

NATURAL RESOURCES DEFENSE COUNCIL
SOUTHEAST ENVIRONMENTAL TASK FORCE
ALLIANCE FOR THE GREAT LAKES
ENVIRONMENTAL LAW AND POLICY CENTER
FAITH IN PLACE
RESPIRATORY HEALTH ASSOCIATION OF METROPOLITAN CHICAGO
SIERRA CLUB

Via email (petcokecomments@cityofchicago.org) and
United States Mail

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

To whom it may concern:

Thank you for the opportunity to comment on the City of Chicago's Proposed Rules and Regulations for the Handling and Storage of Bulk Material Piles [sic] ("Proposed Rules")¹, on behalf of the Natural Resources Defense Council (NRDC) and our members, Southeast Environmental Task Force (SETF), Alliance for the Great Lakes, Environmental Law and Policy Center, Faith in Place, Respiratory Health Association of Metropolitan Chicago, and Sierra Club.² We applaud the City's recognition that the transport, storage and handling of petroleum coke and other harmful substances is contaminating our environment and threatening the health of children and families living in Chicago neighborhoods. For too long, bulk storage and handling facilities have polluted the air and water with little to no oversight. This summer's uproar over the clouds of black dust swirling off of storage piles and into neighborhoods and waterways caught the public's attention and highlighted the need for real solutions to this environmental injustice. With literally tons more

¹ Exhibit 1, available at http://www.cityofchicago.org/content/dam/city/depts/cdph/environmental_health_and_food/ProposedRegsHandlingStorageBulkMatPiles12192013.pdf

² SETF is also submitting separate comments to the City to highlight the group's community perspective and concerns.

petroleum coke headed for these facilities in the near future from the increased processing of heavy crude at Midwest refineries, the time to act is now.

We appreciate the City's swift action following the most recent community complaints and news stories. The proposed regulations are an important part of the solution, though fall far short of what is needed: such regulations in their current form fail to fully address the incompatibility between noxious industries like bulk material storage and handling and thriving, healthy urban communities. Among other things, they defer the most rigorous controls for another two years, while letting some facilities escape these and many other controls entirely. We are also concerned with the overbroad variance provision that allows 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. The setbacks contained in the rules, which are critical to protecting neighboring communities, are plainly insufficient. Protection for aquatic life and drinking water should be enhanced as well, as existing facilities threaten the health of the Calumet River and Lake Michigan.

In addition to a number of changes that are needed in the rules, we strongly urge the City to use its zoning authority as it was intended, to separate bulk material storage and handling from where people live, worship, and play. Only with strong zoning requirements can the Southeast Side and other similar areas achieve their full potential for Chicago residents as the City undergoes economic changes and moves into the new century. To the extent that the City's zoning power is limited in its ability to protect people from this pollution, robust public health regulations are necessary.

Our comments begin with an overview of the public health and environmental threats from bulk material storage and handling, focusing on petroleum coke and coal, followed by an assessment of the proposed regulations.³ It is our

³ Technical expertise for these comments was provided by Dr. Ranajit Sahu. Dr. Sahu has over twenty years of experience in the fields of environmental, mechanical and chemical

understanding that the City looked to the South Coast Air Quality Management District's Rule 1158⁴ as a guide to its Proposed Rules, and thus we reference Rule 1158 where appropriate. While the regulations are a significant step forward, in their current form they pose a number of issues and concerns that we believe must be addressed in order to meet the City's duty to safeguard the public's health and welfare. We look forward to working with the City to make the necessary changes.

I. PUBLIC HEALTH IMPACTS OF BULK MATERIAL STORAGE AND HANDLING

The primary public health threats from bulk material storage and handling come from so-called fugitive dust, otherwise known as particulate matter or "PM." Such dust comes from nearly every aspect of operations, from trucks and barges to conveyors and drop points to storage piles. The dust can be inhaled, impacting the lungs and respiratory system, or ingested if it deposits on land, water or food. As noted above, our discussion focuses on impacts from petroleum coke and coal dust, given concerns with these two materials in Chicago communities.

PM has long been recognized as a harmful air pollutant by the U.S. Environmental Protection Agency (USEPA), with National Ambient Air Quality Standards currently set for both coarse PM, or "PM₁₀," and fine PM, or "PM_{2.5}." USEPA summarizes the health impacts of PM₁₀ and PM_{2.5} as follows:

- "EPA is concerned about particles that are 10 micrometers in diameter or smaller because those are the particles that generally pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects."⁵

engineering, advising private and non-profit clients as well as government agencies. He holds a B.S. with honors in mechanical engineering from the Indian Institute of Technology, and master's and doctorate degrees in mechanical engineering from the California Institute of Technology (Caltech).

⁴ Exhibit 2, South Coast Air Quality Management District, Rule 1158 (Amended June 3, 2005) ("Rule 1158"), available at

http://www.arb.ca.gov/pm/pmmeasures/ceffect/rules/scaqmd_1158.pdf

⁵ Exhibit 3, <http://www.epa.gov/airquality/particlepollution/>

- “Studies suggest that short-term exposure to coarse particles may be linked to premature death and hospital admissions and emergency department visits for heart- and lung-related diseases.”⁶
- “Exposure to fine particle pollution can cause premature death and harmful effects on the cardiovascular system (the heart, blood, and blood vessels). Fine particle exposure also is linked to a variety of other public health problems, including respiratory diseases.”⁷
- “People most at risk from particle pollution include people with diseases that affect the heart or lung (including asthma), older adults, children, and people of lower socioeconomic status. Research indicates that pregnant women, newborns, and people with certain health conditions, such as obesity or diabetes, also may be at increased risk of PM-related health effects.”⁸

According to data on coal mines, coal dust is primarily composed of PM₁₀, with a small fraction of that PM₁₀ in the PM_{2.5} size range⁹; due to physical similarities between coal and petroleum coke, it is likely that petroleum coke also produces a relatively small amount of PM_{2.5} in the form of fugitive dust¹⁰.

Black lung disease, or Pneumoconiosis, is a widely recognized result of occupational exposures to coal dust, whereby the dust settles deep in the lungs, eventually

⁶ Exhibit 4, USEPA, The National Ambient Air Quality Standards for Particle Pollution: Particle Pollution and Health, available at <http://www.epa.gov/pm/2012/decfshealth.pdf>.

⁷ *Id.*

⁸ *Id.*

⁹ *See, e.g.*, Exhibit 5, USEPA, AP-42 Chapter 11.9, Western Surface Coal Mining, Tables 11.9-1 and 11.9-2 (truck loading and bulldozing), available at <http://www.epa.gov/ttn/chief/ap42/ch11/final/c11s09.pdf>.

¹⁰ *See, e.g.*, Exhibit 6, USEPA, Emission Estimation Protocol for Petroleum Refineries, May 2011, Chapter 10, “Fugitive Dust Sources” (recommending use of AP-42 Chapter 13.2.4 calculations for estimation of petroleum coke handling emissions), available at [http://www.epa.gov/ttnchie1/efpac/protocol/Emission Estimation Protocol for Petroleum Refinerie 052011.pdf](http://www.epa.gov/ttnchie1/efpac/protocol/Emission%20Estimation%20Protocol%20for%20Petroleum%20Refinerie%20052011.pdf); and Exhibit 7, USEPA, AP-42 Chapter 13.2.4, “Aggregate Handling and Storage Piles,” at p. 13.2.4-4 (equation using particle size multipliers for PM₁₀ and PM_{2.5}), available at <http://www.epa.gov/ttn/chief/ap42/ch13/final/c13s0204.pdf>.

leading to their hardening.¹¹ The disease is not treatable or curable. A recent hazard characterization through USEPA's voluntary High Production Volume (HPV) Challenge Program cites a 1987 study showing that long-term inhalation of petroleum coke dust led to irreversible increased lung weight in rats at all levels of exposure.¹² In addition, a study of a petroleum coke and coal terminal in Liverpool found greater prevalence of respiratory problems in children living near the terminal and exposed to coke and coal dust.¹³

Petroleum coke and coal dust also are of concern because they contain heavy metals such as mercury, lead, arsenic, chromium, selenium, vanadium, and nickel. Many of these metals are known or probable human carcinogens¹⁴, and are associated with a host of other health problems¹⁵. There is also evidence that these metals are likely

¹¹ Exhibit 8, American Lung Association, Understanding Pneumoconiosis, available at <http://www.lung.org/lung-disease/pneumoconiosis/understanding-pneumoconiosis.html>

¹² While the American Petroleum Institute (API) noted in its submission of the underlying study to EPA that the "lung effects in the rat" are "unlikely to be relevant to humans," see Exhibit 9, API, Petroleum Coke Category Analysis and Hazard Characterization, December 28, 2007, at 13 ("API 2007"), available at <http://www.epa.gov/hpv/pubs/summaries/ptrlcoke/c12563rr2.pdf>, this conclusion should not be extended to the fibrotic effects, see Exhibit 10, Oberdorster, G. (1995). Lung Particle Overload: Implications for Occupational Exposure to Particles, *Regul. Toxicol. Pharm.* 27, 123-135 (distinguishing carcinogenic responses from lung fibrotic responses when extrapolating rat study results to humans). Moreover, the two sources cited by API to support its conclusion in fact report that the significance of lung overload for humans is "still being evaluated." See, e.g., Exhibit 11, Snipes, M. B. 1995. Pulmonary Retention of Particles and Fibers: Biokinetics and Effects of Exposure Concentrations. In McClellan, R.O. and Henderson, R.F. (Eds.), *Concepts in Inhalation Toxicology*, 2nd ed., Taylor & Francis, Washington, DC, pp. 225-248, at 226. Finally, the 1987 study appears to have been sponsored by API itself.

¹³ Exhibit 12, Brabin, B., et al. (1994). Respiratory morbidity in Merseyside schoolchildren exposed to coal dust and air pollution. *Arch. Dis. Child.* 70: 305-312, available at <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1029784/pdf/archdisch00564-0049.pdf>.

