of Bulk Material Piles

Whereas, pursuant to Chapters 2-112 and 11-4 of the Municipal Code of Chicago (the “Code”), the Department of Public Health (the “Department”) is charged with enforcement of environmental regulations within the City of Chicago, including the enforcement of regulations intended to reduce the risk of harm to public health or the environment from air pollution; and

Whereas, pursuant to the authority granted by Section 2-112-160(b) of the Code, the Commissioner of Health (the “Commissioner”) is authorized to issue rules and regulations necessary or proper for the implementation of environmental ordinances and to accomplish the purposes of Chapter 11-4 of the Code, and is further authorized to make reasonable administrative and procedural regulations or rules interpreting or clarifying the requirements which are specifically prescribed in Chapter 11-4 of the Code; and

Whereas, this general rule-making authority includes any rules necessary to implement Article II of Chapter 11-4 of the Code, Sections 11-4-600 through 11-4-810, the “Air Pollution Control Ordinance”; and

Whereas, this general rule-making authority also includes any rules necessary to implement Article VIII of Chapter 11-4 of the Code, Sections 11-4-1410 through 11-4-1460, “Pollution of Waters”; and

Whereas, Section 11-4-800 of the Code further authorizes the Commissioner to issue rules and regulations to implement Article II of Chapter 11-4 of the Code; and

Whereas, Section 11-4-760(e) of the Code authorizes the Commissioner to promulgate additional rules and regulations for the proper management of any substance or material that may become airborne or be scattered by the wind; and

Whereas, in addition, Section 11-4-770 of the Code provides that, for the purpose of minimizing air pollution, the Commissioner may prescribe, by rules and regulation, reasonable, specific operating and maintenance practices for buildings, structures, premises, open areas, automobiles and/or truck parking and sales lots, private roadways, rights-of-way, storage piles of materials, yards, vessels, Vehicles, construction, sandblasting, alteration, building, demolition or wrecking operations and any other enterprise which has or involves 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; and

Whereas, Chicago is a densely populated metropolitan area, such that industrial uses are sometimes in close proximity to residential uses; now, therefore,

I, Bechara Choucair, M.D., Commissioner, Department of Health, City of Chicago, issue the following rules and regulations pursuant to the authority granted to me by Sections 2-112-160, 11-4-760(e), 11-4-770, and 11-4-800 of the Municipal Code of Chicago.

PART A: INTRODUCTION

1.0 Scope and Purpose. The purpose of these rules and regulations is to prescribe reasonable, specific operating and maintenance practices to minimize emissions of airborne particulate matter from the storage, on-site handling, loading, unloading, stockpiling, and Processing of Bulk Solid Materials as defined herein, including but not limited to ores, coal, and coke, including petroleum coke (“petcoke”) and metallurgical coke (“metcoke”). These rules and regulations apply to any owner, operator, or other person who stores, loads, unloads, stockpiles, handles on-site, Processes, or uses Bulk Solid Materials. Part B sets forth requirements that are applicable to all Bulk Solid Material Facilities. Part C sets forth requirements that are applicable only to Coke or Coal Bulk Material Facilities. Part D sets forth requirements that are applicable only to Bulk Solid Material Facilities that have outdoor storage piles and that are not Coke or Coal Bulk Material Facilities. Part E sets forth compliance and variance provisions for all Bulk Solid Material Facilities.

2.0 Definitions. For purposes of these rules and regulations, the following definitions shall apply:

- (1) ASTM means the American Society for Testing and Materials.
- (2) BLEND or MIX means combining two or more Bulk Solid Materials.
- (3) BULK SOLID MATERIAL means any solid substance or material that can be used as a fuel or as an ingredient in a manufacturing process that may become airborne or be scattered by the wind and that, except for coke and coal, is stored at a Facility in an amount equal to or greater than 25 cubic yards at any one time, including but not limited to ores, coal, and coke, including petcoke and metcoke, but shall not include salt, grains, Construction and Demolition Materials, materials that are handled or stored pursuant to a recycling, reprocessing, or waste handling Facility permit under Chapter 11-4 of the Code, or materials used in manufacturing cement at a facility that has obtained a construction permit and prevention of significant deterioration approval from the Illinois Environmental Protection Agency.
- (4) CHEMICAL STABILIZER is any chemical dust suppressant which is not prohibited for the uses proposed in these rules or by any other applicable law, and which meets all applicable specifications required by any federal, state, or local agency.
- (5) COAL is a solid, brittle, carbonaceous rock classified as anthracite, bituminous, subbituminous, or lignite by ASTM Designation D388-77.
- (6) COKE is a solid carbonaceous material derived from the distillation of coal (including metallurgical coke) or from oil refinery coker units or other cracking processes (including petroleum coke).

