watco.com

315 W 3rd Street
Pittsburg, KS 66762

May 14, 2024

Watco Terminal and Port Services
Chicago Ferro Terminal
2926 E 126th Street
Chicago, IL 60633

Air Pollution Control
Chicago Department of Public Health
333 S. State Street, Room 200
Chicago, Illinois 60604

ATTN: Variance Request from FRM Monitoring

Dear Sir/Madam,

The Watco Terminal and Port Services (WTPS) Chicago Ferro Terminal has received the City of Chicago Department of Public Health's (CDPH) Rules, Control of Emissions from Handling and Storing Bulk Materials, Effective January 25, 2019 (Rules). In accordance with Section 10.0 of the Rules, WTPS is respectfully submitting the following variance request related to operations at the Chicago Ferro Terminal (Terminal). WTPS is seeking a variance from the requirements of Part D.6.0 Filter-Based Metals Monitoring at Manganese-Bearing Bulk Material Facilities. Terminal has eliminated the presence of manganese-bearing materials (MBM) containing manganese at concentrations greater than 2% and will not handle such materials in the future. The remaining bulk materials handled at the facility are either packaged materials or do not contain manganese. Furthermore, over 4 years' worth of FRM monitoring has demonstrated that emissions from the property are not causing an exceedance of the CDPH's Manganese Limit (ML) of 0.3 micrograms per cubic meter ($\mu g/m^3$).

Background

The Terminal was required to participate in FRM filter-based air monitoring program as part of the Rules, Control of Emissions from Handling and Storing Bulk Materials, Effective January 25, 2019. The Terminal has continued to perform monitoring in compliance with the regulations including placement and operation of FRM monitoring with 3-day EPA monitoring schedule for PM_{10} filter-based sampling, preparation of a fugitive dust monitoring plan, and monthly CDPH submittal of air monitoring data and corresponding terminal activities.

PM_{10} filter have been analyzed for manganese, lead, arsenic, cadmium, chromium, manganese, nickel and vanadium. Samples were collected with methods consistent with the National Ambient Air Quality Standards for PM_{10}. All analysis were conducted by an FRM/Federal Equivalent Method (FEM) laboratory method listed by the EPA.

Concentrations of Manganese have been below the ML of 0.3 $\mu g/m^3$ since 2020. Concurrent with Terminal maintained a log of all routine and non-routine maintenance and calibration activities

associated with the dust monitors. All terminal activities were included on a prepared report that was sent to the CDPH on a monthly basis.

In order to comply with the ML, the Terminal discontinued handling bulk manganese in February of 2019. A letter was sent by WTPS to the U.S. Environmental Protection Agency (EPA); Region 5 Office on January 3, 2020, documenting that bulk manganese was no longer stored or handled at the Terminal. Additionally, the Terminal does not plan on handling bulk manganese in the future.

For ease of review by the CDPH, the following sections of this variance request address each of the variance requirements set forth in Section 10.0 of the Rules in the same order that they appear in that section. References to the specific variance requirements by subsection of Section 10 are provided in each of the headings below.

Variance Request (10.2-a)
A variance is requested from Part D.6.0 of the Rules for the Terminal's handling of bulk materials containing less than a 2% concentration of manganese. The Terminal believes that the CDPH Bulk Material Storage rules impose an arbitrary hardship as more than four years of sample results have illustrated no correlation between terminal activity and concentration of manganese in ambient air. The Terminal requests to discontinue FRM monitoring.

Description of Process (10.2-b)
The WTPS Chicago Ferro Terminal is located at 2926 East 126th Street, Chicago, Illinois 60633. A map of the facility showing the location of the barge unloading area and pertinent structures is provided in Attachment B. The area surrounding the Terminal consists of industrial properties with the Calumet River to the northeast. The nearest residential area is located approximately 300 feet south of the Terminal's southern property line, and approximately 0.3 miles from the barge loading area. This residential area is known as the Avalon Trails neighborhood which is part of the Hegewisch development. This residential area is separated from the Terminal by East 126th Street and a wall estimated at 15 feet in height, which surrounds the northern side of the neighborhood. The total Hegewisch population is estimated at approximately 9,000 residents based on the 2015 census. A total of 6 neighborhoods encompass Hegewisch, therefore the population of Avalon Trails is estimated at 1/6th the total population of Hegewisch, or 1,500 residents.

The Terminal engages in transfer and transport operations. The facility consists of a dock area used for unloading, and on rare occasions loading, barges. A majority of the materials handled at the Terminal arrive by barge. A small quantity of material arrives or departs by rail. Trucks and front-end loaders at are used for internal transfers, and covered trucks are used in the delivery of materials to and from the site. Each of these activities are subject to Best Management Practices (BMPs) that minimize the potential for fugitive dust emissions and are discussed in more detail below. MBM above 2% concentration are not handled at the property.

<u>Barge Unloading</u>

To unload barges, the Terminal utilizes an excavator to pick up material out of a barge and transfer it into trucks. Dust that may be generated during barge unloading is controlled using a truck-mounted, Dust Solutions, Inc. Dry Fog Dust Suppression system (Dry Fog System). During the barge unloading process, the Dry Fog System is positioned next to a truck that is ready to be loaded. The Dry Fog System dispenses fog into the truck bed prior to and during material loading activities. The Dry Fog System uses an agglomeration technique and can provide up to 99% dust suppression efficiency. Photographs of the Dry Fog System are provided in Attachment C. Technical specifications of the Dry Fog System are provided in Attachment D.

Storage

Trucks are loaded with bulk materials from barges at the dock and transport the material either offsite or into storage within the Terminal. The Terminal utilizes both indoor and outdoor storage. The Terminal is currently in the process of removing all greater than 2% MBM which will then free up additional indoor storage capacity for the less than 2% MBM. At present, materials stored outside consist of approximately 85% pig iron and approximately 15% iron ore slag. The small amount of iron ore slag (6,000 to 7,000 tons) stored outside has been constant for several years and is not a material typically handled by the Terminal. Pig iron will continue to represent the bulk of the material stored outside. However, as indoor storage capacity allows, the intent is to store more pig iron indoors than has been the case before, thus further reducing the potential for MBM dust emissions.

Indoor Storage

The majority of bulk solids materials at the Terminal are kept indoors, segregated within storage bins. This indoor storage is critical to the Terminal's commercial viability. Problems arise that impair the use of these materials 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 WTPS from a billing and accounting standpoint. For these reasons, in addition to preventing dust emissions, the Terminal has over 351,600 square feet of indoor storage capacity, spread across eleven buildings.

Buildings 100, 200, 300, 400, as well as Buildings C, D, F, G, H, and I will be used to store both packaged materials, which are not subject to the Rules, and bulk materials, including MBMs with less than a 2% manganese concentration. Bulk materials will be stored primarily in Building F, which will be used to the greatest extent possible. Building F has an indoor storage capacity of approximately 160,000 square feet. Building F is fully enclosed and is used for storage of materials as well as loading outbound trucks. Building F contains a 60,000 CFM dust collector equipped with two hoods used to control dust during loading activities. The hoods are connected to a Camfil Farr Model GS72 baghouse. This is a permitted baghouse. Monitoring and maintenance of all permitted bag houses is performed as required under the Fugitive Dust Plan for the Terminal pursuant to the Rules. Records of monitoring and maintenance activities are maintained on location in accordance with this Fugitive Dust Plan.

Additionally, Building F is equipped with two automated high-speed doors which remain closed during material handling and truck loading. The two high-speed doors are equipped with sensors that are set to close the doors 6 seconds after a vehicle enters or exits the building. The 6 second door closure

timing is reduction of the time that the high-speed door had previously remained open after truck loading. It is another enhancement to Terminal operations to reduce the potential for dust emissions from the indoor loading of trucks. The entrance and exit doors are never opened at the same time in order to prevent a cross wind from passing through the building and potentially transporting dust. This practice also minimizes the potential for fugitive dust to leave the building. All trucks that are loaded in Building F are required to tarp their bed prior to opening the outbound high-speed door. In December of 2018, WTPS sent a memo clarifying the tarping requirements to all third party trucking companies that transport material to or from the Terminal. A copy of this memo is included as Attachment E.

Buildings E and H will continue to be used for packaging of bulk products. Building E is equipped with a Camfil Farr Model GS24 baghouse which is rated at 18,000 CFM. Building H is equipped with an Amtech Model ATY-24 which is rated at 18,000 CFM. Both baghouses control dust emissions generated when material is placed into the bagging systems. These baghouses are permitted air pollution control devices.

Outdoor Storage

Because most of the materials handled by WTPS 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 Terminal's indoor storage capacity. As stated above, pig iron and a small amount of iron ore fines are currently the only MBM less than 2% stored outdoors. The pig iron has natural densities that minimize its potential to become airborne during outdoor storage. In addition, it is kept in three-sided, walled bins which help minimize wind exposure. In these bins, the typical material height is well below the Rules' 30-foot height restriction and generally only about 3-4 feet above the height of the bin's walls (the walls are necessary to contain and segregate the products), thus further minimizing the volume of material exposed to wind. The bulk piles will be controlled in accordance with Part E of the Rules by using the existing water truck to wet pig iron during storage and prior to loading. As part of this variance request, if approved by the CDPH, WTPS would commit to seeking approval from CDPH prior to accepting other products for outdoor storage that have less than 2% MBM.

Roadway Dust Control

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

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

Quantity and Types of Materials (10.2-c)

WTPS has discontinued receiving and handling MBM with greater than 2% manganese. In addition, the Terminal will no longer operate the crushing and screening equipment. It is estimated that the Terminal will handle approximately 600,000 to 450,000 net tons of steel, alloy, and associated materials annually following the phase out of manganese bearing material >2%. A full list of the quantity and types of materials handled at the Terminal is provided in Attachment A. Included in Attachment A is the Composition section from the associated Safety Data Sheets (SDS). Under the Occupational Safety and Health Administration's Hazard Communication Standard the manufacturer is required to include within the SDS the ingredients contained within the product. This list must include the chemical name and concentration of all ingredients which are classified as health hazards. Accordingly, for products listed in Attachment A that do not show any manganese content, these products should either not contain any manganese or, if any manganese is present, it would be in trace amounts that do not present any health hazards.

