July 31, 2017

Julie Morita, M.D
Commissioner, Department of Public Health & Environment
333 South State St., 2nd Floor
Chicago, IL 60604

Re: Watco Transloading LLC – Chicago Arrow Terminal, 2926 E. 126th Street
Request for Variance from Section 3.0(4) of the Rules and Regulations for Control of Emissions from the Handling and Storage of Bulk Solid Materials

Dear Commissioner Morita:

Pursuant to Section 8.0 of Article II, Part E of the City of Chicago Department of Public Health's (the "Department") Rules and Regulations for Control of Emissions from the Handling and Storage of Bulk Solid Materials (the "Bulk Solid Materials Rules" or "Rules"), Watco Transloading LLC, ("Watco") submits this request for variance for its facility located in Chicago, Illinois, formerly owned by Kinder Morgan (the "Watco Facility"). This request is separate from, but related to, the variances requested by Kinder Morgan/Chicago Arrow Terminal ("Kinder Morgan") on June 11, 2014.[1] Kinder Morgan's variance request sought variances from five sections of the Rules.[2] The Department conditionally granted two of those variance requests and denied the other three on May 3, 2017. (Ruling on Kinder Morgan Variance Request, dated May 3, 2017, hereinafter "Variance Ruling," attached as Appendix A)

Watco's variance request is concerned primarily with Section 3.0(4) of the Bulk Solid Materials Rules, requiring the installation of permanent, continuous Federal Equivalent Method (FEM) real-time PM-10 monitors ("PM-10 monitors") but also requests that the Department remove the condition requiring the installation of these PM-10 monitors from its conditional approval of the Kinder Morgan variance request. Further, although this request relates to the same facility as Kinder Morgan's June 2014 request, Watco's new request includes extensive additional measures implemented at the Watco Facility that have further reduced fugitive dust, including significant investments in capital improvements and equipment. In addition to the new evidence that supports granting this variance request, Watco also presents a detailed review of

[1] The Department maintains a website containing documents related to the Bulk Solid Materials Rules, including Kinder Morgan's variance request: https://www.cityofchicago.org/city/en/depts/cdph/supp_info/inspections---permitting/doe_ordinances_rulesandregulationsandsupportingdocuments.html. When citing to a document that is available on this site (the "Department Website"), Watco will make note of this. This will reduce the paperwork associated with this filing, as it is generally unnecessary to attach these documents as exhibits if they are already available to the Department and also available online.
[2] The first variance request filing sought a sixth variance, but this request was withdrawn in June 2015.

the EPA air-monitoring study of manganese levels in particulate matter emissions, referenced in the Department's May 2017 decision, that shows the EPA study results, along with long-term PM-10 monitoring results in the same area, support the requested variance.

I. Introduction

Watco purchased this site from Kinder Morgan on February 2nd, 2017. Even prior to this purchase, Kinder Morgan invested significant amounts of time and effort into preventing fugitive dust emissions. Kinder Morgan described many of these efforts in its 2014 variance request. In the years following that request, many additional steps have been taken, at significant cost, to reduce and control the generation of fugitive dust and thus, to prevent the likelihood of fugitive dust leaving the site. Watco's efforts to minimize the potential for fugitive dust are continuing. Additional projects, described in this request, are either planned or undergoing evaluation to determine both their feasibility and effectiveness.

In denying Kinder Morgan's request for a variance from the PM-10 monitoring requirement, the Department relied heavily on the statements concerning the Kinder Morgan facility contained in a study conducted by the United States Environmental Protection Agency ("EPA") on manganese emissions in the general area where the Facility is located (the "EPA Metals Study"). Because this Study was provided to the Department after Kinder Morgan had already made its arguments in support of the variance request and after the public comment period on that request had closed, Kinder Morgan's variance request did not address it. Therefore, upon learning of the EPA Metals Study in the Department's decision to deny Kinder Morgan's variance request, Watco retained Trinity Consultants, a respected national environmental consulting firm, to review the EPA study. As presented in this request, Trinity's evaluation concluded that the air monitoring data gathered by EPA shows that the detected emissions do not pose a risk to public health. Trinity's evaluation further found that the EPA data does not support a finding that the Watco Facility is the main source of manganese emissions.

The Department's decision on the Kinder Morgan variance request also relied on a December 2016 inspection report conducted by the City. Watco has reviewed the report and believes the City inspector's concerns stem primarily from a misunderstanding of operating procedures at the facility. Other issues identified by the inspector, such as the need for a 30-foot measuring post and additional waterway protections, have been addressed by Watco. Further, the inspector's observations of dust present on the internal Facility roads is not evidence that fugitive dust emissions are leaving the Facility at levels that pose either a nuisance or adversely impact the surrounding area. There is nothing in the City's inspector's report indicating that any fugitive dust emissions were observed to be emanating from the Facility's property boundary.

This variance request will demonstrate that Watco conducts operations in a manner minimizes and mitigates the risk of producing fugitive dust emissions, including manganese

emissions. All manganese-containing bulk solids are stored indoors. Although these solids are transferred in outdoor areas on occasion, Watco has clear Best Management Practices (BMPs) that limit the potential for these materials to become airborne, and has a parallel financial interest in not allowing these valuable materials to be lost to windborne dispersion. With these safeguards in place, human health is and will continue to be adequately protected, as demonstrated through the use of EPA-approved air quality monitoring methods. These alternative monitoring methods will impose a more reasonable financial and human-resources burden on Watco.

II. The Regulation or Requirement from which the Variance is Requested (§ 8.0(2)(a))

Watco seeks relief from the real-time PM-10 monitoring requirement established in Section 3.0(4) of the Rules. The Rules specifically anticipate that this requirement may be unreasonable as applied to facilities that do not pose a significant likelihood of creating fugitive dust emissions and invites these facilities to seek variances under Section 8.0(3). As an alternative method of compliance, Watco requests to conduct (1) visible emissions testing at the boundaries of the facility in accordance with EPA Method 22, 40 C.F.R. Part 60, Appendix A, and 35 Ill. Adm. Code 212.107, and (2) opacity testing within the interior of the facility in accordance with EPA Method 9, 40 C.F.R. Part 60, Appendix A, and 35 Ill. Adm. Code 212.109.

III. Description of facility, its operations, and the quality and types of materials used in the process and Activities for Which the Variance is requested. (§ 8.0(2)(b)-(c))

A. Watco Facility and Operations (§ 8.0(2)(b))

Watco's Facility is located at 2926 E. 126th Street in Chicago, Illinois. A map of the facility is provided in Appendix B. The facility is bordered by the Calumet River to its north, a commercial warehouse to the east, an open lot used for employee parking by Ford Motor Company to the west, and East 126th Street to the south. The closest known dwelling is 150 yards to the south of the main entrance gate. The closest residential area is approximately 200 yards south-southwest. The Watco Facility is located in the 60633 Zip code area. It has a population of 12,927 according to the 2010 census resulting in a population density of 1,259 people per square mile. By comparison, the 2010 Census found a density of 11,841 people per square mile for the Chicago area. The 60633 Zip code contains 4,746 occupied housing units and 436 unoccupied housing units.

The Facility engages in a limited amount of processing, and possesses air permits and/or registration related to crushing, screening, and packaging operations, all of which occur indoors. The Facility 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 BMPs that minimize the potential for fugitive dust emissions and are discussed in more detail below.

B. Quality and Types of Materials Used in the Process or Activity (§ 8.0(2)(c))

The Facility does not handle coal or petcoke and is not subject to Article II's regulations specific to those materials. On average, the facility handles 650,000 net tons of steel, alloy, and associated materials yearly. Although a complete inventory cannot be provided here, only approximately 29% of the materials handled at the site contain manganese.[3] In comparison, the S.H. Bell facility has disclosed that, typically 90% of the materials stored at its facility contain manganese.[4] Thus, manganese-containing materials do not constitute a significant component of the materials handling at the site, particularly when it is considered that they are all stored inside. The Facility has both indoor and outdoor storage capacity, with the indoor storage spread across several buildings.

1. Indoor Storage

The majority of bulk solids materials at the Watco Facility are kept indoors, segregated within storage bins that are enclosed on three sides (image 1). This indoor storage is critical to the Watco Facility's commercial viability. These materials lose value if they become wet. Among other problems, wetted steel alloys could create adverse or unintended reactions when used. Wetted materials also have inconsistent weights, and this creates significant problems for Watco from a billing and accounting standpoint. For these reasons, in addition to preventing fugitive dust emissions, Watco has over 351,600 square feet of indoor storage capacity (capable of holding about 885,509 tons), spread across thirteen buildings. (See aerial photo, image 2)

[3] Providing the Department with a comprehensive list of the names and tonnages of all materials stored or transferred at the facility would risk the release of confidential trade secrets to parties outside of the Department. Watco is therefore exempted from providing a detailed inventory by Chi. Municipal Code 11-4-310. If the Department believes that this information is necessary to determine if the requested variance would cause a nuisance or adversely affect the surrounding community, Watco is willing to discuss methods for providing this information while protecting its confidentiality. *See id.* 11-4-310(b)(2).

[4] Department Determination on Variance Request from S.H. Bell Company, dated October 17, 2016, exhibit B, Department Website.

Image 1 - Building F with individual 3-sided storage bins to prevent loss or cross-contamination of products

Image 2 - Aerial Photo of Facility

Importantly, and as noted above, although the Facility does handle bulk materials that contain manganese, all manganese-containing materials are stored indoors. When manganese-containing materials are loaded from an indoor storage bin to a truck for transport to customers, the transfer occurs indoors. And, as discussed in more detail below, this indoor truck loading process occurs beneath a new large dust collector which collects indoor emissions during the loading process. During normal operations, approximately 248,144 tons of bulk material are stored indoors.

2. Outdoor Storage

Watco only stores two types of bulk solids in outdoor storage bins: Pig iron and aggregates. Neither of these contain manganese. Because most of the materials handled by

Watco are moisture sensitive, it has significantly less outdoor than indoor storage space: 111,000 square feet (capable of holding about 161,731 tons), which is less than a third of the Watco Facility's indoor storage capacity.[5] (See Appendix C.) Both the pig iron and aggregates have natural densities that minimize their potential to become airborne. In addition, they are kept in three-sided, walled bins which help minimize wind exposure (image 3). In these bins, the typical material height is well below the Rules' 30-foot height restriction and generally only about 3-4 feet above that height of the bin's walls (necessary to contain and segregate the products,) thus further minimizing the volume of material exposed to wind. Additional measures, described below, limit the potential for these materials to produce fugitive dust.

Image 3 - Outdoors enclosures (note 30-foot height marker pole in foreground)

3. Packaged Materials

Approximately 15% of the materials handled at the Facility are delivered and stored in packaging called "Super Sacks" (image 4). These sacks are made of water-resistant synthetic materials that eliminate the generation of fugitive dust during transport into and out of the Watco Facility, as well as during transfers within the facility. All packaged material is stored inside.