¹⁴ Exhibit 13, American Cancer Society, Known and Probable Human Carcinogens, available at <http://www.cancer.org/cancer/cancercauses/othercarcinogens/generalinformationaboutcarcinogens/known-and-probable-human-carcinogens>

¹⁵ See, e.g., Exhibit 14, 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>; Exhibit 15, ATSDR, Toxicological Profile for Mercury, March 1999, available at <http://www.atsdr.cdc.gov/toxprofiles/tp.asp?id=115&tid=24>, and Exhibit 16, Addendum to

components of PM relevant to cardiopulmonary disease.¹⁶ Many of the heavy metals are also regulated as toxic air pollutants under state and federal statutes, including the Clean Air Act Amendments.

Polycyclic aromatic hydrocarbons (PAHs) include a number of toxic, persistent and bioaccumulative pollutants that present environmental and human health risks.¹⁷ Exposure to these pollutants that are present in petroleum coke and other sources can occur by inhalation of particulate matter and vapor, surface contact, and in the food chain due to atmospheric deposition, surface water run-off, and entry into the food chain. Some PAH pollutants are toxic to humans, affecting the respiratory, neurological, or immune systems, and causing tumors and cancer.¹⁸

II. OTHER ENVIRONMENTAL AND PUBLIC WELFARE IMPACTS

Coal and petroleum coke dust also can cause environmental damage to plants and aquatic life. A 2004 study of coal dust from a coal export terminal in South Africa found that dust coating the leaves of nearby mangrove trees significantly inhibited photosynthesis.¹⁹ The studies reported by the American Petroleum Institute to USEPA through the HPV program showed a slight inhibition of growth of freshwater

the Toxicological Profile for Mercury (Alkyl and Dialkyl Compounds), March 2013, available at http://www.atsdr.cdc.gov/toxprofiles/mercury_organic_addendum.pdf.

¹⁶ Exhibit 17, Brooks, R., et al., Particulate Matter Air Pollution and Cardiovascular Disease, AHA Scientific Statement, May 10, 2010, available at <https://circ.ahajournals.org/content/121/21/2331.full>

¹⁷ See Exhibit 18, National Toxicology Program, Report on Carcinogens, 12th Edition ("Report on Carcinogens"), available at <http://ntp.niehs.nih.gov/ntp/roc/twelfth/roc12.pdf>; Exhibit 19, ATSDR, Toxicological Profile for Polycyclic Aromatic Hydrocarbons ("PAH Tox Profile"), August 1995, available at <http://www.atsdr.cdc.gov/toxprofiles/tp69.pdf>; Exhibit 20, USEPA, Development of a Relative Potency Factor (RPF) Approach for Polycyclic Aromatic Hydrocarbon (PAH) Mixtures (External Review Draft), 2010 ("Potency Factor"), available at http://cfpub.epa.gov/ncea/iris_drafts/recordisplay.cfm?deid=194584; and Exhibit 21, D.T. Logan. (2007). Perspective on Ecotoxicology of PAHs to Fish. Human and Ecological Risk Assessment: An International Journal, 13(2), 302-316, abstract available at <http://www.tandfonline.com/doi/full/10.1080/10807030701226749#.UtcAwvRDvVZ>.

¹⁸ See Report on Carcinogens, PAH Tox Profile, and Potency Factor.

¹⁹ Exhibit 22, G. Naidoo & D. Chirkoot. (2004). The effects of coal dust on photosynthetic performance of the mangrove, *Avicennia marina* [sic] in Richards Bay, South Africa. *Environ. Pollut.*, 127(3), 359-366.

algae during acute toxicity testing.²⁰ Another study by Canada's Department of Fisheries and Oceans found altered gene expression in juvenile Chinook salmon exposed to coal dust, although the authors note that the significance of the increased expression of the gene (which plays a critical role in ribosome biogenesis) is unclear.²¹ One concern noted in the study is that the surfactants used to reduce coal dust may boost the ability of coal pollutants to enter the environment. Some PAH pollutants are toxic to aquatic invertebrates and fish, causing deformities, lesions, tumors, compromised immunity and death.²²

Not only does fugitive dust harm the health of humans, animals and plants, but it also creates an ongoing burden on people's enjoyment of their homes and property. The black dust from petroleum coke and coal handling facilities settles on people's homes, both inside and out, requiring constant cleaning to remove the nuisance. Children cannot play outdoors without dust accumulating on their clothes, which then gets tracked into homes. Families cannot enjoy picnics in their backyards because dust settles on tables and chairs, as well as on plates and in glasses. A number of state agencies and other government bodies have noted concern about the negative effect on property values that can come with fugitive dust.²³

²⁰ API 2007 at 9.

²¹ Exhibit 23, P.H. Campbell & R.H. Devlin. (1997). Increased CYP1A1 and ribosomal protein L5 gene expression in a teleost: The response of juvenile chinook [sic] salmon to coal dust exposure. *Aquat. Toxicol.*, 28(1-3), 1-15.

²² See Logan (2007).

²³ See, e.g., Exhibit 24, Michigan Department of Environmental Quality, Dust and Fallout, available at http://www.michigan.gov/deq/0,4561,7-135-3310_4148-11396--,00.html; Exhibit 25, Washington State Department of Ecology, "Techniques for Dust Prevention and Suppression," (fugitive dust plan improves property values and quality of life), available at <https://fortress.wa.gov/ecy/publications/publications/96433.pdf>; Exhibit 26, City of Clinton, Tennessee, Property Maintenance Regulations, at 13-313(5), "Discharge of fugitive dust unlawful" if it results in "blight or the impairment of property values," available at [http://www.mtas.tennessee.edu/public/municodesweb.nsf/0/277665BB24387D10852567AE00448918/\\$FILE/clinton.t-13.pdf](http://www.mtas.tennessee.edu/public/municodesweb.nsf/0/277665BB24387D10852567AE00448918/$FILE/clinton.t-13.pdf). Our citation to these sources as support for the impact of fugitive dust on property values does not signal an endorsement of the means of fugitive dust control required by the cited authority.

III. SITING

As noted above, the City should exercise its zoning authority to address bulk storage operations, as the Proposed Rules do not cover some fundamental aspects of local land use decision making for bulk storage operations. It can do so by reclassifying these facilities as special uses under the Chicago Municipal Code.

Under existing land use controls, a bulk storage operation can be a permissible land use without any process to determine if the operation:

1. is in the interest of the public convenience and will not have a significant adverse impact on the general welfare of the neighborhood or community;
2. is compatible with the character of the surrounding area in terms of site planning and building scale and project design;
3. is compatible with the character of the surrounding area in terms of operating characteristics, such as hours of operation, outdoor lighting, noise, and traffic generation; and
4. is designed to promote pedestrian safety and comfort.²⁴

These kinds of broader land use considerations are the essence of a special use determination, which should be mandated as part of granting local land use approval for new or modified bulk storage operations. The special use process is the well-established public process for thoroughly evaluating land uses that can have a significant, long-term impact on the communities in which they operate. Through the public special use process, the City is able to prevent damaging land uses or to condition approval in such a way as to eliminate or minimize potential harms. Because bulk storage operations and all of the ancillary activities associated with them create intense, long lasting impacts on communities, they should be regarded as special uses that must be approved as part of establishing or modifying operations. This is especially true because of the cumulative risks posed by multiple

²⁴ Chicago Municipal Code § 17-13-0905.

facilities operating in close proximity to one another, a realistic prospect under Chicago's existing land use system.

Under Chicago's existing zoning and land use controls, bulk storage facilities are permissible uses in two kinds of zones. First, if a facility is engaging in the outdoor bulk storage of raw materials, it is a permissible use in M-3 zones.²⁵ Second, facilities that store extracted, raw, recycled or secondary materials as part of manufacturing, production and industrial services are permissible uses in planned manufacturing districts (PMDs), which are found throughout Chicago including in the Calumet region.²⁶ For example, because petroleum coke is presumably classified as a secondary (not raw) material, a facility engaged in the bulk storage of petroleum coke should be limited to operating in a planned manufacturing district. This is true whether the petroleum coke is being stored inside or outside. By virtue of this, all petroleum coke storage facilities will necessarily aggregate in planned manufacturing districts, where their effects will be experienced cumulatively. This consequence of Chicago's Zoning Ordinance is already in evidence in the Calumet Region.

Chicago's existing Zoning Ordinance treats bulk storage operations in M-3 zones and planned manufacturing districts as "permitted by right." This means that facilities that fit within the permissible use classification are free to locate and operate anywhere within these areas. This is one reason why the setbacks contemplated by the Department of Health are so critical. As in the Calumet region, the PMD perimeter (and sometimes interior) consists of waterways, public spaces and, especially, residential neighborhoods. Because of these natural, public and residential uses, it is unwise to continue to allow this category of intensive uses to be "permitted by right." The City should amend its Zoning Ordinance to require bulk storage operations to acquire special use approval as a pre-condition for new and modified facilities.

²⁵ Chicago Municipal Code § 17-5-0207.

²⁶ Chicago Municipal Code § 17-6-0403-F.

Requiring special use approval for new and modified bulk storage operations will have several immediate benefits:

- First, as noted, a broader range of factors regarding the suitability of the use can be considered. By contrast to the one-size-fits-all “permitted by right” approach, the City will be authorized to view each new and modified operation in a tailored, site-specific manner.
- Second, the City will be authorized to evaluate the suitability of the use according to broad indicators related to the public interest, not merely the more technical regulatory specifications contained in the Department’s proposed regulations.
- Third, potential operators will need to be much more careful and proactive in developing their proposals in order to adhere to the special use approval criteria.
- Fourth, the special use process incorporates opportunities for public notice and participation. The public will be informed and engaged at the earliest stage of a proposal.
- Fifth, the special use process will allow the City to control the risk of the aggregation of multiple facilities that could create a significant cumulative impact.
- Sixth, requiring special use approval will necessarily involve engagement by local elected officials, especially the Alderman, allowing for a more proactive role for public representatives.
- Seventh, uniformly requiring special use approval will restrain a “race to the bottom,” that is, the tendency for facilities to aggregate in locations that offer the path of least resistance. Requiring special use review according to uniformly administered procedures and decision factors will restrain the aggregation of facilities in the most vulnerable communities.

