



DEPARTMENT OF PUBLIC HEALTH
CITY OF CHICAGO

August 3, 2020

Steven Caudle, Terminal Manager
Watco Transloading LLC - Chicago Arrow Terminal
2926 E. 126th Street
Chicago, IL 60633

RE: Watco Terminal and Port Services, 2926 E. 126th Street
Request for Variance from Air Pollution Control Rules and Regulations for Control of
Emissions from Handling and Storage of Bulk Material Piles

Dear Mr. Caudle,

The Chicago Department of Public Health (“CDPH”) has reviewed submissions from Watco Terminal and Port Services, Chicago Ferro Terminal (“Watco”) requesting a variance from requirements of CDPH’s Rules and Regulations for Control of Emissions from the Handling and Storage of Bulk Material Piles, effective January 25, 2019 (“Bulk Material Rules” or “Rules”). Specifically, CDPH reviewed Watco’s April 24, 2019 request letter and attached exhibits, as well as Watco’s response to public comments received July 25, 2019 and Watco’s response to CPDH’s request for additional information, received by CDPH on February 20, 2020. Pursuant to the Bulk Material Rules, CDPH also reviewed written comments on the variance request submitted during a public comment period as described below.

Watco’s variance request pertains to the enclosure requirement for manganese-bearing material as it relates to materials with a manganese content less than 2%. Section 5.0 of the Bulk Material Rules requires all non-packaged manganese-bearing bulk material to be maintained in fully enclosed structures in accordance with the enclosure requirements set forth in the Rules. The Rules do not provide an exception for materials with a de minimis amount of manganese. Instead, companies may avail themselves of the variance process if they believe the material they handle contains a level of manganese that is so low as to be negligible and will not create a public nuisance or adversely impact the surrounding area, environment, or property uses.

In this case, according to Watco, the materials it handles that contain manganese consist of pig iron (.01-1.0 percent manganese), ferro-phosphorus (less than 2 percent manganese), and “Standard and Mini Prilled Sucra-Min Iron (Iron Ore Slag)” (less than 2 percent manganese). (See Attachment A to the Variance Request and the additional information provided on February 20, 2020.)

As set forth in greater detail below, with respect to pig iron, CDPH hereby grants the variance request subject to one condition, as set forth below. This conditional variance is based on CDPH’s review of 1) recently collected air monitoring data, 2) the unique nature of pig iron, and 3) Watco’s description of relevant operations and management of the material, which, taken together, indicate that issuance of a variance is not likely to create a public nuisance or adversely impact the surrounding area. (Please note that pursuant to Section 10.0(3)(d) of the Bulk Material Rules, a variance may be revoked at any time if the Commissioner finds that operation of the facility is creating a public nuisance or otherwise adversely impacting the surrounding area, surrounding environment, or surrounding property uses.)

However, with respect to other materials that purportedly contain less than two percent manganese, CDPH finds that Watco has not provided sufficient information to establish that issuance of a variance is not likely to create a public nuisance or adversely impact the surrounding area. As stated above, the Rules do not provide an exception for materials with a de minimis amount of manganese. Granting a blanket variance for any materials containing less than two percent manganese, as requested by Watco, would amount to the establishment of a de minimis standard in opposition to the intent of the Rules. Thus, any variance request based on low manganese content must be material specific, with a special focus on the nature, storage, and handling of the specific material at issue. Such specificity was lacking in the information provided by Watco. If the company has additional information in support of the request, it may submit a new variance request.

DETAILED DISCUSSION

I. Requirements for Issuance of a Variance

Under Section 10.0 of the Bulk Material Rules, the burden of proof is upon the applicant for the variance to demonstrate that issuance of the requested variance will not create a public

nuisance or adversely impact the surrounding area, the surrounding environment, or surrounding property uses. In the event that the applicant does not meet this burden, the variance request will be denied. Pursuant to Section 10.0(2), a variance request must be in writing and must set forth, in detail, all of the following (in pertinent part)¹:

- a) A statement identifying the regulation or requirement from which the variance is requested;
- b) A description of the process or activity for which the variance is requested, including pertinent data on location, size, and the population and geographic area affected by, or potentially affected by, the process or activity;
- c) The quantity and types of materials used in the process or activity in connection with which the variance is requested, as appropriate;
- d) A demonstration that issuance of the variance will not create a public nuisance or adversely impact the surrounding area, surrounding environment, or surrounding property uses;
- e) A statement explaining:
 - i. Why compliance with the regulations imposes an arbitrary or unreasonable hardship;
 - ii. Why compliance cannot be accomplished during the required timeframe due to events beyond the Facility Owner or Operator's control such as permitting delays or natural disasters; or
 - iii. Why the proposed alternative measure is preferable.
- f) A description of the proposed methods to achieve compliance with the regulations and a timetable for achieving that compliance, if applicable;
- g) A discussion of alternate methods of compliance and of the factors influencing the choice of applying for a variance;
- h) A statement regarding the person's current status as related to the subject matter of the variance request[.]

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

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

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

- i. Inclusion of a definite compliance program;
- ii. Evaluation of all reasonable alternatives for compliance;
- iii. Demonstration that any adverse impacts will be minimal.

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

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

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

II. Variance Process and Public Comments

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

On May 1, 2019, public notice of Watco’s variance request was provided by publication in the Chicago Sun-Times and on the City’s website at www.cityofchicago.org/environmentalrules. This notice stated that, to be considered, written comments were to be received by CDPH on or before May 31, 2019. On May 17, 2019, a subsequent public notice was published in the same manner, notifying the public that the

comment period had been extended upon request of members of the public. The new deadline for public comments was June 30, 2019. During the public comment period, CDPH received one written submission from the public, which is posted on the website referenced above.

The public comment letter, dated June 28, 2019, was submitted jointly by the Southeast Side Coalition to Ban Petcoke (“SSCBP”), the Southeast Environmental Task Force (“SETF”), and the Natural Resources Defense Council (“NRDC”), (hereafter collectively referred to as “SSCBP *et al.*”). In their comment letter, SSCBP *et al.* opposed the variance request, stating that: “Watco has failed to demonstrate that an exemption will not adversely impact the surrounding area and the community should not be subject to any manganese dust emissions.” (Public Comment Letter, p. 2-3.) In particular, the commenters highlighted Watco’s “poor compliance track record,” including a “history of dust emission exceedances and poor housekeeping.” *Id.* at 3. In support of this assertion, they pointed to CDPH inspection reports for September 1, 2017, December 12, 2018, and February 15, 2019, which noted Watco’s failure to implement best management practices for dust control and other dust-related concerns. *Id.* at 3-4. In addition, they pointed to a Notice of Violation issued by the U.S. Environmental Protection Agency (“USEPA”) on December 18, 2018, which cited monitoring data that showed levels of manganese above the health-based screening level. *Id.* at 4. Further, while acknowledging that manganese emissions have decreased since Watco announced that the facility would stop accepting manganese (above 2%), the commenters noted that “there were several one-day spikes that exceeded the 0.3 ug/m³ MRL as recently as in April 2019.” *Id.*

SSCBP *et al.* also stated that Watco provided an inaccurate description of the impacted population, where more than 3,700 residents live within a one-mile radius of the facility and which includes baseball fields and public parks. Further, it is an environmental justice community, whose residents have been “environmentally overburdened.” *Id.* at 6. The commenters mentioned historical emissions over the years and noted that the USEPA was conducting sampling of soil around Watco’s facility “to determine whether manganese concentrations present in the soil require remediation.”² *Id.* at 9.

SSCBP *et al.* also noted that “Watco’s description of the materials and quantities being stored outside is confusing,” arguing that “Watco must clarify what material it is storing and the

² The results of the soil sampling can be viewed on USEPA’s website: <https://www.epa.gov/il/watco-terminal-and-port-services#soil-sampling>. It was found that concentrations did not exceed USEPA’s removal management level.

respective percentage of manganese for each material. *Id.* at 10-11. The public commenters also stated that, contrary to Watco's assertions, dust from pig iron is still a concern in spite of the density of the material. *Id.* at 11-12.

Finally, SSCBP *et al.* stated that "Watco has not adequately demonstrated hardship," nor "any detail or support for its claim that storing all manganese bearing materials inside will cost many millions of dollars." *Id.* at 12-13.