[5] By comparison, S.H. Bell, which handles similar materials has significantly more outdoor storage than indoor storage: 116,250 square feet of outdoor storage area versus 83,000 square feet of indoor storage. S.H. Bell has not disclosed what portion of the 90% of its manganese-containing materials it stores outdoors. The Department recently criticized S.H. Bell for failing to specify where these materials are stored in the company's most recent fugitive dust plan. (Department Response to S.H. Bell Fugitive Dust Plan, dated March 3, 2017, p. 3, available on Department Website.)

Image 4 - "Super Sacks" in barge. The materials are highly dense, and so material piles do not exceed the side walls of the barges' holds, because the barges cannot carry that much weight. This picture likely shows a barge at full capacity for these dense alloys.

IV. The Department's Decision on the Kinder Morgan Variance Request.

The Kinder Morgan variance request sought a variance from the Section 3.0(4) requirement to install PM-10 monitors at the Facility, as well as other requirements of the Rules. The Department denied the PM-10 monitors variance request because it lacked certain supporting information and based on statements contained in the EPA Metals Study and a December 2016 Department inspection. Watco is submitting this new request for a PM-10 monitoring variance because there is additional information not previously presented to or considered by the Department which supports granting it.

Subject to certain conditions, the Department granted Kinder Morgan's request for a variance from Sections 3.0(7) and 5.05(5) of the Rules relating to the application of dust suppressants during freezing conditions. In granting this portion of the variance request, the Department noted that PM-10 monitoring would indicate whether the variance conditions were effective. Watco requests that the Department maintain the variance from Sections 3.0(7) and 5.05(5) without requiring Watco to install the PM-10 monitors.

Kinder Morgan also requested relief from certain high wind and weather station requirements set forth in Sections 3.0(5) and 5.0(4), which the Department denied. Watco is not requesting that the Department reconsider this portion of its variance decision.

A more detailed review of the relevant portions of the Department's decision is presented below to show there are several reasons why the Department should re-consider the findings it relied upon in denying Kinder Morgan's request.

A. Fugitive Dust Monitoring

For owner/operators that have not obtained a variance, Section 3.0(4) of the Rules requires that they install, operate, and maintain permanent, continuous Federal Equivalent Method (FEM) real-time PM-10 monitors at the perimeter of their facilities. Kinder Morgan sought a narrowly-tailored variance from this requirement, asking that fugitive dust emissions be monitored using (1) visible emissions testing at the boundaries of the facility in accordance with EPA Method 22, and (2) opacity testing within the interior of the facility in accordance with EPA Method 9. These methods, while not providing the 24-hour per day monitoring of a continuous system, provide a similar level of protection for the Watco Facility once site-specific conditions are taken into account. Those conditions include the fact that only dense materials (pig iron and aggregates) are stored outdoors, and the significant commitments of money and effort towards reducing the potential of those materials to become airborne. These efforts have included the use of dust suppression equipment at transfer stations, the wetting of outdoor materials during times of low humidity and high wind, and the use of BMPs during transfer operations.

After Kinder Morgan filed its variance request, the Department received a comment letter signed jointly by the Natural Resources Defense Council and the Southeast Environmental Task Force. The letter (dated March 10, 2017) attached a 2015 air-monitoring study prepared by the EPA (the "EPA Metals Study.")[6] The Study looked at the presence of lead and toxic metals, including manganese, in Southeast Chicago. The Study did not find elevated concentrations of lead, but did find elevated levels of manganese. The levels, however, were below the ATSDR Minimal Risk Level of 300 ng/m^3. EPA flagged Kinder Morgan as a possible source of the manganese emissions, based on generalities like the Facility's proximity and the presence of manganese-bearing materials at the facility. However, the Study did not examine whether there was any correlation between the higher manganese levels EPA recorded and activity occurring at the Facility during those times. Trinity did perform that examination, as further discussed below, and it does not support the conclusion that the Facility is a potential source. Nor did EPA's report address the data showing that prevailing wind conditions were not consistent with the Facility being an emissions source of the measured manganese levels. EPA also seemed to be unaware of Kinder Morgan's practice of storing all manganese-bearing materials in indoor enclosures. Finally, and perhaps most critically, EPA failed to discover or acknowledge several alternative sources of manganese in the area.[7]

Less than two months after receiving the EPA Metals Study, and without the benefit of any third-party review of the Study's conclusions, the Department issued its decision denying Kinder Morgan's request for a variance from the PM-10 monitoring requirement, citing the EPA

[6] Xact Metals Study: Southeast Chicago, Region 5 Air and Radiation Division, December 12, 2014 – July 23, 2015. (Attached as Appendix D.)
[7] The problems with the Study are discussed further in Section V.C.

Metals Study as a key basis for its decision. The Department specifically noted the EPA's unsupported and speculative conclusion that Kinder Morgan was "the main [manganese]-contributing facility" to elevated manganese concentrations in Southeast Chicago. (Variance Ruling p. 11) The Department's other reasons for denying the Kinder Morgan variance request included (1) that Kinder Morgan had not provided enough information about the "aggregates" stored outdoors to determine whether these materials tended to produce dust, (2) that Kinder Morgan routinely conducted some transfers of magnesium-containing alloys outdoors and, (3) that Kinder Morgan's dust suppression efforts for its pig iron was actually evidence that the pig iron was producing dust and posed risks that barred the granting of a variance.

The Department also cited a December 2016 inspection report of the facility, another piece of evidence received long after Kinder Morgan's last opportunity to comment. (Variance Ruling at p. 11) The inspector stated that he did not observe a sweeper or water truck in operation during his visit, and concluded from his review of the logs kept for those trucks found that the water truck was not being used. In actual fact, as discussed in more detail below, the inspector misread the logs which recorded both the use of the sweeper truck and the water truck but did not differentiate between the two. The Department also highlighted the inspector's observation of "very dry and dusty" access roads, but did not note any observations of dust emissions either within the facility or at its boundaries. The access roads observations had not been noted in prior City inspections.

B. Transfer Points - Section 3.0(7) & Dust Suppressant System - Section 5.0(5)

Section 3.0(7) of the Rules requires that owner/operators regulate all transfer points at their sites. Unless the material transferred is naturally moist, each transfer point must either be indoors or be subject to a water-spray system during operations. Kinder Morgan sought only a very limited variance: Many of its transfers already occurred indoors, and the materials it stores outdoors were (as one might expect) not moisture-sensitive and so could be sprayed during transfer. However, there were some outdoor transfers of moisture-sensitive materials that could not be moved indoors, such as barge-to-truck transfers. The moisture-sensitive materials could not be practically subjected to conventional water spray, which would impair the value of those commodities. As an alternative compliance measure, Kinder Morgan proposed that it could be required to continue conducting the outside transfers of these materials following a defined set of BMPs specific to the different transfer points at the site (e.g., barge-to-truck, conveyor-to-rail car, etc.)

For similar reasons, Kinder Morgan asked for a variance specific to portions of Section 5.0(5)'s dust-suppression requirements. Section 5.0(5) requires the use of either chemical stabilizers, water-spray bars, a misting system, or water trucks to wet down or otherwise stabilize uncovered bulk storage piles. Section 5.0(5)(b) requires that the system be designed to provide water even when temperatures fall below 32°F, and so the system must be able to heat and distribute water during freezing conditions.

Again, Kinder Morgan requested a narrowly tailored variance—asking that it be exempted only from the requirement that the Facility have the ability to apply dust suppressants during freezing conditions. The use of non-freezing chemical stabilizers would damage the bulk solids, and the use of heated water would require major changes to the site's infrastructure and building a boiler room in order to heat the water pipes, and applying for new permits.

The Department conditionally granted both of these variances subject to certain conditions. In the case of the Section 3.0(7) variance, Kinder Morgan was required to (1) always load moisture-sensitive alloys indoors, (2) ensure that a water source is always available for outdoor loading and unloading of non-moisture-sensitive materials during non-freezing conditions, and (3) ensure that staff conducting transfer operations adhere to the facility's Fugitive Dust Plan. The Section 5.05(b) variance—applicable from November 1st to March 31st of each year—was conditioned on Kinder Morgan (1) assigning personnel to monitor for visible dust at all transfer points during freezing operations and (2) immediately shutting down such operations that are causing the visible dust. The Department noted that both variances were being granted in light of its decision to deny a variance for PM-10 monitoring which would provide an indication of whether the dust-suppression variances were allowing fugitive dust to leave the site.[8] Watco is requesting that the Department clarify that based on the additional evidence presented in this variance request regarding both the nature of the Facility's operations and the improvements which have been subsequently implemented, along with the proposed increase in the frequency of conducting Method 9 and 22 monitoring, the variance from Section 5.05(b) subject to the two conditions regarding operational activities but without the requirement to operate PM-10 monitors remains in effect.

C. Wind Monitoring - Section 3.0(5) & High Wind Events - Section 5.0(4)

Kinder Morgan sought a variance for two sections related to high-wind events. Section 5.0(4) of the Rules requires suspending the disturbance of outdoor piles when wind speeds exceed 15 miles per hour (mph), and Section 3.0(5) requires the installation, operation, and maintenance of a weather station to assess whether this wind speed is reached (in addition to recording a log of wind speeds at the facility.) Kinder Morgan asked for approval to use a wind sock designed to indicate whether wind speeds have exceeded 15-knots (17.4 mph) and so asked that the high-wind provisions of Section 5.0(4) be adjusted to trigger at 17.4 mph. The Department denied these variance requests. (Variance Ruling, p. 15)

[8] Compliance with the PM-10 monitoring requirements is not specifically cited as a condition of either variance. Therefore, the Department could grant a variance from the PM-10 monitoring requirements without having to modify the conditional variances for Sections 3.0(7) and 5.0(5)(b). But to minimize ambiguity, Watco is requesting a variance that explicitly states that the variances from Sections 3.0(7) and 5.0(5)(b) are not conditioned on the performance of PM-10 monitoring.

Watco is not renewing Kinder Morgan's request for a variance from Sections 3.0(5) and 5.0(4). As discussed below, Watco has already purchased a weather station that meets the requirements set forth in the Rules and is awaiting its shortly expected delivery and installation.

V. Granting Watco a Variance from the PM-10 Monitoring Requirement in Section 3.0(4) Will Not Cause a Nuisance or Adversely Affect the Surrounding Community (§ 8.0(2)(d)).

A. Watco is Continuing the Dust Suppression Procedures that the Department Found Sufficient to Justify the Variances under Sections 3.0(5) & 5.0(4) of the Rules.

1. Barge Loading and Unloading

Watco's barge unloading procedures follow the BMPs specific to those types of transfers. Before barges arrive at the site, Watco arranges for them to be covered with stackable fiberglass lids, stackable metal lids, or sliding metal lids, which both minimizes fugitive dust emissions from arriving barges and, for moisture-sensitive materials, also protects them from exposure to damaging moisture (image 5). The need to use covers to protect the moisture-sensitive materials should provide assurance to the Department that these procedures are consistently followed.