- (7) **COKE OR COAL BULK MATERIAL FACILITY** is a source, site, or facility where coke or coal is stored, loaded, unloaded, stockpiled, handled on-site, blended, Processed, or otherwise managed.
- (8) **CONSTRUCTION OR DEMOLITION MATERIAL** means material used in or resulting from the construction, remodeling, repair, landscaping, or demolition of utilities, structures, buildings, and roads, including but not limited to stockpiles of crushed stone, sand and gravel, hot mix asphalt plants or ready mixed concrete plants.
- (9) **EXISTING FACILITY** is a Facility that is properly permitted by the Commissioner, and subject to a Certificate of Operation issued by the Commissioner, as of the issuance date of these Rules and Regulations and is limited to operations within Facility boundaries as the boundaries exist on the issuance date of these Rules and Regulations.
- (10) **FACILITY** is all contiguous land, and structures, other appurtenances, and improvements on the land, used for storing, on-site handling, loading, unloading, stockpiling or Processing Bulk Solid Material.
- (11) **FUGITIVE DUST** means any solid particulate matter that becomes airborne by natural or human-made activities, excluding engine combustion exhaust and particulate matter emitted from a properly permitted exhaust stack equipped with a pollution control device.
- (12) **HIGH WIND CONDITIONS** is when average wind speeds exceed 15 miles per hour over two consecutive five minute intervals of time.
- (13) **INTERNAL ROAD** means any route within a facility that is not located in an area normally used for staging or storage of material and that has evidence of repeated prior travel by, or is otherwise regularly used by, Vehicles for transporting materials to, from, or within a Facility.
- (14) **METALLURGICAL COKE, or METCOKE**, is a carbon material resulting from the manufactured purification of multifarious blends of bituminous coal.
- (15) **MOIST MATERIAL** means material with a moisture content of 3% by weight as determined by ASTM analysis, unless another standard is established by an applicable State Permit, Law, Rule or Regulation.
- (16) **OWNER OR OPERATOR** means any person who has legal title to any Facility, who has charge, care or control of any Facility, who is in possession of any Facility or any part thereof, or who is entitled to control or direct the management of any Facility.
- (17) **PERSON** is any individual, partnership, co-partnership, firm, company, limited liability company, corporation, association, joint stock company, trust, estate, political subdivision, state agency, or any other legal entity, or their legal representative, agent or assigns.
- (18) **PETROLEUM COKE, or PETCOKE**, is a solid carbonaceous residue produced from a coker after cracking and distillation from petroleum refining operations, including such residues produced by petroleum upgraders in addition to petroleum refining.
- (19) **PROCESS OR PROCESSING** means any chemical, industrial, commercial, or manufacturing operation or activity that causes, or has the potential to cause, the emission of airborne particles including, but not limited to,

blending, mixing, crushing, screening, breaking, wet or dry cleaning, thermal drying, and chemically treating.

- (20) **REPORTABLE ACTION LEVEL** means the positive difference between the level of PM10 measured at the upwind monitor(s) at a Facility and the level of PM10 measured at the downwind monitor(s) at a Facility that will trigger response activities under a contingency plan pursuant to Section 3.0(3)(f) as established in the Fugitive Dust Plan submitted by a Facility under Section 3.0(3). The Reportable Action Level may vary based on the value of the difference, and based on the concentration of PM10 detected at the downwind monitor(s) at a Facility.
- (21) **TRANSFER POINT** is the location at or within a facility where material being moved, carried, or conveyed is dropped or deposited.
- (22) **VEHICLE** is any car, truck, railcar, or marine vessel.

PART B: BULK SOLID MATERIAL FACILITIES

3.0 Operating and Maintenance Practices. Any Facility that Processes, handles on-site, transfers, loads, unloads, stockpiles, or stores Bulk Solid Materials shall comply with all of the following requirements:

- (1) Certificate of Operation – Required. Every Owner or Operator of a Facility subject to these Rules and Regulations must possess a certificate of operation issued in accordance with Section 11-4-660 of the Code. The Department reserves the right to impose dust control requirements, in addition to the requirements set forth in these Rules and Regulations, as conditions of the Facility’s certificate of operation, if the Commissioner finds that the Facility has failed to control fugitive dust.
- (2) Fugitive Dust – Prohibited. The Facility Owner or Operator shall not prevent the discharge into the atmosphere of visible fugitive dust as specified below:
 - a) Visible Dust. The Facility Owner or Operator shall not cause or allow any Fugitive Dust that is visible beyond the property line of the Facility;
 - b) Opacity Limit. The Facility Owner or Operator shall not cause or allow any Fugitive Dust within the property line of the Facility at any Bulk Solid Material storage pile, Transfer Point, roadway or parking area that exceeds 10% opacity, or other applicable opacity standard set forth in an applicable State Permit, Law, Rule or Regulation, including but not limited to the Environmental Protection Act and 35 Ill. Admin Code Part 212.
 - c) Measurement of Opacity. Opacity shall be determined based on a visual reading in accordance with the measurement method specified in 35 Ill. Admin. Code 212.107.
 - d) Testing of Visual Emissions and Opacity Limits. The Facility Owner or Operator shall, on at least a quarterly basis, periodically perform tests of

visual fugitive dust and opacity in accordance with the protocol set forth in the approved Fugitive Dust Plan.