Demonstration of Impact (10.2-d)

The Terminal has put in place several practices to mitigate dust emissions throughout the property to ensure that the facility does not create a public nuisance or adversely impact the surrounding area, surrounding environment, or surrounding property uses. The implementation of these practices responded to U.S. Environmental Protection Agency (EPA) concerns and the implementation of the Rules' mandated Fugitive Dust Control Plan. The dust control measures employed at the Terminal include:

- The use of the Dry Fog System during barge unloading;
- Conducting outbound loading of trucks inside of Building F which is equipped with the dust collection system and bag house;
- The use of two high-speed doors on Building F to maintain full enclosure during truck loading activities;
- Tarping trucks that are loaded out with material before they leave Building F and before exiting the Terminal;
- The use of dust collectors and baghouses for packaging and bagging operations in Buildings E and H;
- Wetting of outdoor bulk material storage;
- Wetting of internal roadways;
- Application of chemical suppressant on roadways throughout the year; and
- The use of a street sweeper to remove any dust from internal road surfaces.

<u>Federal Reference Monitoring Sampling</u>

On September 17, 2018, the Terminal began collecting air samples from a FRM which generates a 24-hour composite air sample every three days. At the end of each month, all samples are removed from the FRM and submitted for laboratory analysis of Arsenic, Cadmium, Chromium, Lead, Manganese, Nickel, and Vanadium using EPA IO Compendium Method IO-3.5.

The laboratory results of samples collected from the FRM monitor have varied over time, but overall demonstrate a downward trend for the three-month rolling average manganese concentration. The specific cause of manganese concentrations detected in these samples have not been determined and no direct correlation between elevated manganese levels and current Terminal operations have been found. There appears to be background ambient manganese levels based on several manganese detections reported on days when the Terminal was not in operation or during wind directions which are not consistent with Terminal activities causing those detections.

The monthly average manganese concentration from FRM samples from October 2019 through the most current sampling event of March 2024, is 0.029 $\mu g/m^3$, which is more than an order of magnitude lower than the ML of 0.3 $\mu g/m^3$. Furthermore, the ML has never been exceeded in that sampling period. The FRM data set includes over 500 samples collected over the last four years and does not indicate a correlation between operations at the Terminal and manganese concentrations in ambient air.

WTPS believes that, through BMPs that minimize the potential for fugitive dust emissions, the Terminal can continue to control fugitive dust emissions at the site without the continuation of FRM monitoring.

Statement of Hardship (10.2-e)

Compliance with Part D.6.0 of the Rules for bulk materials with manganese concentrations of less than 2% imposes an arbitrary and unreasonable hardship because the Terminal has already demonstrated compliance with the ML utilizing the existing, enhanced dust control measures. The FRM has been collecting air samples since September of 2018. The rolling average manganese concentration from September 2018 through March of 2024 demonstrates that Terminal activities are not causing an exceedance of the ML. The Terminal is currently in compliance with the ML based on the three-month rolling average promulgated in the Rules as well as the previous four months, from December 2023 through March 2024 (Attachment G).

The cost of operating the FRM and laboratory analysis is $1,684 per month. In addition, the Terminal incurs additional expense in the way of labor hour for maintenance and reporting activities. On average this has resulted in an annual cost of approximately $20,208. Over the last four years the total cost to conduct monitoring was approximately $80,832.

Description of Proposed Method for Compliance (10.2-f)

The Terminal will utilize the dust controls and BMPs previously described under Demonstration of Impact. The Terminal will be able to maximize the indoor storage of MBM with concentrations less than 2%. Compliance will continue to be achieved through BMPs established above.

Alternative Methods of Compliance (10.2-g)
The Terminal will continue to operate within the BMPs established in the Fugitive Dust Control Plan. The dust control measures employed at the Terminal include:

- The use of the Dry Fog System during barge unloading;
- Conducting outbound loading of trucks inside of Building F which is equipped with the dust collection system and bag house;
- The use of two high-speed doors on Building F to maintain full enclosure during truck loading activities;
- Tarping trucks that are loaded out with material before they leave Building F and before exiting the Terminal;
- The use of dust collectors and baghouses for packaging and bagging operations in Buildings E and H;
- Wetting of outdoor bulk material storage;
- Wetting of internal roadways;
- Application of chemical suppressant on roadways throughout the year; and
- The use of a street sweeper to remove any dust from internal road surfaces.

Current Status (10.2-h)
WTPS 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 CDPH with a complete description of WTPS' current status regarding the requirements of the City's Rules from which it is seeking a variance.

Fugitive Dust Monitoring Reports (10.2-i)
Fugitive dust monitoring reports for the previous four months (December 2023 – March 2024) are included as Attachment G. If the requested variance is granted by the CDPH, the Terminal will discontinue monthly fugitive dust monitoring reports to the CDPH.

WTPS greatly appreciates the opportunity to provide this variance request to the CDPH. WTPS appreciates the efforts of the CDPH in ensuring the safety and well-being of the community and believes that FMR monitoring at the terminal is no longer necessary.

Should you have questions regarding this submittal, please contact Mr. Bryan Paraspolo, CHMM, Environmental Manager at bryan.paraspolo@watco.com or at 516-582-6960.

Sincerely,

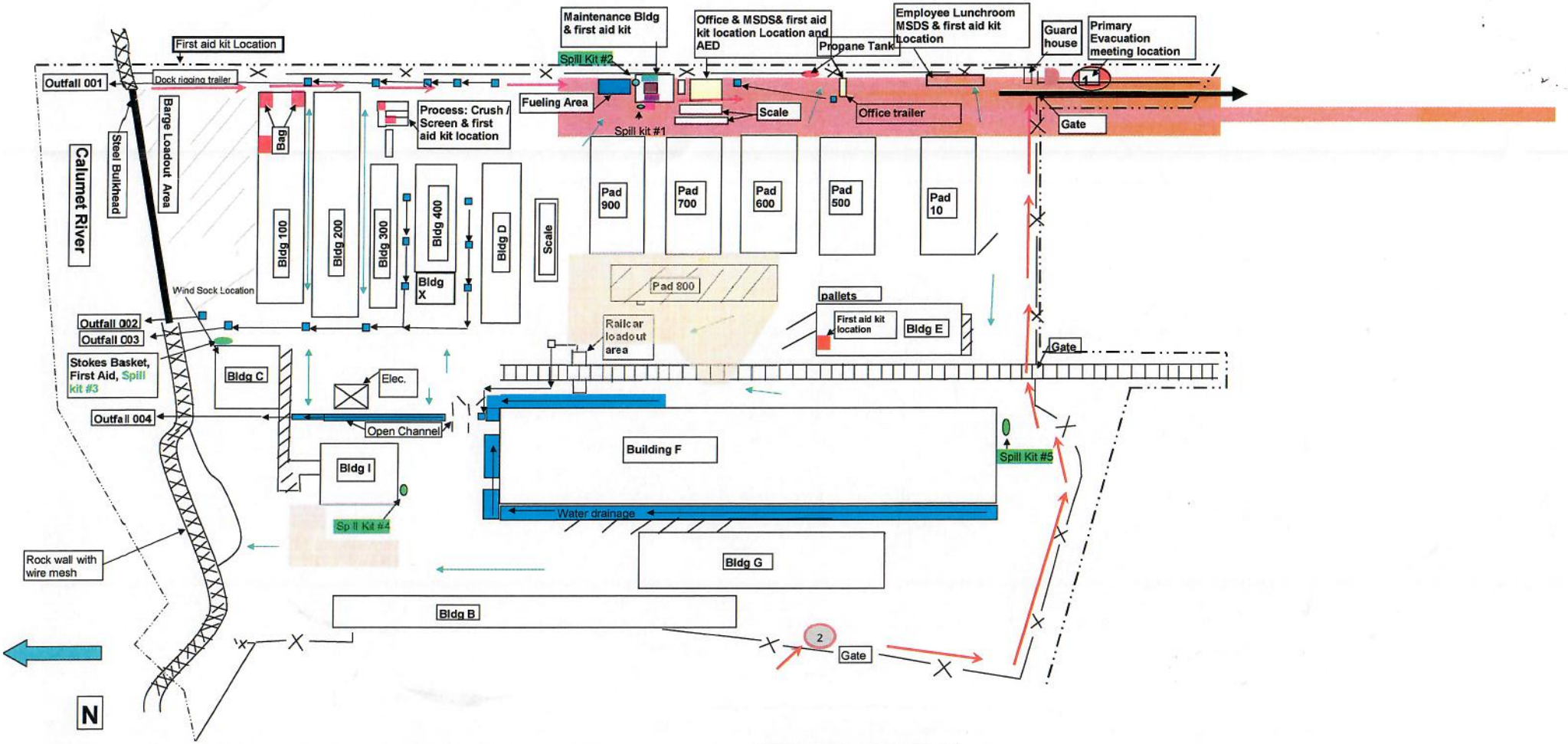
Bryan Paraspolo, CHMM
Environmental Manager

Attachments
Attachment A – List of Products Handled
Attachment B – Site Map
Attachment C – Photographs of DSI Dry Fog Dust Suppression System
Attachment D – Dust Suppression
Attachment E – Tarping Memo
Attachment F – Sweeper Specifications
Attachment G – Rolling Average Manganese Concentrations
Attachment H – Fugitive Dust Monitoring Reports (December 2023 – March 2024)

Attachment A – List of Products Handled

Chemical	Chemical Name	CAS Number	Highest Percentage
Calcium Silicon	Calcium	7440-70-2	32
	Silicon	7440-21-3	65
	Barium	7440-39-3	18
	Aluminum	7429-90-5	21
Ferro Boron	Iron	7439-89-6	84
	Boron	7440-42-8	19
Ferro Chrome	Chromium	7440-47-3	53
	Iron	7439-89-6	37
	Carbon	7440-44-0	9
	Silicon	7440-21-3	6
	Nickel	7440-02-0	0.4
Ferro Phosphorous	Iron	7439-89-6	90
	Phosphorus	7723-14-0	20
	Vanadium	7440-62-2	2
	Titanium	7440-32-6	2
	Nickel	7440-02-0	2
	Manganese	7439-96-5	2
Ferro Silicon	Iron	7439-89-6	90
	Phosphorus	7723-14-0	20
	Vanadium	7440-62-2	2
	Titanium	7440-32-6	2
	Nickel	7440-02-0	2
Ferro Vanadium	Iron	7439-89-6	93
	Silicon	7440-21-3	2
	Chromium	7440-47-3	1
	Manganese	7439-96-5	1
	Nickel	7440-02-0	1
	Vanadium	7440-62-2	1
Magnesite	Magnesium Carbonate	546-93-0	99
	Quartz	14808-60-7	1
Olivine Sand	Forsterite	15188-03-3	93
	Fayalite	13918-37-1	7
Silicon Carbide	Silicon Carbide	409-21-2	100