Image 5 - Aerial photo of covered barge

The lids on the barges remain in place except when lids are removed to allow excavators to unload the material from that portion of the barge (image 6). Additionally, when elevated wind levels are detected, a limit is placed on the number of lids that can remain open at the same time. When unloading material from the barge, the excavator operator minimizes the amount of product handled per scoop or bucket, ensuring that it is never overfilled (image 7). When depositing material into a dump truck for transport, the excavator operator lowers the excavator bucket into the dump box well within the sidewalls, and then slowly curls the bucket outward when placing material into the dump trucks. This procedure minimizes the "drop height"

(*i.e.*, how far the material falls when being deposited) and the degree of disturbance of the material during the transfer operation, thus minimizing the potential for fugitive dust.

Image 6 - Excavator unloading barge with bucket attachment

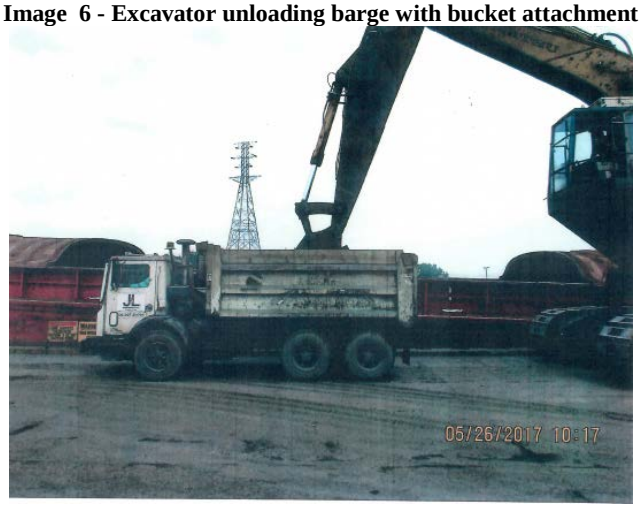

Image 7 - Excavator loading truck (note minimized "drop height")

2. Rail Car Bulk Loading and Unloading

Rail car loading and unloading operations account for a relatively small volume of annual on-site material transfers. In 2016, the facility handled only 65 rail cars over the course of the year, and 27% of those rail cars were enclosed box cars that contained products (finished steel and Super Sacks) with no meaningful potential to create fugitive dust.

Bulk rail cars are unloaded by positioning them over a rail pit and releasing the material into the pit below. The pit is below ground level, accessible by a ramp, and walled off on the three other sides, which significantly shields the unloading operation from the wind. Front-end loaders access the material through the ramp, then move the material either to the appropriate on-site storage bin or directly to a truck. (See truck loading procedures below.) No material is stored

in the rail pit and, for quality control and material loss-control reasons, the rail pit is swept clean after each transfer operation.[9]

As for loading operations, there are two kinds of rail cars loaded on-site: (1) Open-top rail cars and (2) covered hopper-top rail cars. Open-top rail cars (image 8) are loaded with a front-end loader. All materials are watered prior to being loaded into the open-top rail car. Covered-hopper-top rail cars (image 9) are typically loaded using conveyors. A chute is installed at the end of the conveyor to minimize the potential for fugitive dust by shielding descending material from the wind. Because the covered-hopper top cars are partially covered, it is more difficult for dust to escape.

Image 8 - Loading an open gondola car with pig iron. Note the front-end loader is operating on a concrete pad and no fugitive dust is present. The pig iron was sprayed with water prior to handling.

[9] Watco is evaluating the feasibility of wetting down railcar materials prior to their being deposited into the pit.

Image 9 - Loading proppants sand into a covered hopper rail car - no visible emissions noted

3. Truck Loading and Unloading

With one exception, all truck unloading is conducted indoors at the Watco Facility. The exception is a particular class of tractor-trailer that tips its container back to discharge its cargo. The storage buildings at the Watco Facility lack the vertical clearance necessary to allow this type of truck to unload indoors. In these cases the product is offloaded onto a concrete transfer pad outdoors (image 10), and then immediately transferred either into a smaller truck or into a front-end loader that delivers the material to the appropriate storage bin. To minimize the amount of material lost—Watco's handling contracts typically tolerate no more than one-half of one percent (0.5%) losses in mass—the transfer pad is cleaned utilizing a combination of a skid steer, shovels, and brooms to recover even the smallest material particles (image 11).

Image 10 – Transfer Pad Operations

Image 11 - Transfer Pad Operations

All bulk materials stored indoors (which would include all manganese-containing materials) are also loaded into trucks indoors. (See images 12 & 13) This includes the loading of the larger tractor-trailers mentioned above, because their vertical clearance requirements for unloading do not prevent indoor loading operations which do not necessitate tilting the trailer portion of the vehicle.

Image 12 - Truck being loaded under dust collector

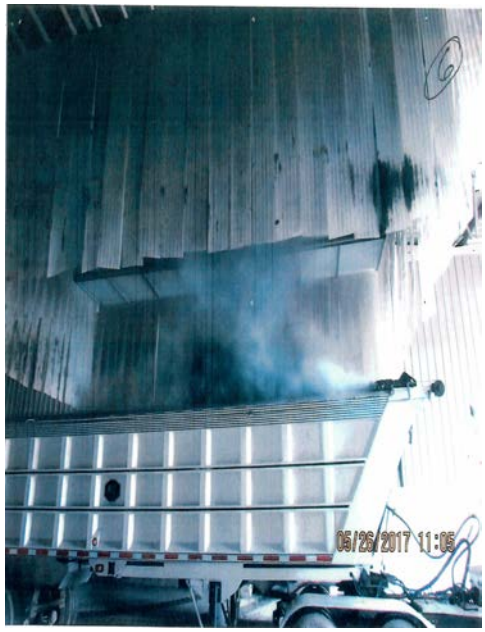

Image 13 - Truck being loaded under dust collector

Under normal conditions, non-water-sensitive materials stored outdoors will be loaded into trucks outdoors. However, during periods of low humidity, high temperatures, and/or wind speeds greater than 15 mph, Watco uses a water truck to wet down the surface of the outdoor materials before transfer operations begin. When trucks are loaded, the bucket or clamshell

depositing the material will be lowered as far into the truck bed as possible to reduce fall height and thus minimize fugitive dust.

4. Other BMPs

In addition to the above-described transfer point procedures, the following BMPs employed at the Watco Facility also contribute to the prevention and minimization of fugitive dust:

- All vehicular travel is required to adhere to an 8 mile-per-hour posted speed limit within the terminal.
- When loading pig iron into trucks, rail cars, or barges, the material is sprayed with water (unless the material is already wetted by precipitation.)
- Material spillage of any kind is cleaned immediately because of the value and weight of the product. The cleaning is accomplished using a combination of equipment and hand tools (i.e., shovels and brooms).
- All transport vehicles, including those not driven by Watco employees, must agree to not leave the Facility without covering or enclosing bulk material. Watco inspects all trucks prior to loading to verify that the truck does not track dust-producing material into the Facility and that the truck is capable of covering/enclosing the material it receives at the site.
- The roads and transfer areas at the Facility are routinely swept by a sweeper truck and washed by water-spray truck. The trucks follow specific routes focusing on areas most frequented by truck and front-end loader traffic. (See Appendix E)

B. Additional Evidence Not Presented to the Department in Kinder Morgan's Variance Request Supports Granting Watco's Variance Request.

1. Information on Materials Stored Outdoors

In denying Kinder Morgan's variance request, the Department explained that it could not assess the fugitive-dust potential of aggregates stored outside at the Facility based on the information provided. Watco is attaching a MSDS for the aggregates handled and stored at the Facility (see Appendix F). Importantly, the MSDS information makes clear that these aggregates, like the pig iron, contain no manganese. These materials do not contribute to any manganese-containing fugitive dust, and are typically sized between 0.25 and 1.5 inches. Although the density of aggregate is less than that of pig iron (ranging from 2.6 g/cm^3 to 3.0 g/cm^3), it is still significantly more dense than the various forms of pet coke that the Rules are built around (ranging from 1.2 g/cm^3 to 2.16 g/cm^3).

Watco is also attaching a photograph of the aggregate material, which was not included in the Kinder Morgan request (image 14). As shown in the image, the aggregate is roughly pebble-sized or larger—particle sizes too large to become airborne given the density of

aggregate. In fact, the aggregate is normally too dense for the wind to even move it laterally across the ground.

Image 14 - Aggregate Pile - Pebble sizes range from 0.25 to 1.5 inches

The Department also criticized Kinder Morgan for claiming that the pig iron stored at the facility produces "almost no dust" (Variance Ruling, at p. 10). The Department did acknowledge that Kinder Morgan has practices to suppress dust during transfer operations. In the event the Department may have a concern about the potential for the pig iron to produce dust even when not being transferred, Watco can address that concern. Physical disruption during the transfer process does tend to scrape off iron particles from the larger ingots. However, this shearing force is not present during inactive periods, and the wind alone is not sufficient to break off these particles in meaningful quantities. Also, when the pile is wetted as part of the transfer process, the water tends to wash down any powdery material, knocking it down to lower parts of the pile where the shielding effect of the enclosure bins is greatest.

There have been no other changes in the nature of the materials handled at the facility since Kinder Morgan described those materials in 2014. None of the bulk alloys kept at the site come in the form of a powder. The pig iron stored outside (see image 15) tends to be formed in large, cobble-sized, ingots. Typical bulk alloys at the Watco Facility are in sizes ranging from 4" to ¼" inches (image 16). The Department has previously noted that "if a facility establishes that the material it handles is uniquely dust resistant when handled properly, or that the dust emissions are effectively contained, captured, or controlled, then a variance might be appropriate." (Variance Ruling, p. 12). This additional information confirms that the materials handled at the Watco Facility are, in fact, uniquely dust resistant, and that Watco undertakes measures to capture and suppress any dust that might be generated during transfer operations.

Image 15 - Outdoor pig iron storage

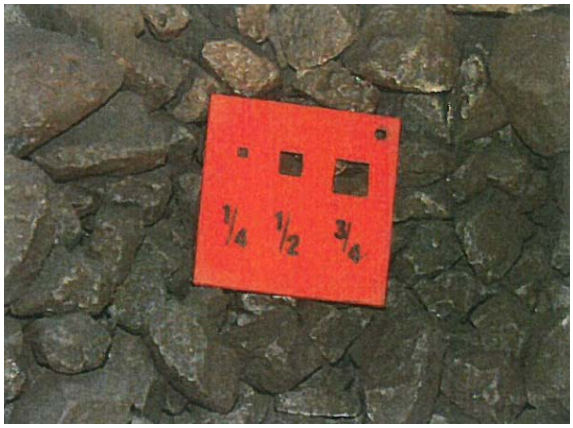

Image 16 - Silicon Manganese, stored indoors

2. Recent Opacity Testing During High Wind Events Produced Compliant Results.

Watco also has is providing additional, pertinent opacity test results that support a decision to grant this variance. The results of EPA Method 9 testing that was conducted during transfer operations at the Watco Facility on May 5th, 2017 are attached. (See Appendix G.) This testing was conducted during high-wind events (*i.e.*, 20 mph or more), where one would expect well above-average levels of fugitive dust. Even so, these high-wind operations did not generate non-compliant dust levels. After monitoring barge-unloading operations for 30 minutes, Watco's observer (who is properly trained and certified in Method 9) found an average opacity of only 6.8%. A second round of sampling found average levels of 17.75%, which is still below the applicable emission standard of 20%. See 35 Ill. Adm. Code 212.316.