(3) Fugitive Dust Plan – Required. Every Owner or Operator of a Facility subject to these Rules and Regulations must prepare, submit, and follow a Fugitive Dust Plan. The Fugitive Dust Plan shall be updated on an annual basis and submitted to the Department for review and approval on or before January 31 every year, provided that the first Fugitive Dust Plan shall be due within ninety (90) days of the issuance of these Rules and Regulations. For Facilities that are constructed or become subject to these regulations after they take effect, the first Fugitive Dust Plan shall be submitted with the Facility’s application for a certificate of operation and before the Facility accepts any Bulk Solid Materials. If the Commissioner finds that the submitted Fugitive Dust Plan is missing any required information or is insufficient to ensure compliance with these Regulations, the Commissioner may disapprove the Fugitive Dust Plan and request submission of a modified Fugitive Dust Plan. If there is any change, modification, or addition to any Facility component described in an approved Fugitive Dust Plan, the Facility Owner or Operator shall submit an amended Fugitive Dust Plan to the Department for review and approval at least thirty (30) days prior to such change, modification, or addition. The Fugitive Dust Plan shall include, at a minimum, the following components:

- a) A site map, drawn to scale, depicting the following information:
 - i. Facility boundaries;
 - ii. All buildings, Internal Roads and utilities on Facility property;
 - iii. All roadways within one quarter mile of the perimeter of the Facility that are within the City of Chicago and that are used for transport of material to or from the Facility;
 - iv. All potential emissions points at the Facility, including a depiction of the footprints of all Bulk Solid Material storage piles; and
 - v. The locations of all control devices and monitoring devices, including the fugitive dust monitors required under 3.0(4) and the wind speed monitor required under 3.0(5);
- b) A description of the Facility’s operations, including a list of all Bulk Solid Materials handled at the Facility;
- c) A description of the truck routes within one quarter mile of the perimeter of the Facility that are used to transport material to and from the Facility, including an explanation of how dust will be minimized during transport (e.g., travel on paved roads where possible, minimize truck speeds, etc.) and a description of the measures that will be used to ensure trucks are cleaned of loose material before they leave the Facility;

- d) A calculation showing the Facility's maximum total indoor and outdoor Bulk Solid Material storage capacity in tons or cubic yards. In the first Fugitive Dust Plan, due within ninety days of the issuance of these Rules and Regulations, the calculation shall be certified by signature of an authorized representative of the Owner or Operator and shall be accompanied by evidence of authority to sign on behalf of the Owner or Operator;
 - e) A description of all control measures, devices, and technologies to be used to minimize and control Fugitive Dust, a statement certifying that all control measures, devices, and technologies have been properly calibrated and maintained, and a statement that all appropriate Facility staff have been trained on the proper application and operation of all such control measures, devices, and technologies;
 - f) A dust monitoring plan that describes:
 - i. the placement, operation, and maintenance of the PM10 monitors required under paragraph 3.0(4); and
 - ii. The schedule and plan for quarterly testing to ensure compliance with the prohibition on Fugitive Dust set forth in 3.0(2). Such testing must be a) conducted by a professional trained and certified to read opacity in accordance with the measurement method specified in 35 Ill. Admin. Code 212.107, and b) conducted during a range of weather conditions to ensure that representative conditions are the Facility are covered;
 - g) A contingency plan describing the Owner's or Operator's response activities when the monitors required under paragraph 3.0(4) detect PM10 that exceeds the Reportable Action Level as defined in Section 2.0 above. The response activities should consist of a range of increasingly aggressive measures appropriate to different levels of exceedance;
 - h) A contingency plan for an alternative method of monitoring in the event of malfunction or failure of the approved PM10 monitors;
 - i) A description of the Facility's recordkeeping system, which shall include a schedule for routine inspection, testing, and maintenance as required in 3.0(17); and
 - j) A factsheet or executive summary of the Fugitive Dust Plan designed to inform the public of the Facility's plan to control and minimize fugitive dust. The Department will post the summary, together with the approved Fugitive Dust Plan, on the City's website.
- (4) Fugitive Dust Monitoring. Unless, pursuant to the Variance procedure set forth in 8.0 below, 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 PM10 monitors around the perimeter of the Facility in accordance with the requirements specified below:

- a) During the first year of monitoring, at least one monitor shall be placed along each side facing the four cardinal directions (north, south, east, and west) around the Facility to monitor for Fugitive Dust in the ambient air around the Facility;
 - b) During the second and subsequent years of monitoring, monitors shall be placed in accordance with an approved dust monitoring plan that shall be based on the data observed in the first year, with monitors located at a minimum of two upwind and two downwind locations and additional monitors as appropriate depending on the size of the facility and other relevant factors such as variability of wind direction at the site and the proximity of neighborhoods;
 - c) All data collected shall be consistent with units in the National Ambient Air Quality Standards for PM10, and ambient monitoring practices must comply with current U.S. Environmental Protection Agency protocols and guidance for ambient air quality monitoring, including but not limited to those for data completeness, calibration, inspection, maintenance, and site and instrument logs;
 - d) A data logger shall be attached to the monitors to record readings from the monitors, and the Facility Owner or Operator shall notify the Department, in writing within 24 hours, each time the monitors exceed the Reportable Action Level set forth in the Fugitive Dust Plan and any time monitoring equipment has malfunctioned preventing readings or logging of data; and
 - e) The Facility Owner or Operator shall maintain a log of all routine and non-routine maintenance and calibration activities associated with each fugitive dust monitor.
- (5) Wind Monitoring. The Facility Owner or Operator shall install, operate and maintain, according to manufacturer's specifications, a weather station or other permanent device to monitor and log wind speed and wind direction at the Facility at an unobstructed, unsheltered area, centrally positioned in relation to the storage piles, and at a minimum height of 10 meters above ground level, unless another height is appropriate pursuant to applicable U.S. Environmental Protection Agency protocols and guidance.
- (6) Conveyors. All conveyors shall be covered or enclosed conveyors in order to reduce or eliminate fugitive dust emissions to the maximum extent practicable.

(7) Transfer Points. The Facility Owner or Operator shall maintain all material transfer points in compliance with one of the following measures in order to ensure compliance with the opacity limit set forth in 3.0(2)(b):

- a) Total enclosure;
- b) Water spray system sufficient to control Fugitive Dust emissions during operations;
- c) Vented to air pollution control equipment which is in full operation and permitted by the Commissioner; or
- d) Transfer only Moist Material and conduct such transfer in a manner that minimizes the exposed drop.

(8) Transport. When transport is by truck, the Facility Owner or Operator shall ensure that:

- a) All vehicles and off-road mobile heavy equipment handling or transporting bulk solid material shall adhere to the posted speed limit within the Facility, which shall be no more than 8 miles per hour;
- b) Except for Existing Facilities, material is received or transferred only in truck trailers that, within one quarter mile of the perimeter of the Facility and within the City of Chicago, are driven only on paved roads;
- c) All outgoing material transport trucks, whether loaded or empty, are cleaned so that:
 - i. Any part of any tractor, trailer or tire exterior surface, excluding the inside of the trailers, are free of all loose material; and
 - ii. The material removed by the truck cleaning operation is collected and recycled or otherwise disposed of so that it does not result in Fugitive Dust emissions.
- d) All outgoing material transport trucks, whether loaded or empty, pass through a wheel wash station and pass over rumble strips that will vibrate the trucks and shake off loose material and dust, unless the approved Fugitive Dust Plan specifies other measures to ensure that the trucks will not cause any track-out of materials onto the public way.

(9) Vehicle Covering and other Dust Control. The Facility Owner or Operator shall not load material into any truck trailer, railcar, or barge unless measures are in place to prevent material from escaping from the Vehicle as follows:

- a) Truck trailers must be immediately covered before leaving the Facility in one of the following manners:
 - i. A solid sliding cover or stackable cover on the top of the truck trailer that is kept completely closed except during loading; or
 - ii. A continuous tarp that completely covers the truck trailer and that is installed or constructed to prevent wind from entering over the leading edge of the trailer rim into the interior of the trailer.
- b) Railcars and barges must be loaded in a manner that will control dust through the use of best management practices such as, but not limited to, the use of solid covers, the application of dust suppression agents and/or water, and the profiling of materials to prevent wind erosion.

(10) Vehicle Leaking. Facility owners or operators shall not load material into truck trailers, railcars, or barges such that a vehicle leaks material or liquid that contains material onto Internal Roads or into waterways. If a vehicle leaks material or liquid that contains material onto an Internal Road or into a waterway, the Facility Owner or Operator shall clean the affected road within one hour with a street sweeper or water and shall clean the affected waterway immediately.