- Eighth, in PMDs, the special use approval process will also provide a basis for the City to evaluate two additional criteria explicitly mandated by the Zoning Ordinance:

1. existing manufacturing activities, including the potential for land use conflicts and nuisance complaints; and

2. efforts to market other property within the *planned manufacturing district* for industrial use.²⁷

The Department of Health’s proposal only addresses part of the issue with bulk storage facilities. On a more fundamental level, the issue is land use. Consequently, any meaningful response by Chicago must also include changes to the land use approval process for new and modified bulk storage facilities. Fortunately, such change is not significant, but rather only requires extending the requirement for special use approval to this category of facilities. While this requires action by the City Council and cannot be accomplished by regulations alone, it must be done to prevent the uncontrolled proliferation of facilities, clustered in those small areas of Chicago where today they are permitted by right.

IV. CRITIQUE OF PROPOSED RULES

While the Proposed Rules include a number of improvements from the existing vague ordinances relevant to fugitive dust control, they also contain a number of weaknesses and gaps that together significantly dilute the City’s ability to protect the public health and welfare. Below we walk through these weaknesses and gaps, and make recommendations for necessary changes.

Issues are presented in the order they arise in the Proposed Rules for ease of tracking, not in their order of importance. Priority issues include the following:

²⁷ Chicago Municipal Code § 17-13-0905-C.

- Implementation Schedule, see comments on Section 6.0
- Enclosure of all facilities, see comments on Section 3.0(5)
- No variances from setbacks and other non-pile controls, see comments on Section 3.0(18).
- Enhanced setbacks, see comments on Section 3.0(5)

DEFINITIONS, SECTION 2.0.

A number of the proposed definitions require clarification or modification, while definitions are needed for other terms.

- *Accumulation, 2.0(1)*. The basis for using three ounces per square foot as the threshold for accumulation is not clear and should be explained. Moreover, three ounces per square foot is a significant amount of material; in comparison, silt, the parameter for measuring deposits on surfaces, is typically calculated in grams per square meter.²⁸ Thus, the City should adopt a lower threshold for accumulation, which is based on a limit designed to minimize entrainment and fugitive emissions of PM by wind, vehicle traffic, and site activities.
- *Chemical Stabilizer, 2.0(3)*. “Non-toxic” should be removed from the definition, as toxicity testing and characterization has not been carried out on a number of chemicals used for dust suppression. Full compliance with other laws and applicable requirements should be retained.
- *High Wind Conditions, 2.0(9)*. The basis for defining a high wind condition as “15 miles per hour” is not clear and should be explained. Moreover, the term “wind speeds” as used in the definition itself needs to be defined, as wind speed may be measured in a number of different ways (e.g., average wind speed, wind speed sustained over a period of time, wind gusts, etc.) In addition, the definition should specify at what elevation the wind speed is to

²⁸ See, e.g., Exhibit 27, Western Regional Air Partnership, Fugitive Dust Handbook, Chapter 5, at 5-2, available at http://www.wrapair.org/forums/dejf/fdh/content/Ch5-Paved_Roads_Rev06.pdf.

be measured. Typically, wind speeds are measured at the standard anemometric height of 10 meters. However, in this case, it may be more appropriate to base the wind speed measurement at an elevation specific to the expected heights of sources such as piles or loading activities.

- *Fully Enclosed Conveyor, no definition provided.* As set forth below, the Proposed Rules should require “fully enclosed” conveyors, and a definition of this term should be provided either here or in the Conveyors section. “Fully enclosed” in this context means that there is no ability of fugitive dust emissions from the conveyor to escape to the ambient air.
- *Fully Enclosed Structure, no definition provided.* While the Proposed Rules employ the term “fully enclosed structures” in Section 3.0(4), this key term is nowhere defined.²⁹ In contrast, Rule 1158 includes a definition of “enclosed storage” as follows: “any completely roofed and walled structure or building... surrounding an entire coke, coal or sulfur pile.” The City should adopt a similar definition here.
- *Maximum local design wind speeds, no definition provided.* This term is used in Section 3.0(6)(c)(iv) to describe the conditions under which a wind barrier must perform. However, no definition is provided by the Proposed Rules, either in the definition section or in Section 3.0(6). This term should be defined.
- *Petroleum Coke, or Petcoke, 2.0(14).* The definition of petroleum coke should be clarified to include such residues produced by petroleum upgraders in addition to petroleum refining.³⁰
- *Process or Processing, 2.0(15).* The proposed definition is overly broad, containing activities often not associated with “processing” as the term is

²⁹ Indeed, while Section 3.0(4)(b) requires that such structures comply with “applicable Building Code requirements,” there is no description of the structures adequate to determine which building code requirements are in fact applicable.

³⁰ Upgrading and refining are considered two distinct processes, though they both produce petroleum coke. *See, e.g.*, Exhibit 28, Alberta Energy, “Upgrading and Refining,” available at <http://www.energy.alberta.ca/Oil/pdfs/FSRefiningUpgrading.pdf> and Exhibit 29, Husky Energy, “Lloydminster Upgrader” (upgrader produces sulfur and petroleum coke), available at <http://www.huskyenergy.com/operations/downstream/facilities/heavyoilupgrader.asp>.

typically understood in the industry. As a general matter, “processing” usually connotes that the bulk material is somehow physically or chemically changed, as with blending, crushing, screening, washing, etc. Other activities that merely move the material around, such as loading, unloading and stockpiling, generally are referred to as “handling.”

While these distinctions are not absolute and consistent in all contexts, they do appear to be recognized in other parts of the Proposed Rules. The term “process” to describe activities at the bulk materials facilities is used in several places accompanied by terms such as “storage, blending, handling... and transport,”³¹ and “transports, or stores,”³² indicating that processing is distinct from these activities.

Moreover, here they are important because the broadness of the proposed definition for “processing” creates confusion in some sections of the rules. The most problematic is Section 3.0(5), which states as follows:

For Existing Facilities only, the Facility Owner or Operator may maintain outdoor Bulk Solid Material storage if the Facility at no time exceeds the following limitations; provided, however, that no material Processing, including but not limited to blending, mixing, crushing, and screening, may occur outdoors, except that truck loading and unloading may occur within a wind barrier...

Because the proposed definition of “processing” includes “stockpiling,” this sentence allows an activity in its first half (outdoor bulk material storage) that is prohibited by its second half (outdoor material processing, which by definition includes stockpiling, a.k.a. storage, under proposed Section 2.0(15)).

³¹ Section 1.0.

³² Section 3.0.

For these reasons, the City should adopt an amended definition of processing with a narrower scope, and amend other sections of the Proposed Rules to ensure consistency in use of this term and terms related solely to the moving of bulk material from place to place.

- *Separation Pond, 2.0(17)*. It is not clear why this definition is limited to just coke and not all of the other materials covered by this regulation.
- *Water Spray System, 2.0(20)*. The basis for limiting the upper limit in the range of pressures, namely 1500 psi, is not clear. Systems are available that operate at pressures up to 2000 psi.³³

OPERATING AND MAINTENANCE PRACTICES, SECTION 3.0

Fugitive Dust Prohibitions, Section 3.0(2). The Proposed Rules include limits on visible emissions and opacity as follows:

2) Fugitive Dust – Prohibited. The Facility Owner or Operator shall not cause or allow the discharge into the atmosphere of:

a) Any Fugitive Dust that is visible beyond the property line of the Facility; or

b) Any Fugitive Dust within the property line of the Facility at any Bulk Solid Material storage pile, Transfer Point, roadway or parking area that, for a period or periods aggregating more than three minutes in any one hour, is equal to or greater than 10% opacity.

These limits are important protections and metrics. However, they are weakened by the lack of monitoring, testing and reporting requirements for demonstrating

³³ See, e.g., Exhibit 30, MEFCOR, Fully Automatic Dust Suppression Water Control Valve, Model DSV400, available at <http://173.254.28.129/~copyitb1/mefcor/dsv400.htm>; see also Exhibit 31, Tecpro Australia, Tecpro Australia – Specialists in Spray Nozzles and Dust Suppression Solutions for Mining Industry, available at http://www.mining-technology.com/contractors/emission_control/tecpro-australia/. Spray systems used in the mining industry should be translatable to the facility covered by the Proposed Rules.

continuous compliance. A limit is only as strong as the accompanying monitoring, testing and reporting protocols. It should not be assumed, in the absence of such critical requirements, that compliance with the work practice standards contained in other portions of the rules suffice to demonstrate compliance with these two prohibitions: such work practices are at best a rough proxy for air emissions. In addition, as explained in more depth below, under the proposed Implementation Schedule, these work practice standards are not immediately applicable, while the fugitive dust prohibitions contained in Section 3.0(2) are.³⁴

For these reasons, the City must include detailed monitoring, testing and reporting protocols for visual emissions and opacity. These requirements should go into effect at the same time as the visual emissions and opacity limits themselves become applicable.

The monitoring, testing and reporting protocols should include, at minimum, the following:

- Periodic testing using approved methods and protocols for determining visible emissions and opacity, such as USEPA's Method 9 or 9D, as applicable, by a trained and certified professional³⁵;
- A schedule for such testing, with testing occurring at least quarterly;
- A full range of weather and atmospheric conditions under which such testing must occur, such that representative conditions at the facility are covered;
- Either a prohibition on nighttime operations or the requirement that nighttime operations be conducted while nighttime opacity measurements, which are possible, are conducted pursuant to an

³⁴ See Section 6.0, Implementation Schedule.

³⁵ See, e.g., Exhibit 32, USEPA, Test Methods for Unpaved Roads and Unpaved Parking Lots, available at <http://www.epa.gov/region9/air/phoenixpm/fip/method.html>.

approved protocol and also that particulate monitoring is maintained during nighttime operation.

In addition, the City should clarify that the opacity limit applies to areas where barges and railcars serve the facility (not solely truck-related areas such as roadways and parking areas), as well as to the trucks, railcars, and barges themselves.³⁶

The opacity limit should also include a daily cumulative limit on excess opacity levels, such as not to exceed three three-minute periods in a consecutive 24-hour period, as 24 episodes of three minute exceedances can equal a significant amount of fugitive dust in a single day.