Attachment B – Site Map



Operating Areas aprox 20% Buildings, >90% asphalt or concrete paving, <10% gravel paving

- Pile — Open pile storage of Pig Iron
- Gravel
- Storm Catch Drain
- Surface Drainage
- Fencing
- Fueling Area consists of:
  - (1) 300 gallon Gasoline tank
  - (1) 2,500 gallon Diesel tank
  - (1) 500 gallon Diesel tank
- Safe Zone, no PPE required
- (1) 2,500 gallon used oil tank
- (3) 250 gal Lube Oil Tanks
- (2) 250 Lube Oil Tanks
- (1) 1,000 gallon Propane tank
- (+/- 14) 55-gallon drums lubricating oil
- (6) Confined Spaces: Feed Hoppers
- SDS Locations
- 1 — Primary Evacuation Meeting Location
- 2 — Secondary Evacuation Meeting Location

WTPS - Chicago Ferro Terminal
2926 East 126th Street
Chicago, IL
60633

NOT TO SCALE

Attachment C – Photographs of DSI Dry Fog Dust Suppression System

PHOTOGRAPHIC LOG

Variance Request
City of Chicago Rules, Control of Emissions from Handling and Storing Bulk Materials

Photo # 1 Assembled DCI Dry Fog Truck

Photo # 2 View of DCI Dry Fog Truck during assembly with fog nozzles on top

Photo # 3 View of DCI Dry Fog Truck during assembly

Photo # 4 Pressure gauges and flow control for DCI Dry Fog Truck

Photo # 5 DCI Dry Fog contol pannel with fog nozzles on top

Photo # 6 Assembled DCI Dry Fog Truck

Attachment D – Dust Suppression

Using Agglomerative Dust Suppression and Wind Breaks for Fugitive Dust Abatement

Richard Posner, Dust Solutions, Inc.

Aura Poulsen, Dust Solutions, Inc.

David McMillan, MARC Technologies Pty Ltd.

Introduction

Findings from the recent government enquiry into Coal Workers' Pneumoconiosis in Queensland led to recommendations for reduction in current Occupational Exposure Limits (OEL) for respirable dust. The implementation of effective controls which can reduce dust levels, particularly dust of respirable particulate size of 10 microns (PM10) and below, will significantly reduce these exposure levels.

Dry Fog dust suppression uses an agglomeration technique that can provide up to 99% dust suppression efficiency while adding less than 0.1% moisture to the process using only compressed air and water. The mechanism for suppression of dust using dry fog is especially effective on respirable dust particles at PM10 and below.

Wind breaks are another technique used to prevent wind erosion and particle uptake from material stockpiles.

The purpose of this article is to provide a general background on the science and application of these two dust suppression methods.

History and Science of Dry Fog Dust Suppression

In the 1970's, the technique of dry fog dust suppression was created by Sonic Environmental Systems, Inc., a U.S. based company, for use in industrial dust suppression, humidification and other applications to convey humidified air without the use of a duct. This was accomplished through the special design of a nozzle that atomized water droplets below 10um in size. Original research and testing undertaken by the University of Sweden and Colorado School of Mines (Schowergerdt, 1976) on the nozzles' effectiveness to suppress dust revealed that impaction and agglomeration between a dust particle and binding agent such as water will occur if the water droplet is the same size or smaller than the dust particle. On the contrary, if the water droplet size is much larger than the dust particles (for example 20-300um in size) – then the dust particle (1-15um) will follow the air stream around the water droplet and stay suspended in the air (see Figure 1).

Following this finding, the University of Waterloo in Canada conducted a study on the use of dry fog in various applications utilizing a pneumatic nozzle to create droplet sizes from 30um to 100um inside an electrostatic precipitator. A similar conclusion was reached regarding agglomeration as the Colorado School of Mines, however, it was also determined that a decrease in residence time did not affect the overall efficiency. This was an important factor in determining the effectiveness of the agglomeration pattern of the droplets.

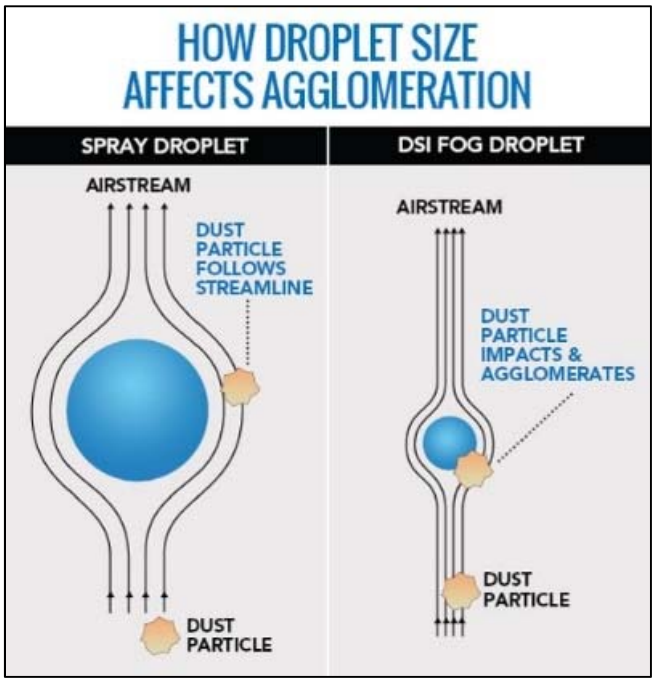


Figure 1: Dust particle agglomeration with droplet size.

Another consideration in determining the viability of fog as a dust suppressant is its ability to carry a positive charge as shown through lab and field testing of the Sonic nozzle. Studies have also demonstrated that most industrial pollutants acquire an electrostatic charge as they are dispersed into the air. If charged particulate material is exposed to an oppositely charged water fog, there is an increased probability of collision between the particulates and fog droplets. After contact is made, the particulates agglomerate rapidly and fall out of the atmosphere due to their increased weight. This finding was tested with charged and

uncharged fog droplets across a wide variety of industrial pollutants ranging from materials such as coking coal and iron ore crushing dust to other materials that are very lightweight and highly susceptible to moisture such as cement clinker and fly ash (Hoenig, 1977).

The interaction between charged fog droplets and dust particles varied across particulate types but it was noted that the use of fog lowered dust density across all tested materials. For example, when testing dust density of fly ash in a controlled environment, it was found that the fog reduced the density of respirable material by fog by over 91%. There are two factors that attributed to this result. The first is that fly ash dust particles, lightweight and approximately 3um particle size are similar in size to the fog droplet, which facilitates a stronger collision and agglomeration between particles. The second is that the fly ash holds a negative charge which was effectively suppressed by positively charged fog (see Figure 2).

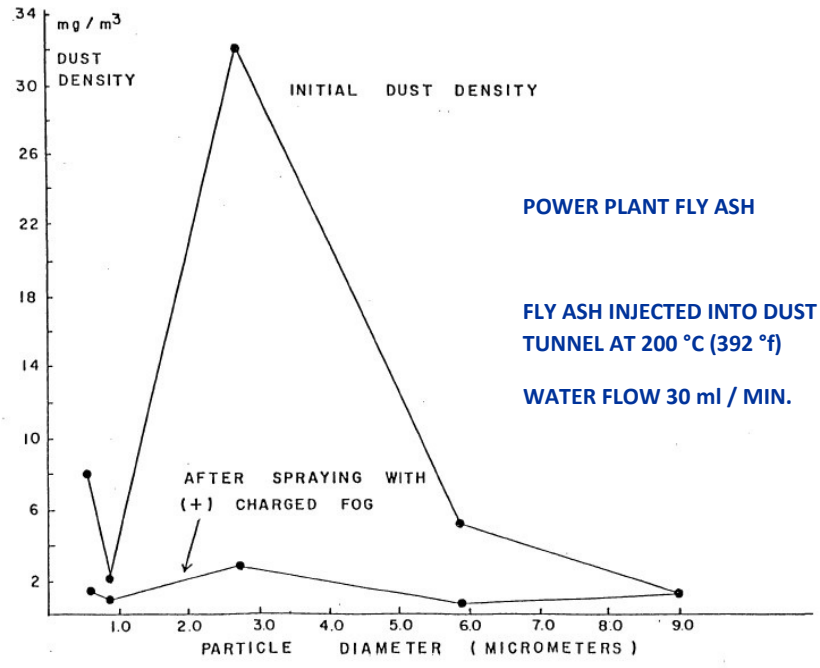


Figure 2: Using positively charged fog on fly ash from a power plant.

The same test with non-charged fog and positively charge foundry dust yielded different results but showed that dust density was still reduced through the agglomeration principal (see Figure 3).

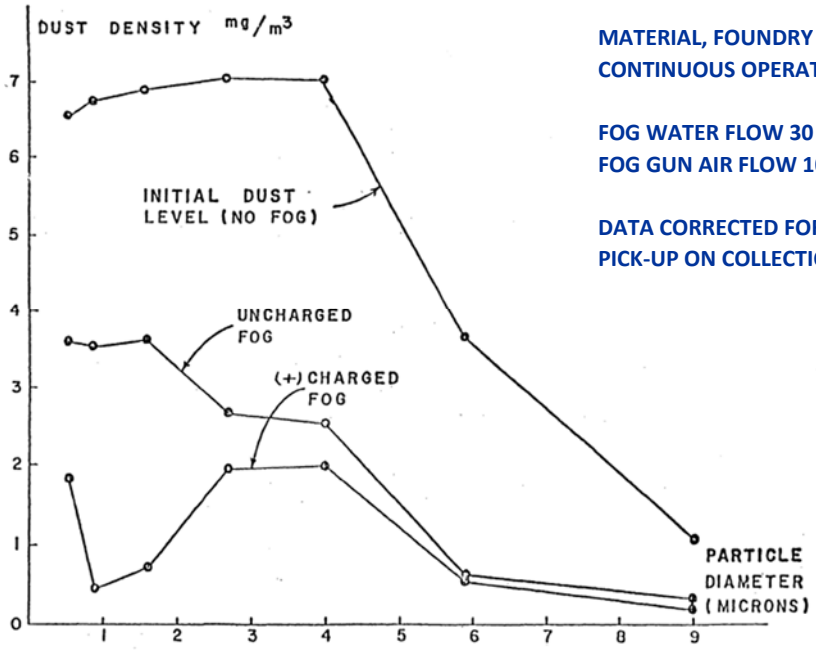


Figure 3: Using non-charged and positively charged fog on foundry dust.