(11) Truck Loading and Unloading. For enclosed Coke or Coal Bulk Material storage piles, the Facility Owner or Operator shall conduct material truck loading and unloading only in an enclosed structure that is either equipped with a water spray system to be used as needed to prevent visible dust emissions or vented to permitted air pollution control equipment that is operated during loading and unloading activities. The ends of the structure shall have overlapping flaps that reduce the opening, sliding doors which shall remain closed except to allow the trucks to enter and leave, or other equally effective devices. For outdoor Bulk Solid Material storage, the Facility Owner or Operator shall ensure that truck loading and unloading occurs in compliance with the requirements for Transfer Points specified in 3.0(7).

(12) Railcar Loading and Unloading. For enclosed Coke or Coal Bulk Material storage piles, the Facility Owner or Operator shall conduct railcar material loading and unloading only in an enclosed structure that is either equipped with a water spray system operated to prevent visible dust emissions, or vented to permitted air pollution control equipment that is operated during loading and unloading activities. The ends of the structure shall have overlapping flaps, sliding doors or other equally effective devices, which shall remain closed except to allow the railcars to enter and leave. For outdoor Bulk Solid Material storage, the Facility Owner or Operator shall ensure that railcar loading and unloading occurs in compliance with the requirements for Transfer Points specified in 3.0(7).

(13) Barge and Boat Loading and Unloading. The Facility Owner or Operator shall conduct barge/boat material loading only through an enclosed chute that uses a water spray system, or an air pollution control system or other mechanism described in the approved Fugitive Dust Plan, in order to control Fugitive Dust emissions during

operations. Barge unloading shall be conducted in a manner that will minimize dust in accordance with measures set forth in the Fugitive Dust Plan and in compliance with the requirements for Transfer Points specified in 3.0(7).

- (14) Paving. The Facility Owner or Operator shall pave, with a durable material that is not susceptible to becoming windborne, and in a manner sufficient to bear the expected level of traffic at the Facility, and maintain as paved all Internal Roads within the Facility that are used for transporting or moving material.
- (15) Roadway Cleaning. In order to clean roads of spilled and tracked material, the Facility Owner or Operator shall use a street sweeper to clean any paved road that is used to transport material inside or within one quarter mile of the perimeter of the Facility and shall comply with all of the following requirements:
- a) The street sweeper shall be equipped with a water spray, for use during non-freezing weather, and a vacuum system to prevent Fugitive Dust during street sweeping;
 - b) The street sweeping shall be sufficient so that not more than 4 hours elapses between each street sweeper cleaning or after every 100 truck material receipts or dispatches, but not less than one time daily when the Facility is open for business, unless the roads are free and clear of any material transported to or from the Facility; and
 - c) Each 24 hour day, the day beginning at 12:01 A.M., the Facility Owner or Operator shall document whether for that day the Facility Owner or Operator is street sweeping every four hours or every 100 trucks, or whether the roads are free and clear of any material transported to or from the Facility. The record shall show the date and time when street sweeping was performed and the truck count, as applicable.
- (16) Spilled Material. The Facility Owner or Operator shall maintain all areas within the Facility not regularly used for storage of material free of any spilled or misplaced material by removing such material by the end of each work shift.
- (17) Recordkeeping. The Facility Owner or Operator shall keep and maintain Facility logs as follows:
- a) Record daily, all cleaning and street sweeping;
 - b) Record daily, the weather conditions, including wind speed and direction, documented by the weather station or other device installed pursuant to 3.0(5);
 - c) Record the application of water and/or Chemical Stabilizer pursuant to paragraphs 3.0(7), 3.0(9), 3.0(11), 3.0(12), 3.0(13), and/or 5.0(5), as applicable, and

note any instances when such application is suspended for any reason, including but not limited to, weather conditions;

d) Record any instances when activities are suspended due to high winds as required by paragraph 5.0(4), as applicable;

e) Record the results of the continuous monitoring for Fugitive Dust as required in paragraph 3.0(4), indicate any instances when a monitor detects Fugitive Dust that exceeds the Reportable Action Level set forth in the Fugitive Dust Plan, and record the action taken to respond to the detection of Fugitive Dust;

f) Record quarterly, the results of the tests of visual Fugitive Dust and opacity as required in paragraph 3.0(2)(d);

g) Maintain a schedule for routine inspection, maintenance, and testing of all control measures, devices, and technologies, including a schedule for inspection of Bulk Solid Material piles, inspection of all monitors, and inspection of off-site areas for the presence of dust; and identify the person or persons responsible for such inspections, maintenance, and testing;

h) All records required to be kept pursuant to these Rules and Regulations shall be kept and maintained at the Facility and be available for inspection for a minimum of three (3) years from the date the record is created.

PART C: COKE OR COAL BULK MATERIAL FACILITIES

4.0 Enclosure of Coke and Coal. The Owner or Operator of a Coke or Coal Bulk Material Facility shall maintain all Coke and Coal in fully enclosed structures in accordance with the enclosure requirements set forth in 4.0(2).