Finally, the City should limit opacity to 5% instead of 10%. This is the limit that applies to a number of parallel fugitive dust sources, including barge loading, in Granite City, Illinois, under the state's fugitive dust regulations.³⁷

The Calumet area, like Granite City, has a number of fugitive dust sources located in close proximity to neighborhoods; thus, it is appropriate to require sources in the City of Chicago to comply with a similarly rigorous opacity standard.

Fugitive Dust Plan, Section 3.0(3). The Fugitive Dust Plan requirement in the Proposed Rules is the core and only submission required of a facility, as well as the primary compliance document subject to approval by the Commissioner. As such, it is a key component of the Proposed Rules. To truly serve its critical function, several changes are needed.

First, the rules should clearly state the standard by which the Commissioner must judge the sufficiency of the proposed plan and require the Commissioner to disapprove the plan unless this standard is met. For example, Rule 1158 requires the Executive Officer to:

³⁶ See, e.g., 35 Ill. Admin. Code 212.316(e) (applying opacity limit to barge unloading).

³⁷ See *id.*; see also Mich. Comp. Laws § 324.5524(2) (5% opacity limit applies to roads, lots and storage piles at certain facilities).

disapprove an Open Storage Pile Control Plan unless the facility operator demonstrates that the plan requires the facility operator to implement best available control measures on the pile(s) and provides that no material accumulates beyond the boundaries of the pile and provides that the facility will comply with all applicable AQMD rules.³⁸

In this case, the standard for approval should include, at minimum, compliance with all of the substantive and administrative requirements set forth in the Proposed Rules and any other applicable rules and regulations, as well as a determination by the Commissioner that the facility will not “create a public nuisance or adversely impact the surrounding area, surrounding environment, or surrounding property uses.”³⁹

Second, the Proposed Rules should clearly state that an approved fugitive dust plan expires at the end of one year.⁴⁰ Currently, Section 3.0(3) only states that the plan “shall be updated on an annual basis and submitted to the Department for review and approval on or before January 31 every year,” which leaves some ambiguity as to whether a facility may continue to operate under an older dust plan.

Third, the required map should include the location of all control devices and monitoring stations.

Fourth, the rules must include standards by which to judge the sufficiency of the contingency plan required to address exceedances of the PM reportable action levels based on monitoring data, such as to eliminate the PM exceedances. Furthermore, the rules should include measures that must be considered in developing a contingency plan, such as cessation of operations or additional control measures not otherwise mandated by the rules. These standards and requirements may be more appropriately placed in a separate provision regarding PM monitoring.

³⁸ Rule 1158 at (f).

³⁹ Drawn from the proposed variance provision, Section 3.0(18).

⁴⁰ *See, e.g.*, Rule 1148 at (f)(6), “The Plan is only valid for one year.”

(These and other needed improvements in the PM monitoring requirements are taken up below.)

Fifth, in Section 3.0(3)(h), the City should require each facility to employ or retain a person with training and certification in dust control as the person or persons responsible for maintenance and testing of control measures, devices and technologies, as well as for certifying submissions to the Commissioner along with certification by the owner/operator, and require submission of supporting documentation of said qualifications with the fugitive dust plan. Additionally, a person with training and certification in ambient monitoring should be employed or retained with respect to PM₁₀ monitoring and reporting.

Finally, and perhaps most importantly, the rules should provide for a means for the public to comment on and challenge the sufficiency of the Fugitive Dust Plan. Such public input is critical in general because of the potential impact of these facilities on city communities, and in particular because this plan is the mechanism for setting for the terms of any variance sought under Section 3.0(18), if such variances are to be allowed at all, see comments on Section 3.0(18). In addition, if the rules are not sufficiently amended to add necessary objective standards, public participation is critical to ensuring that the Commissioner properly exercises her/his discretion. The rules should require that the Commissioner take all public comments into account in his or her decisions on fugitive dust plans by issuing a response to comments along with a determination explaining the grounds for approval.

Enclosure of Bulk Solid Material, Section 3.0(4). As noted above, a definition is needed for “fully enclosed structure.” In addition, as described in more detail below regarding the outdoor pile provision, all facilities should be required to comply with the enclosure provision. The City should also make the following changes to Section 3.0(4):

- In Section 3.0(4)(a), tie the sufficiency of the air pollution control system 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.⁴¹

- In Section 3.0(4)(c), define and constrain the term “other device(s),” which is unenforceably vague, such as by stating 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 (see comment on 3.0(4)(a), as determined by the Commissioner.
- Utilize total emission limits for the facility in terms of both maximum pounds per hour and maximum pounds per year that apply to the sum of all emissions from the facility. This is important since PM arises from multiple sites and processes and this total emission limit caps facility emissions. The City should develop source-specific emission limits that apply to specific processes or emission points, e.g., baghouses, truck traffic, etc.

Outdoor Bulk Solid Material Storage – When Allowed, Section 3.0(5). The City should eliminate an exemption from the requirement for full enclosure of piles made available to smaller existing facilities, as outdoor piles at such facilities can still generate significant dust and, as set forth in more detail below, the proposed management practices for outdoor piles are problematic.

The exemption from full enclosure is available if existing facilities fall below two thresholds for quantity of material received and total capacity, and meet several setback requirements, although the setback requirements may be waived under the

⁴¹ See, e.g., Exhibit 33, USEPA, Office of Solid Waste and Emergency Response, RCRA Orientation Manual 2011: Resource Conservation and Recovery Act, Section III: RCRA Subtitle C – Managing Hazardous Waste, Chapter 3: Regulations Governing Treatment, Storage, and Disposal Facilities, at III-61 to III-62, available at <http://www.epa.gov/osw/inforesources/pubs/orientat/rom35.pdf>

variance provision (as discussed in more detail below). In place of the full enclosure requirement, smaller existing facilities must comply with “best management practices” to control and monitor dust.⁴²

As an initial matter, there is no correlation between the daily quantity and total capacity thresholds in the Proposed Rule and emissions and risks from fugitive dust. Piles qualifying for outdoor storage and applying the required control measures may still generate significant fugitive dust, as shown in the following tables which present emission calculations for outdoor storage piles, both wetted and unwetted.⁴³

| Wind Erosion from Wetted Petcoke Storage Pile - PM10 Emissions (lb/yr) | | | | | | | |
|---|------------------|-----------------------------|---------------------------------|--------|---------|---------|---------|
| [Source: TCEQ, May 2008] | | | | | | | |
| Pile Size (acres) | Pile Height (ft) | Approx. Pile Mass (tons)[a] | Number of Active Days (days/yr) | | | | |
| | | | 250 | 275 | 300 | 325 | 350 |
| 1 | 30 | 10890 | 990.0 | 1089.0 | 1188.0 | 1287.0 | 1386.0 |
| 2 | 30 | 21780 | 1980.0 | 2178.0 | 2376.0 | 2574.0 | 2772.0 |
| 3 | 30 | 32670 | 2970.0 | 3267.0 | 3564.0 | 3861.0 | 4158.0 |
| 4 | 30 | 43560 | 3960.0 | 4356.0 | 4752.0 | 5148.0 | 5544.0 |
| 5 | 30 | 54450 | 4950.0 | 5445.0 | 5940.0 | 6435.0 | 6930.0 |
| 6 | 30 | 65340 | 5940.0 | 6534.0 | 7128.0 | 7722.0 | 8316.0 |
| 7 | 30 | 76230 | 6930.0 | 7623.0 | 8316.0 | 9009.0 | 9702.0 |
| 8 | 30 | 87120 | 7920.0 | 8712.0 | 9504.0 | 10296.0 | 11088.0 |
| 9 | 30 | 98010 | 8910.0 | 9801.0 | 10692.0 | 11583.0 | 12474.0 |

[a] assumes conical base with height limited to that shown, and material density of 50 pounds per cubic feet (bituminous coal, coke - typical)

⁴² See Section 3.0(6).

⁴³ While the Proposed Rules require spraying of outdoor piles, the non-wetted pile emission estimates are provided because these spray systems become less effective at higher wind speeds for several reasons, e.g., winds alter spray patterns, less water reaches the pile, and the uniformity of water coverage across the pile decreases, all reducing effectiveness and increasing emissions. Wind barriers primarily function to lower wind speeds, and so will reduce but not prevent emissions at higher wind speeds.

| Wind Erosion from Non-Wetted Petcoke Storage Pile - PM10 Emissions (lb/yr) | | | | | | | |
|---|------------------|-----------------------------|---------------------------------|---------|---------|---------|---------|
| [Source: TCEQ, May 2008] | | | | | | | |
| Pile Size (acres) | Pile Height (ft) | Approx. Pile Mass (tons)[a] | Number of Active Days (days/yr) | | | | |
| | | | 250 | 275 | 300 | 325 | 350 |
| 1 | 30 | 10890 | 3300.0 | 3630.0 | 3960.0 | 4290.0 | 4620.0 |
| 2 | 30 | 21780 | 6600.0 | 7260.0 | 7920.0 | 8580.0 | 9240.0 |
| 3 | 30 | 32670 | 9900.0 | 10890.0 | 11880.0 | 12870.0 | 13860.0 |
| 4 | 30 | 43560 | 13200.0 | 14520.0 | 15840.0 | 17160.0 | 18480.0 |
| 5 | 30 | 54450 | 16500.0 | 18150.0 | 19800.0 | 21450.0 | 23100.0 |
| 6 | 30 | 65340 | 19800.0 | 21780.0 | 23760.0 | 25740.0 | 27720.0 |
| 7 | 30 | 76230 | 23100.0 | 25410.0 | 27720.0 | 30030.0 | 32340.0 |
| 8 | 30 | 87120 | 26400.0 | 29040.0 | 31680.0 | 34320.0 | 36960.0 |
| 9 | 30 | 98010 | 29700.0 | 32670.0 | 35640.0 | 38610.0 | 41580.0 |

[a] assumes conical base with height limited to that shown, and material density of 50 pounds per cubic feet (bituminous coal, coke - typical)

The previous two tables show estimated annual PM₁₀ emissions from storage piles, both wetted (upper table, assuming a 70% control efficiency) and non-wetted (lower table). The pile geometry is assumed to be limited to a height of 30 feet, consistent with the proposed height limit, and conical in shape. Thus, these calculations should be interpreted as order-of-magnitude emissions estimates.⁴⁴