Particulate Control

In the above described results, an air stream was created by which dust particles and atomized water droplets (fog) were able to come into contact and stay in a relatively enclosed space. When this occurs, particle removal from the air stream takes place due to three primary mechanisms:

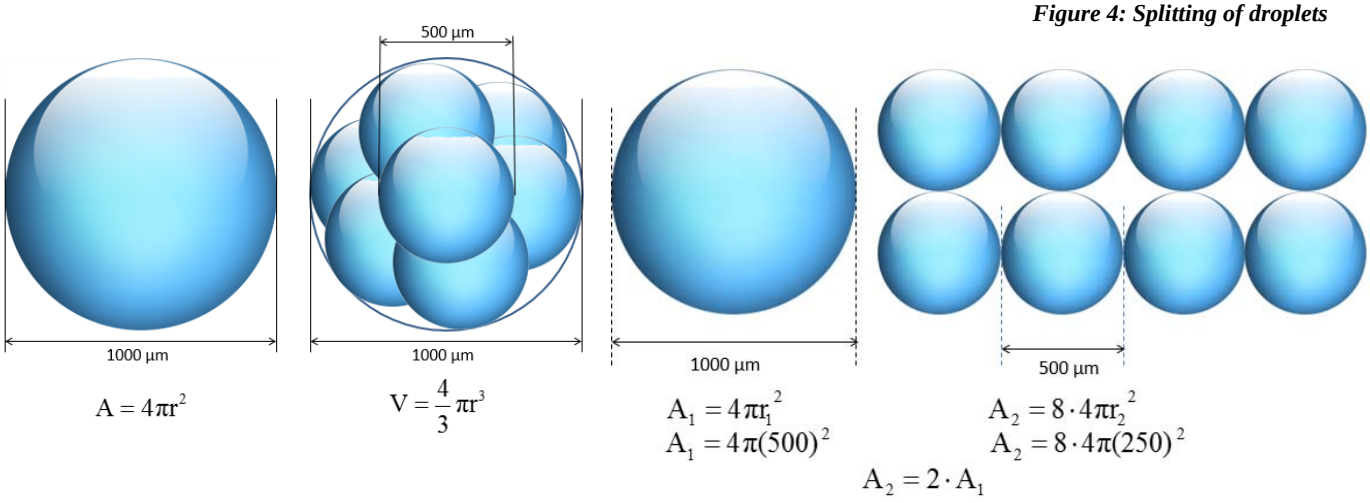
- Impaction: When the fog droplet flows in the path of the dust-laden air stream, the droplets and dust particles may collide depending on their initial trajectory and velocity. This collision is called impaction (in our case agglomeration). Due to inertia, the impact with the droplet will cause the dust particle to become encapsulated, increasing its weight causing it to fall out of the atmosphere.
- Interception: The finer particles moving within the air stream do not hit the fog droplets directly but rather graze the droplets and adhere to them. This mechanism also causes an increase in particle weight.
- Diffusion: When fog droplets are scattered among dust particles, the particles are deposited on the droplets by diffusion.

The impaction / interception efficiency increases as the amount of water droplets compared with dust particles increases, the particle size increases (or conversely the water droplet size

decreases), and the velocity of the droplets is fast enough to create an airstream by which the particles will flow.

It is also important to note in the above study, that as the particle sizes decreased, the surface area of the fog increased. This is easy to understand from a simple physics and calculation perspective. If we have a gallon of water in a simple sphere and split it into 8 smaller spheres the surface area increases, while the volume of water stays the same. Figure 4 demonstrate this concept:

Figure 4: Splitting of droplets



By splitting the droplet into 8 smaller droplets, we have just doubled the size of the surface area. The ultrasonic nozzle creates droplets in the range of 1-10um, with an average droplet size of 5um. We would need to split the spheres 15 times to achieve these sized droplets. After 15 divisions of the spheres, we will have droplets of average size 5.9um, and a surface area of approximately 3848 meters squared versus the original sphere at 0.12 meters squared. In terms of dust suppression, this means that less water is used to achieve the same suppression by agglomeration. The idea is to overwhelm the dust particles with the fog to create this opportunity for impaction and interception. With more fog and droplets, the chances of agglomeration greatly increases, producing a better effect of suppression.

The Ultrasonic Nozzle

The ultrasonic nozzle is the core component of the dry fog dust suppression system. Unlike water spray or misting systems, ultrasonic nozzles create fog droplets below 10um that most closely match and most effectively agglomerate with PM2.5 and PM10. This is accomplished

using compressed air to forcefully push air and water into a convergent divergent venturi. This process creates a standing shock wave of 47k Hz, essentially a high frequency sound wave. Air is accelerated beyond the speed of sound through the venturi creating shock waves, which pass into a resonator cavity and are reflected back to amplify the subsequent waves. The result is an intense field of sonic energy focused between the nozzle body and the resonator cavity. The diagram below shows a cross section of the orifice and resonator cavity.

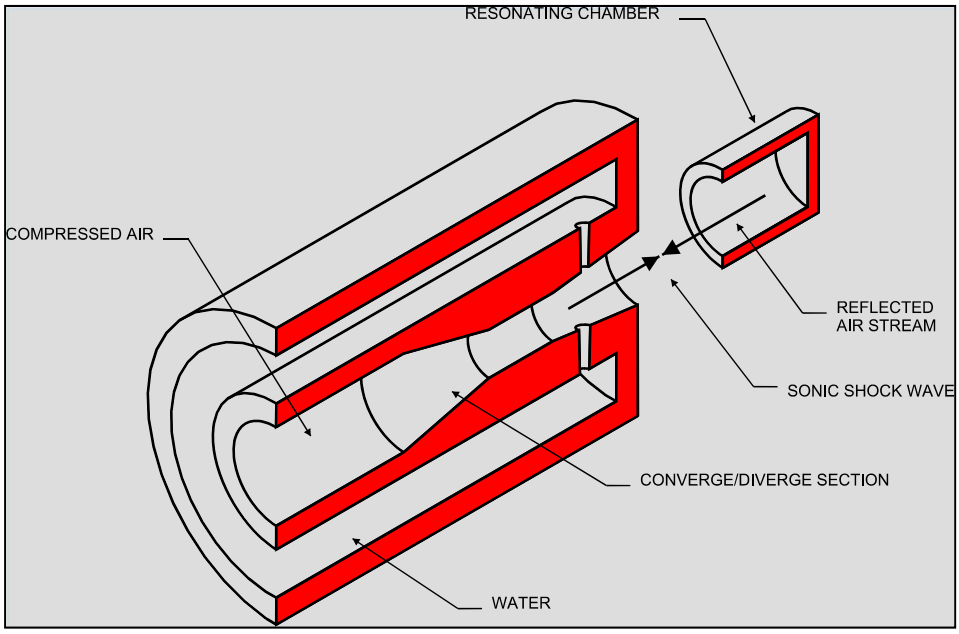


Figure 5: Cross section of orifice and resonator.

The water particles are sheared by the incoming air down to smaller sized droplets and then enter the air stream. Upon entering the shock wave zone, the water droplets are shattered into very fine droplets below 10um in size. Due to the fact that the nozzle does not use high hydraulic pressure, the orifice opening for the water and air can be larger than normal atomization nozzles. Additionally, the sonic shock wave helps foster small vibrations that create a "self-cleaning" nozzle.

Dry Fog Dust Suppression Applications

Transfer Points

A very common application for material movement in coal handling are transfer points. This is when material is moved between conveyors which may or may not be moving in different directions. Dust is typically generated in two locations during material transfer. The first

location is the discharge point where material that is too light to fall during the discharge becomes airborne when moving from one conveyor to another. The second location and more significant area of dust creation is the receiving belt where the material lands. Typically, there is a skirt board, or what is commonly referred to as a conveyor cover, on the receiving belt. To shield the dust particles that become airborne upon impact. However, due to the air movement from the displacement by the material, the dust that is generated moves with the material flow. This air displacement can be calculated by knowing the belt width, material bulk density, and material load (tons per hour). Air is created at a rate proportional to the belt width. The equation for this is as follows (source: Martin Engineering):

$A_G = 350 \times BW + A_R$

- A_G= Air Generated
- BW = belt width in feet
- A_R = Additional air generated from the drop.

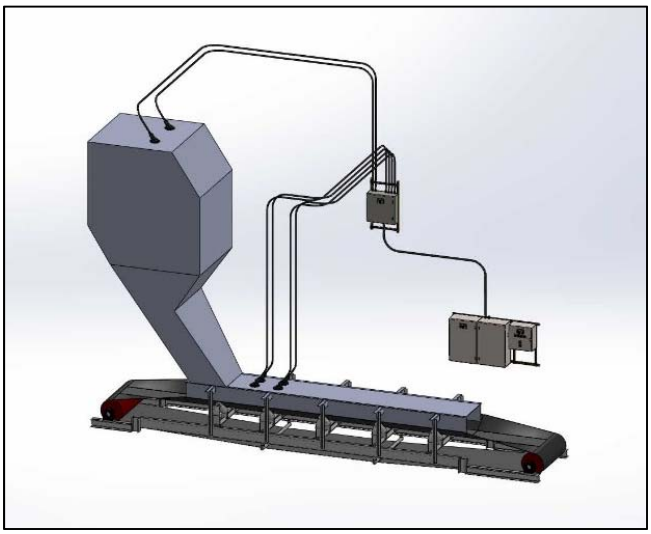
If this is greater than a 3' drop and BW is less than 3 than $A_R = 700$. If there is a greater than 3' drop and BW is greater than 3' then $A_R = 1000$. If the drop is less than 3', then $A_R = 0$

The displaced air is determined by tons per hour of the material and the material bulk density. The equation is as follows:

$A_D = (K \times L) / D$

- A_D = Displaced Air
- K = conversion factor 33.3
- D = Material bulk density (lbs/ft^3)

Adding these two numbers together provides the amount of air flow through the transfer point. Higher numbers signify that more dry fog that would be required to agglomerate with



the dust particles before they exit the conveyor cover. More nozzles are typically used at the impact point on the receiving conveyor due to the larger amount of dust generated at the impact on the receiving conveyor, more nozzles are typically used at that location to prevent the dust from exiting the conveyor into the open air (see Figure 7).