(1) Enclosure Plan. The owner or operator of any Coke or Coal Bulk Material Facility shall submit to the Department for review and approval a plan (the “Enclosure Plan”) for total enclosure of all coke piles, coal piles, conveyors, Transfer Points, and Processing areas at the Facility. The Enclosure Plan shall include:

a) A construction schedule prepared using the critical path method for completion of engineering, procurement, permitting, and construction of the enclosure; and

b) An Interim Fugitive Dust Plan that shall include, at a minimum, the following components:

i. A site map, drawn to scale, depicting the following information:

1. Facility boundaries;

2. All buildings, Internal Roadways and utilities on Facility property;

3. All roadways within one quarter mile of the perimeter of the Facility that are within the City of Chicago and that are used for transport of material to or from the Facility;
 4. All potential emissions points at the Facility, including a depiction of the footprints of all Coke or Coal Bulk Material piles;
 5. The locations of all control devices and monitoring devices, including the fugitive dust monitors required under 3.0(4) and the wind speed monitor required under 3.0(5);
- ii. A site map, drawn to scale, depicting the boundaries of any associated Coke or Coal Bulk Material Facility owned or operated by the Owner or Operator at which the Owner or Operator intends to temporarily store Coke or Coal Bulk Materials during implementation of the Enclosure Plan, and including all the information required in 4.0(1)(b)(i) above;
 - iii. A description of the Facility's operations, including a list of all Coke or Coal Bulk Materials handled at the Facility or any associated Coke or Coal Bulk Material Facility;
 - iv. A description of all control measures, devices, and technologies to be used to minimize and control Fugitive Dust during transport to and from the Facility and any associated Coke or Coal Bulk Material Facility while materials are staged, loaded, unloaded, Processed, or otherwise handled at the Facility and any associated Coke or Coal Bulk Material Facility;
 - v. A dust monitoring plan that describes the placement, operation, and maintenance of the PM10 monitors required under paragraph 3.0(4), including an explanation of the positive difference between background levels of PM10 leaving a Facility or any associated Coke or Coal Bulk Material Facility that will determine the Reportable Action Level, which Reportable Action Level may vary based on the value of the difference, and based on the concentration of PM10 detected at the downwind monitor(s) at a Facility or any associated Coke or Coal Bulk Material Facility;
 - vi. A contingency plan describing the Owner's or Operator's response activities when the monitors required under paragraph 3.0(4) detect PM10 that exceeds the Reportable Action Level established pursuant to 3.0(3)(e)(i) above, and a contingency plan for an alternative method of monitoring in the event of malfunction or failure of the approved PM10 monitors; and
 - vii. A description of the Facility's recordkeeping system, which shall include a schedule for routine inspection and maintenance of the control

measures, devices, and technologies, and the identity of the person or persons responsible for such maintenance and testing.

- (2) Enclosure Requirements. Fully enclosed structures for all Coke and Coal handling, storage, and transfer operations must meet the following requirements:
- a) Structures used to store, handle, or transfer Coke or Coal Bulk Materials shall be completely roofed and walled structures or buildings that entirely surround Coke or Coal Bulk Materials and shall be designed, permitted and constructed in accordance with applicable Building Code requirements.
 - b) Structures used to store, handle, or transfer Coke or Coal Bulk Materials shall be properly maintained and equipped with and use a permitted air pollution control system and/or the ability to apply water to materials within a structure sufficient to control Fugitive Dust emissions at designed vents and at any other openings, including entrances and exits; and
 - c) Any entrances or exits for material or Vehicles shall have overlapping flaps, sliding doors or other devices(s), which shall remain closed except to allow material or Vehicles to enter and leave or to allow people to enter and exit, provided that if devices other than overlapping flaps or sliding doors are used, then the performance for dust control at the openings must be shown in the Fugitive Dust Plan to be equivalent to or better than that of the overlapping flaps or sliding doors used in conjunction with the required air pollution controls as determined by the Commissioner.
- (3) Interim Requirements. During implementation of the Enclosure Plan, Coke and Coal may be maintained in outdoor stockpiles subject to the following:
- a) The approved Interim Fugitive Dust Plan required in 4.0(1)(b);
 - b) The requirements for all Bulk Storage Material Facilities set forth in Part B above; and
 - c) The requirements for outdoor storage of bulk solid materials set forth in Part D below.

PART D: OUTDOOR STORAGE OF BULK SOLID MATERIALS OTHER THAN COKE OR COAL

5.0 Outdoor Bulk Solid Material Storage. The Facility Owner or Operator may maintain outdoor Bulk Solid Material storage if the Facility meets all of the following requirements.