Nor is there a correlation between the setbacks and risk from fugitive dust. The maximum setback is 660 feet from childcare facilities, parks, etc.; this is equivalent to a single city block. The setback from residences is half this distance. Particulate matter from uncovered piles can travel in excess of a block as evidenced by Calumet resident reports, especially on high wind days and if there is significant traffic and other activity in the area to send settled dust airborne again (which is highly likely given that the public way setback is only 100 feet). According to USEPA, with

⁴⁴ Detailed calculations for wind erosion from piles, which require significant additional actual geometry and wind speed information, can be performed as shown in Exhibit 34, USEPA's AP-42 Section 13.2.5, Industrial Wind Erosion, available at <http://www.epa.gov/ttn/chief/ap42/ch13/final/c13s0205.pdf>. If the City decides to allow outdoor piles at all, rather than removing the exemption for facilities that fall below proposed thresholds, we recommend that the City conduct such additional calculations in order to refine the information presented in these comments, and then use such calculations to estimate risk and appropriately adjust the thresholds.

respect to construction sites, this track out and re-suspension of dust by passing traffic “may be far more important than all the dust sources actually within the construction site.”⁴⁵ And even these inadequate setbacks can be avoided by sources with outdoor piles through a variance.⁴⁶

For these reasons and as set forth in more detail below, the control requirements applying to outdoor storage piles are insufficient to reduce risks from fugitive dust: (a) spray systems tend to become less effective over time unless properly maintained, due to plugging, poor and inefficient droplet generation, and poor spray patterns; (b) during high winds, spray systems can be ineffective because the wind can distort the spray pattern and significant quantities of water or chemical stabilizer may simply not reach the pile surface; (c) the proposed rules lack the necessary material moisture content routine testing to ensure that spray systems are properly calibrated to achieve maximum effectiveness; (d) the proposed rules lack the necessary visual emissions and opacity testing to verify that the spray systems are properly calibrated to achieve maximum effectiveness, and (e) the PM monitoring requirements similarly are not adequate to provide this verification.

Thus, as the prerequisites for the exemption are not supported and exempted facilities would pose a significant threat to the public health and welfare, the exemption should be removed. We note that Rule 1158 does not include such an exemption for facilities below certain thresholds.⁴⁷

⁴⁵ Exhibit 35, USEPA, AP-42 Chapter 13.2.3, Heavy Construction Operations, at 13.2.3-2, available at <http://www.epa.gov/ttnchie1/ap42/ch13/final/c13s02-3.pdf>.

⁴⁶ See Section 3(18) (listing as immune from a variance only the quantity received and total capacity thresholds).

⁴⁷ While the original rule included some allowance for certain existing facilities from the full enclosure requirement, that allowance has expired and all facilities must now comply with the enclosure requirement. See Rule 1158, at (d)(2)(c) (allowing facilities in existence prior to 1999 to operate under an open pile control plan) and (f) (Executive Officer may not accept any new Open Storage Control Plan for approval after 2008) and (f)(6) (Open Storage Control Plan is only valid for one year).

Outdoor Bulk Solid Material Storage – Best Management Practices, Section 3.0(6).

Height Limit, 3.0(6)(a). The City should provide the basis for allowing a maximum pile height of 30 feet. This height corresponds to a two to three storey building. It is not clear that an open pile of this height, containing pet coke or coal, can be effectively managed by a wind barrier⁴⁸, given the wind gusts that can occur at these heights. For example, in just 2013 alone, the highest wind gust speed recorded in Chicago was 67 miles per hour and highest sustained wind speed was 41 mph at Midway Airport.⁴⁹

The effectiveness of a wind barrier at these heights and wind conditions (in terms of the wind barrier's ability to meet the opacity and visual emission limits contained in Section 3.0(2)) is especially important, as wet suppression systems are ineffective at higher winds.⁵⁰ Moreover, it is not clear that the wind barriers can be effective at these heights if they are also designed to open and close, as allowed by the Proposed Rule.

If wind barriers cannot be demonstrated as effective at these heights, the exemption from full enclosure for existing facilities meeting the thresholds should be removed. At the very least, the Proposed Rules must limit pile and drop point activity to heights at which wind barriers have been demonstrated as effective and impose

⁴⁸ Two of the primary studies on wind barriers cited in the literature tested wind breaks at piles of 8 to 9 feet. See Exhibit 36, Barbara Billman and S.P.S. Arya, USEPA Atmospheric Sciences Research Laboratory, Office of Research and Development, "Windbreak Effectiveness for Storage-Pile Fugitive-Dust Control," USEPA Report No. EPA/600/3-85/059, 1985, available at https://www.alexandriava.gov/uploadedFiles/tes/oeq/info/Reference%201_Paper-Windbreak%20Effectiveness%20for%20storage%20Pile%20Fugitive%20Dust%20Control.pdf and Exhibit 37, Robert Zimmer, et al., USEPA, Air and Energy Engineering Research Laboratory, "Field Evaluation of Windscreens as a Fugitive Dust Control Measure for Material Storage Piles," USEPA Report No. EPA/600/S7-86-027, November 1986, available through nepis.epa.gov.

⁴⁹ See Exhibit 38, <http://weatherspark.com/history/30851/2013/Chicago-Illinois-United-States>. Such wind speed data is typically recorded at a height of 10 meters, approximately equal to the maximum pile height allowed by the Proposed Rules.

⁵⁰ See comments on Section 3.0(5).

limits on maximum emissions, including on a short-term basis with specific requirements on a 3-minute basis for opacity and on an hourly basis for total PM emissions.

Protection of Waterways, 3.0(6)(b). The provision as drafted is unenforceably vague. The City should include minimum numeric setbacks and objective separation methods to ensure that “no materials will fall, erode, be thrown, discharged, dumped, disposed of, or deposited in the waterway at any time.” The setbacks for water should be tied to the enhanced setbacks for residences, etc., discussed above, as both are based on the travel distance of dust by air. They should include setbacks from all waters of the United States, potable water wells, and public water supply reservoirs and intakes.

Wind Barrier, 3.0(6)(c). As discussed above, there is significant question as to whether wind barriers can be effective at the heights allowed by the Proposed Rules, given likely wind speeds.

In addition, the wind barrier requirement lacks an objective performance metric by which to judge its sufficiency, other than defining performance as “the ability of the screen material to stay in place and not tear or release from the fence structure.”⁵¹ As the visual emissions and opacity limits contained in Section 3.0(2) apply to the piles and other activities surrounded by the wind barrier, the Proposed Rules should explicitly require that wind barriers be demonstrated to be capable of meeting these limits on a continuous basis, i.e., under all conditions.⁵² This is the performance that must be demonstrated by documentation required under Section 3.0(6)(c)(iv)(2).

It is not clear why a range of porosities is allowed. This provision should be explained in terms of its impact on the ability of the windscreen to meet the visual emissions and opacity limits. The same applies regarding the demonstration that the

⁵¹ See Section 3.0(6)(c)(iv)(4).

⁵² See comments on Section 3.0(6)(c)(iv), regarding the need for a definition of maximum local design wind speeds.

screen material will not become plugged with particulate matter in “most conditions.”⁵³

Finally, it is not clear how measuring the setback distance from the base of the storage pile accounts for required enclosure of “immediately adjacent Processing area(s).”⁵⁴ The setback distance should also include a maximum distance, as wind barriers located at too great of a distance, such as at the perimeter of the facility, will be of questionable effectiveness. Similarly, the rules should contain a provision regarding placement of the wind barrier that takes into account total footprint of the storage pile. A wind barrier provides protection of a land area extending only a limited distance from the barrier itself. Thus, if a storage area is very large area-wise, portions of the area may not be sufficiently controlled by a wind barrier whose placement is based solely on the base of the storage pile.⁵⁵

Alternate Wind Barrier, 3.0(6)(d). Because the visual emissions and opacity limits apply to the sources within the wind barrier, approval of any alternative wind barrier must be tied to these metrics as well. As currently written, the provision is vague and unenforceable, especially because Section 3.0(6)(c) itself does not describe a single wind barrier with a single level of performance (and so does not lend itself to a determination that a proposed alternative is “at least as effective” as that required by (6)(c).)

High Wind Events, 3.0(6)(e). *See infra* comments on Section 2.0(9) on the definition of high wind conditions. Additional language is needed with regards to the weather station’s design and operation, as follows: “The facility must install, operate, and maintain, according to manufacturer's specifications, a permanent, continuous site

⁵³ See Section 3.0(6)(c)(iv)(4). It is not clear whether the Proposed Rules intended to use “most” or “moist.” In other case, the term is vague and requires further definition.

⁵⁴ Sections 3.0(6)(c)(i) and (v).

⁵⁵ The USEPA protocols and guidance can be found in Exhibit 39, USEPA, Office of Air Quality Monitoring and Standards, Air Quality Assessment Division, Quality Assurance Handbook for Air Pollution Measurement Systems, Volume IV, Meteorological Measurements Version 2.0 (Final), March 2008, available at http://www.epa.gov/ttn/amtic/files/ambient/met/Volume%20IV_Meteorological_Measurements.pdf

meteorological station designed to record 2 minute data, and measurement of such data must comply with U.S. Environmental Protection Agency protocols and guidance.”⁵⁶ Also, the required weather station should be capable of measuring (a) wind direction, in addition to wind speed, and (b) other data necessary for dispersion modeling, including but not limited to temperature. Such information is critical to understanding the dispersion of particulate matter beyond the facility boundary, which in turn is necessary for determining whether a facility is creating a public nuisance or adversely impacting the surrounding area, environment, or property uses.

The rules must contain standards for placement of the weather station, including that the station be located in an unsheltered area, centrally positioned in relation to the storage piles, and at a minimum height of 10 meters.

Finally, the rules should require that outdoor piles be covered with a tarp during high wind events, in addition to suspension of disturbance.

Fugitive Dust Monitoring, 3.0(6)(f). Requiring facilities to monitor PM10 is an important step forward for the surrounding neighborhoods. However, significant improvements are needed in the current provisions relating to air quality monitoring to remove ambiguities and create a robust, enforceable monitoring requirement.