ROM Bins and Receiving Hoppers

Another common dry fog application for coal handling is ROM bins and receiving hoppers, where coal is dumped by truck into a ROM bin at a mine, or transferred into a surge or receiving hopper. During this dumping process and when the material strikes the hopper below, the air is displaced and large plumes of dust rise out of the hopper.

Figure 8: Photo of a dry fog system with wind fencing on a receiving hopper at a coal power plant.

Dry fog can be used to counteract the dust by creating a "blanket" of fog in the bin area, which captures the dust as it pushes up the walls of the bin, settling the dust back into the bin and preventing it from escaping to atmosphere. As fog is light, it will also follow the uprush of air up the bin walls, and continues to act on any dust that may push through this blanket.

Where the ROM bin or hopper is exposed, dry fog can be used in conjunction with wind fencing to suppress this dust. The wind fence is used to contain the dust and dry fog in the same area to allow the agglomeration to occur between the dust particles and the fog droplets. Additionally, the wind fence is used to reduce the speed of the wind that could potentially blow the dust or dry fog out of the area.

Train Unloading

Coal may arrive at an export terminal by rail. In the case where the material arrives via train, this is another potential area for dust creation. There are two types of coal unloading methods from railcars: rollover wagon tippler or belly dump. The wagon tippler is a process where a drive mechanism rotates the entire railcar onto its side and the material empties out of the top into hoppers below. This creates a large displacement of air and as the material hits the

hoppers below causing the dust to rise with the air flow out of the hoppers. In a belly dump system, the bottom of the railcar opens to drop the materials into a hopper below. This operation also has the potential to create significant amounts of dust.

The wagon tippler creates more dust than a belly dump, however, both involve the same design concept. The idea is to use the hoppers sides to the advantage of the dry fog. The hoppers are filled with fog prior to discharging the material to create a "blanket" across the open area, similar to with ROM bins and hoppers. When the material is discharged, the fog agglomerates with the dust prior to leaving the hopper, increasing the particle weight and returning it to the process. The air that flows out of the hopper will carry the additional fog.

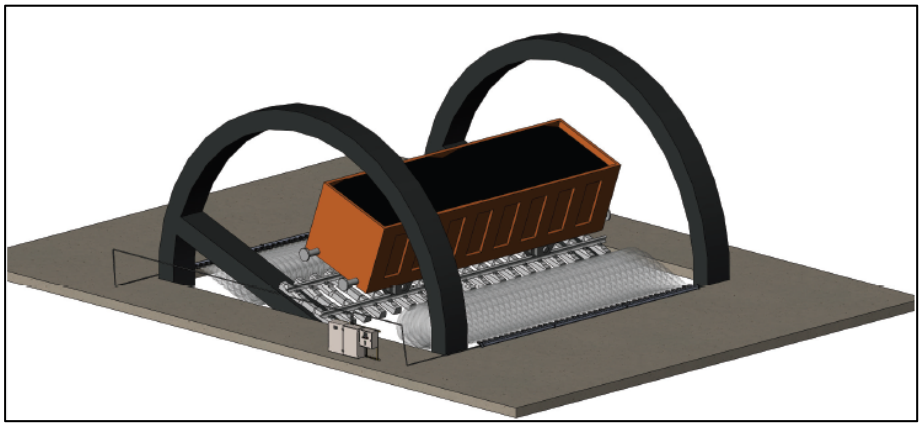


Figure 9: Design concept for a rollover wagon tippler using manifolds of nozzles to create the dry fog inside the hopper area below the wagon tippler.

Figure 10: A wagon tippler using dry fog.

Crushing Area

The crushing area at a coal mine typically consists of a rotary breakers and scalping screens, or a crushing circuit and a screening circuit, where the material enters into the crusher building and is sent into a screen. The screen determines the material that does not need to be crushed (fines) and the material that is too large and needs to be crushed further. These areas act like transfer points moving the coal from one conveyor to another and through the crusher. A study was conducted to determine the dust concentration in various locations in the crushing area before and after the use of a fogging system (Warrington, 1979). The following results were obtained:

Dust Concentration in mg/m^3

Application	Before Fogging System	After Fogging System
Crusher Feed Point	72.63	1.67
Crusher Discharge	192.98	5.22
Screen	10.80	0.42
Transfer Point	15.10	1.06

There is an average reduction of almost 96% dust concentration in using the dry fog system within a crushing plant area.

Fly Ash Loading

In coal power plants, fly ash is a by-product of the coal combustion process. The non-combustible minerals that occur from burning coal form bottom ash and fly ash. Bottom ash is a light-weight aggregate material that falls to the boiler bottom for collection. Fly ash are the fine particles of ash from solid fuel material that is carried off with the flue gases. The material is handled through conveying systems and then eventually loaded onto trucks which transport the fly ash to either a holding area at the plant or a storage area off-site. This product may also be recycled and used in other applications such as in cement plants. Fly ash has a very low material density, which makes it lightweight, fine and extremely dusty. The process of loading this onto trucks has the potential to create high levels of dust emissions. Many plants use a pug mill or paddle mixer, which is a machine that adds water into the fly ash before it is loaded onto the trucks, however, this is detrimental to the process in that fly ash will harden when wet and moisture also adds weight to the process which adds costs

during transportation. There are also operational and environmental factors when fly ash is converted from wet-to-dry. Dry systems offer plants the benefit of eliminating surface impoundments and their associated water quality and structural integrity risks.

Dry fog is one solution for the conveyance of bottom and fly ash that will not wet the product and can be used at the loading point. The system is designed to fill the truck bed with fog so that when the material impact causes a dust plume in the truck bed, the dust particles will agglomerate with the "blanket" of fog that covers the area. Dry fog can effectively suppress dust while adding less than 0.1% moisture to the process.

Figure 11: Fly ash loading into a truck bed using Dry Fog

References:

Billman, B. and Arya, S.P.S. 1984. Windbreak Effectiveness for the Control of Fugitive Dust Emissions from Storage Piles: A Wind Tunnel Study. CR-811973. Atmosphere Sciences Research Laboratory, U.S. Environmental Protection Agency, Research Triangle Park, NC.

Colinet, J., Rider, J. et al. 2010. Best Practices for Dust Control in Coal Mining. Information Circuluar 9517. Department of Health and Human Services, Pittsburgh, PA USA.

Cowherd, C., Muleski, G., Kinsey, J. 1988. Control of Open Fugitive Dust Sources. EPA-450/3-38-008. U.S. Environmental Protection Agency, Research Triangle Park, NC.

Daugherty, D.P and Coy, D.W. 1979. Assessment of the Use of Fugitive Dust Emission Control Devices. EPA-600/7-79-045. Research Triangle Institute. U.S. Environmental Protection Agency, Research Triangle Park, NC.

Douglas, P.L., Dullien F, Spink, D.R. 1976. An Investigation of the Operating Parameters of a Low Energy Wet Scrubber for Fine Particles. Canadian Journal of Chemical Engineering. Canadian Society of Chemical Engineering.

Hoenig, Stuart A. 1977. The Use of Electrostatically Charged Fog for Control of Dust from Open Sources. EP-600/7-77-131. U.S. Environmental Protection Agency, Research Triangle Park, NC.

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Schowengerdt, F.D., Brown, J.T., 1976. Colorado School of Mines Tackles Control of Spirable Coal Dust, Coal Age. Journal Volume: 81:4. Golden Colorado.

Warrington, Glen. 1979. Using Agglomerative Dust Suppression for Dust Abatement in Crushing and Screen Plants. Aggregate Producers Association of Ontario. Ottowa, Ontario. CA.

Coal Workers' Pneumoconiosis Select Committee, May 2017. 'Black Lung – White Lies', Inquiry into the re-identification of Coal Workers Pneumoconiosis in Queensland: Executive Summary, Report No.52, 55th Parliamentary Enquiry.

Online Source - Vito Equations https://www.martin-eng.com/sites/default/files/downloadable-files/resourceswhite-papers/facts-concerning-dust-air.pdf

All project photos courtesy of Dust Solutions, Inc. Beaufort, SC. USA.

Attachment E – Tarping Memo

From: Bridgette Jones
Sent: Friday, December 28, 2018 10:33 AM
To: Bridgette Jones <Bridgette.Jones@watcocompanies.com>
Subject: PLEASE READ ASAP-CHANGE NOTICE FROM WATCO MANAGEMENT
Importance: High

Announcement Regarding Change in Procedure for Loading and Unloading Dump Trucks

---

December 28, 2018

Watco
2926 E 126th PL
Chicago, IL 60633

Watco Terminals would like to thank you for assisting us with our initiative of operating a terminal that is environmentally compliant and safe for our employees, community and drivers. We have incorporated many additional safeguards this year to make sure we are compliant and aware of any potential variances in the air quality while loading and unloading trucks.

In line with this, effective ***IMMEDIATELY,*** ALL trucks must be tarped **BEFORE** they enter our terminal. This change in procedure was necessitated by the EPA and the City of Chicago to make sure the air quality in and around our terminal stays at a certain levels. We do understand that this is going to be new for the drivers so we are asking that you remind them as often as you can. We will also remind them and advise when the rules are not enforced. Our hope is that this change will be met with little or no resistance so that we can continue the awesome relationships we have with you and the drivers.

Please keep in mind that this new terminal policy will be ***heavily enforced.***

I. TRUCKS MUST BE TARPED BEFORE THEY ENTER OUR ADDRESS-THEY MUST STAY TARPED UNTIL THE ARRIVE AT THE PLACE IN THE YARD THAT THEY WILL BE LOADED /UNLOADED. ***THIS INCLUDES PIG IRON LOADS***

II. TRUCKS MUST TARP **IMMEDIATELY** AFTER THEY ARE LOADED-INSIDE THE BUILDING (THEY SHOULD NOT CROSS OUR SCALE ON THE WAY OUT WITHOUT BEING TARPED)

III. ALL DRIVERS SHOULD CONTINUE TO ARRIVE AT THE FACILITY WITH PROPER PPE (HARD HAT, VEST, GLASSES)

If you have any questions, please feel free to contact us. Thank you in Advance for assisting us with the change.