In response to the public comments, Watco submitted additional information on July 25, 2019. (This information is also posted on the above-referenced website.) In its response letter, the company stressed its compliance with the Manganese Limit (ML) set forth in the Bulk Material Rules, stating that this "shows that it is not creating any public nuisance or adversely impacting the surrounding area." (Watco Response to Comments, p. 2.) The company further argued that "[p]ast operations and practices are not the appropriate context in which to consider Watco's variance request" (*Id.* at 3), and that, in any event, all past issues raised by SSCBP *et al.* have already been resolved. Watco also reiterated that it has spent millions of dollars on improvements and dust control measures at its facility. *Id.* at 4, 6-7.

III. Variance Request Determination Detailed Analysis

A. Detailed Summary of Variance Request: As mentioned above, Watco requested a variance from Part D of the Bulk Material Rules.³ Section 5.0 in Part D requires the enclosure of manganese-bearing bulk material. The company noted that, earlier in 2019, it made a decision to phase out and ultimately cease handling any bulk materials with manganese concentrations above 2%. Thus, the variance request pertains to "the Terminal's handling of bulk materials containing less than a 2% concentration of manganese." (Watco Variance Request, p. 2.) According to the company, "the capital cost required to fully enclose all operations is an arbitrary and unreasonable hardship to impose on WTPS [Watco Terminal and Port Services]." *Id.* at 9.

³ Part D of the Rules includes Section 5.0, pertaining to "Enclosure of Manganese-Bearing Bulk Material," and Section 6.0, pertaining to "Filter-Based Metals Monitoring at Manganese-Bearing Bulk Material Facilities." Although Watco stated it was requesting a variance from "Part D" generally, the substance of the request letter addresses only the requirements in Section 5.0. For example, in its Statement of Hardship, Watco discussed the enclosure requirement only, and not the monitoring requirement. (Watco Variance Request, p. 7.) In addition, Watco stated that it "will continue to utilize the FRM as required by the EPA and the Rules." *Id.* Accordingly, CDPH considers the request to pertain only to Section 5.0 of the Rules.

At the time of the request, Watco stated that “materials stored outside consist of approximately 85% pig iron and approximately 15% iron ore slag.” *Id.* at 3. The company further noted that “[t]he small amount of iron ore slag (6,000 to 7,000 tons) stored outside has been constant for several years and is not a material typically handled by the Terminal. Pig iron will continue to represent the bulk of the material stored outside.” *Id.* In another section of the variance request, Watco repeated that “pig iron and a small amount of iron ore fines are currently the only manganese-bearing materials stored outdoors.” *Id.* at 4.

As noted by SSCBP *et al.*, Watco’s use of the term “fines” to describe the iron ore slag raises questions about the nature of the material and poses a “concern that the iron ore on site has significant dust potential.” (Public Comment Letter, p. 11.) Therefore, by letter of February 6, 2020, CDPH requested Watco to explain what was meant by the term “fines,” and to further explain how dust is controlled during the storage and handling of this material.

In response (via email of February 20, 2020)⁴, Watco stated that:

The term “fines” is an industry standard used to refer to a material with dimensions of ½ x down or smaller. ½ x down means the largest size is ½”, and the smallest size is 8 to 16mesh. The dimensions of the iron ore slag fines on site typically range from ¾ inch x down to ½ inch x down. The potential for fugitive dust from the iron ore slag fines is controlled in the same manner as Pig Iron. It is stored outside and is typically always wet or damp. In the summer months, it is sprayed down by water when needed. (The current Iron ore slag pile consists of ¾ x down with 60% being ¾ x 1/2 , 30% being ½ x ¼ , 5% as ¼ x 1/8, and 5% 1/8 x 16 mesh).

Watco did not mention how the iron ore fines are stored or how dust is managed during storage and handling of the material, beyond watering as needed in the summer months. However, the variance request did list general dust control measures employed at the facility, including use of a dry fog system during barge unloading, tarping of trucks, wetting of outdoor piles and internal roadways, application of chemical suppressants on roadways, and the use of a street sweeper. *Id.* at 6. Other measures, such as use of a dust collection system and bag house during indoor truck loading and use of high-speed building doors, presumably do not apply to the iron ore fines, since this material is not stored or loaded indoors.

⁴<https://www.chicago.gov/content/dam/city/depts/cdph/InspectionsandPermitting/Watco's.Response.to.CDPH.Questions.Feb202020.pdf>

With regard to pig iron, Watco stated that this material “has natural densities that minimize its potential to become airborne during outdoor storage.” (Watco Variance Request, p. 4.) Watco further described the storage of pig iron, including the use of three-sided, walled bins, and noted that the company uses a water truck “to wet pig iron during storage and prior to loading.” *Id.* In its July 2019 response to the public comments, Watco noted that it was “storing just under 10,000 net tons of pig iron,” reiterating that this is “a material which has an extremely low concentration of manganese.” (Watco Response to Comments, p. 6.)

In addition, Watco pointed to its filter-based air monitoring data, which indicates compliance with the ML and which “overall demonstrates[s] a downward trend for the three-month rolling average manganese concentration,” as indicated in a chart attached to the variance request. (Watco Variance Request, p. 6 and Att. G.) Watco stated that compliance with the enclosure requirement would impose an arbitrary and unreasonable hardship, “because the Terminal has already demonstrated compliance with the ML utilizing the existing, enhanced dust control measures.” *Id.* at 7. The filter-based monitoring data is further discussed in Section B, below.

Additional Variance Request Regarding Submission of Monitoring Reports

Toward the end of its variance request letter, Watco mentions its fugitive dust monitoring reports, stating that it has attached reports for the previous four months as “Attachment G,”⁵ as required by Rule 10.0(2)(i). (Variance Request p. 9.) Rule 10.0(2)(i) states that, in the event a variance is granted from the enclosure deadline set forth in Rule 6.0(5), then monthly fugitive dust monitoring reports must be submitted by fourteen (14) days following the end of the month which the report covers.

In this regard, Watco states that it “requests that CDPH grant it a variance from the Rules to allow the submission of these monthly results by the 28th day of the month following the monitoring period.” *Id.* The company further stated that, [p]roviding the reports by the 14th day following the reporting period, as stated in the Rules, is impractical as the laboratory typically requires 14 days to produce the data.” *Id.*

⁵ It appears that the reference should have been to “Attachment H,” as Attachment G consists of two charts depicting “Rolling Average Manganese Concentrations” and Attachment H consists of “Fugitive Dust Monitoring Reports.”

CDPH notes that this apparent additional variance request should have been submitted together with all the requirements for a variance listed in Rule 10.0(2). Nevertheless, it appears that a variance is not needed with regard to submission of monitoring data, because Watco is already meeting the deadlines set forth in the Rules. The “fugitive dust monitoring reports” required in Rule 10(2)(i) are the same reports required by Rule 3.0(4)(f); i.e. “the hourly data for each fugitive dust monitor in an Excel spreadsheet, together with the meteorological station data for the same time period,” which is due within 14 days of the end of the month in which the data was collected. For most months, Watco has consistently been providing its PM10 reports well within this deadline.

Watco’s mention of laboratory analysis (above) indicates that it may actually be referring to the filter-based metals monitoring data. However, pursuant to Rule 6.0(i), this data is already due within 28 days of the end of the month in which the data was collected, and Watco has also consistently been meeting this due date in the submission of its filter-based monitoring results. Therefore, a variance to the deadlines is not necessary.

B. Minimization of Adverse Impacts and Alternative Compliance Program. Section 10.0(2)(d) of the Rules requires a demonstration that issuance of the variance will not create a public nuisance or adversely impact the surrounding area, environment, or property uses; and Section 10.0(2)(g) of the Rules requires applicants to describe alternate methods of compliance. In this regard, Watco stated that it “has put in place several practices to mitigate dust emissions throughout the property to ensure that the facility does not create a public nuisance” or cause adverse impacts. *Id.* at 5. As mentioned above, these measures include the use of water and chemical suppressants, as well as special procedures during loading and unloading activities. The dust control measures are further described in Watco’s Fugitive Dust Plan (FDP), last updated in April 2019 (attached without appendices as Attachment A).

Further, with regard to material storage, Watco stated that the pig iron is “kept in three-sided, walled bins,” and that the material within the bins is “generally only about 3-4 feet above the height of the bin’s walls ... thus further minimizing the volume of material exposed to wind.” *Id.* at 4. Watco did not describe how it stores the iron ore fines; however, inspectors have observed that it is stored in piles out in the open.