3. Additional Compliance Measures and Equipment

Kinder Morgan made substantial efforts to reduce the potential for fugitive dust at the Facility, some of which occurred even before the City enacted the Bulk Solid Materials Rules. Kinder Morgan invested over $6.5 million dollars in infrastructure upgrades. This included paving most outdoor surfaces, increasing indoor storage capacity by 100,000 square feet, installing dust collectors in four buildings (total cost, $747,541.47), resurfacing the dock area with concrete ($191,056), and purchasing both a water truck and a street sweeper ($87,000). These measures were described in Kinder Morgan's variance request. But there are now additional, significant dust controls in place, as described in detail below, which provide the necessary additional evidence to demonstrate that granting Watco's PM-10 monitors variance request will not create a nuisance or adversely impact the surrounding area.

i. New dust collector

In June 2015, a new, substantial dust collector (the fifth added to the facility since 2010) was installed inside the truck-loading building at a total cost of approximately $682,000 (see image 12, above.) The collector is designed to collect and filter air at a rate of 60,000 CFM. Since this new dust collector was installed, trucks are loaded beneath the collector, and the collector captures emissions from this indoor transfer operation. It is reasonable to assume that to the extent that manganese-containing dust emissions might have been escaping from the building before June 2015, they are now being essentially captured and hence, significantly further reduced since this dust collector began operations. Moreover, any such reduction would not have been monitored by the EPA Metals Study which was completed at about the same time as this dust collector began operating. However, there are continuing Illinois EPA PM-10 monitoring results for the period post-June 2015 that, as discussed below, showing significant decreasing trends in recent years.

ii. Installation of weather monitoring station

Watco is not renewing Kinder Morgan's request for a variance from the Rule's wind monitoring requirements. As of the date of this filing, it has purchased and expects to receive very shortly a new weather monitoring station.[10] The estimated cost to purchase and install this equipment is $6,474.

Watco agrees with the Department's previous observation that the collection of detailed wind monitoring data would play an important role in helping conclusively establish that the Watco Facility does not meaningfully contribute to fugitive dust emissions in Southeast Chicago, particularly in assessing whether increased dust levels are observed, including by Method 9 and 22 testing, on days when the Watco Facility is downwind from other facilities that handle manganese-bearing materials.

The weather monitoring station will also play a key role in Watco's BMP for high-wind conditions by accurately gauging whether the 15 mph threshold for "high wind" events is reached and ensuring that Facility personnel are alerted to take the incremental actions (alternate measures) required under the BMP. Employee operations binders contain a decision-tree (a copy of which is attached as Appendix H) which simplifies and standardizes the decision-making process for dust suppression, to aid consistent compliance. The weather station will also create a detailed record of wind conditions at the facility, which Department inspectors can cross-check against the roadway cleaning log, the water spraying log, and the suspended activity log, to confirm that these operations are being conducted in accordance with the BMPs and applicable requirements of the Bulk Solid Material Rules.

[10] Shortly before filing this variance request, Watco was notified by its vendor that delivery before the August 1st deadline to install the system would not be possible. On July 27, 2017, Watco requested a one-month extension of the deadline to install the system.

iii. Installation of 30-foot height pole

The Department's December 2016 inspection report for the Kinder Morgan Facility observed that the height of the Facility's taller material piles could not be determined due to the absence of a 30-foot measuring post on site.[11] (Appendix I, p. 1.) Watco disputes this observation given that the walls of the outdoor storage bins are well below a height of 30 feet and the outdoor storage bins do not exceed these walls by more than a few additional feet. Also, former Kinder Morgan personnel (who have continued to work at the facility since Watco became the owner/operator earlier this year) confirm that the height of the outdoor piles has consistently remained below 30 feet. However, in recognition of the Rules' specification that a 30-feet high visible marker be installed, Watco has installed the required measuring post near its outdoor storage piles (image 3).

iv. Barge unloading area resurfacing and new berm

The Department's December 2016 inspection report also references the lack of a berm at the barge unloading area adjacent to the river. Watco questions the basis for this observation—at the time it purchased the facility there was concrete curbing along the barge unloading area's boundary with the river. The inspection report does not acknowledge the existence of this curbing, or explain why it was insufficient to stop material from falling into the river during unloading (or loading) operations. In any event, this matter has been resolved by Watco's ongoing project to completely resurface the barge unloading area. The resurfacing project is close to completion, and has cost over $400,000.

The main purpose of the barge unloading area re-surfacing work was to further improve the collection of residual materials and dust in this area. The former surface had cracked and eroded over time, creating subsurface spaces where materials and dust could collect, avoid collection by the sweeper and water trucks that clean the loading area after transfer operations, and then potentially be released during dry, windy, conditions. The elimination of these cracks and eroded surfaces now greatly improves the efficiency of the Facility's sweeper and water trucks, thus reducing the potential for the creation of fugitive dust (image 17).

[11] Watco disputes the inspector's guesstimate that the pile he observed was close to 30-feet high. Staff personnel report that the material piles rarely exceed the range of 18 to 20 feet. The installation of the marker pole should help all parties reliably assess the heights of these piles in the future.

Image 17 - Resurfaced and curbed dock area

v. Pilot Testing of "dry fog" system for dust suppression

Watco has been working on identifying a system for additional control of potential fugitive dust in the barge unloading area for moisture-sensitive materials. It has recently completed testing of a misting system, but the system tended to create ice hazards and adversely affect moisture-sensitive materials. Watco recently commenced a testing period of a different system (called a Dry Fog™ system) that avoids the misting system's icing and contamination problems by minimizing the volume of water used. The Dry Fog™ system has the potential to provide dust suppression even for the moisture-sensitive materials transferred in this area. (see Appendix J for more detailed information and manufacturer's photos of the Dry Fog™ system.) The Dry Fog™ system generates ultrafine water droplets (1 to 10 microns in diameter) that are especially suited to attaching to and smothering airborne dust particles smaller than 10 microns (PM-10 particles). The system is designed for this specific application, while other misting systems tend to produce excessively large droplets, which allow smaller dust particles to pass through the "slipstreams" between droplets.

If successful, the Dry Fog™ system (expected to cost approximately $50,000 to purchase and install) will add an extra level of protection to barge loading and unloading operations at the Facility. This is important because Watco stores all manganese-containing materials indoors, and so barge transfer processes (already subject to other suppression procedures) are the only plausible vector for manganese dust emissions.

Initially, the Dry Fog™ system will be used only for barge loading and unloading procedures. Because the barges are a major hub of transfer operations at the Facility, this will have an immediate positive impact.

vi. Purchase of clamshell excavator attachment

Currently, the Watco Facility uses an excavator with a bucket attachment to remove bulk solids from barges. Although BMPs require the excavator operator to remove the material in small enough scoops that spillage is unlikely, Watco is taking additional action to minimize these losses. Watco is in the final stages of purchasing a clamshell bucket which will reduce the surface area of the material exposed during the unload process (the clamshell encloses more product) and also allow the material to be loaded into trucks from a lower drop height, virtually eliminating fugitive dust emissions from this transfer process (image 18). This clamshell attachment, estimated to cost $95,000, will be used in all barge loading and unloading operations moving forward.

Image 18 - Clamshell excavator attachment

In summary, Watco has made, or is in the process of making additional improvements to its facility that were not part of the evidence presented in support of the Kinder Morgan variance request. These additional improvements clearly further reduce the potential for fugitive dust emissions from the Watco Facility and thus demonstrate that the Facility will not cause a nuisance or adversely impact the surrounding area.

C. The EPA Metals Study Supports Granting the Watco Variance

The EPA's Xact Metals Study included in Exhibit B on the Department's May 3, 2017 variance denial letter to Kinder Morgan (the "EPA Metals Study") was submitted to the Department on March 10, 2017, well after the public comment period on Kinder Morgan's variance request closed on September 2, 2014. This is Watco's first opportunity to address the EPA Metals Study. A careful evaluation of the air monitoring data presented in the EPA Study reveals that it supports the conclusion that Watco's facility is not creating a public nuisance or adversely impacting the surrounding area. First, the manganese concentrations measured are all below the current human health standard. Second, a comparison of the Facility operations on days where the higher of the manganese levels measured shows that the Watco facility is not a

likely source of the manganese. Finally, the available data concerning potential sources of manganese emissions in the study area shows that there are several other potential sources of manganese that could have contributed to the manganese emissions and have not been investigated.

1. The EPA Metals Study Shows that Ambient Manganese Concentrations are not Adversely Impacting the Surrounding Area.

i. The EPA Metals Study evaluated the air data using an old and unreliable reference standard.

The EPA Metals Study cites and relies upon an old Reference Concentration (RfC) of manganese of 50 nanograms per cubic meter (ng/m^3),[12] which the EPA originally published over twenty years ago in 1993. An RfC is "an estimate (with uncertainty spanning perhaps an order of magnitude) of a continuous inhalation exposure to the human population (including sensitive target groups) that is likely to be without an appreciable risk of deleterious effects during a lifetime."[13] An RfC is an "estimate" which takes into consideration uncertainty factors (UFs) which are applied based on the reference value derivation.

What the EPA Metals Study does not disclose is that the manganese RfC was derived principally from a 1992 study which had an assigned uncertainty factor (UF) of 1000).[14] The manganese RfC UF of 1000 reflects factors of 10 for individual variability, a factor of 10 to convert the lowest observed adverse effect level of the 1992 study to a "no observed adverse effect" level, and a factor of 10 for database uncertainty.[15] Per our review of UFs for EPA's RfCs, an uncertainty factor of 1000 or more is abnormally high. Of the applicable chemicals in the EPA's IRIS database, 68% of chemicals with a RfC had UFs less than 1000. [16] This indicates that the manganese RfC uncertainty, already characterized as high, is also unlike the uncertainty assigned to the derivation of most other RfCs.

In addition to adopting an uncommonly conservative standard for manganese exposure, the RfC for manganese simply does not reflect the most recent knowledge in this area. The 50 ng/m^3 standard is still based on the 1992 study, and has not been revised since 1993. Perhaps if there were no more recent standards to draw from, then the EPA Metals Study's unexplained reliance on the 1992 RfC would be justifiable. But, as explained below, there is a more recent, and more reliable, standard that the Study did not acknowledge or explore.