- (1) Setbacks. Bulk material storage piles shall be located in accordance with setback requirements established in the Chicago Zoning Ordinance.
- (2) Height Limit. The vertical distance from grade immediately adjacent to a pile to the highest point of that pile shall be no greater than 30 feet. The Facility Owner or

Operator shall install and maintain a post or other visible measurement marker to demonstrate the height of each pile.

- (3) Protection of Waterways. Outdoor storage piles shall be set back at least 50 feet from any waterway, except that material in the process of being unloaded from or loaded to a barge may be located within 50 feet of a waterway for a period of time not to exceed 24 hours so long as no materials will fall, erode, be thrown, discharged, dumped, disposed of, or deposited in the waterway at any time.
- (4) High Wind Events. Disturbance of outdoor Bulk Solid Material piles, including but not limited to outdoor loading, unloading, and any other Processing, shall be suspended during High Wind Conditions, as detected by the wind monitor required under 3.0(5), unless alternate measures are implemented to effectively control dust in accordance with the approved Fugitive Dust Control Plan.
- (5) Dust Suppressant System. The Facility Owner or Operator must apply Chemical Stabilizers and/or maintain and operate water spray bars, a misting system, water spray systems and/or water trucks to prevent Fugitive Dust emissions in violation of 3.0(2), in accordance with the following requirements:
 - a) Except pursuant to 5.0(5)(c) below, the dust suppressant system shall be operable and able to dispense water, water-based solutions, and/or Chemical Stabilizers at all times unless all bulk storage material piles are covered.
 - b) When the temperature falls below 32 degrees Fahrenheit, the Facility must use Chemical Stabilizers and/or water heating systems to ensure that dust suppression continues.
 - c) If any part of the dust suppressant system is undergoing maintenance or otherwise becomes inoperable, the Facility Owner or Operator must suspend disturbance of Bulk Material piles that would be controlled by the inoperable portion of the dust suppressant system until such time as the system becomes operable again.
- (6) Runoff Management. The Facility Owner or Operator shall install and maintain stormwater management, erosion and sediment controls sufficient to:
 - a) Prevent runoff from the pile onto neighboring parcels, public ways, or any water bodies;
 - b) Prevent runoff from entering into public sewers or any entry points into the stormwater collection system, unless such discharges are in compliance with all applicable discharge permits;
 - c) Address timely and effective ways to respond to spills and/or visible migration of pollutants that could occur onsite or offsite;

- d) Demonstrate that the site is graded in such a way as to ensure proper drainage and to prevent pooling of water; and
- e) Ensure compliance with an approved Stormwater Management Plan pursuant to Chapter 11-18 of the Municipal Code, as applicable.

PART E: COMPLIANCE

6.0 Implementation Schedule. These Rules and Regulations shall take effect in five phases as follows:

- (1) The following paragraphs shall take effect immediately upon issuance of these Rules and Regulations:

1.0	Scope and Purpose
2.0	Definitions
3.0(1)	Certificate of Operation - Required
3.0(2)(a), (b), (c)	Fugitive Dust Prohibited
3.0(10)	Vehicle Leaking
3.0(15)	Roadway Cleaning
3.0(16)	Spilled Material
3.0(17)(a)	Recordkeeping -- Daily cleaning
3.0(17)(g)	Recordkeeping -- Maintain Schedule for Routine Inspection
3.0(17)(h)	Recordkeeping -- Timeframe for Maintenance of Required Records
6.0	Implementation Schedule
6.0(7)	Enclosure Reporting
7.0	Penalties
8.0	Variance from Operating and Maintenance Practices
9.0	Other Laws
10.0	Severability

- (2) The following paragraphs shall take effect ninety days from the issuance of these Rules and Regulations:

3.0(2)(d)	Testing of Visual Emissions and Opacity Limits
3.0(3)	Fugitive Dust Plan Required
3.0(4)	Fugitive Dust Monitoring
3.0(5)	Wind Monitoring
3.0(7)	Transfer Points
3.0(8)	Transport
3.0(9)	Vehicle Covering or other Dust Control
3.0(11)	Truck Loading and Unloading
3.0(12)	Railcar Loading and Unloading
3.0(13)	Barge and Boat Loading and Unloading
3.0(17)(b)	Recordkeeping – Weather Conditions

- 3.0(17)(c) Recordkeeping - Application of Water or Chemical Stabilizer
- 3.0(17)(d) Recordkeeping – Suspension of Work due to High Winds
- 3.0(17)(e) Recordkeeping – Dust Monitoring Results
- 3.0(17)(f) Recordkeeping – Record Quarterly Tests of Visual Fugitive Dust
- 4.0(1) Enclosure of Coke and Coal - Enclosure Plan
- 5.0(1) Outdoor Bulk Solid Material Storage - Setbacks
- 5.0(2) Outdoor Bulk Solid Material Storage - Height Limit
- 5.0(3) Outdoor Bulk Solid Material Storage - Protection of Waterways
- 5.0(4) High Wind Events
- 5.0(5) Outdoor Bulk Solid Material Storage - Dust Suppressant System
- 5.0(6) Outdoor Bulk Solid Material Storage - Runoff Management