As mentioned above, Watco also noted that it is currently in compliance with the Manganese Limit established in the Bulk Material Rules. Section 2.0(16) of the Rules provides that the Manganese Limit (“ML”) is “the concentration of manganese equal to or greater than 0.30 micrograms per cubic meter as averaged over a rolling three-month period.” An exceedance of this limit is deemed to be a “condition detrimental to health” in violation of Section 7-28-060 of the Chicago Municipal Code. (As explained in CDPH’s response to comments on the Amended Bulk Material Rules, this standard was based on the federal Minimal Risk Level (MRL) for manganese emissions.⁶)

Watco installed a filter-based metals monitor and began collecting data in September 2018. Air monitoring results are posted on USEPA’s website at <https://www.epa.gov/il/watco-terminal-and-port-services#air-monitoring>. The most recently available ten-months’ worth of monitoring results for manganese are as follows:

May 2020	.017 ug/m ³
April 2020	.086 ug/m ³
March 2020	.037 ug/m ³
February 2020	.054 ug/m ³
January 2020:	.041 ug/m ³
December 2019:	.066 ug/m ³
November 2019:	.032 ug/m ³
October 2019:	.021 ug/m ³
September 2019:	.038 ug/m ³
August 2019:	.114 ug/m ³

Thus, the data shows that the most recent rolling three-month average is 0.047 (for March, April, and May 2020). The average for the two preceding rolling three-month periods (for February, March, and April and January, February and March, respectively) are 0.177 and 0.044. These and earlier results (as in indicated in the variance request) are well below the 0.30 ML.

⁶https://www.chicago.gov/content/dam/city/depts/cdph/InspectionsandPermitting/CDPH_Resp_Com_Bulk_MaterialAmendments_January2019.pdf

With regard to PM10 (i.e. particulate matter less than or equal to ten microns in diameter), the national ambient air quality standard (NAAQS) is 150 micrograms per cubic meter. In its dust monitoring contingency plan, which is part of its FDP, Watco established a Reportable Action Level (RAL) of 150 micrograms per cubic meter, when measured as the positive difference between any two monitors at the facility. If this number is reached, the company must report the event to CDPH and enact its contingency plan. Over the past year, Watco's monitors have recorded daily levels below the 24-hour average for NAAQS, and the company has never experienced an RAL event.

However, in addition to the 24-hour RAL standard, it is important for companies to pay attention to any elevated hourly readings, or "spikes," as these can be indicative of short-term fugitive dust problems (for example, during wind gust events). Thus, as set forth in Watco's FDP, Watco staff are required to conduct an investigation any time a monitor records an hourly reading greater than 300 $\mu\text{g}/\text{m}^3$. In such event, "Watco personnel will observe on-going operations and site conditions in the vicinity of the monitor that had the reading greater than 300 $\mu\text{g}/\text{m}^3$, and in other areas of the Terminal." (See Attachment A, p. 12). In such case, Watco will then take actions as outlined in the FDP.

Upon review of Watco's PM10 monitoring reports, CDPH notes that there have been several instances where hourly readings have shown spikes in fugitive dust for two or more consecutive hours, particularly in the summer months.⁷ This indicates that the potential for excessive fugitive dust emissions remains, even with the compliant 24-hour monitoring results. Further, it is presumed, based on the metals monitoring data, that some portion of the PM10 includes manganese dust. As the public commenters pointed out, sampling results for four days in April 2019 showed manganese levels above 0.3 $\mu\text{g}/\text{m}^3$. Additionally, the data for August 2019 showed a one-day spike of .785 $\mu\text{g}/\text{m}^3$. While the single-day spikes do not equal a violation of the ML (which is a rolling 3-month standard), they do illustrate the importance of dust control measures in compliance with the Bulk Material Rules.

C. CDPH Determination: Pursuant to Section 10.0(3)(c) of the Rules, "[t]he Commissioner may grant a variance in whole or in part, and may attach reasonable conditions to

⁷ For example, there were multiple readings above 300 $\mu\text{g}/\text{m}^3$ on 7/11/19, 7/22/19, 8/12/19, 8/29/19, and 8/30/19. In addition, there were several more days with at least one spike in conjunction with consecutive hours depicting readings above 150 $\mu\text{g}/\text{m}^3$.

the variance, or require alternative measures, to ensure minimization of any adverse impacts and to accomplish the purposes of Chapter 11-4 of the Code.” In this case, Watco has requested a variance from Section 5.0 of the Rules, which requires all non-packaged manganese-bearing bulk material to be maintained in fully enclosed structures in accordance with the enclosure requirements set forth in the Rules. The request “relates to operations at the Terminal for handling bulk materials with less than 2% manganese.” (Watco Variance Request p. 9, emphasis added.)

The public commenters stated that CDPH “should consider this request in the context of Watco’s failure to manage manganese dust emissions to date.” (Comment letter p. 3.) In particular, SSCBP *et al.* cited a September 2017 CDPH inspection, December 2018 violation notices issued by both CDPH and USEPA, and a February 2019 CDPH inspection. *Id.* at 4. However, follow-up CDPH inspections found that Watco had addressed the issues observed during the earlier inspections. In addition, the facility has made changes to its operation since those inspections, including building improvements and the cessation of receipt of manganese-bearing material containing greater than 2% manganese. Accordingly, CDPH’s determination is based primarily on more recent observations and documentation, including the information submitted with the variance request.

As mentioned above, the Rules do not provide an exception for materials with a de minimis amount of manganese. Therefore, neither do the Rules establish a de minimis level of manganese. In the Response to Public Comments on Proposed Amendments to the Rules, CDPH stated:

The Final Rules no longer contain a fixed de minimis level in the definition of manganese-bearing bulk materials. The presumption is that any level of manganese is covered. However, if a company believes its material contains a level of manganese that is so low as to be negligible, whether the manganese content is 1% or 4%, the company may apply for a variance and submit supporting documentation that persuasively demonstrates why there should be an exemption. In this way, CPDH and the public can be assured that such an exemption will not create a public nuisance or adversely impact the surrounding area, environment, or property uses.”⁸

⁸https://www.chicago.gov/content/dam/city/depts/cdph/InspectionsandPermitting/CDPH_Resp_Com_Bulk_MaterialAmendments_January2019.pdf

The Department further noted that “even if a material contains a low amount of manganese by weight, the material could still pose a risk if handled in large quantities and not sufficiently controlled.” *Id.*

Accordingly, any variance request based on the manganese content in a particular material must include specific information about the nature and quantity of the material at issue, as well as information on how it is handled and how dust from the material is control. In other words, the request be material specific. Requesting CDPH to grant a blanket variance for “all materials with less than 2% manganese,” as Watco did, amounts to a request for CDPH to establish a de minimis standard, contrary to the intent of the Rules.

Moreover, the Rules require variance applications to include detailed information, including “[a] description of the process or activity for which the variance is requested...” (Rule 10.0(2)(b) and “[t]he quantity and types of materials used in the process or activity in connection with which the variance is requested...” (Rule 10.0(2)(c)).

Determination Regarding Pig Iron

In this case, with regard to pig iron, CDPH finds that sufficient information was submitted to support a conditional variance for the enclosure requirement. Upon review of all submittals from Watco and the public, and upon analysis of the available monitoring data, CDPH finds that fugitive dust from pig iron can be appropriately controlled to avoid any potential adverse impacts upon the surrounding community. Specifically, CDPH finds that, due to the unique nature of pig iron, including its density and weight, any fugitive dust generated from disturbance of the material can be minimized through consistent use of appropriate dust controls.

Further, in addition to the dust control measures for pig iron mentioned above, CDPH had the opportunity to consider the nature of pig iron in connection with a variance request from another bulk material company. In that determination, CDPH found that any dust resulting from the outdoor storage of pig iron could be adequately suppressed and therefore, would not cause a public nuisance.⁹

In conditionally granting the variance request, CDPH also took into account the relatively low percentage of manganese content in the pig iron handled at the facility, along with the low

⁹<https://www.chicago.gov/content/dam/city/depts/cdph/InspectionsandPermitting/CDPH.Determination.Var.Req.S.H.BellCompany.Jan62020.pdf>

levels of manganese collected in the filter-based monitor. As mentioned above, the air monitoring data thus far shows that downwind PM10 concentrations are below the 24-hour limit for PM10, and that average manganese concentrations are below the ML. While SSCBP *et al.* object to any level of manganese emissions, CDPH believes that public health will be protected if emissions do not exceed the health-based threshold set forth in the Bulk Material Rules. Thus, if the filter-based monitoring data ever shows an exceedance of the Manganese Limit, this variance will be reconsidered.