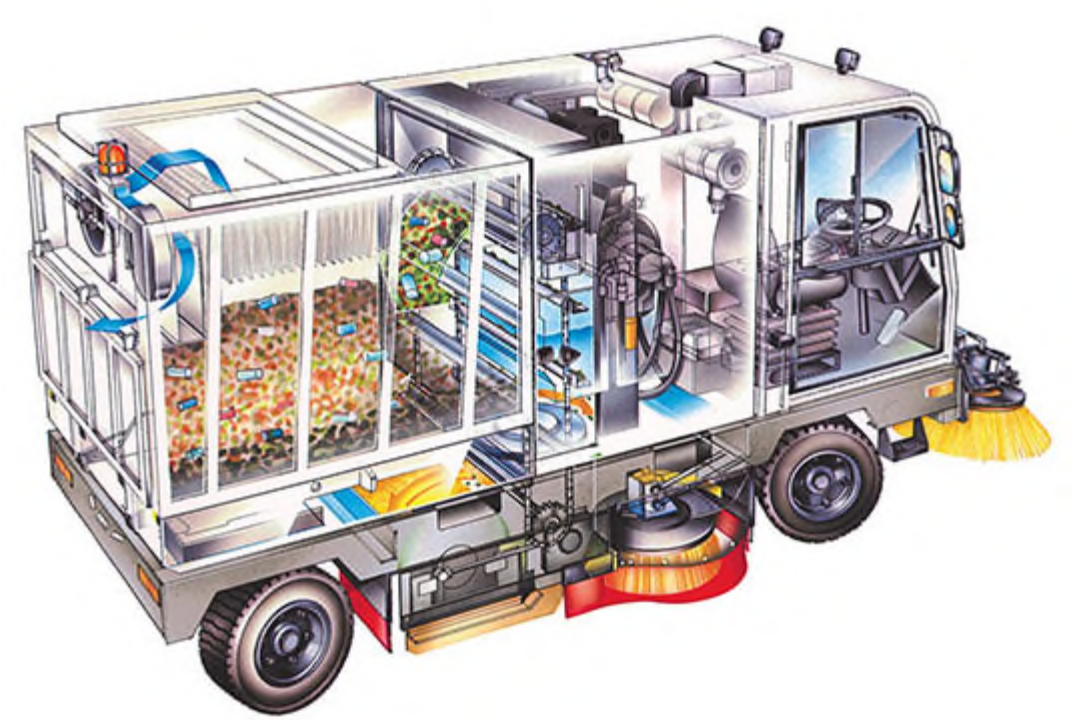
HAPPY NEW YEAR!!!!

WATCO COMPANIES

Attachment F – Sweeper Specifications

Sentinel Outdoor Ride-On Sweeper

FEATURES



HIGHLIGHTS

- Collect virtually all forms of debris with direct throw system, debris conveyor and corrosion-resistant stainless steel hopper.
- Powerfully clean the toughest applications with the Sentinel's 100.6 hp / 75 kW Cummins 4F turbo diesel engine.
- Meet the most stringent PM-10 environmental air quality requirements with a hydraulic twin vacuum dust control system.
- Simplify operation with 1-Step™ activation, LCD digital control panel, and power steering.
- Easily maneuver in tight spaces with the sweepers 13 ft / 3960 mm turning radius.

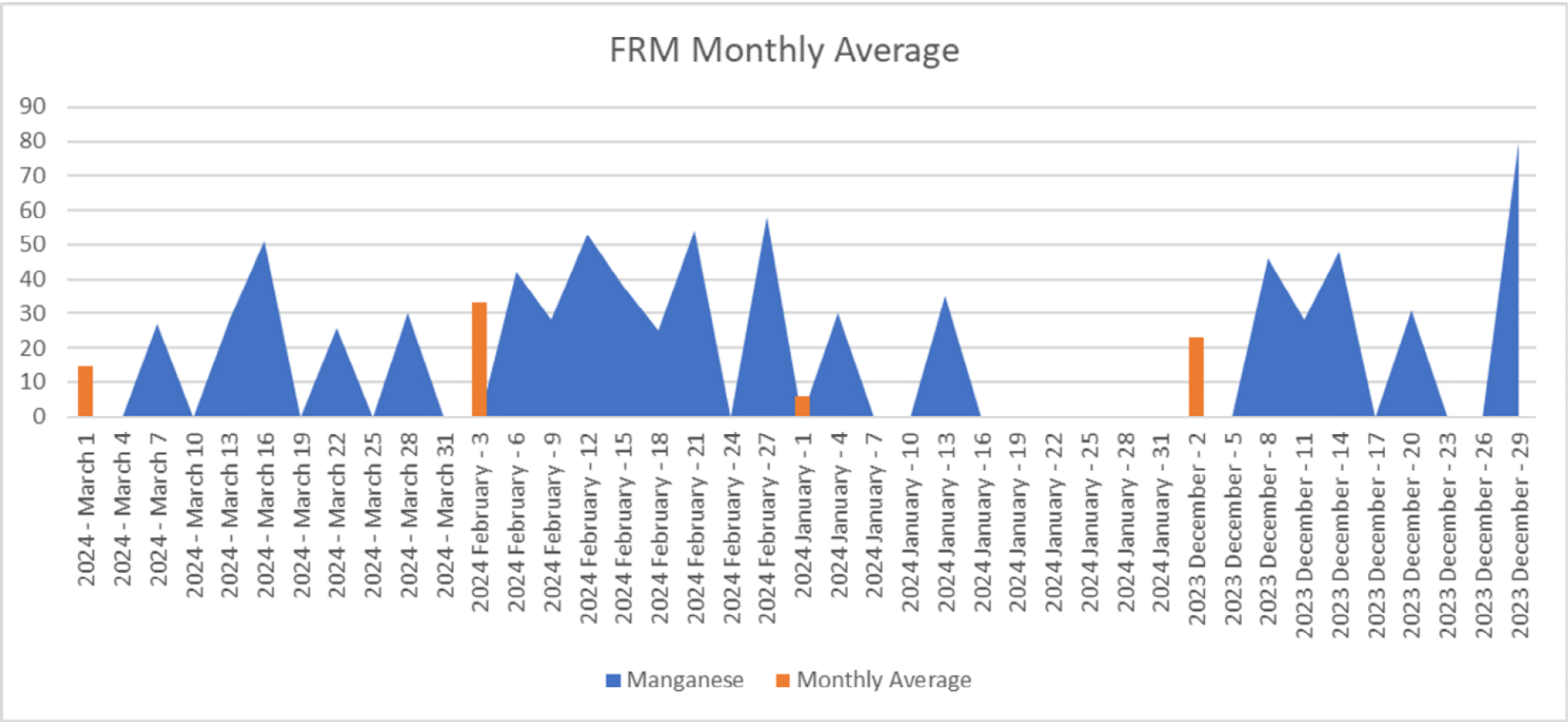
SPECIFICATIONS

- Air Technology / Broom Technology: Broom Technology
- Application: Outdoor
- Dump Type: Low Dump
- Estimated Run Time: Continuous
- Main Brush Dimensions: 51 in / 1295 mm
- Sound Level: As low as 78.5 dBA
- Propelling Speed: Up to 25 mph / 40 km/h

- Sweep Technology: Direct Throw, Conveyor
- Cleaning Path: 69 in / 1750 mm, 87 in / 2210 mm, 126 in / 3200 mm

- Hopper Capacity: 3.4 cubic yd / 2.6 cubic m
- Dust Control Systems: Dry, Wet, Dry & Wet
- Estimated Coverage/Productivity: Up to 535920 sq ft / 49500 sq m
- Machine Type: Ride-On
- Power Source: Diesel
- Side Brush Dimensions: 32 in / 810 mm (diameter) - side broom
- Service Plans: Gold, Silver, Pay as You Go, Safety Inspection, Block of Time

Attachment G – Rolling Average Manganese Concentrations


FRM Monthly Average
90
80
70
60
50
40
30
20
10
0
2024 - March 1
2024 - March 4
2024 - March 7
2024 - March 10
2024 - March 13
2024 - March 16
2024 - March 19
2024 - March 22
2024 - March 25
2024 - March 28
2024 - March 31
2024 February - 3
2024 February - 6
2024 February - 9
2024 February - 12
2024 February - 15
2024 February - 18
2024 February - 21
2024 February - 24
2024 February - 27
2024 January - 1
2024 January - 4
2024 January - 7
2024 January - 10
2024 January - 13
2024 January - 16
2024 January - 19
2024 January - 22
2024 January - 25
2024 January - 28
2024 January - 31
2023 December - 2
2023 December - 5
2023 December - 8
2023 December - 11
2023 December - 14
2023 December - 17
2023 December - 20
2023 December - 23
2023 December - 26
2023 December - 29
Manganese
Monthly Average

Attachment H – Fugitive Dust Monitoring Reports (December 2023 – March 2024)

January 17, 2024

Attn: Air Pollution Control
City of Chicago Public Health Department
333 S. State Street, Room 200
Chicago, Illinois 60604

Dear Sir/Madam:

Watco Terminal and Port Services (WTPS) is submitting the December 2023 Federal Reference Monitor (FRM) data for the Chicago Ferro facility. Please find attached the filter analysis results and a summary of the Loading and Unloading activities performed at the facility during the month of December.

The facility continues to remain below the Manganese Limit (ML) as defined in the City of Chicago Rules - Control of Emissions from Handling and Storage of Bulk Materials.

If you have any questions regarding this document or any of the attachments, please contact Bryan Paraspolo, Environmental Manager with Watco Companies, LLC at (516) 582-6960 or bryan.paraspolo@watco.com.