The Proposed Rules require those facilities allowed to maintain outdoor storage piles, i.e., existing facilities that fall below the quantity and total capacity thresholds (and in some cases meet the setback requirements), to install, operate and maintain PM10 monitors around the perimeter of the facility.⁵⁷ There are a number of

⁵⁶ The USEPA protocols and guidance can be found in Exhibit 39, USEPA, Office of Air Quality Monitoring and Standards, Air Quality Assessment Division, Quality Assurance Handbook for Air Pollution Measurement Systems, Volume IV, Meteorological Measurements Version 2.0 (Final), March 2008, available at http://www.epa.gov/ttn/amtic/files/ambient/met/Volume%20IV_Meteorological_Measurements.pdf

⁵⁷ Sections 3.0(5) and (6)(f).

significant issues with the requirements as proposed (*see also infra* comments on Section 3.0(3)).

First, the language in Section 3.0(6)(f) creates confusion around the quantity and placement of the monitors. Under the current draft, the language may be read as allowing facilities to get by with placing only four monitors at the cardinal directions. There are no clear requirements for when a facility must instead place monitors “at other locations described in the Fugitive Dust Plan reviewed and approved by the Commissioner...”. To remedy this problem, all facilities should be required to (a) initially install and operate continuous PM monitors at the four cardinal locations and collect the required weather station data for a year, and (b) at the end of the first year, 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 based on the size of the facility and other relevant factors such as variability of wind direction at the site and the proximity of neighborhoods, to the Commissioner for approval, and the rules should include standards by which the Commissioner will judge the adequacy of the proposed monitoring network.

Second, additional requirements are needed for the monitors and their operation. In addition to the language currently contained in the provision, the rules should include the following: “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.”⁵⁸

Third, the Proposed Rules contain no objective standard for assessing what level of PM constitutes an actionable level. Instead, the only mention of the metric by which

⁵⁸ The USEPA protocols and guidance can be found in Exhibit 40, USEPA, Office of Air Quality Monitoring and Standards, Air Quality Assessment Division, Quality Assurance Handbook for Air Pollution Measurement Systems, Volume II, Ambient Air Quality Monitoring Program, May 2013, available at <http://www.epa.gov/ttnamti1/files/ambient/pm25/qa/QA-Handbook-Vol-II.pdf>.

the monitoring data will be gauged is a reference to a “reportable action level” in the requirements for Fugitive Dust Plan, which will be set on a case-by-case basis, taking into account the “background levels.” That actionable levels are set on a case-by-case basis leaves room for significant variation from facility to facility, and potentially leaves some neighborhoods subject to more pollution than others. The potential for arbitrary and inconsistent reportable action levels is compounded by the lack of any parameters in the Proposed Rules to guide the setting of the action level (indeed, there are no clear requirements for the Department’s approval of the operator’s Fugitive Dust Plan, just requirements for what the operator must include in the plan, *see* 3.0(3)). The City should instead set numeric PM₁₀ and PM_{2.5} levels, exceedances of which constitute a reportable action level that triggers an abatement response by the facilities. This level should be set no higher than 50 micrograms per cubic meter as a 24-hour average for PM₁₀ with no more than one exceedance in a month, and the rules should provide for a lower level to be set on a case-by-case basis if necessary to protect the health and welfare. Facilities may claim a defense to such a violation if they can show that their facilities did not cause or contribute to the violation, based on the background level at the site.

Fourth, the Proposed Rules do not explain how background levels will be determined in order to absolve facilities from any PM exceedances to which they did not contribute. The Proposed Rules should require that background levels be based on a measured concentration from any on-site monitor that can provide a background estimate for the period of interest as based on meteorological data and other considerations, or at a regional monitoring site used for this purpose that uses comparable USEPA-approved methods for the period of interest.

Fifth, the City should require monitoring of PM_{2.5} in addition to PM₁₀. As described above, petroleum coke and coal storage facilities will emit a portion of their dust as PM_{2.5}, and fine particulates are associated with a host of health problems.⁵⁹ Given that the area around the Calumet facilities will be designated in nonattainment for

⁵⁹ *See infra* Section I.

PM_{2.5} based on data from the monitoring station at George Washington High School⁶⁰, which is about one mile southeast of the KCBX South facility, it is especially important that these facilities provide continuous monitoring of fine particulate matter using USEPA designated methods. PM_{2.5} monitors are widely available from many vendors.

Sixth, the PM monitoring requirements, as noted above, apply only to small existing facilities exempted from the full enclosure requirement. Larger facilities can still have concerning levels of PM, even if storage piles are enclosed. This is especially true under the Proposed Rule because the variance provision permits larger facilities to avoid a long list of important requirements that apply to vehicles, conveyors, and other significant sources of PM pollution besides storage piles. Indeed, the very existence of the variance provision necessitates the application of the PM monitoring requirements to all facilities to ensure that any variances granted are in fact justified and do not create threats to the public health and welfare. For these reasons, the City should require all facilities to comply with PM monitoring requirements.

Time Limit on Piles, 3.0(6)(g). One year is too long for materials to be left on site; accumulation time should be limited to six months.⁶¹

Dust Suppressant System, 3.0(6)(h). Several changes are needed in the requirement for wet dust suppressant systems in order to clarify obligations and ensure that the visual emission and opacity limits are met.

First, it is not clear what is meant by “operating and dispensing... at all times.”⁶² These terms lack specificity regarding quantity, frequency, and duration. The City

⁶⁰ Exhibit 41, Illinois Environmental Protection Agency, Recommended Annual PM_{2.5} Nonattainment Area Designations in Illinois, October 2013, available at http://www.epa.state.il.us/public-notices/2013/pm25-nonattainment/Chi_annualPM25_Oct_23_2013.pdf.

⁶¹ See, e.g., USEPA, Office of Solid Waste, Hazardous Waste Generator Regulations, On-site Accumulation Quantity Limits, § 262.34: Accumulation Time.

⁶² See Section 3.0(6)(h)(i).

should provide more specifics on these parameters to define “operating and dispensing.”

Second, it is similarly not clear what is meant by “piles are covered.” More specificity is needed regarding what qualifies as an acceptable cover.

Third, the rules should contain a cap on outages of the spray system for Chemical Stabilizer Spray Systems as well as Water Spray Systems.⁶³

Fourth, when the spray system is out of operation, the rules should require that activity at the piles cease and that piles be covered with a tarp, similar to the treatment of high wind days. Otherwise, activity may continue for an entire day without adequate control⁶⁴; in addition, dust emissions may be very significant if outages occur for multiple periods of less than 24 consecutive hours in a given month.

Runoff Management, 3.0(6)(i). Similar to the provision for Protection of Waterways, the Runoff Management provision lacks necessary specificity. At minimum, the controls should:

- ensure that water that may come in contact with storage piles or process areas is prevented from entering waters of the State and of the U.S., except in accordance with a permit issued by the Commissioner;
- address all potential inlets, drains, or entry points into the stormwater collection system, and off-site conveyances through which coke or coal might enter the stormwater collection system;
- address timely and effective ways to respond to spills and or visible migration of pollutants that could occur onsite or offsite; and
- demonstrate that the site is graded in such a way as to ensure proper drainage and to prevent pooling of water.

⁶³ See Section 3.0(6)(h)(ii), addressing only outages of water spray systems.

⁶⁴ See *id.*, limiting outages of the spray system to a maximum of 24 consecutive hours.

For controls that utilize sedimentation ponds, at minimum the following requirements should apply:

- the sedimentation ponds must be designed and operated to contain or appropriately treat runoff from a 500-year, 24-hour precipitation event;
- rainfall, snowmelt, combined rainfall-snow melt events, and runoff from dust suppression spray systems must be considered in determining the design capacity of the sedimentation pond;
- the sedimentation ponds and ditches or conveyances tributary to such ponds must be constructed with a liner that has a maximum permeability equal to or less than 1×10^{-7} m/sec; and
- all discharges from the sedimentation ponds must comply with the applicable requirements of the Illinois Environmental Protection Act and 35 Ill. Adm. Code: Subtitles C and D.

Protection of Water, General. The two provisions regarding water, Protection of Waterways and Runoff Management, apply only to smaller facilities with outdoor open storage piles. As set forth elsewhere in these comments, dust issues at larger facilities required to fully enclose piles can also be significant. Thus, the Proposed Rules should require all facilities to comply with the Protection of Waterways and Runoff Management provisions.

Truck Loading and Unloading, Section 3.0(7). The requirements for truck loading and unloading should explicitly reference the visual emissions and opacity requirements in Section 3.0(2) as metrics for performance of the enclosures and wind barrier, and require minimum control efficiencies for the air pollution control equipment.⁶⁵ As noted above, the point for measuring setback of the wind barrier should take into account loading/unloading operations as well.

⁶⁵ See *supra* comments on Section 3.0(4)(a).

Railcar Loading and Unloading, Section 3.0(8). Same comments as for truck loading.

Barge and Boat Loading and Unloading, Section 3.0(9). Same comments as for truck loading. In addition, sufficient control of fugitive dust emissions while loading and unloading open barges is not likely to be feasible or effective. Thus, the rules should require the use of covered or enclosed barges. Second, it is not clear that “enclosed chute” accurately describes current technologies for reducing fugitive dust while loading and unloading barges and ships. A vacuum technology for unloading barges is available and has been employed in conjunction with covered barges at facilities handling bulk materials.⁶⁶ The rules therefore should require vacuum technology at the point of load-out.