Nevertheless, CDPH notes that Section 17-9-0117-D of the Chicago Municipal Code requires certain facilities to submit quarterly throughput reports certifying the amount of non-packaged manganese-bearing material received by, shipped from, and stored at the facility. For purposes of this ordinance, the term *manganese-bearing material* does not include any material which contains an amount of manganese that is “less than 1 percent by weight.” (See Section 17-17-0105-H of the Code.) However, CDPH believes that such information would be useful in order to better understand the relationship of a facility’s pig iron quantities with its reported fugitive dust emissions. Watco already submits throughput reports for ferromanganese handled at the facility. As a condition for the requested variance, and as further described below, CDPH requests that Watco also begin reporting on the quantity of pig iron handled at the site.¹⁰

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

Please note that pursuant to Section 10.0(3)(d) of the Bulk Material Regulations, a variance may be revoked at any time if the Commissioner finds that operation of the facility is

¹⁰ Notably, Watco states that its pig iron is .01-1.0 % manganese. The ordinance regarding throughput reports applies to materials with a manganese content of 1% or more. (Section 17-9-0117-D of the Chicago Municipal Code.) Thus, any pig iron with exactly 1% manganese is subject to the throughput reporting requirement anyway.

creating a public nuisance or otherwise adversely impacting the surrounding area, surrounding environment, or surrounding property uses.

Determination Regarding Iron Ore Fines

With regard to iron ore fines (and any other unspecified material), CDPH finds that Watco has not provided enough information about how the material is handled and how dust is suppressed during storage and handling. In addition, the variance request did not include enough information about the nature of the material, including its manganese content and its potential to emit dust. With regard to manganese content, when asked how Watco knows the material contains “up to 2% manganese,” the response was that it must contain “less than 2%,” because manganese is not listed on the “Universal Minerals SDS sheet.” (Watco February 2020 Additional Information). This does not answer the question, as it does not explain how the company knows the material contains manganese at all.

Additionally, as to the material’s emission potential, the information the company provided, in response to CDPH’s request for more information, indicates that at least some portion of the material is relatively fine, with sizes ranging from below ½ inch to “8 to 16 mesh.” *Id.* While it is not known whether the material is as dusty as coal, coke, or crushed concrete, for example, it certainly has a higher fugitive dust potential than heavier bulk materials such as pig iron.

Therefore, CDPH finds that Watco has not demonstrated that issuance of a variance allowing outdoor storage of manganese-containing iron ore fines will not create a public nuisance or adversely impact the surrounding area, environment, or property uses. Thus, the variance request is denied. Watco is free to re-apply for a variance specific to this iron ore material with more detailed information about why it should not be enclosed.

CONCLUSION

CDPH’s determinations regarding Watco’s variance request will be effective as of the date of this letter, and will be posted, along with appendices and supporting materials, on CDPH’s website at www.cityofchicago.org/environmentalrules. Please be advised that if Watco fails to comply with the Bulk Material Rules within the timeframes provided above, Watco will be subject to enforcement action including daily fines in the amount of \$1,000 to \$5,000 per

violation as provided by Section 11-4-810(a)(7) of the Chicago Municipal Code. Furthermore, CDPH may issue a summary abatement order pursuant to Section 11-4-025(c) of the Chicago Municipal Code, requiring Watco to correct any violations within a timeframe prescribed by the Commissioner.

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

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

Sincerely,



Allison Arwady, M.D.
Commissioner

cc: Mort Ames, DOL
Jennifer Hesse, CDPH

Attachments

Attachment A - Watco Fugitive Dust Plan (without appendices), April 2019



Fugitive Dust Control Plan

Chicago Ferro Terminal

2926 E 126th Street
Chicago IL 60633

Terminal Manager: Steven Caudle

(773) 646-8000

Rev. April, 2019

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Executive Summary

The Chicago Ferro Terminal (Terminal) is located at 2926 E. 126th Street, Chicago, IL 60633 and encompasses approximately 40 acres. The facility is a specialty warehousing and marine loading/unloading terminal that receives, stores, and loads dry-bulk material for the iron and steel industry.

The Terminal was first opened in 1985 as Arrow Terminal. The facility was purchased by Global Materials in 1997 and acquired by Kinder Morgan in 2004. The Terminal was invited to join and accepted enrollment in the Illinois EPA's, Registration of Smaller Source (ROSS) Program in April 2012. Watco Terminal and Port Services (WTPS) acquired the terminal in 2017. Since 2005 over \$7,800,000 has been invested in environmental and infrastructure upgrades at this Terminal, including but not limited to:

1. Repaved most surfaces – 2005-2006
2. Increased indoor storage by 100,000 square feet with 90 individual poured concrete storage bins – 2008
3. Installed Packaging Department Dust Collector - 2010
4. Installed Concrete Dock Surface – 2011. (Previously a slag surface)
5. Installed Crusher Dust Collector – 2011
6. Installed Screener Dust Collector – 2011
7. Paved roads between outdoor Pig Iron storage pads – 2012.
8. Paved roads in front of packaging building – 2012.
9. Purchased Water Truck - 2013
10. Street Sweeper – 2014 minimum of four hours per day
11. Street Sweeper - <2014 Weekly
12. Employee Training (Continuous)
13. High speed door(s) and electrical improvements –2017
14. 60,000 CFM dust collector – 2016
15. Wind Monitoring System – 2017
16. Dock repaving –2017
17. New paved roadway - 2017
18. Fogging System – purchased October 2017 (barge unloading) – Implemented 2/26/2018
19. Four (4) Environmental Beta Attenuation Monitors (E-Bam Plus) by Met One Instruments – January 2018 –Implemented March 2018
20. Install (1) Federal Reference Method (FRM) Monitor per the EPA Section 114 Request by Met One Instruments – September 2018
21. Application of calcium chloride on internal road ways as a dust suppressant – January of 2019.

The Terminal recently committed to stop receiving bulk material containing greater than 2% manganese and also stopped operation of the crushing and screening operation previously conducted on site. These two actions represent significant efforts made on the part of the Terminal to reduce the potential for dust emissions.

This Fugitive Dust Control Plan has been developed in accordance with the regulations set forth by the City of Chicago Department of Public Health; Article II. Air Pollution Control Rules and Regulations, published January 25th, 2019ⁱ and 35 IAC 212. Chicago Ferro Terminal has developed specific control procedures based on local wind speeds and are included in this plan.

On May 3, 2017 the Chicago Department of Public Health granted 2 variances requests to the Terminal related to the City of Chicago Bulk Material Regulations. On April 24th, 2019 the Terminal submitted a variance request for exemption from part D of the Rules based largely on the fact that the Terminal has committed to stop handling bulk material containing greater than 2% manganese. The following is an outline of the approved and pending variance requests:

1. High Wind Events/Transfer Points – suspension of outdoor operations at 15 MPH. Granted with the following conditions:
 - a. Moisture sensitive alloys are transferred indoors
 - b. That a water source is always available for outdoor loading and unloading of non-moisture sensitive products, during non-freezing conditions; and
 - c. That staff continuously watch for visible dust and adhere to the dust control provisions in the facility's Dust Control Plan and incremental dust control procedures decisions tree, up to and including ceasing operations if opacity/visible emission limits (defined in this plan) are reached or in question.
2. Dust Suppression System – suspension of requirement to use wet suppression to control dust outdoors during freezing conditions. Granted with the following condition.
 - a. From November 1 – March 31 each year, transfer and storage occurs outdoors, terminal personnel will continuously monitor all active transfer points during freezing weather operations. In the event dust is observed, immediately suspend operations that are causing visible dust unless it meets applicable opacity standards or can be effectively suppressed in another manner and in accordance with the Fugitive Dust Control Plan.
3. A Variance Request from Part D of the Rules as revised January 25th, 2019 was submitted to the CDPH in April of 2019. This request is pending a response from the CDPH at this time.

Neither the Terminal nor WTPS own any of the products handled within the facility. Rather the terminal is a custodian of the products and responsible for ensuring the products are not cross contaminated and no product is lost or damaged. The industry standard for acceptable loss is 0.005%; Chicago Ferro Terminal operates well below this standard. Chicago Ferro Terminal is recognized as an industry leader in the handling of customer products and goes through extensive measures to make sure that the same amount and quality of product that enters the facility also leaves the facility.