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[12] EPA Metals Study, page 13 of 13, Summary, item 6.
[13] U.S. EPA, December 2002, Section 4.2 U.S. EPA Risk Assessment Forum, *A Review of the Reference Dose and Reference Concentration Processes*, December 2002, Section 4.2.
[14] U.S. EPA, *Inhalation Health Effect Reference Values for Manganese*, EPA/600/R-12/047F5, Table 1 (Dec. 2012). The 1992 data was from Roels, H.A., P. Ghyselen, J.P. Buchet, E. Ceulemans, and R.R. Lauwerys. 1992. *Assessment of the permissible exposure level to manganese in workers exposed to manganese dioxide dust*.
[15] *Id.*
[16] https://cfpub.epa.gov/ncea/iris/search/index.cfm?

ii. Applying the appropriate health risk standard, manganese levels in the vicinity of the Watco Facility did not reach levels that would risk adversely affecting the local community.

The EPA Metals Study results show no measured manganese concentrations above 300 ng/m^3. 300 ng/m^3 is the current Minimal Risk Level (MRL) of manganese, and the MRL system is the appropriate comparative value to use in evaluating the Study's monitoring results, not the RfC system.

MRLs reflect the generation of risk assessment science that came after the more uncertain estimates used for RfCs. The Agency for Toxic Substances and Disease Registry's (ATSDR's) methodology for developing MRLs arose out of an agency-wide ATSDR workgroup, aided by observers from the EPA and the National Institute of Environmental Health Sciences, which was subjected to an expert panel of peer reviewers.[17] It is important to recognize that the MRL is an estimate "of daily human exposure to a hazardous substance that is likely to be without appreciable risk of adverse noncancer health effects over a specified route and duration of exposure."[18] The MRL is intended to be a screening exposure level to identify hazardous substances that may be of concern, and measured concentrations below these levels are not likely to cause harmful health effects.

In 2012, the ATSDR used the same 1992 EPA study data which was the basis for EPA's manganese RfC, but put that study data through the ATSDR's updated risk assessment methodology for deriving MRLs.[19] Using the MRL methodology, the ATSDR developed the current manganese MRL of 300 ng/m^3 and assigned it a significantly lower (by an order of magnitude) uncertainty factor (UF) of 100,[20] reflecting factors of 10 for individual variability and a factor of 10 for database uncertainty.[21] Based on a review of UFs for ATSDR's for hazardous substances with similar chronic duration (or greater than one year) inhalation MRL (like manganese), an uncertainty factor of 100 or less is quite common. Of the hazardous substances in the ATSDR's database with an applicable MRL, 79% of those substances had UFs of 100 or

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[17] C.H. Selene et al., *Minimal Risk Levels (MRLs) for Hazardous Substances* (1998)
[18] U.S. EPA Risk Assessment Forum, *A Review of the Reference Dose and Reference Concentration Processes*, December 2002, Section 2.1.5.
[19] Creating accurate assessments of the risks created by different quantities of toxic substances is the core competency of the ATSDR. Congress created the ATSDR in 1980 "to implement the health-related sections of laws that protect the public from hazardous wastes and environmental spills of hazardous substances." As the federal public health agency of the U.S. Department of Health and Human Services, the ATSDR protects communities from harmful health effects related to exposure to natural and man-made hazardous substances. It performs this work under both the federal Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the Resource Conservation and Recovery Act of 1976 (RCRA). Under CERCLA, the ATSDR is charged, in part, with expanding "the knowledge base about health effects from exposure to hazardous substances." Under RCRA, ATSDR is "authorized to assist EPA in determining which substances should be regulated and the levels at which substances may pose a threat to human health."
[20] U.S. EPA, *Inhalation Health Effect Reference Values for Manganese*, EPA/600/R-12/047F5, Table 1 (Dec. 2012).
[21] *Id.*

less.[22] This indicates that the manganese MRL uncertainty is comparable to the uncertainty assigned to the derivation of most other applicable MRLs.

Thus, the EPA Metals Study found that manganese levels in the vicinity of the Watco Facility are at levels "likely to be without appreciable risk of adverse noncancer health effects." But rather than announcing this fact, the Study confuses the issue by using simultaneous references to the old manganese RfC value. The problem was compounded by the fact that Kinder Morgan was not given an opportunity to address and correct these ambiguities before the Department's variance decision. This understandably caused the Department to misconstrue the underlying data presented in the EPA Metals Study in its denial of the Kinder Morgan variance request.

When assessing the data gathered by the EPA Study, the Department should look to the toxicology standards devised by the ATSDR, the public health agency that Congress authorized to protect communities from harmful health effects due to exposure to hazardous substances. When ATSDR's standard, the MRL, is used as the appropriate reference concentration, the Study data from December 2014 – July 2015, measuring a concentration of 108 ng/m^3, shows levels well below the MRL screening threshold of 300 ng/m^3. Therefore, the EPA Metals Study measured manganese concentrations do not indicate there is any adverse impact on the surrounding area.[23]

2. The EPA Metals Study Results and Other Monitoring Show Decreasing Manganese Levels Since the Implementation of Fugitive Dust Controls Under the Bulk Solid Materials Regulations.

The Illinois Environmental Protection Agency (Illinois EPA) has long maintained a metals monitor at Washington High School (Washington HS), approximately 1.4 miles northeast of Watco.[24] As shown in Figure 1, annual manganese concentrations have been recorded for many years at this location, which is adjacent and just north of the temporary (late 2014 through mid-2015) EPA Metals Study monitoring location in Rowan Park (northeast of the intersection of East 116th Street and Avenue O).

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[22] https://cfpub.epa.gov/ncea/iris/search/index.cfm?

[23] Watco is aware of two other recent monitoring studies that measured manganese concentrations, both showing no harmful health impacts. One is detailed in the previously cited ATSDR Health Consultation a report REVIEW OF ANALYSIS OF PARTICULATE MATTER AND METAL EXPOSURES IN AIR – KCBX – CHICAGO, COOK COUNTY, ILLINOIS (Aug. 22, 2016). Tables 6 and 7 of that report show average manganese concentrations monitored over the period of February 2014 through January 2015 at the KCBX North Terminal and at the KCBX South Terminal both having average manganese concentrations below the 300 ng/m^3 comparative value (an average of 128 ng/^{3} at the North Terminal, and an average of 87 ng/m^3 at the South Terminal.) A second, on-going, effort at S.H. Bell commenced in March 2017 and shows an average manganese concentration, considering two months' worth of data, of 220 ng/m^3.

[24] The monitor is located at 3535 E 114th Street (southeast of the intersection of E 114th Street and Avenue O), and is identified as Illinois EPA Monitor Id 17-031-0022.

Figure 1 - Annual Mean Manganese Concentration - Washington H.S. Monitor

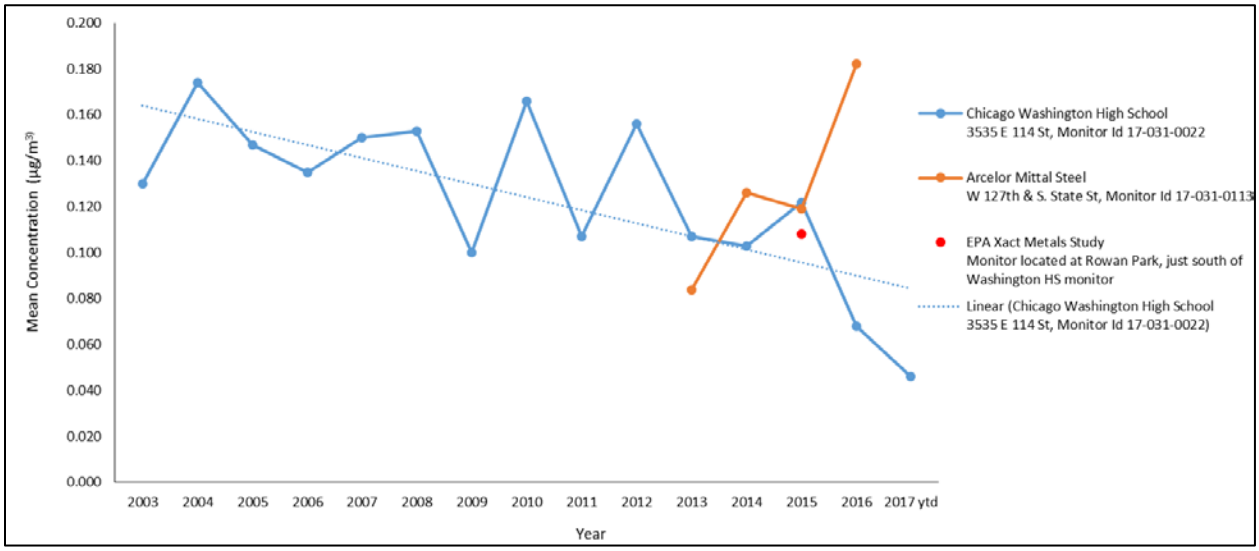


Figure 1 shows a downward trend of annual manganese concentrations at the Illinois EPA Washington HS monitor location, particularly in recent years and since the EPA Metals Study concluded.[25] Because the EPA Metals Study monitor location was located immediately south of the Illinois EPA monitor location, it reasonably can be inferred that if the EPA had continued its study past mid-2015, the concentrations it detected at the EPA Metals Study location would also have decreased by a similar amount.

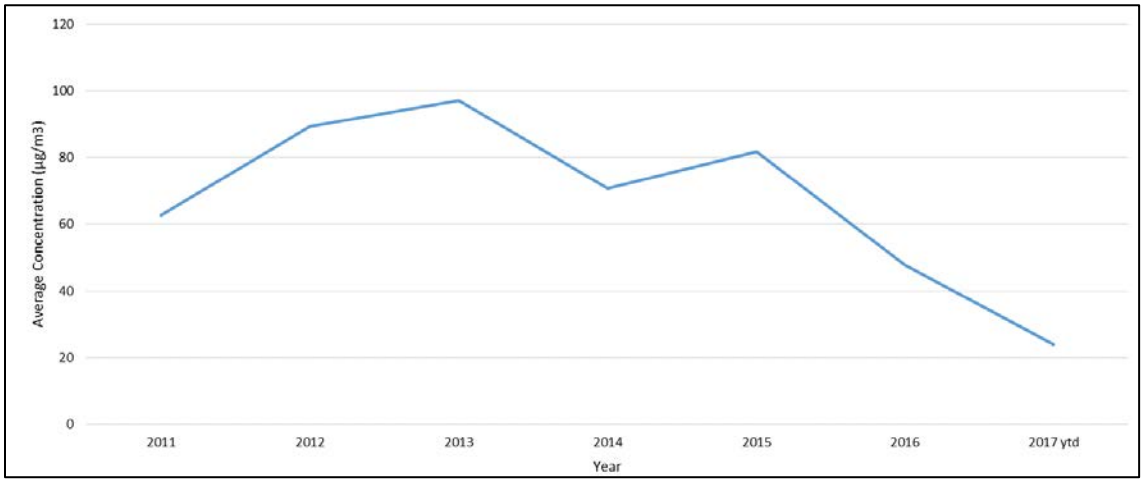
The downward trend is also evident when reviewing the Illinois EPA highest recorded manganese concentrations each year,[26] as shown in Figure 2, with the lowest maximum readings being recorded again in recent years. Watco believes the downward trend in measured manganese concentrations identified at the Illinois EPA Washington HS monitoring location is, in part, influenced by measures to minimize fugitive dust as required by the 2014 Bulk Material Solids Rules, both at the Watco Facility and at other regulated facilities. As suggested by the EPA Metals Study, the location of the study's monitor, and the Illinois EPA's longstanding Washington HS metals monitor, could be considered downwind of "various industries along the Calumet River."[27]

[25] Per Figure 1, higher manganese concentrations have been recorded at the Illinois EPA monitor (called the ArcelorSteel monitor) located approximately 3.5 miles west southwest of Watco, when that monitor was operated from 2014-2016.