Roadways, Section 3.0(11). As with a number of other provisions, the Roadways requirements should be tied to the visual emissions and opacity limits in Section 3.0(2). In addition, Section 3.0(11)(a) should include language regarding the water spray and vacuum systems to make clear that such systems must be used to achieve these limits. To further ensure that the facilities comply with sweeping requirements and properly use spraying and vacuum systems, the rules should also include silt limits for roads and require periodic silt collection and evaluation.⁶⁷ See also comments on Transport regarding paved roads within one-quarter mile of the perimeter of the facilities.⁶⁸

Railroad Tracks, New Section. The rules should include a section for railroad tracks analogous to Section 3.0(11) for Roadways. This section should require the facility operator or owner to maintain spill-free and material-free railroad tracks by

⁶⁶ See, e.g., Exhibit 42, Global Cement, Company Profile, claiming that “[o]ur terminal has one of the most dust-free loading systems possible” and including photos of vacuum system, available at <http://globaltx.net/>; see also Exhibit 43, HIS GlobalSpec, High Capacity Ship and Barge Unloading – Product Announcement from FLSmidth, describing Dockside Vacuum Loaders, available at http://www.globalspec.com/FeaturedProducts/Detail/FLSmidth/High_Capacity_Ship_and_Barge_Unloading/49709/0.

⁶⁷ An example may be found in Rule 1158 at (d)(7)(A).

⁶⁸ See *infra* comments on Section 3.0(15).

daily vacuuming or otherwise removing any materials that may be deposited on the tracks or adjacent to the tracks that can entrain fugitive dust.⁶⁹ Finally, the rules should prohibit the use of bottom-dump railroad cars, which can leak dust-forming materials onto the tracks.

Accumulations, Section 3.0(12). The rules must include period sampling requirements to determine whether the numerical value for accumulations set forth in the definitions section is being met. This sampling should also be tied to the Roadways provision, as that section is intended to “clean roadways of Accumulation.” Following the work practices set forth in the Roadways section should not be assumed to constitute compliance with the numeric components of the accumulation requirements for reasons explained above with respect to the visual emissions and opacity limits.

Conveyors, Section 3.0(13). The Proposed Rule should require “fully enclosed conveyors” and provide a definition for this term.

Transfer Points, Section 3.0(14). Transfer points can be the largest source of emissions at facilities, as material in motion is more prone to becoming airborne. As with other sources at facilities, because the opacity limit in Section 3.0(2) applies to Transfer Points, the performance of water spray systems and air pollution control equipment employed pursuant to Sections 3.0(14)(b) and (c) should be tied to the opacity limit, with an appropriate testing and reporting protocol.

⁶⁹ See, e.g., Exhibit 44, Guardian Carleton, Fugitive Dust Program, October 2013 (“Guardian Carleton”) (requested by the Michigan Department of Environmental Quality), available at http://www.deq.state.mi.us/aps/downloads/ROP/pub_ntce/B1877/October%202013%20Fugitive%20Dust.pdf (describing leakage of solid materials onto tracks and obligations to keep the tracks free of raw materials). Note that the Guardian Carleton plant’s relatively rural location without any nearby residential neighborhoods, 14600 Romine Road in Carleton, Michigan, likely justifies less frequent dust control than is necessary at the urban facilities addressed by these rules. See also Exhibit 45, Jim’s Tank Service, High Rail Vacuum Service (describing road- and rail-ready vacuum trucks that remove “unwanted materials from track beds or rail cars”) available at <http://jimstankservice.com/industrial-services/high-rail-vacuum-service>. The reference to this source is not intended as an endorsement of this particular product or service, but as an example of vacuum applications for rail that are available for bulk material handling facilities.

With regards to 3.0(14)(d), a definition of “moist” and a testing protocol for determining moisture is required. In addition, the basis for allowing an exposed drop of up to four feet is not clear; the lower the drop height, the less potential for cross-wind entrainment of the material being dropped. Thus, the regulations should require the facility to minimize the selected drop heights for various operations, with a maximum drop height of two feet. Flexible loading equipment is available for minimizing the drop distance.⁷⁰

Transport, Section 3.0(15). Several changes to the transport section are necessary to control this substantial source of fugitive dust.

First, the Proposed Rule should eliminate the exemption for existing facilities from the otherwise applicable requirement that materials are delivered or transferred only in trucks that, within a quarter mile of the facility perimeter, are driven only on paved roads⁷¹, as it poses significant risks of truck-generated dust for surrounding communities. Given the significant amounts of dust that can be generated by regular heavy truck traffic traveling along unpaved roads⁷², this exemption is a dangerous hole in the Proposed Rule’s coverage. Indeed, dust from truck traffic on unpaved roads alone can contribute to local PM10 air quality violations.⁷³ Residents of the Calumet area report significant dust from truck traffic on unpaved sections of road

⁷⁰ See, e.g., Exhibit 46, U.S. Department of Health and Human Services (CDC, NIOSH), Office of Mine Safety and Health Research, Dust Control Handbook for Industrial Minerals Mining and Processing, January 2012, at 189-193 (describing loading spouts), available at <http://www.msha.gov/NIOSH/RI9689DustControl.pdf>.

⁷¹ Section 3.0(15)(b). This proposed exemption is available to all existing facilities, regardless of size or location.

⁷² See, e.g., Exhibit 47, Oak Hills Property Owners Association post dated December 11, 2013, describing dust problems from unpaved roads surrounding a new high school, available at <http://www.ohpoa.org/>.

⁷³ See, e.g., Exhibit 48, Alaska Department of Environmental Conservation, Amendments to State Air Quality Control Plan, 2010, at II.D.2-1 (describing PM10 from unpaved roads as the “main source” of PM10 violations in Eagle River), available at http://dec.alaska.gov/air/anpms/SIP/SIPDocs/anchIM_erPM10_qapp2010doc/ER%20PM-10%20LMP%20Adopted.pdf.

surrounding the KCBX south facility. Conversely, USEPA has found that paving unpaved roads can significantly reduce PM₁₀.⁷⁴

The exemption also is at odds with the Proposed Rule's requirement to sweep roadways⁷⁵; typically unpaved roads are not swept as paved roads are. Thus, the exemption negates any benefit that would have occurred due to sweeping on roads adjacent to the existing facility, which can be significant.

Rule 1158 does not exempt any existing facilities from the requirement to have truck traffic only travel on paved roads within a quarter mile radius of the facility.⁷⁶ Instead, it requires paved roads around all facilities, and sweeping on those roads.

Second, the basis for the 8 mph speed limit is not stated or clear. The ability of trucks to pulverize, create and entrain fugitive dust depends on many factors including truck weight, number of tires, speed, etc.⁷⁷ Thus, simply noting a speed limit, without basis, does not ensure effectiveness in dust control so as to achieve compliance with the visual emission limit and opacity limit (which expressly applies to roadways within the facility). The City should confirm whether this speed limit will achieve compliance with these limits, and if not, modify the speed limit accordingly.

Third, measures equivalent to those for trucks should be added for railcars and barges. All outgoing railcars should be cleaned, and there should be a prohibition on holes in railcars such that material leaks (in solid or liquid form) from the cars, see comment on Leaking below.

⁷⁴ See Exhibit 49, Federal Highway Administration, Multi-Pollutant Emissions Benefits of Transportation Strategies-FHWA: Road Dust Reduction Strategies, available at http://www.fhwa.dot.gov/environment/air_quality/conformity/research/mpe_benefits/mpe07.cfm; see also Exhibit 50, Washington State Department of Transportation, Attachment A: Technical Evaluation: PM₁₀ Air Quality Analysis, at 5 (discussing Spokane's strategy to reduce PM₁₀ from roadways by paving unpaved roads), available at <http://www.wsdot.wa.gov/NR/rdonlyres/77BD6519-40A7-4234-883D-A036CC6F8BCA/0/AttachmentA.pdf>.

⁷⁵ See comments on Section 3(11).

⁷⁶ See Rule 1158, at (d)(6).

⁷⁷ See, e.g., Exhibit 51, USEPA, AP-42 Chapter 13.2.1, Paved Roads, available at <http://www.epa.gov/ttnchie1/ap42/ch13/final/c13s0201.pdf>.

Fourth, testing requirements are needed for the vehicle exterior washing obligations in Section 3.0(15)(c), such as those found in Rule 1158.⁷⁸

Vehicle Tarping, Section 3.0(16). Several changes are needed to better reflect the types of covers available for fugitive dust control from vehicles.

First, the title of the section should be changed to “Vehicle Covering,” as tarps are only one of the allowed controls.

Second, the provision should make clear that solid covers are available and should be used for barges. We observed such a solid barge cover on a barge docked at the Beemsterboer facility during a boat trip in mid-October of 2013.

Third, it is not clear that these control options sufficiently reduce dust from vehicles while loading occurs. While another provision addresses loading and unloading, this provision currently has a number of gaps, as described above. The Vehicle Covering section should fill in these gaps where feasible, such as by requiring use of covers that expose a minimal amount of material during loading and unloading.

Fourth, the term “moist material” in Section 3.0(16)(b) is vague and needs further definition and testing protocols, as with its use in the Transfer Points provision.

Leaking, Section 3.0(17). Several changes are needed to fully protect against leaks from vehicles.

First, as solids can “leak” from vehicles⁷⁹, the provision should not be limited to liquid leaks.

Second, as barges can also leak materials, they should be included along with trucks and railcars.

Finally, as barges dock at facilities but remain in the water, the provision should prohibit loading barges such that material leaks into the waterway. This

⁷⁸ See Rule 1158 at (i)(2) (“Compliance Determination and Performance Information” requiring quarterly testing of vehicle exteriors).

⁷⁹ See, e.g., Guardian Carleton, *supra* note 70.

requirement should be accompanied by a parallel clean-up provision to that currently applicable to truck and railcar leaks.

Variance from Operating and Maintenance Practices, Section 3.0(18).

The broad variance provision in the Proposed Rules is problematic because it allows facilities large and small, existing and new, to avoid a broad range of important control obligations without any public participation, and without a clear standard for guiding the Commissioner's review. Indeed, under the wide scope of the variance provision, it is difficult to see how a facility could NOT create a public nuisance or otherwise harm the health and welfare if it qualified for waiver of even a portion of the provisions subject to a variance.