Introduction

In February 2019, the Terminal committed to stop receiving manganese-bearing bulk material containing manganese at concentrations greater than 2% and to phase out all handling of said material in an expedited manner. At the time of the revision to this plan, the remaining greater than 2% manganese-bearing bulk material has been transferred to an enclosed structure at the Terminal, called "Building F," which meets the requirements of Part D of the City of Chicago Rules, Control of Emissions from the Handling and Storing Bulk Materials, dated January 25, 2019 (Rules) for storage and loadout. For this material, the Terminal expects to be in compliance with Part D of the Rules during the phase out period because the material will be stored in Building F. The transfer of this material from Building F to off-site locations will be done in completed by in Building F and trucks will be covered before leaving the facility. Once the phase out of this material is complete, the Terminal will continue to handle bulk materials that contain less than 2% manganese. The following plan pertains to bulk materials containing less than 2% manganese

1. Fugitive Dust Control Plan Objectives

This Fugitive Dust Control Plan for the Watco Terminal and Port Services (WTPS) Chicago Ferro Terminal (Terminal) has been developed in accordance with the requirements set forth by the Rules and 35 IAC 212.

The Fugitive Dust Control Plan is designed to meet the aforementioned laws and to establish the following objectives:

- Define procedures that Terminal personnel will follow to control and/or mitigate fugitive and/or visible dust emissions;
- Identify fugitive and/or visible dust levels requiring corrective actions;
- Identify steps that will be followed to bring fugitive and/or visible dust emissions within appropriate ranges;
- Identify steps that will be taken to demonstrate that corrective action procedures are followed and to verify that the facility is controlling avoidable fugitive and/or visible emissions;
- Identify the fugitive dust monitoring, weather monitoring, and measurement parameters.

In order to meet the stated objectives, the Fugitive Dust Control Plan clearly identifies the following:

- A site map depicting facility boundaries, buildings, internal roads, utilities, roadways within a quarter mile of the perimeter of the facility that are used for transport of material, all potential points of emissions, location of all control devices, and the location of all monitoring equipment (Figures 1 & 2);
- Description of the Facility's operations including a list of all bulk solid materials handled at the Terminal;
- Description of all truck routes within a quarter mile of the terminal used for transport of material;
- A calculation of the Terminal's maximum total indoor and outdoor bulk solid material storage;
- A description of all control measures, devices, and technologies used to minimize and control fugitive dust;
- A description of the placement, operation, and maintenance of the Particulate Matter less than 10 microns (PM₁₀) monitors;

- The schedule and plan for quarterly testing to ensure compliance with the prohibition on Fugitive Dust;
- A contingency plan for PM detections that exceed the Reportable Action Level (RAL);
- A contingency plan for an alternative method of monitoring
- A description of the Terminal's record keeping system;
- A fact sheet of the Fugitive Dust Plan
- All potential fugitive dust emission units;

2. Description of Facility Operations

The Terminal is located at 2926 E. 126th Street, Chicago, IL 60633. The Terminal is a specialty warehousing and marine loading/unloading terminal that receives, stores, and loads dry-bulk material for the iron and steel industry, amongst other packaged and finished products. A list of all bulk products handled at the Terminal is provided in Appendix A: Quantity and Types of Materials Handled. All of the bulk products handled at the facility contain less than 2% manganese. Neither packaged materials nor finished steel products are considered to contribute to fugitive dust and therefore are not included in this list.

The Terminal predominantly engages in transfer and transport operations. The facility has a dock area used for unloading, and on rare occasions loading, barges. A majority of the materials handled at the Facility arrive by barge. A relatively small quantity of material arrives or departs by train. Trucks and front-end loaders at the site are used for internal transfers, and covered trucks play a significant role in the delivery of materials to and from the site. Each of these activities are subject to Best Management Practices (BMPs) that minimize the potential for fugitive dust emissions and are discussed in more detail under Section 5 of this Plan.

The Terminal has defined procedures to identify fugitive and/or visible emissions sources and associated mitigation measures. Details of the dust monitoring and mitigation measures are discussed in Section 6 of this Plan.

Bulk products that arrive at the Terminal by barges are unloaded using an excavator. Bulk Products are loaded via the excavator directly into trucks. Dust that may be generated during barge unloading is controlled using a truck-mounted, Dust Solutions, Inc. Dry Fog Dust Suppression system (Dry Fog System). During the barge unloading process, the Dry Fog System is positioned next to a truck that is ready to be loaded. The Dry Fog System dispenses fog into the truck bed prior to and during material loading activities. The Dry Fog System uses an agglomeration technique and can provide up to 99% dust suppression efficiency. Photographs of the Dry Fog System are provided in Appendix C. Technical specifications of the Dry Fog System are provided in Appendix D. Internal trucks are then delivered to an enclosed building where the materials are stored in bins constructed of solid concrete walls, concrete block, or jersey barriers.

Bulk products are loaded out from the warehouse bins with front end loaders. The material is then transferred into third party trucks inside of Building F. The loadout area for Building F contains a 60,000 CFM dust collector equipped with two hoods used to control dust during loading activities. The hoods are connected to a Camfil Farr Model GS72 baghouse. The collected dust is pneumatically shaken down from the filter bags and collected at the bottom of the bag house in drums. This area has been further equipped with high speed roll up doors located at the entrance and exit to the truck loading area. These high-speed doors are equipped with sensors that are set to close the doors 6 seconds after a vehicle enters or exits the building. The entrance and exit doors are never opened at the same time in order to prevent a cross wind from passing through the building and potentially transporting dust. This practice also minimizes the potential for fugitive dust to leave the

building. All trucks that are loaded in Building F are required to tarp their bed prior to opening the outbound high-speed door.

At the time of this Plan revision, pig iron and a small amount of iron ore slag are the only materials stored outdoors. The pig iron has natural densities that minimize its potential to become airborne during outdoor storage. In addition, it is kept in three-sided, walled bins which help minimize wind exposure. In these bins, the typical material height is well below the Rules' 30-foot height restriction and generally only about 3-4 feet above the height of the bin's walls (the walls are necessary to contain and segregate the products), thus further minimizing the volume of material exposed to wind. The bulk piles will be controlled in accordance with Part E of the Rules by using the existing water truck to wet pig iron during storage and prior to loading.

Potential roadway fugitive dust emissions are minimized due to the fact that all truck route roadways and all vehicle parking surfaces within the terminal are paved. Currently the Terminal actively controls traffic related dust emission year-round via sweeping, water application, and chemical applications. The Terminal utilizes a Tennant Company, Sentinel Outdoor Ride-On Sweeper to wet roads and remove dust from inter-terminal paved areas. This sweeper is owned by WTPS and is dedicated for the sole use of the Terminal. The sweeper is equipped with water spray capability and a direct throw conveyor system which containerizes all recovered dust and debris. The unit is also equipped with a hydraulic twin vacuum dust control system to control dust emissions while in use. Technical specifications of the sweeper are provided in Appendix F. This piece of equipment is used to sweep and wet the paved surfaces within the Terminal every 4 hours of operation or once per every 100 third party trucks that enter the Terminal. A separate water truck is also used to wet roads as necessary to ensure compliance with the requirements of the Rules and weather permitting. The effectiveness of the water sweeper and spray control measures are continually evaluated. A log of the sweeping and water truck operation is documented and kept with records maintained on site.

In November 2018, the Terminal commenced an additional enhancement of its dust control practices. The application of Calcium Chloride dust suppressant was implemented on major road ways where Semi truck traffic is directed.

Figure 1 depicts the location of the Terminal as well as the surrounding roads used to access the Terminal. Figure 2 depicts the general locations of the operational areas that have the potential to generate fugitive dust as listed below as well as depiction of the normal traffic patterns within the facility. These locations are further discussed in Section 6.

3. Description of Truck Routes

The Terminal is accessed from the north side of 126th Avenue. This road connects with South Torrance Avenue approximately 0.3 miles west of the Terminal entrance and with Avenue O approximately 0.7 miles east of the Terminal entrance. Torrance Avenue, Avenue O and 126th Avenue are the only trucking routes utilized by companies transporting materials to and from the Terminal. South Carondolet road is the only other thoroughfare within a quarter mile of the Terminal, however this road goes through a residential area and does not connect with any major highway. Therefore, South Carondolet road is not used to access the Terminal.

4. Indoor and Outdoor Bulk Solid Material Storage

- 1. Indoor Storage Capacity and Volume:** The facility has eleven (11) storage buildings covering approximately 330,354 square feet. These buildings are used to store Packaged, Finished Steel and

moisture-sensitive Bulk Products as well as house the packaging and bagging operations. The calculations for the storage area and capacity are outlined in *Appendix B: Storage Calculations*. The total inside storage of bulk materials during normal operational is approximately 259,255 tons and maximum storage capacity is estimated at 388,882 tons. This tonnage does not include packaged material.