[26] Per Illinois EPA metals monitoring procedures, a manganese concentration is measured across each six-day period, unlike the EPA Metals Study procedures, which measured a manganese concentration each hour. Maximum hourly concentrations from the EPA Metals Study will therefore show more variability than measured six-day concentrations per the Illinois EPA monitor. This is all relative based on the fact that the comparative screening level concentration for manganese is an annual value to reflect the chronic impacts of manganese.

[27] EPA Metals Study, page 4 of 13, describing the quality assurance procedures for sample collection and monitor placement.

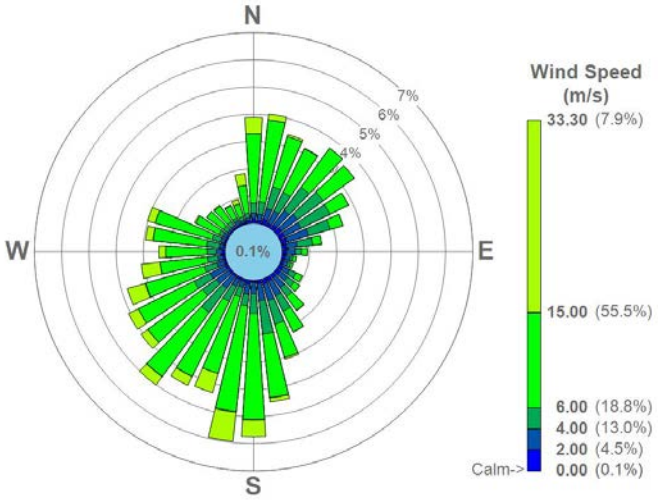
Figure 2 - Washington H.S. PM10 Monitor Top 8 24-Hour High Concentrations – Averaged Per Year



To confirm the prevailing wind direction (*i.e.*, to determine what is "upwind") and wind speeds in the vicinity of the EPA Metals Study monitor, the Illinois EPA Washington HS monitor, and the lower Calumet River basin area in general, Watco's consultant, Trinity Consultants, analyzed meteorological data collected at a nearby location.[28] As shown in Figure 3, nearby wind data would indicate that the prevailing average wind direction in the lower Calumet River basin area is from a south - south southwest – southwest direction. Based on this prevailing south-south southwest – southwest wind direction, there are few, if any, residences downwind between the Watco Facility and the EPA and Illinois EPA Washington HS monitor locations. The exception to this is a few residences located immediately south of the EPA and Illinois EPA's Washington HS monitor locations, between East 115th and 116th Streets. The Illinois EPA data and the EPA Metals Study data (Figures 1 and 2) prove that there are no measured manganese concentrations of concern near these locations (based on the measured concentrations of manganese being well below the manganese MRL), and the downward trend in measured manganese concentrations further lend support to the conclusion that ongoing fugitive dust mitigation measures in this area are effective.

[28] The EPA Metals Study, while collecting wind speed and wind direction data at the monitor location, only collected data over the period of December 12, 2014 until July 23, 2015, as depicted in Figure 2 on page 4 of 13 of the EPA Metals Study Report.

Figure 3 - Combined 2015-2016 Windrose Derived from Meteorological Data collected at KCBX South Terminal (10730 Burley Ave.)



3. The EPA Metals Study Lacks Persuasive Evidence That the Manganese Dust Measured Was From the Kinder Morgan Facility.

The Department's May 3, 2017 variance denial letter to Kinder Morgan states that: "[T]he EPA metals study, referenced below, found evidence of manganese containing dust coming from Kinder Morgan's facility." Later, the Department states that: "Based on an analysis of wind direction and wind speed, the report specifically identified Kinder Morgan as 'the main [manganese]-contributing facility.'" (Variance Ruling, p. 11.) But, a closer review shows that both of the cited EPA Metals Study statements are wrong and mislead the Department's review of the Kinder Morgan variance request. First, the EPA Metals Study did not provide evidence that the manganese containing dust came from the Kinder Morgan facility. Second, the EPA's identification of Kinder Morgan as "the main [manganese]-contributing facility" is not supported by the data presented in its report. In truth it is impossible, using the EPA Metals Study data, to predict the source of the manganese emissions the EPA measured. Second, a comparison of the relevant conditions, both wind direction and the Facility's operations (or lack thereof) at the time of the monitoring, refute this conclusion. Moreover, the concentrations are below the manganese MRL that is intended to protect against adverse health effects.

The EPA Metals Study does not follow a clear methodology, but the presentation of its data in Figure 6 suggests that the Study adopted an approach that will not produce consistent results.[29] To our understanding, the depiction in EPA Metals Study Figure 6 is arrived at in the following manner: (1) Hourly concentrations measured at the EPA monitor location are plotted on a map at a location upwind of the monitor, based upon the hourly wind direction at the time of the concentration measurement, and at a distance from the monitor based on the hourly wind

[29] EPA Metals Study, page 9 of 13.

speed at the time of the concentration measurement; and (2) The highest frequency of such plotting of all hourly concentrations results in the reddish shaded locations as shown in the EPA Metals Study Figure 6.

EPA describes these areas as "the area of most significant and consistent emissions," and describes the area around the Kinder Morgan facility as a "hot spot." But it is not possible, using the EPA Metals Study data, to predict the quantity or the location of where the manganese emissions resulting in the concentration plot "hot spots" came from. The data is insufficient to identify whether emissions were from sources upwind of Kinder Morgan, or from Kinder Morgan, or from sources downwind of Kinder Morgan, or from some combination of all of these sources.[30]

Data from EPA, including the Toxic Release Inventory (TRI)[31] and Enforcement and Compliance History Online (ECHO)[32] databases, show over a dozen nearby sources of reported manganese emissions (see Appendix K, fig. 1).[33] Given that many sources have no statutory EPA obligation to report manganese emissions, reported sources of particulate matter (reported as PM-10) emissions were also reviewed. A plot of these sources located within a 5-mile radius of the EPA Metals Study and Illinois EPA Washington HS monitoring locations is shown in Appendix K, fig. 2.[34]. There are nearly 75 known PM-10 emitting stationary sources in this 5-mile radius. Watco is also aware that other possible sources of manganese emissions, and PM-10 emissions, within this 5-mile radius, have still not been captured in the TRI and ECHO database analyses. For example, the Defense Logistics Agency (DLA), located at 3200 Sheffield Avenue in Hammond, Indiana (shown on Appendix K, fig. 3) is known to have outside storage piles of manganese compounds but is not included in the TRI and ECHO databases. [35] The DLA facility

[30] Documentation on EPA's website, archiving its recent investigations of facilities on Chicago's southeast side, is also inadequate in identifying possible sources of manganese The EPA Metals Study notes that "various recyclers at Reserve Marine Terminal (RMT) were all recently inspected by EPA air enforcement engineers" but includes no details of those operations, this despite EPA website having limited details of other inspections of similar operations located further north of the EPA Metals Study monitoring location. See https://www.epa.gov/il/elg-metals-inc; https://www.epa.gov/il/cronimet-usa.

[31] TRI Database located at: https://iaspub.epa.gov/triexplorer/tri_release.chemical.
The TRI Program tracks the releases of defined toxic chemicals that may pose a threat to human health and the environment. Facilities in certain industry sectors report annually the releases of such toxic chemicals.

[32] ECHO Database located at: https://echo.epa.gov/ The ECHO database can be used to search for facilities in a given area to assess their compliance with environmental regulations, and includes reported annual air emissions, if applicable.

[33] Watco believes that some possible sources of possible manganese emissions are not included in these EPA databases since many facilities, often small in relative size (number of employees, or geographic footprint, or processing operations) have no state or federal obligations to report such emissions under any reporting program, and hence they are not included in the TRI or ECHO databases. Also, no mobile or naturally occurring sources of manganese emissions are included in these databases.

[34] Manganese, being a metal species, would also be considered particulate matter, and inhalable quantities of manganese would also be reported as PM-10.

[35] See http://www.dla.mil/Portals/104/Documents/StrategicMaterials/IATK/1%20DLA-SM%20Hammond%20SWPPP%20r9.pdf and specifically page 3-11, Table 3.2 identifying open storage piles of ferromanganese at this location.

is only approximately 2 miles from the EPA Metals Study and Illinois EPA Washington HS monitor locations.

Watco is also aware that other possible sources of manganese emissions, and PM-10 emissions, within this five-mile radius, have still not been captured in the TRI and ECHO database analyses. For example, the Defense Logistics Agency (DLA), located at 3200 Sheffield Avenue in Hammond, Indiana (shown on Appendix K, fig.3) is known to have outside storage piles of manganese compounds but is not included in the TRI and ECHO databases. The DLA facility is only approximately two miles from the EPA Metals Study and Illinois EPA Washington HS monitor locations.

Finally, the EPA Metals Study is silent on what might be the typical manganese concentration in an urban area, regardless of the proximity of possible manganese emissions. This "background" concentration may not be trivial, based on previously published information.[36]

Thus, the EPA Metals Study does not provide evidence that manganese-containing dust came exclusively or in part from the Kinder Morgan facility. The presumption that Kinder Morgan must be the responsible party is unsound: There are too many other stationary sources in the lower Calumet River basin that do or may emit manganese and whose emissions would have been monitored by the EPA Metals Study's monitor location. In its study, the EPA did not follow-through with the necessary steps to determine a specific source or sources of the measured manganese. And, considering the considerable amounts of money and effort that Kinder Morgan (and now Watco), have invested into dust suppression at the Facility and the indoor storage of manganese-containing materials, it is frustrating that the Study leveled accusations at the Facility without any analysis of those improvements.