Sincerely,

Bryan Paraspolo, CHMM
Environmental Manager

Attachment I:
Monthly Terminal Activities

Sample Date	Manganese (Mn) Result ng/m^3	Exceedance (Y/N)	Activity Description
2-Dec-23	0	No	Terminal Closed
5-Dec-23	0	No	Unloaded 1 Pig Iron barge; Unloaded 2 bulk inbound; Loaded 17 bulk loads
8-Dec-23	46	No	Unloaded 1 Pig Iron barge; Unloaded 2 bulk inbound; Loaded 16 bulk loads
11-Dec-23	28	No	Unloaded 1 Pig Iron barge; Unloaded 1 bulk inbound; Loaded 18 bulk loads
14-Dec-23	48	No	No barge; Unloaded 1 bulk inbound; Loaded 24 bulk trucks
17-Dec-23	0	No	Terminal Closed
20-Dec-23	31	No	No barge; Unloaded 1 bulk inbound; Loaded 14 bulk trucks
23-Dec-23	0	No	Terminal Closed
26-Dec-23	0	No	Terminal Closed
29-Dec-23	80	No	No barge; Unloaded 2 bulk inbound; Loaded 17 bulk trucks

Average (ng/m^3)	23.30
Average (µg/m^3)	0.023

Attachment II:
December 2023 Monitoring Results & Data

Pace Analytical
1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

Date: 12/15/2023

CLIENT: WATCO Companies
Project: Watco
Lab Order: S2312071

CASE NARRATIVE

Report ID: S2312071001

Entire Report Reviewed by: John M. Jacobs
John Jacobs, Project Manager

Samples P2986720 #360, P2986721 #361, P2986722 #362, P2986723 #363, P2986724 #365, P2986725 #366, P2986726 #367, P2986728 #370, P2986729 #371, P2986730 #374 and P2986731 #375 were received on December 4, 2023.

All samples were received and analyzed within recommended holding times, except those noted below in this case narrative. Samples were analyzed using methods outlined in the following references:

Standard Methods for the Examination of Water and Wastewater, approved method versions
EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, online versions
EPA methods 40 CFR Parts 136 and 141EPA 600/2-78-054 methods
NDEP Mining Methods
40 CFR Part 50, Appendices B, J, L, O and FEM EQL-0310-189
IO Compendium Methods
Clean Water Act Methods Update Rule for the Analysis of Effluent, current version.
ASTM approved and recognized standards
ISO approved and recognized standards
USDA Handbook 60
Soil Survey Laboratory Manual Ver 4.0
ASA/SSSA 9 Methods of Analysis Part 2, 1982
ASA/SSSA Methods of Analysis Book 5 Part 3, 1996
Other industry approved methods

All Quality Control parameters met the acceptance criteria defined by EPA and Pace Analytical except as indicated in this case narrative:

Date: 12/15/2023

Definitions

RL	Reporting Limit

Qualifiers

*	Value exceeds Maximum Contaminant Level
A	Check MSA specifications
B	Analyte detected in the associated Method Blank
C	Calculated Value
D	Report limit raised due to dilution
E	Value above quantitation range
G	Analyzed at Pace Gillette, WY laboratory
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
L	Analyzed by another laboratory
M	Value exceeds Monthly Ave or MCL or is less than LCL
N	Sample analyzed outside of compliance requirements
ND	Not Detected at the Reporting Limit
O	Outside the Range of Dilutions
P	Sample preserved in lab at time of receipt
R	RPD outside accepted recovery limits
S	Spike Recovery outside accepted recovery limits
U	Analyte below method detection limit
X	Matrix Effect

Pace Analytical
1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

Sample Analysis Report

CLIENT: WATCO Companies
2926 E 126th St
Chicago, IL 60633

Date Reported: 12/15/2023
Report ID: S2312071001

Work Order: S2312071
Collection Date: 11/2/2023
Project: Watco
Date Received: 12/4/2023 10:45:00 AM
Lab ID: S2312071-001
Sampler:
Client Sample ID: P2986720 #360
Matrix: airfilter
COC: 191618

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m3	11/02/2023 00:00	Field
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	12/11/2023 14:40 MS	IO-3.5
Cadmium	ND	1000		ng/filter	12/11/2023 14:40 MS	IO-3.5
Chromium	ND	1500		ng/filter	12/11/2023 14:40 MS	IO-3.5
Lead	60	50		ng/filter	12/11/2023 14:40 MS	IO-3.5
Manganese	ND	600		ng/filter	12/11/2023 14:40 MS	IO-3.5
Nickel	ND	1300		ng/filter	12/11/2023 14:40 MS	IO-3.5
Vanadium	ND	2450		ng/filter	12/11/2023 14:40 MS	IO-3.5
Filter Metals Concentration						
Arsenic	ND	2.08		ng/m³	12/15/2023 09:41 JJ	Calculation
Cadmium	ND	41.7		ng/m³	12/15/2023 09:41 JJ	Calculation
Chromium	ND	62.5		ng/m³	12/15/2023 09:41 JJ	Calculation
Lead	2.48	2.08		ng/m³	12/15/2023 09:41 JJ	Calculation
Manganese	ND	25		ng/m³	12/15/2023 09:41 JJ	Calculation
Nickel	ND	54.2		ng/m³	12/15/2023 09:41 JJ	Calculation
Vanadium	ND	102		ng/m³	12/15/2023 09:41 JJ	Calculation

Pace Analytical
1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

Sample Analysis Report

CLIENT: WATCO Companies
2926 E 126th St
Chicago, IL 60633

Date Reported: 12/15/2023
Report ID: S2312071001

Work Order: S2312071
Collection Date: 11/5/2023
Project: Watco
Date Received: 12/4/2023 10:45:00 AM
Lab ID: S2312071-002
Sampler:
Client Sample ID: P2986721 #361
Matrix: airfilter
COC: 191618

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m3	11/05/2023 00:00	Field
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	12/11/2023 14:52 MS	IO-3.5
Cadmium	ND	1000		ng/filter	12/11/2023 14:52 MS	IO-3.5
Chromium	ND	1500		ng/filter	12/11/2023 14:52 MS	IO-3.5
Lead	ND	50		ng/filter	12/11/2023 14:52 MS	IO-3.5
Manganese	ND	600		ng/filter	12/11/2023 14:52 MS	IO-3.5
Nickel	ND	1300		ng/filter	12/11/2023 14:52 MS	IO-3.5
Vanadium	ND	2450		ng/filter	12/11/2023 14:52 MS	IO-3.5
Filter Metals Concentration						
Arsenic	ND	2.08		ng/m³	12/15/2023 09:41 JJ	Calculation
Cadmium	ND	41.7		ng/m³	12/15/2023 09:41 JJ	Calculation
Chromium	ND	62.5		ng/m³	12/15/2023 09:41 JJ	Calculation
Lead	ND	2.08		ng/m³	12/15/2023 09:41 JJ	Calculation
Manganese	ND	25		ng/m³	12/15/2023 09:41 JJ	Calculation
Nickel	ND	54.2		ng/m³	12/15/2023 09:41 JJ	Calculation
Vanadium	ND	102		ng/m³	12/15/2023 09:41 JJ	Calculation

Pace Analytical
1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

Sample Analysis Report

CLIENT: WATCO Companies
2926 E 126th St
Chicago, IL 60633

Date Reported: 12/15/2023
Report ID: S2312071001

Work Order: S2312071
Collection Date: 11/8/2023
Project: Watco
Date Received: 12/4/2023 10:45:00 AM
Lab ID: S2312071-003
Sampler:
Client Sample ID: P2986722 #362
Matrix: airfilter
COC: 191618

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m3	11/08/2023 00:00	Field
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	12/11/2023 15:04 MS	IO-3.5
Cadmium	ND	1000		ng/filter	12/11/2023 15:04 MS	IO-3.5
Chromium	ND	1500		ng/filter	12/11/2023 15:04 MS	IO-3.5
Lead	80	50		ng/filter	12/11/2023 15:04 MS	IO-3.5
Manganese	ND	600		ng/filter	12/11/2023 15:04 MS	IO-3.5
Nickel	ND	1300		ng/filter	12/11/2023 15:04 MS	IO-3.5
Vanadium	ND	2450		ng/filter	12/11/2023 15:04 MS	IO-3.5
Filter Metals Concentration						
Arsenic	ND	2.08		ng/m³	12/15/2023 09:41 JJ	Calculation
Cadmium	ND	41.7		ng/m³	12/15/2023 09:41 JJ	Calculation
Chromium	ND	62.5		ng/m³	12/15/2023 09:41 JJ	Calculation
Lead	3.37	2.08		ng/m³	12/15/2023 09:41 JJ	Calculation
Manganese	ND	25		ng/m³	12/15/2023 09:41 JJ	Calculation
Nickel	ND	54.2		ng/m³	12/15/2023 09:41 JJ	Calculation
Vanadium	ND	102		ng/m³	12/15/2023 09:41 JJ	Calculation

Pace Analytical
1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

Sample Analysis Report

CLIENT: WATCO Companies
2926 E 126th St
Chicago, IL 60633

Date Reported: 12/15/2023
Report ID: S2312071001

Work Order: S2312071
Collection Date: 11/11/2023
Project: Watco
Date Received: 12/4/2023 10:45:00 AM
Lab ID: S2312071-004
Sampler:
Client Sample ID: P2986723 #363
Matrix: airfilter
COC: 191618

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m3	11/11/2023 00:00	Field
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	12/11/2023 15:28 MS	IO-3.5
Cadmium	ND	1000		ng/filter	12/11/2023 15:28 MS	IO-3.5
Chromium	ND	1500		ng/filter	12/11/2023 15:28 MS	IO-3.5
Lead	100	50		ng/filter	12/11/2023 15:28 MS	IO-3.5
Manganese	ND	600		ng/filter	12/11/2023 15:28 MS	IO-3.5
Nickel	ND	1300		ng/filter	12/11/2023 15:28 MS	IO-3.5
Vanadium	ND	2450		ng/filter	12/11/2023 15:28 MS	IO-3.5
Filter Metals Concentration						
Arsenic	ND	2.08		ng/m³	12/15/2023 09:41 JJ	Calculation
Cadmium	ND	41.7		ng/m³	12/15/2023 09:41 JJ	Calculation
Chromium	ND	62.5		ng/m³	12/15/2023 09:41 JJ	Calculation
Lead	4.27	2.08		ng/m³	12/15/2023 09:41 JJ	Calculation
Manganese	ND	25		ng/m³	12/15/2023 09:41 JJ	Calculation
Nickel	ND	54.2		ng/m³	12/15/2023 09:41 JJ	Calculation
Vanadium	ND	102		ng/m³	12/15/2023 09:41 JJ	Calculation

Pace Analytical
1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

Sample Analysis Report

CLIENT: WATCO Companies
2926 E 126th St
Chicago, IL 60633

Date Reported: 12/15/2023
Report ID: S2312071001

Work Order: S2312071
Collection Date: 11/14/2023
Date Received: 12/4/2023 10:45:00 AM
Sampler:
Matrix: airfilter
COC: 191618