2. **Outside Storage Capacity and Volume:** The facility has five (5) different areas on the property covering approximately 111,000 square feet, where material is stored outside and open to the environment. The main product stored outside is Pig Iron (Iron Linnet), which is stored in five (5) areas. The calculations for the storage area and capacity are outlined below in *Appendix B: Storage Calculations*. The total outside storage during normal operations is approximately 122,850 tons and the maximum storage capacity is estimated at 184,275 tons. Appendices

5. Description of Fugitive Dust Controls

The Terminal employs various work practices and Best Management Practices (BMPs) to control and/or limit the potential emissions of fugitive dust to the environment. These practices include, but are not limited to, the following equipment and processes:

- The use of the Dry Fog System during barge unloading;
- Conducting outbound loading of trucks inside of Building F which contains a 60,000 CFM dust collector equipped with two hoods used to control dust during loading activities. The hoods are connected to a Camfil Farr Model GS72 baghouse;
- The use of two high-speed doors on Building F to maintain full enclosure during truck loading activities. These doors are set to close 6 seconds after a truck passes over the threshold;
- Tarping trucks that are loaded out with material before they leave Building F and before exiting the Terminal;
- The use of dust collectors and baghouses for packaging and bagging operations in Buildings E and H. Building E is equipped with a Camfil Farr Model GS24 baghouse which is rated at 18,000 CFM. Building H is equipped with an Amtech Model ATY-24 which is rated at 18,000 CFM.;
- When unloading materials into Building E, the loaders are required to leave the bucket inside the loading curtain for 20 seconds after dropping the material in order to allow the dust collector to remove as much dust as possible.
- Wetting of outdoor bulk material storage;
- Wetting of internal roadways;
- Application of calcium chloride chemical dust suppressant on roadways throughout the year;
- The Terminal utilizes a Tennant Company, Sentinel Outdoor Ride-On Sweeper to wet roads and remove dust from inter-terminal paved areas. This sweeper is owned by WTPS and is dedicated for the sole use of the Terminal. The sweeper is equipped with water spray capability and a direct throw conveyor system which containerizes all recovered dust and debris. The unit is also equipped with a hydraulic twin vacuum dust control system to control

dust emissions while in use. Technical specifications of the sweeper are provided in Appendix E.;

- All vehicular traffic is required to adhere to an 8 mph posted speed limit within the terminal;
- Material spillage of any kind is cleaned by the end of the working day to reduce emissions and reduce the potential for lost product. Under no circumstances do customers allow loss of products;
- Cleanup utilizing a combination of equipment and hand tools (shovels and/or brooms) is used after every transfer to account for all material and prevent cross contamination; and
- 30 foot pile height limits are enforced and piles on the terminal rarely if ever approach ½ this limit.

The following is a detailed discussion how the Best Management Practices are employed to minimize the generation of fugitive dust emissions.

i. **Conveyors** - Bulk rail cars are loaded at the terminal via a portable conveyor and/or front end loader. When an open-topped railcar is being loaded the material being loaded is wetted, weather permitting, to control potential dust generation. If the material is to be loaded into a closed-top railcar the chute at the end of the conveyor is lowered as far as possible into the railcar to minimize dust generation. Specific control measures based on local wind speeds can be found in *Appendix G: Chicago Ferro Terminal - Incremental Dust Control Procedures and Decision Tree for Bulk Products*.

ii. **Transfer Points** - The terminal employs a number of work practices and operational techniques to reduce the potential for fugitive dust. The techniques include, but are not limited to:

- The placement of clamshell/bucket used to load trucks as far into the truck beds as possible to reduce the fall height of the material being loaded.
- Limiting the amount of material picked up in a given bucket to reduce the possibility of spillage of the material.
- The truck loading of moisture-sensitive Ferro Alloys is conducted in the breezeway inside Building F with a 60,000 CFM dust collector and a high speed door to reduce exposure to the environment.
- The truck loading in the breezeway of building F is further protected by two high speed doors that remain closed during loading to minimize cross breeze and transport of dust during loading.
- All trucks are required to apply a tarp over the load prior to the opening of the high speed door and leaving the breezeway.
- When loading Pig Iron outdoors, water is be applied based on temperatures and wind speeds. As a safety issue, a variance was put forth and approved to not require wetting during freezing temperatures.

Specific control measures based on local wind speeds can be found in *Appendix G: Chicago Ferro Terminal - Incremental Dust Control Procedures and Decision Tree for Bulk Products*.

iii. **Transportation** - The terminal employs a number of work practices and operational techniques to reduce the potential for fugitive dust. The techniques include, but are not limited to:

- The facility adheres to a posted 8 MPH speed limit as required by Article II.
- Greater than ninety (>90) percent of the roadways and parking areas at the facility are paved.

- The Tennant Company, Sentinel Outdoor Ride-On Sweeper is used to sweep the paved surfaces at the facility entrance and within the facility. Terminal roadways and parking areas are cleaned with this sweeper a minimum of once every 4 hours or 100 external/third party trucks.
- A water truck is also used on site to keep primary travel ways in use moist, weather permitting.
- External or third party trucks that will proceed outbound onto public streets are restricted to paved surfaces; that represent >90% of the road surfaces within the terminal.
- Additionally all external/third party trucks that will carry product outbound are inspected prior to loading and a Driver Pick-Up Ticket (Appendix H) is utilized to verify the truck is clean, can safely handle, transport and will cover any bulk material. These BMPs are designed to prevent material from being tracked off site and prevent fugitive dust. They are used in lieu of and by design intended to replace and afford greater protection than a wheel wash station and rumble strips as specified in Part B, Section 3, Subsection 8, paragraph d. Specific control measures based on local wind speeds can be found in *Appendix G: Chicago Ferro Terminal - Incremental Dust Control Procedures and Decision Tree for Bulk Products*.

iv. Vehicular Coverings and Other Dust Controls - Transport vehicles agree to not enter or leave the facility without covering any bulk material. All transport vehicles loaded with bulk materials indoors are required to cover any non-packaged bulk material prior to exiting the storage building, whenever mechanically possible. If a truck is not mechanically able to extend a tarp while indoors, they must cover their non-packaged bulk material immediately upon leaving the building. All external/third party trucks that will carry product outbound are inspected prior to loading and a Driver Pick-Up Ticket (*Appendix H*) is utilized to verify the truck is clean, can safely handle, transport, will cover any bulk material and no loose material is on the outside of the truck.

v. Vehicle Leaking/ Integrity - All external/third party trucks that will carry product outbound are inspected prior to loading and a Driver Pick-Up Ticket (*Appendix H*) is utilized to verify the truck is clean and that no loose material is on the outside of the truck.

Truck Bulk Loading and Unloading - As indicated above, the loading techniques include, but are not limited to, the placement of buckets or clamshells used to load trucks as far into the truck beds as possible to reduce the fall height of the material being loaded. The truck loading of moisture-sensitive Ferro Alloys is conducted in the breezeway with 60,000 CFM dust collector and high speed door inside building F to reduce exposure to the environment. When loading non-moisture sensitive material outdoors, water is applied whenever possible, based on temperature and wind speed. In November 2018, operational changes were implemented when unloading materials into Building E. The loaders are required to leave the bucket inside the loading curtain for an additional 20 seconds once the load is complete to allow the dust collector to remove as much dust as possible. Specific control measures based on local wind speeds can be found in *Appendix G: Chicago Ferro Terminal - Incremental Dust Control Procedures and Decision Tree for Bulk Products*.

vi. Railcar Bulk Loading and Unloading- Rail car bulk loading and unloading is conducted utilizing BMPs that minimize the potential for fugitive dust.

Rail car loading takes place outside along the rail spur. Open-top hopper cars are loaded using either a covered conveyor or a frontend loader, which retrieves the material from the designated storage bin. Water is applied, as needed/required weather permitting to mitigate potential fugitive dust generation.

Covered hopper cars are loaded using a front end loader, which retrieves the material from the storage bin. The material is then placed into a rail hopper that discharges to a covered conveyor which brings the material to the car. Covered hoppers cannot handle wet or moisture added material.

When conditions warrant all loading of trucks, both internal and external, is conducted indoors. Specific control measures based on local wind speeds can be found in *Appendix H: Chicago Ferro Terminal - Incremental Dust Control Procedures and Decision Tree for Bulk Products*.