(3) The following paragraph shall take effect six months from the issuance of these Rules and Regulations:

- 3.0(6) Covered Conveyors

(4) The following paragraph shall take effect one year from the issuance of these Rules and Regulations:

- 3.0(14) Paving

(5) The following paragraph shall take effect two years from the issuance of these Rules and Regulations:

- 4.0(2) Enclosure of Coke and Coal - Enclosure Requirements

(6) Enclosure Deadline. Within two (2) years from the submission of the Enclosure Plan, as required by 4.0(1) and 6.0(2), all Coke and Coal Bulk Materials must be either fully enclosed or removed from the Facility and any associated Coke or Coal Bulk Material Facility, as required by 4.0 above.

(7) Enclosure Reporting. During the two-year period provided in 6.0(5) above, the Facility Owner or Operator shall submit to the Commissioner monthly reports describing the work completed within the previous month, and the work planned in the upcoming month, towards compliance with these sections. The first report shall be due on the first business day of the month following the first thirty-day period after issuance of these Rules and Regulations, with subsequent reports due on the first business day of each following month. The address to submit the monthly reports is 333 South State Street, 2nd Floor, Chicago, Illinois, 60604, ATTN: Environmental Inspections.

The Commissioner may, at the Commissioner's sole discretion, grant extensions of the timeframes provided, in accordance with the Variance provisions set forth in 8.0 below, upon request and only for good cause shown by the Facility Owner or Operator.

7.0 Penalties. In accordance with Section 11-4-810 of the Code, any person who violates any provision of these regulations shall be fined not less than \$1,000 nor more than \$5,000. Each day of any violation of these regulations shall constitute a separate and distinct offense, and for each such violation the fines imposed shall be assessed per day.

8.0 Variance from Regulations.

(1) Applications for a Variance. The Facility Owner or Operator may apply to the Commissioner for a variance from any Regulation set forth in Parts B, D, or E above in accordance with the provisions set forth in 8.0(2) below.

(2) Requirements of the Variance Application. The request for a variance must be in writing and must set forth, in detail, all of the following:

- 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:
 - 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;
- i) For any request for a variance from the enclosure deadline set forth in 6.0(5), the applicant must submit all of the information required in sections 8.0(2)(a) through (h) above and shall also submit 1) fugitive dust monitoring reports for the four months prior to the date of the variance application and 2) in the event that the variance is granted, monthly fugitive dust monitoring reports for the duration of the variance which shall be due fourteen (14) days following the end of the month which the report covers. The monthly fugitive dust monitoring reports required by this section shall be submitted in an electronic format as specified in the Variance.

(3) Criteria for Reviewing Applications.

- a) In determining whether to grant a variance, the Commissioner will consider public comments received pursuant to 8.0(4) and will evaluate the information provided in the application to meet the requirements of 8.0(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.
- b) 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.
- 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.
- d) 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.

(4) Change in Facility Operations. If any part of the Facility's operation that is the subject of the variance expands or changes, then, at least thirty (30) days prior to the expansion or change in operation, the Facility Owner or Operator shall notify the Commissioner

and either a) apply for a new variance or b) notify the Commissioner of the Owner or Operator's intent to comply with the regulation(s) that were the subject of the variance, in which case the variance will automatically terminate.

(5) Notice of Variance Applications. The Commissioner will not grant any variance under this section until members of the public have had an opportunity to submit written comments on the variance application. Public notice of all variance applications will be provided by publication in a newspaper of general circulation published within the city and by publication on the city's website. The Commissioner will accept written comments for a period of not less than thirty (30) days from the date of the notice.

9.0 Other Laws. These regulations in no way affect the responsibilities of the Facility owner and operator to comply with all other applicable federal, state or City laws, ordinances, or regulations, including but not limited to those regarding the construction, operation, maintenance, and closure of the Facility.

10.0 Severability. If any clause, sentence, paragraph, subsection, Section, or Part of these Regulations is adjudged by any court of competent jurisdiction to be invalid, that judgment shall not affect, impair or invalidate the remainder of these Regulations, but shall be confined in its operation to the clause, sentence, paragraph, subsection, Section or Part to which the judgment is rendered.

I, Bechara Choucair, hereby promulgate the foregoing Bulk Material Storage Rules and Regulations on this 13th day of March 2014.



Bechara Choucair, M.D.
Commissioner of Health
City of Chicago