What's more, Watco can refute the EPA Metals Study's allegation that its Facility is "the main [manganese]-contributing facility." Observed manganese levels have a negative correlation with activity at the Facility. The EPA Metals Study includes a Table 3 which depicts "the 34 hours when manganese was more than ten times the average concentration, *i.e.* the top 1% of the data."[37] Several of these highest hourly data points occur when there were no operations underway at the Kinder Morgan facility. For example, Table 3 of the EPA Metals Study includes hourly manganese concentrations on Thursday, March 5, 2015 at 6pm and 9pm, but the Kinder Morgan facility was not operating during this time period. [38] (See Affidavit of Steven J. Caudle, attached as Appendix L.) Similarly, Table 3 also includes an hourly manganese concentration on Sunday, March 15, 2015 at 8 pm, but again the Kinder Morgan facility was not operating that

[36] Per the EPA, the average concentration of manganese in urban air is approximately 40 ng/m^3. U.S. EPA, *Inhalation Health Effect Reference Values for Manganese*, EPA/600/R-12/047F5, Table 1 (Dec. 2012).
[37] EPA Metals Study, page 11 of 13. Table 3. Details of Peak Manganese Periods (ng/m^3).
[38] EPA Metals Study, Table 3, identifying hourly concentration of manganese of 1373 ng/m^3 and 2247 ng/m^3.

day.[39] There are also many hourly manganese concentrations in Table 3 where the wind direction at the time of the hourly manganese concentration is inconsistent with the Kinder Morgan facility being the source.[40]

Thus, even if the manganese levels monitored by the EPA were at levels which indicated an unacceptable risk, the EPA Metals Study does not provide reliable or persuasive evidence that manganese containing dust came either exclusively or in part from the Facility. Clearly, there are numerous potential sources of manganese within the area surrounding the EPA's monitor location. EPA did not provide any explanation for why these other sources were not significant or contributing sources. Further, the fact that several of the highest manganese readings occurred during evening or weekend hours when the Kinder Morgan Facility was not operating and that a significant portion of the measured manganese levels occur at times when the wind direction would not be consistent with the Facility being a source refute the EPA's biased and speculative accusation against the Facility.

4. Regardless of the EPA Metals Study, Declining PM-10 Concentrations in the Area Are Evidence that Fugitive Dust Mitigation Measures Are Being Effective.

The EPA Metals Study covers a relatively small amount of time. And so, it gives little insight into whether the changes required by the Bulk Solid Materials Rules have had an impact on fugitive dust emissions. Like other industrial operations in the area, the Facility has made significant operational changes in response to these new regulations. From the long-term Illinois EPA PM-10 monitoring results, a reasonable inference can be drawn that steps taken previously by Kinder Morgan and additional steps more recently taken by Watco at the Facility have reduced the fugitive dust emissions to a level that supports granting this variance request.

The Illinois EPA has maintained longstanding PM-10 monitor at Washington HS, approximately 1.4 miles to the northeast of Watco (at the same location of its metals monitor, measuring manganese concentrations). Concentrations of PM-10 clearly have been trending downward, particularly in recent years, both on an annual average basis (Figure 1, above) and when considering the average of the 8 highest 24-hour average concentrations (Figure 2, above). Annual mean concentrations per Figure 4 have fallen 30% from 2015 to 2016, a trend which has continued in 2017 (per 2017 year-to-date monitoring data). Figure 5, below, shows that PM-10 concentrations at the Illinois EPA Washington HS monitoring location, downwind of Watco, are the cleanest of the three monitored locations in the City of Chicago.

[39] EPA Metals Study, Table 3, identifying hourly concentration of manganese of 1151 ng/m^3.
[40] EPA Metals Study, Table 3, of just the top 1% of all the manganese concentrations measured during the hourly periods during the EPA Study period, 20% are from a wind direction other than in the direction of the Kinder Morgan facility.

Figure 4 - Washington H.S. PM-10 Monitor - Annual Mean

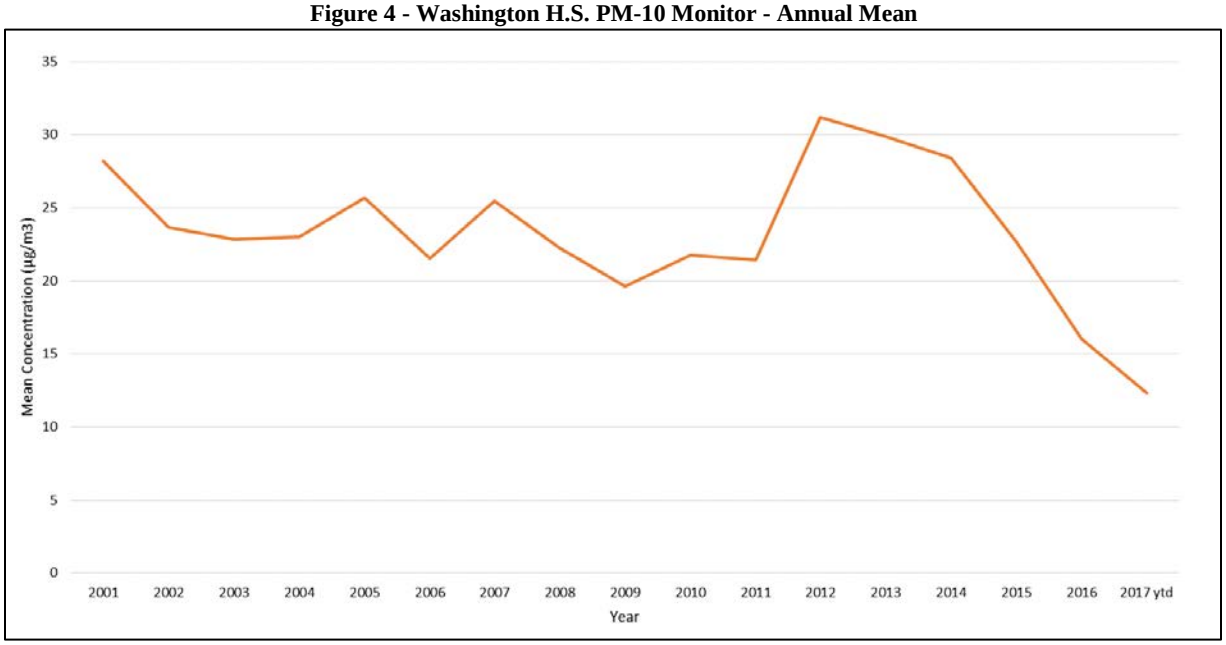
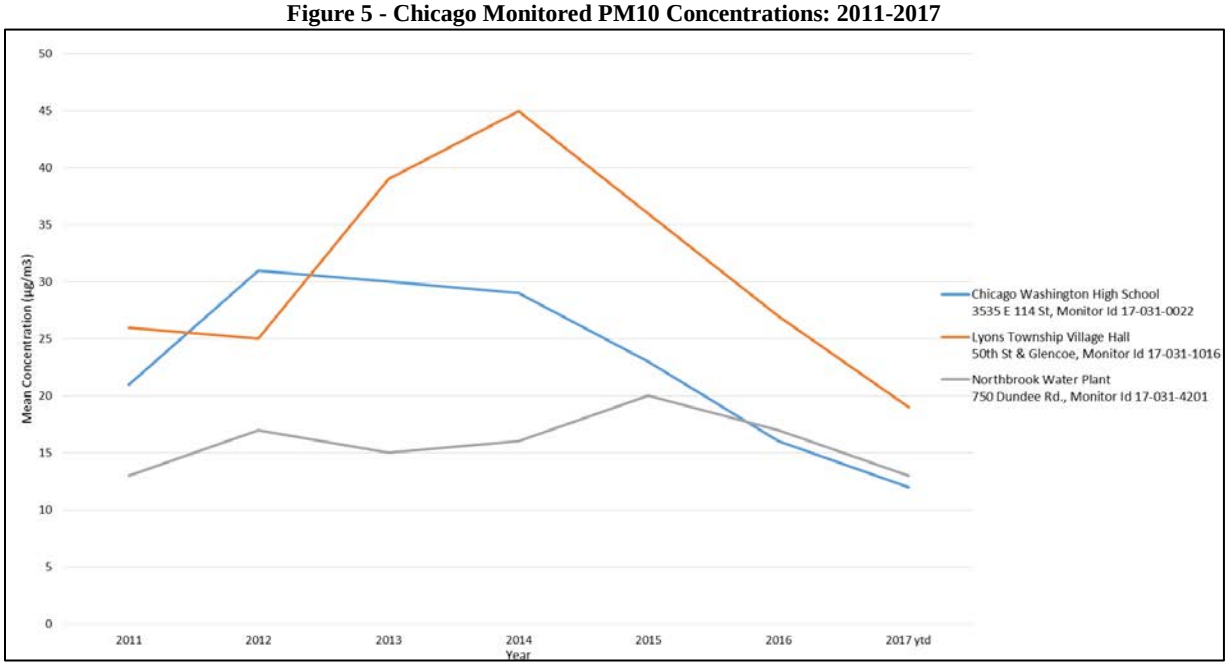


Figure 5 - Chicago Monitored PM10 Concentrations: 2011-2017



Watco submits that the EPA Metals Study data shows that manganese levels in fugitive dust in the area surrounding the Watco Facility do not adversely impact the community. The measured levels were consistently below the manganese MRL that was established by the ATSDR to protect human health. The fact that several of the higher manganese levels measured occurred when the facility was not operating is additional evidence that the Watco facility is not a significant source of manganese emissions. The significant declines documented in the long

term manganese and PM-10 monitoring data collected by the Illinois EPA further show that fugitive dust emissions have significantly declined in recent years—another line of evidence demonstrating that the Watco facility is not causing adverse impacts or nuisance conditions. Finally, as discussed in this variance request, further significant fugitive dust emissions controls have been put in place at the Watco facility since the conclusion of EPA Metals Study. It stands to reason that if the EPA measured manganese at levels consistently below the MRL before these additional controls were put in place, the case for Watco's requested variance is stronger today.

C. Watco has Addressed the Department's December 2016 Inspection Report's Findings.

As discussed above, Watco has made changes to address both the 30-foot high marker and barge area berm issues raised in the Department's December 2016 Inspection Report of the then Kinder Morgan Facility. However, the Department's December 2016 Inspection Report's remaining finding that the Facility does not conduct water truck operations is not correct. It appears to have arisen from a misinterpretation of the Facility's operations log. In fairness, the inspector's confusion is understandable: The forms used at the Facility at the time of the inspection did not differentiate between the operations of the sweeper and water trucks. Entries on these forms simply recorded that one of the two trucks was operated to clean Facility roads and other internal areas, without differentiating whether it was the sweeper truck or the water truck. Hence, on first impression, it appears that the inspector assumed (albeit incorrectly) that only the sweeper truck was being used. Watco has since modified the forms to make the distinction clear. There are now separate log forms for recording the operations of the sweeper truck and for the water truck so that it is clear which truck has been operated (Appendix M).

The Facility has had both sweeper and water trucks in operation since at least 2014. In fact, a Department inspector actually saw the water truck in operation in August 2016, and documented it in a contemporaneous inspection report.