- vii. **Barge Bulk Loading and Unloading** - Barge bulk loading is conducted utilizing BMPs that minimize the potential for fugitive dust. The Terminal does not generally load outbound barges, (one in 2017 and two in 2016). However, an excavator and/or front end loader is utilized to load outbound barges when necessary.

The bulk material is retrieved from the storage bins using a front end loader. The front end loader then proceeds to the dock and gently deposits the bulk material onto the dock. It is then recovered by the excavator with a fully enclosed clamshell (normally) or bucket and lowered into the barge and gently deposited to minimize dust.

Barge bulk unloading is conducted utilizing an excavator. The excavator grabs the material from the barge with a fully enclosed clamshell (normally) or bucket and then gently deposits the material into the bed of the receiving truck. In order to reduce the potential the operator does not utilize the full capacity of the bucket or scoop during transfer of material. Instead the operator reduces the amount of product handled, per bucket or scoop (the scoop is never overfilled or spilling material), and the speed at which it is handled. The operator of the excavator meters the contents from the clamshell/bucket within the bed of the truck to control potential fugitive dust emissions to the greatest extent possible. Additionally, the Dry Fog Machine is deployed for use at the dock, specifically for the truck loading of material from barges to reduce emissions. These procedures take place typically on the northern edge of our dock, immediately adjacent to the Calumet River. Specific control measures based on local wind speeds can be found in *Appendix G: Chicago Ferro Terminal - Incremental Dust Control Procedures and Decision Tree for Bulk Products*; including but not limited to reducing the number of barge lids removed during unloading or loading.

Additionally barge lids are selectively removed from barges with moisture sensitive cargo so that only 3 or 5 (type and size dependent) are removed at a time to mitigate potential emissions from the barge.

- viii. **Paved/ Unpaved Roads** - The Terminal is in compliance with Article II as greater than ninety (>90) percent of the in-plant roadways are paved. The limited area, which is not paved, is made of a slag material and gravel mix which generates minimal dust. External or third party trucks that will proceed outbound onto public streets are restricted to paved surfaces; that represent >90% of the road surfaces

within the terminal. These BMPs are designed to prevent material from being tracked off site and prevent fugitive dust. All external/third party trucks that will carry product outbound are inspected prior to loading and a Driver Pick-Up Ticket (Appendix H) is utilized to verify the truck is clean, can safely handle, transport and will cover any bulk material. All trucks are inspected prior to loading to ensure that there is no loose material on the outside of the truck.

Roadway and Travel Path Cleaning and Use of a Water Truck

The Terminal has an on-site street sweeper used to clean all paved surfaces within the terminal at a minimum of once every 4 hours or for every 100 external trucks.

Water as a form of dust suppression is an integral component of the sweeping operation and as a standalone dust control measure. The street sweeper has the capability to apply water while conducting cleaning operations. A water truck is also used as necessary to wet roads throughout the day, as necessary and weather permitting. The effectiveness of the water spray control measures will be continually evaluated. A log of the sweeping and water truck operation will be documented and kept on site. In November 2018, a new dust suppressant was implemented on all inter-facility roadways during the winter months to minimize and/or eliminate dust emissions. An example of the log is attached in *Appendix I: Daily Street Sweeper / Water Truck Log*.

Clean-up of Spilled Material

The products handled at the terminal are valuable and the terminal has and will always clean up any spilled material as soon as possible to minimize loss to the customer and any potential environmental impact. The same equipment that is used for normal material handling is appropriate for the majority of spill cleanup. Finishing is completed with brooms and pans. Transfer pad and bins are cleaned periodically during operations and at the end of every move to ensure no product is lost.

Truck Loading/ Haul Integrity

The Terminal has put into place administrative controls to minimize the likelihood of bulk materials leaking from loaded or unloading vehicles at the terminal, prior to authorizing entrance to the terminal to load. The driver has to declare that is truck is capable of holding material without leaking and will tarp and secure the load. An example of this declaration is provided in *Appendix H: Driver Pick-Up-Ticket*.

6. Dust Monitoring Contingency Plan

1. Placement of PM₁₀ Ambient Air Monitors

Section 3.0(4) of the Rules requires Facilities to install “permanent, continuous Federal Equivalent Method (FEM) real-time PM₁₀ monitors. The Terminal has purchased four E-BAM Plus -9800 monitors from Met One Instruments, Inc. The monitors were installed in March of 2018 and will be located in the four cardinal directions as listed below and shown in Figure 2

- a. The North PM₁₀ Monitor is located on the NW corner of the roof of building C.
- b. The East PM₁₀ monitor is located on the NW corner of the wash bay roof.

- c. The South PM₁₀ monitor is located on the SE corner of building E roof.
- d. The West PM₁₀ monitor is located on the roof of building F West side, just north of building G.

2. Federal Reference Method (FRM) PM10 filter based monitor

The Terminal purchased and completed the installation of one Federal Reference Method (FRM) monitor on September 10, 2018 in accordance with the Environmental Protection Agency (EPA) Section 114 Request, dated May 15, 2018. The monitor is installed in a specific location approved by the EPA which is depicted in Figure 2.

The rationale for the site location is that it takes into consideration the closest residential area adjacent to the property line, which is south of the facility. The placement of the monitor meets the horizontal and vertical placement requirements outlined in 40 CFR Part 58, Appendices D & E, as well as the QA Handbook for Air Pollution Measurement Systems: “Volume II: Ambient Air Quality Monitoring Program” EPA – 454/B-17-001, January 2017.

The Terminal implemented the 3-day EPA monitoring schedule starting on September 13, 2018. The terminal hired an accredited lab to perform all sample analysis of the PM₁₀ filters for lead and the named toxic metals. The laboratory certifies that the FRM/FEM laboratory methods meet the requirements of the List of Designated Reference and Equivalent Methods. All data collected from the FRM PM₁₀ monitor will be consistent with the National Ambient Air Quality Standards (NAAQS) for PM₁₀. Upon installation of the FRM PM10 monitor, a data logger was attached and readings from the FRM sampler are being recorded.

2. Maintenance of Monitors

Watco has developed routine action items within its company-wide internal tracking system, Velocity EHS. The Environmental Manager responsible for the facility will ensure that all action items are performed as necessary, per the maintenance schedule provided by Met One. The following table lists the routine maintenance activities and corresponding schedule that should be implemented:

Maintenance Item	Interval	Reference
Replace the filter tape - U.S. EPA PM _{2.5} FEM Applications	8 Weeks	E-Bam Plus Manual Sec. 2.8
Replace the filter tape (for alternative tape advance settings)	As needed	E-Bam Plus Manual Sec. 2.8
Basic leak check	8 Weeks	E-Bam Plus Manual Sec. 6.2
Nozzle and vane cleaning	8 Weeks	E-Bam Plus Manual Sec. 6.5.1
Flow audit (verify and/or calibrate flow system)	8 Weeks	E-Bam Plus Manual Sec. 6.8
Clean PM ₁₀ inlet particle trap	3 Months or Less	BX-802 Manual
Clean PM _{2.5} cyclone particle trap	3 Months or Less	BX-807 Manual
Verify or set the clock	8 Weeks	E-Bam Plus Manual Sec. 3.6.1
Mass Audit	6 Months	E-Bam Plus Manual Sec. 6.9
Background determination	As needed	E-Bam Plus Manual Sec 6.4
Internal Nozzle Cleaning	6 Months	E-Bam Plus Manual Sec. 6.5.2
Replace the pump muffler	6 Months	n/a
Test analog output voltage (if used)	6 Months	E-Bam Plus Manual Sec. 6.11
Rebuild AC pump	24 Months	n/a

3. Contingency

The E-Bam PM₁₀ monitors record PM₁₀ on an hourly basis and store the data electronically. An automated system alerts facility personnel of elevated PM₁₀ readings. The system transmits the alerts via email. Upon receipt of an email alert, the Terminal Manager or his designee will determine if the Reportable Action Level (RAL) has been exceeded.