The sole provisions in Section 3 not subject to a variance are as follows:

- Certificate of Operation, 3.0(1)
- Fugitive Dust - Prohibited, i.e., visual emissions and opacity limits, 3.0(2)
- Enclosure of Bulk Solid Material, 3.0(4), if a facility meets the quantity-received and total capacity thresholds contained in Section 3.0(5)(a) and (b)
- Protection of Waterways, 3.0(6)(b)
- Runoff Management, 3.0(6)(i)

Thus, large facilities that must meet the full enclosure requirement for piles can avoid not only the setback requirement, but also the following:

- Fugitive Dust Plan, 3.0(3)
- All truck, railcar, and barge loading and unloading requirements, 3.0(7), 3.0(8) and 3.0(9), as well as truck cleaning and other truck-specific requirements, 3.0(15), and Vehicle Tarping, 3.0(16)
- All provisions related to roadways, paving, and accumulations, 3.0(10), 3.0(11), and 3.0(12)
- Conveyors and Transfer Points, 3.0(13) and 3.0(14)

- Leaking, 3.0(17)

Existing facilities falling under the thresholds for full enclosure of piles can avoid all of these requirements, plus *all* requirements for best management practices at outdoor piles contained in Section 3.0(6), with the exception of the two water-related provisions. In other words, these facilities need not use wind barriers, comply with height limits, cease operations on high wind days, install and operate PM monitors, or use dust suppression systems.

The vast potential scope of the variance provision to create huge fugitive dust problems is clear on its face. Allowing facilities of all kinds to avoid any and all requirements applicable to vehicles is unacceptable, given the significant contribution of vehicles to facilities' emissions, as discussed above. The same can be said for conveyors and transfer points, where emissions can be significant as materials are disturbed. These sources are particularly problematic where setbacks can be avoided altogether under the variance.

At the very least, if the variance provision is retained, it must include procedural protections, a clear standard of review, and an enforceable plan recording the obligations of the facility under the variance.

First, a proceeding must be established for variance determinations, with members of the public allowed to participate as parties. Standards for a variance application must be clear, detailed and specific, covering issues like emissions monitoring, data or emissions calculations and modeling, a site map, and other material required by the fugitive dust plan provision. There should also be a defined process for members of the public to request a revocation of a variance from the Commissioner.

Second, regarding a standard of review, the rules must require that the Commissioner deny a request for a variance unless s/he finds that (a) any deviation from the explicit requirements of Section 3.0 will achieve equal to or greater than the expected level of protection from the Section 3.0 provisions, or (b) the facility is located so as to significantly reduce the risks to public health and the environment,

and the issuance of the variance will not harm the public health or adversely impact the surrounding area, surrounding environment, or surrounding property uses based on the expected emissions from the facility.

Third, the variance provision should retain the fugitive dust plan requirement contained in Section 3.0(3). Without this plan, there are no defined standards for what a variance application must contain or legal mechanism for recording the obligations for the facility under the variance (unless such obligations are explicitly included in the certificate of operation).

RECORDKEEPING, SECTION 4.0

Required Records, Section 4.0(1). A critical gap in Section 4 is the lack of reporting requirements. In addition to maintaining records onsite, the facility should be required to submit to the Commissioner quarterly reports summarizing the required data and an annual report. Such reports will not only provide the Commissioner's office with useful compliance assessment tools and reduce inspection burdens, but also give the public access to this important information. The annual report can be linked to submission of the required fugitive dust plan, such that the past year's performance may inform the Commissioner's determination on the plan. All reports must be certified by an employee or contractor trained and certified in fugitive dust control. These reports should be made available to the public on the City's website.

Recordkeeping and reporting should include data from all of the needed monitoring and testing protocols described in these comments.

In terms of the recordkeeping put forth in the Proposed Rules, facilities should be required to report composition data as part of reporting the type of material handled by the facility. Such composition data should be measured by the facility on a quarterly basis, using representative samples, and should include physical characteristics like particle size distribution.

IMPLEMENTATION SCHEDULE, SECTION 6.0

There are a number of problems with the proposed implementation schedule, from the time allowed for fully enclosing large piles and other significant sources, to the lack of interim controls, to the lack of assurances that the visual emissions and opacity limits will be met, to the extension provision, to inconsistencies in how provisions align in time.

As a general matter, the extended timeframes for implementation of key controls – in particular full enclosure of piles, conveyors and vehicle/barge loading – without any provision for cessation of or significant limits on operation in the meantime, or in some cases without any interim control requirements, is unacceptable. The City has a duty to protect the public’s health and welfare, and to prohibit public nuisances, at all times. It has joined a lawsuit against several facilities on the basis that under their current operations, the facilities pose a threat to public health and welfare. There is clearly an existing dust problem that requires immediate and stringent action. 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.

Giving larger facilities a whole two years to enclose their piles⁸⁰ is especially problematic, as the rules contain no interim requirements for these facilities’ piles. For facilities falling above the pile enclosure thresholds, the only provisions governing control of piles are contained in Sections 3.0(2) (prohibition on fugitive dust) and Section 3.0(4). The provisions for outdoor storage contained in Section 3.0(5) apply exclusively to facilities meeting the threshold requirements that need not enclose piles in the long run. In other words, for a whole two years, larger facilities may store their petroleum coke and coal outdoors, with no requirements to use wind barriers or apply dust suppressants or cease operations on high wind days or monitor their fugitive dust or comply with any water-related measures. Notably,

⁸⁰ Section 6.0(4).

smaller piles must comply with a number of these requirements within 90 days of the rules' issuance (but see concern with alignment of obligations below).⁸¹ The only limits on piles at larger facilities for a whole two years are the visual emissions and opacity limits, which as described above are currently lacking in necessary testing and reporting requirements and which by themselves are wholly inadequate to ensure that fugitive dust from these facilities will not harm the public health and welfare.

Nor is it clear that a whole year is needed for determining whether facilities meet the quantity received or total capacity thresholds, or for installing a wind barrier, complying with vehicle/barge loading and unloading requirements, paving, or enclosing conveyors. As described above, loading activities and unpaved roads can be very large sources of fugitive dust. Paving in particular is an activity that requires no specialized equipment and can be done on short notice. Wind barriers are employed specifically because they are relatively low cost and easy to install. Covered conveyors can be procured and installed in approximately 3-6 months. Similar to their treatment of piles at large facilities, the rules contain no interim measures that apply to these sources.

Moreover, it is hard to see how facilities given one to two years for installation of these key controls will comply with the fugitive dust prohibitions contained in Section 3.0(2), which are (properly) immediately applicable.⁸² If these timelines are to be maintained in the current or a similar form, there is clearly a need for robust testing and monitoring protocols for visual emissions and opacity, as well as interim controls for all sources.

⁸¹ It appears that the City may have intended all piles to comply with the outdoor pile requirements prior to some facilities being subject to the two-year timeline for full enclosure. This can be inferred from the fact that the quantity of materials and total capacity thresholds for qualifying for longer term outdoor storage do not go into effect until a year out, while the setbacks, height limit, dust monitoring, time limit and dust suppressant requirements are applicable 90 days after issuance. *See* Sections 6.0(2) and (3). However, as explained in the text, the current language does not in fact require such interim controls. If the City intended for larger facilities to comply with the supposed best management practices for dust from piles in the two-year period, it must amend the rules accordingly.

⁸² *See* Section 6.0(1).

Not only does the proposed rule contain overly generous timeframes with no interim controls, facilities may be granted any open-ended extension of all control requirements described in Sections 6.0(2), (3), (4), without any parameters except that the facility must demonstrate “good cause” to the Commissioner.⁸³ This broad extension provision is unacceptable. As noted above, the City’s duty to protect the public health and welfare applies at all times, and any extension of the already generous timeframes should not be allowed. To the extent that this provision is retained in any form, it must be accompanied by (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. Procedural protections are, as set forth above, particularly important for safeguarding the public health and welfare where communities have long been burdened by these sources. Finally, there are several instances in which the timing of provisions’ implementation does not align with their intended function. One such instance is the immediate applicability of the fugitive dust prohibitions and the delay in implementation of controls intended to achieve those limits, as discussed above. In addition, it is not clear how substantive requirements for outdoor storage piles may go into effect at 90 days⁸⁴, before two of the qualifying thresholds for those requirements become applicable at one year out⁸⁵. Similarly, splitting the triggering thresholds for outdoor storage versus full enclosure of piles, with the setbacks being applicable at 90 days and the quantity received and total capacity thresholds applying at one year, does not make sense. Nor can facilities comply immediately with the street sweeping requirements in Section 3.0(11) for “any road that is used to transport material inside or within one quarter mile of the

⁸³ See Section 6.0(6).

⁸⁴ Section 6.0(2) (Sections 3.0(5)(c) and 3.0(6)(a) and (f)-(h) “shall take effect ninety days from the issuance...”).

⁸⁵ Section 6.0(3) (Sections 3.0(5)(a) and (b), and 3.0(6)(c) and (d), “shall take effect one year from the issuance...”).

perimeter of the Facility”⁸⁶ (emphasis added) if the paving requirement does not go into effect for one year⁸⁷ (as explained above, one cannot sweep unpaved roads).

HAZARD TESTING

The City’s regulations define categories of bulk solid materials, but do not prohibit hazardous materials that may result from unanticipated, off-spec or atypical materials. Simply, there is no protocol to exclude hazardous materials, and consequently no assurance that only non-hazardous bulk solid materials are being handled, stored, transported, or otherwise managed. In order to ensure only non-hazardous materials are present at any facility, a screening protocol should be established in the regulations to ensure that no load of hazardous materials is transported for storage at any Chicago facility. No load of material that is characteristically hazardous may be accepted.

- a) The owner or operator must not accept any bulk storage material for storage, handling, blending, processing, transport, or other management unless:
 - 1) A determination for the bulk storage material has been conducted by the generator of the material in accordance with 35 Ill. Adm. Code 722.111; and,
 - 2) Such determination establishes that the bulk storage material is not hazardous.
- b) When making a hazard determination pursuant to this provision, bulk storage materials must be analyzed as if they were a solid waste.
- c) Documentation of all determinations required under this Section must be provided by the generator to the bulk solid material facility and maintained for inspection at this facility.

⁸⁶ Section 6.0(1) (Section 3.0(11), Roadways, “shall take effect immediately...”).

⁸⁷ Section 6.0(3) (Section 3.0(10), Paving, “shall take effect one year from the issuance...”).

As noted above, we stand ready to assist the City in the necessary revisions to the proposed regulations.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Meleah A. Geertsma". The signature is fluid and cursive, with the first name being the most prominent.

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