But, more importantly, the December 2016 Inspection Report should not be viewed as representative of facility operations. It is an outlier that is not consistent with prior inspections of the Facility. For instance, in August 2016, a different inspector observed a truck being loaded at Building F, observed the operation of a watering truck, and was shown the street sweeper. During the visit, he told Facility employees that he was pleased by the pollution-prevention efforts he observed.[41] Similarly, a July 8, 2015 site visit by the EPA found "no cause for concern" after viewing the operations.[42] (See Appendix N, Watco's internal notes on EPA site

[41] More remotely, but still relevant, in 2012 Kinder Morgan successfully defended itself against a citation claiming that it had allowed dust to collect around dust collector pads at the facility.

[42] The EPA does not treat these inspections as perfunctory. In 2014, following an inspection that found significant fugitive dust emissions, the EPA issued a Notice of Violation to S.H. Bell's nearby materials handling facility. It soon followed that up with a civil action against S.H. Bell, which ultimately settled in the government's favor, with S.H. Bell agreeing to install PM-10 monitors. *See United States v. S.H. Bell Company*, Case No. 16-7955 (N.D. Ill.).

visit.) These two inspections (occurring when the Facility was staffed and operated in substantially the same way as it did in December 2016), should give the Department pause in evaluating the appropriate weight to be given to the most recent report's reference to "very dusty" conditions. It is important to note that the inspection report did not observe any noncompliant fugitive dust emissions at the Facility. Nevertheless, Watco has taken the inspector's assessment seriously and has worked hard to carry out improvements. This outlier comment is not a sufficient basis for denying Watco's variance request, especially not when other inspections did not find noteworthy levels of dust.

D. Given that the Available Data Shows that Manganese Emissions are Declining, Continuing Method 9 and 22 Monitoring is Sufficient to Ensure Compliance.

The evidence presented above shows that currently the Watco Facility has no significant potential to create fugitive manganese dust that would create a nuisance or adversely impact the surrounding area. Even if one sets that evidence aside and operates on the assumption that the Facility does contribute to the local dust emissions, the alternative opacity monitoring that would be conducted under the requested variance (under Methods 9 and 22) would be likely to detect that contribution. In addition, the continued Illinois EPA local PM-10 monitoring provides a safeguard to address any concern by the Department that those alternative monitoring methods are inadequate.

This approach is particularly appropriate because the empirical monitoring data collected by the Illinois EPA show that PM-10 and manganese concentrations in the area are steadily declining. Assuming for the sake of argument that the Facility previously contributed to area PM-10 emissions, it would be unfair not to connect the decreases in those emissions to the significant resources and effort that the Facility's owners have put into dust suppression efforts. And as noted above, Watco is still implementing additional, expensive, control measures that (again, in this worst-case scenario) would bring further reductions in emissions.[43] In sum, granting this variance is supported by sufficient evidence to satisfy Watco's burden of proof and includes robust safeguards to allow the City to monitor that Watco's operations are compliant with applicable fugitive dust emissions standards going forward.

VI. Granting Watco a Variance from the PM-10 Monitors Deadline in Section 6.0(6) will not Cause a Nuisance or Adversely Affect the Surrounding Community (§ 8.0(2)(d)).

A. Materials Transfers at the Facility are Subject to Best Management Practices that Minimize the Potential for Fugitive Dust Emissions

[43] And, even before these levels were reduced, the manganese levels did not exceed the ATSDR Minimal Risk Level of 300 ng/m^3

1. Proposed Methods to Achieve Compliance with the Regulations (§ 8.0(2)(f))

Kinder Morgan's variance request contained relatively little information on the alternative opacity detection methods proposed. These proposed measures—Method 9 and Method 22—are widely-used procedures that are used for exactly this situation. In developing Method 9, the EPA "conducted extensive field studies on the accuracy and reliability" of this method. EPA, *Visible Emissions Field Manual—Methods 9 and 22*, EPA 340/1-92-004 (Dec. 1993). In fact, when the EPA performs site inspections, it uses Method 9 to determine the presence of fugitive dust emissions. (See S.H. Bell Notice of Violation, Appendix O.)

The Bulk Solid Materials Rules accept Methods 9 and 22 as an appropriate methods for testing the outcomes of granted variances to ensure that they protect the public and the environment. Even owner/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. Thus, Watco proposes that it be required to follow the alternative-compliance approach proposed by the Rules. Watco is willing to conform to a conditional variance requiring that Methods 9 and 22 testing be conducted monthly. 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.

Also, while PM-10 monitors (assuming they are properly maintained and calibrated, which is challenging with the current generation of monitors) can be more accurate than Methods 9 and 22 in gauging opacity, they are not suitable for all environments. Watco's Facility is on a relatively compact footprint, and some of its boundaries lack obvious sites where the PM-10 monitors could be installed without having their results distorted by nearby on-property and off-property buildings. Neither Watco, nor the Department, nor the community will be served by PM-10 monitoring that can only be installed in locations where it will produce erratic and unreliable results.

In addition to being unnecessary and possibly inefficient, the cost of requiring the installation, operation, and maintenance of PM-10 monitors is unreasonable in light of the hypothetical benefits envisioned by the Department. See Rules Section 8.0(2)(e)(i). Watco has contacted vendors and has been told that it would cost between $100,000 and $200,000 to purchase and install the PM-10 monitors required by Section 3.0(4). This estimate does not include the cost of supplying power to the monitors. Because the Facility has already committed large sums of time and money to ensuring that the dust emissions do not adversely affect the surrounding community, requiring additional expenses for work that can be done reliably with EPA-approved alternatives already in use at the Facility would impose an arbitrary and unreasonable hardship on Watco. (Rules Section 8.0(e)(i)).

VII. Statement Regarding the Person's Current Status as Related to the Subject Matter of the Variance Request (§ 8.0(2)(h))

Watco believes that it has provided the requested statement concerning its current status of compliance related to the subject matter of this variance request. The above information provides the City with Watco's current status regarding the requirements of the City's Rules from which it is seeking a variance.

VIII. Conclusion

Watco appreciates the cooperation which your Department has shown during the process of submitting this variance request. Watco has worked to submit this request as quickly as possible following the Department's ruling on Kinder Morgan's variance request. This required Watco to obtain expert opinions regarding the EPA Metals Study relied on by the Department, and to explore additional dust-reduction measures that could be proposed in this filing.

Watco respectfully submits that it has satisfied the requirements for a variance in Section 8.0 of the Rules and requests that the Commissioner grant the requested variance for the reasons described above. The decision to ask the Department to revisit a variance request that it denied only a few months ago was not made reflexively. That denial was based on two major pieces of evidence (the EPA Metals Study and the December 2016 inspection report) that were received shortly before the Department's decision and without benefit of either third-party expert review, as in the case of the EPA Metals Study, or rebuttal by Kinder Morgan or Watco to show the inaccuracies attendant to their findings. The truth is that the EPA Metals Study, for no clear purpose, methodically exaggerates the severity of manganese levels in Southeast Chicago. It also arbitrarily selects the Watco Facility to stand as the scapegoat for this biased presentation of monitoring results, even though the facts on the ground simply do not support this theory. All manganese-containing materials at the Facility are stored indoors. The recorded spikes in manganese levels do not correlate well with Facility operations, or occur at places and times where the wind was not blowing from the direction of the Facility. Yet, even though this data strongly suggests that manganese (which, again, is not present at harmful levels) originates from a different site in the area, and even though there are scores of other industrial operations in the vicinity, the Study invests no time in evaluating these facts which contradict its speculative findings. The Study's flawed findings and conclusions are not reliable evidence and do not support a denial of this variance request.

The December 2016 inspection report also needs to be placed in its proper context. The misconstruction of the Facility's sweeper and water truck logs has been corrected by Watco to show that water trucks were regularly operating—something that had not been questioned in prior inspections that found no such alleged noncompliance. The inspector appears to have thought that he was being misled by Kinder Morgan, which had claimed to been conducting wash-truck operations, yet had no record of this in its operational logs. He was correct, but not in

the way he thought—the Facility's log books documented the washing operations in a confusing manner. (Watco has since revised its procedures to address this.) Watco has provided substantial evidence, including an August 2016 inspection report, showing that the water truck is used routinely at the Facility. The December 2016 report should not be viewed as representative of the Facility's dust control practices, particularly when it stands in stark contrast with clean bills of health that the Facility had received earlier from a different Department inspector and the EPA. And finally, there were no observations of fugitive dust emissions emanating from the Facility during this inspection. The inspection report is simply not a sufficient basis for requiring the use of expensive particulate monitoring systems that will do little, if anything, to protect public health and the environment. To the extent the Department may have any lingering concerns associated with the December 2016 report, as a new owner of the Facility, Watco submits that its extensive efforts to further improve control of fugitive dust emissions demonstrate that further changes to the Facility's operation just since the beginning of this year warrant a different decision on this new variance request.

The Facility's owners have behaved as good corporate citizens during the recent regulatory upheaval for bulk solids. The Facility has made millions of dollars in capital improvements with the goal of ensuring that its community is not put at risk by materials-handling operations.

The Rules were written, in part, with facilities like the Watco Facility in mind. The drafters understood that PM-10 monitoring is expensive, and in many cases the public will be fully protected through alternative compliance measures. That is why the PM-10 monitoring requirement in Section 3.0(4) is one of the few requirements to cross-reference the variance procedures in Section 8.0. The monitoring rule is not for everyone. Watco submits it has shown that it should not be applied to its Facility because the credible evidence presented here shows that no nuisance will be created nor any adverse impact caused to the surrounding area by granting this variance request. Should the Department believe that it needs more time to confirm the accuracy of this demonstration, then Watco submits that it should be given the opportunity to continue its operations, as well as its plans for further dust control improvements, to demonstrate that the monitoring rule is an unnecessary and unduly burdensome requirement. Watco is open to discussing with the Department a time-limited variance which suspends the PM-10 monitors requirement to allow these additional improvements to be completed and subject to Watco's submission of a final report to the Department showing the additional improvements implemented. Assuming the completed, additional improvements provide further support for the variance request, the time-limited variance would then become a final variance decision. In the interim, Watco would continue to demonstrate compliance with the PM-10 emissions standards under the Bulk Solid Materials Rules, as it currently does, by conducting the periodic monitoring required by those rules.

The Facility's owners have worked aggressively and at great cost to pursue the goal of dust suppression at this site. This was done both out of obligation to the community and in the knowledge that the Bulk Solid Materials Rules are not blind to this kind of cooperation from owners and operators. The Department benefits from creating these kinds of incentives for its regulated companies—but if the incentives are not applied consistently, and if a lot of good work can be made worthless by unfounded allegations by outside parties, the Department will see this tool's effectiveness rapidly diminish. The Watco Facility deserves the opportunity to prove the success of its extensive dust-suppression efforts using EPA Methods 9 and 22 and should be granted a variance from the PM-10 monitoring rule.

Respectfully submitted,

Steven Caudle
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Watco Transloading LLC – Chicago Arrow Terminal