Section 3.0(3) of the Rules requires Watco to describe its “response activities when the monitors detect PM₁₀ that exceeds the RAL. The response activities should consist of a range of increasingly aggressive measures appropriate to different levels of exceedance.” The Rules define Reportable Action Level as “the positive difference between the level of PM₁₀ measured at the upwind monitor(s) at a Facility and the level of PM₁₀ measured at the downwind monitor(s) at a Facility that will trigger response activities. The RAL may vary based on the value of the difference, and based on the concentration of PM₁₀ detected at the downwind monitor(s) at a Facility.” Although the Rules allow Watco to utilize the positive difference between the upwind and downwind monitors, Watco utilizes the positive difference between the maximum reading and the minimum reading. This conservative calculation results in a number higher than or equal to the true upwind/downwind positive difference, but allows Watco to respond immediately without having to determine wind direction. Accordingly, for purposes of this submission, “Difference” means the positive difference between the highest level of PM₁₀ measured at any monitor at the Facility and the lowest level of PM₁₀ measured at any monitor at the Facility.

Watco will use a two-level approach:

1. On an hourly basis, if the level detected at any one monitor is greater than 300 µg/m³, Watco personnel will observe on-going operations and site conditions in the vicinity of the monitor that had the reading greater than 300 µg/m³, and in other areas of the Terminal, and take actions as outlined in Appendix F: The Terminal - Incremental Dust Control Procedures and Decision Tree for Bulk Products. Watco records each occurrence on its Wind/PM₁₀ Event Log. Watco maintains its Wind/PM₁₀ Event Logs in accordance with Section 6.2 below.
2. On a 24 hour average basis, if the difference between any two upwind and downwind monitors is greater than 150 µg/m³, Watco will report to the City of Chicago Department of Public Health and take action as identified.

Monitor Results	Actions	Report as RAL?
1. Hourly reading <300 µg/m ³	No action required	No
2. Hourly reading >300 µg/m ³	Investigate and Mitigate-outlined below	No

3. 24-Hour Difference* >150 µg/m ³	RAL event - outlined below	Yes
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*24 hour Difference is the difference of the hourly average over a 24-hour calendar day

If either an investigation or RAL event (items numbered 2 and 3 in the above chart) occurs, Watco will proceed as follows:

1. Investigate fugitive emission levels to determine suspected on-site source(s).
 - a. If a RAL event has occurred-submit written notice to the City of Chicago Department of Public Health within 24 hours.
 - b. If an on-site source is identified, proceed to paragraph 2 below.
 - c. If an on-site source is not identified, proceed to paragraph 6 below.
2. If WATCO identifies a potential on-site source, WATCO determines which actions listed below for each potential on-site source it should take to address the potential fugitive emissions, and WATCO takes those actions. These actions are not required to be taken in any particular order. Rather, WATCO may take some or all of these actions as appropriate based on the suspected source and on-site conditions. Water application will typically be considered the primary response activity to control fugitive emissions.
 - a. Stockpile Potential Source
 - i. Compact, shape, or perform other pile maintenance; and/or
 - ii. Apply targeted water through cannon system; and/or
 - iii. Apply targeted water through water truck; and/or
 - iv. Apply targeted chemical stabilizer through water truck.
 - b. Product Unloading Potential Source
 - i. Apply targeted water through cannon system; and/or
 - ii. Apply targeted water through water truck; and/or
 - iii. If rotary rail dump enclosure is suspected source, visually monitor baghouse exhaust and check pressure drop, and if issue is apparent, examine for blinded or compromised bags
 - c. Product Transfer Potential Source
 - i. Apply water through spray bars; and/or
 - ii. Apply targeted water through cannon system; and/or
 - iii. Apply targeted water through water truck.
 - d. Product Loading Potential Source
 - i. Minimize drop distance; and/or
 - ii. Reduce feed rate; and/or
 - iii. Apply water through spray bars; and/or
 - iv. Utilize choke feeding; and/or
 - v. If vessel to barge transfer, and vessel discharge conveyor is equipped with water spray, instruct vessel representatives to activate water spray.
 - e. Internal Roads, Transient Pathways, or Parking Areas Potential Source
 - i. Apply targeted water through cannon system; and/or
 - ii. Apply targeted water through water truck; and/or
 - iii. Conduct additional sweeping.

- f. Upon implementation of the actions described above, as applicable, proceed to paragraph 3 below
3. Monitor PM₁₀ Readings in next hour
 - a. PM₁₀ Readings
 - i. if after taking Steps 1 and 2 above, the hourly reading for the monitor at issue is <300 µg/m³, proceed to paragraph 6 below;
 - ii. If after taking Steps 1 and 2 above, the hourly reading for the monitor at issue is >300 µg/m³, proceed to paragraph 4 below.
4. Suspend
 - a. Suspend the on-site source identified under paragraph 1 above and conduct mitigation activities; and,
 - b. Monitor PM₁₀ levels hourly until the hourly reading for the monitor at issue is <300 µg/m³, in which case, proceed to paragraph 5 below.
5. Restart
 - a. When the hourly reading for the monitor at issue is <300 µg/m³, restart the source/activities suspended under paragraph 4 above.
6. Recording
 - a. Record and retain an event report that includes pertinent PM₁₀ data, meteorological information, timing of alert, timing of suspension (if applicable), timing of restart (if applicable), description of mitigation efforts, and other pertinent information relating to the event.

4. Alternative Method of Monitoring

Within 24 hours of a monitor malfunction that prevents readings or logging of data, Watco will notify the City of Chicago Department of Public Health (CDPH) in writing. Records of all maintenance activities and equipment downtime will be maintained on-site.

In the event that the on-site wind monitor is out of service, data from the local weather database will be used (i.e. Weather Underground or equivalent).

If a PM₁₀ monitor is out of service for a period longer than 48 hours, the frequency of Method 22 opacity reading, will be increased to once per day at the location of the out of service PM₁₀ monitor. The increased frequency of opacity readings will continue until the monitor is put back into service.

Watco will continue to demonstrate compliance with the PM₁₀ emissions standards under the Bulk Solid Materials Rules, as it currently does, by conducting the periodic monitoring required by the rules. The Bulk Solid Materials Rules accept Methods 9 and 22 as appropriate methods for testing the outcomes of variances to ensure that they protect the public and the environment. Even the owners/operators that have obtained a variance from Section 3.0(4) are required by Section 3.0(2) to conduct opacity testing under EPA Method 9 on "at least" a quarterly basis. Watco presently follows the alternative-compliance approach proposed by the Rules and will perform Methods 9 and 22 testing at least quarterly. These opacity measurements will be conducted by a trained/certified employee or contractor. The findings will be documented in an Opacity Monitoring Log, which will be available for inspection by the Department upon request.

7. Record Keeping System

The Terminal has developed and maintains the following data or equivalent forms onsite to show compliance with Sections 3.0., Subsection 17 of Article II.

1. Training Logs
2. Routine Facility Inspections
3. Water Spraying log (*Appendix I: Daily Street Sweeper/Water Truck Log*)
4. Roadway Cleaning Log (*Appendix I: Daily Street Sweeper/Water Truck Log*)
5. Dust Collection System (*Appendix J: Dust Collector Daily Inspection Logs*)
6. Opacity Monitoring (*Appendix K: Method 9 Observation Record*)
7. Visible Emissions Monitoring (*Appendix L: Method 22 Observation Record*)
8. Printed emails from wind speed/direction system annotated with modified/suspended activities during high wind conditions
9. Excursion Reporting Form and Log (*Appendix M: Fugitive Dust / Opacity Limit Excursions*)
10. Quarterly opacity and fugitive dust observations (*Appendix N: Quarterly Fugitive Dust / Opacity*)

The records will be maintained in the Terminal files for a period of no less than three years in accordance with Sections 3.0, Subsection 17, and paragraph h of Article II. For logs which are manually generated, the records will include the date and time of the record, and the identifications of the employee completing the form. Logs that are manually generated will be made on standard forms, which are designed to include all information required by Section 3.0 of Article II. Such logs may be updated from time to time to reflect recordkeeping improvements which may be identified during Plan review or as a result of field experience with the logs.

8. Reporting

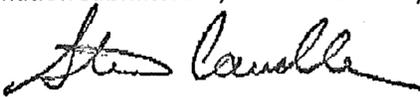
The Terminal submits monthly PM₁₀ Reports to the CDPH which contain the data from the 4 EBAM monitors and the weather station.

Monthly FRM reports will be submitted to the CDPH within 28 days after the end of each calendar month, in accordance with Section 6.0(i) of the rules. The terminal submits to the CDPH monthly PM₁₀ reports.

Terminal submits a Quarterly Non-Packaged Manganese-Bearing Material Operation report to the Department of Planning and Development (DPD).

9. Plan Certifications

I certify that this document and all Appendices were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and behalf, true, accurate and complete.



Authorized Signatory
Steven Caudle
Chicago Ferro Terminal Manager

5-1-19

Date