Project: Watco
Lab ID: S2312071-005
Client Sample ID: P2986724 #365

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m3	11/14/2023 00:00	Field
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	12/11/2023 15:34 MS	IO-3.5
Cadmium	ND	1000		ng/filter	12/11/2023 15:34 MS	IO-3.5
Chromium	ND	1500		ng/filter	12/11/2023 15:34 MS	IO-3.5
Lead	280	50		ng/filter	12/11/2023 15:34 MS	IO-3.5
Manganese	1800	600		ng/filter	12/11/2023 15:34 MS	IO-3.5
Nickel	ND	1300		ng/filter	12/11/2023 15:34 MS	IO-3.5
Vanadium	ND	2450		ng/filter	12/11/2023 15:34 MS	IO-3.5
Filter Metals Concentration						
Arsenic	ND	2.08		ng/m³	12/15/2023 09:41 JJ	Calculation
Cadmium	ND	41.7		ng/m³	12/15/2023 09:41 JJ	Calculation
Chromium	ND	62.5		ng/m³	12/15/2023 09:41 JJ	Calculation
Lead	11.8	2.08		ng/m³	12/15/2023 09:41 JJ	Calculation
Manganese	75	25		ng/m³	12/15/2023 09:41 JJ	Calculation
Nickel	ND	54.2		ng/m³	12/15/2023 09:41 JJ	Calculation
Vanadium	ND	102		ng/m³	12/15/2023 09:41 JJ	Calculation

Pace Analytical
1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

Sample Analysis Report

CLIENT: WATCO Companies
2926 E 126th St
Chicago, IL 60633

Date Reported: 12/15/2023
Report ID: S2312071001

Work Order: S2312071
Collection Date: 11/15/2023
Project: Watco
Date Received: 12/4/2023 10:45:00 AM
Lab ID: S2312071-006
Sampler:
Client Sample ID: P2986725 #366
Matrix: airfilter
Comment: Field Blank
COC: 191618

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	12/11/2023 15:40 MS	IO-3.5
Cadmium	ND	1000		ng/filter	12/11/2023 15:40 MS	IO-3.5
Chromium	ND	1500		ng/filter	12/11/2023 15:40 MS	IO-3.5
Lead	ND	50		ng/filter	12/11/2023 15:40 MS	IO-3.5
Manganese	ND	600		ng/filter	12/11/2023 15:40 MS	IO-3.5
Nickel	ND	1300		ng/filter	12/11/2023 15:40 MS	IO-3.5
Vanadium	ND	2450		ng/filter	12/11/2023 15:40 MS	IO-3.5

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Sample Analysis Report

CLIENT: WATCO Companies
2926 E 126th St
Chicago, IL 60633

Date Reported: 12/15/2023
Report ID: S2312071001

Work Order: S2312071
Collection Date: 11/17/2023
Project: Watco
Date Received: 12/4/2023 10:45:00 AM
Lab ID: S2312071-007
Sampler:
Client Sample ID: P2986726 #367
Matrix: airfilter
COC: 191618

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m3	11/17/2023 00:00	Field
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	12/11/2023 15:46 MS	IO-3.5
Cadmium	ND	1000		ng/filter	12/11/2023 15:46 MS	IO-3.5
Chromium	ND	1500		ng/filter	12/11/2023 15:46 MS	IO-3.5
Lead	210	50		ng/filter	12/11/2023 15:46 MS	IO-3.5
Manganese	2100	600		ng/filter	12/11/2023 15:46 MS	IO-3.5
Nickel	ND	1300		ng/filter	12/11/2023 15:46 MS	IO-3.5
Vanadium	ND	2450		ng/filter	12/11/2023 15:46 MS	IO-3.5
Filter Metals Concentration						
Arsenic	ND	2.08		ng/m³	12/15/2023 09:41 JJ	Calculation
Cadmium	ND	41.7		ng/m³	12/15/2023 09:41 JJ	Calculation
Chromium	ND	62.5		ng/m³	12/15/2023 09:41 JJ	Calculation
Lead	8.89	2.08		ng/m³	12/15/2023 09:41 JJ	Calculation
Manganese	85	25		ng/m³	12/15/2023 09:41 JJ	Calculation
Nickel	ND	54.2		ng/m³	12/15/2023 09:41 JJ	Calculation
Vanadium	ND	102		ng/m³	12/15/2023 09:41 JJ	Calculation

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Sample Analysis Report

CLIENT: WATCO Companies
2926 E 126th St
Chicago, IL 60633

Date Reported: 12/15/2023
Report ID: S2312071001

Work Order: S2312071
Collection Date: 11/20/2023
Date Received: 12/4/2023 10:45:00 AM
Sampler:
Matrix: airfilter
COC: 191618

Project: Watco
Lab ID: S2312071-008
Client Sample ID: P2986728 #370

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m3	11/20/2023 00:00	Field
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	12/11/2023 15:52 MS	IO-3.5
Cadmium	ND	1000		ng/filter	12/11/2023 15:52 MS	IO-3.5
Chromium	ND	1500		ng/filter	12/11/2023 15:52 MS	IO-3.5
Lead	90	50		ng/filter	12/11/2023 15:52 MS	IO-3.5
Manganese	1200	600		ng/filter	12/11/2023 15:52 MS	IO-3.5
Nickel	ND	1300		ng/filter	12/11/2023 15:52 MS	IO-3.5
Vanadium	ND	2450		ng/filter	12/11/2023 15:52 MS	IO-3.5
Filter Metals Concentration						
Arsenic	ND	2.08		ng/m³	12/15/2023 09:41 JJ	Calculation
Cadmium	ND	41.7		ng/m³	12/15/2023 09:41 JJ	Calculation
Chromium	ND	62.5		ng/m³	12/15/2023 09:41 JJ	Calculation
Lead	3.78	2.08		ng/m³	12/15/2023 09:41 JJ	Calculation
Manganese	48	25		ng/m³	12/15/2023 09:41 JJ	Calculation
Nickel	ND	54.2		ng/m³	12/15/2023 09:41 JJ	Calculation
Vanadium	ND	102		ng/m³	12/15/2023 09:41 JJ	Calculation

Pace Analytical
1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

Sample Analysis Report

CLIENT: WATCO Companies
2926 E 126th St
Chicago, IL 60633

Date Reported: 12/15/2023
Report ID: S2312071001

Work Order: S2312071
Collection Date: 11/23/2023
Project: Watco
Date Received: 12/4/2023 10:45:00 AM
Lab ID: S2312071-009
Sampler:
Client Sample ID: P2986729 #371
Matrix: airfilter
COC: 191618

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m3	11/23/2023 00:00	Field
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	12/11/2023 15:58 MS	IO-3.5
Cadmium	ND	1000		ng/filter	12/11/2023 15:58 MS	IO-3.5
Chromium	ND	1500		ng/filter	12/11/2023 15:58 MS	IO-3.5
Lead	ND	50		ng/filter	12/11/2023 15:58 MS	IO-3.5
Manganese	ND	600		ng/filter	12/11/2023 15:58 MS	IO-3.5
Nickel	ND	1300		ng/filter	12/11/2023 15:58 MS	IO-3.5
Vanadium	ND	2450		ng/filter	12/11/2023 15:58 MS	IO-3.5
Filter Metals Concentration						
Arsenic	ND	2.08		ng/m³	12/15/2023 09:41 JJ	Calculation
Cadmium	ND	41.7		ng/m³	12/15/2023 09:41 JJ	Calculation
Chromium	ND	62.5		ng/m³	12/15/2023 09:41 JJ	Calculation
Lead	ND	2.08		ng/m³	12/15/2023 09:41 JJ	Calculation
Manganese	ND	25		ng/m³	12/15/2023 09:41 JJ	Calculation
Nickel	ND	54.2		ng/m³	12/15/2023 09:41 JJ	Calculation
Vanadium	ND	102		ng/m³	12/15/2023 09:41 JJ	Calculation

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Sample Analysis Report

CLIENT: WATCO Companies
2926 E 126th St
Chicago, IL 60633

Date Reported: 12/15/2023
Report ID: S2312071001

Work Order: S2312071
Collection Date: 11/26/2023
Project: Watco
Date Received: 12/4/2023 10:45:00 AM
Lab ID: S2312071-010
Sampler:
Client Sample ID: P2986730 #374
Matrix: airfilter
COC: 191618

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m3	11/26/2023 00:00	Field
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	12/11/2023 16:04 MS	IO-3.5
Cadmium	ND	1000		ng/filter	12/11/2023 16:04 MS	IO-3.5
Chromium	ND	1500		ng/filter	12/11/2023 16:04 MS	IO-3.5
Lead	70	50		ng/filter	12/11/2023 16:04 MS	IO-3.5
Manganese	ND	600		ng/filter	12/11/2023 16:04 MS	IO-3.5
Nickel	ND	1300		ng/filter	12/11/2023 16:04 MS	IO-3.5
Vanadium	ND	2450		ng/filter	12/11/2023 16:04 MS	IO-3.5
Filter Metals Concentration						
Arsenic	ND	2.08		ng/m³	12/15/2023 09:41 JJ	Calculation
Cadmium	ND	41.7		ng/m³	12/15/2023 09:41 JJ	Calculation
Chromium	ND	62.5		ng/m³	12/15/2023 09:41 JJ	Calculation
Lead	2.72	2.08		ng/m³	12/15/2023 09:41 JJ	Calculation
Manganese	ND	25		ng/m³	12/15/2023 09:41 JJ	Calculation
Nickel	ND	54.2		ng/m³	12/15/2023 09:41 JJ	Calculation
Vanadium	ND	102		ng/m³	12/15/2023 09:41 JJ	Calculation

Pace Analytical
1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

Sample Analysis Report

CLIENT: WATCO Companies
2926 E 126th St
Chicago, IL 60633

Date Reported: 12/15/2023
Report ID: S2312071001

Work Order: S2312071
Collection Date: 11/29/2023
Project: Watco
Date Received: 12/4/2023 10:45:00 AM
Lab ID: S2312071-011
Sampler:
Client Sample ID: P2986731 #375
Matrix: airfilter
COC: 191618

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m3	11/29/2023 00:00	Field
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	12/11/2023 16:10 MS	IO-3.5
Cadmium	ND	1000		ng/filter	12/11/2023 16:10 MS	IO-3.5
Chromium	ND	1500		ng/filter	12/11/2023 16:10 MS	IO-3.5
Lead	ND	50		ng/filter	12/11/2023 16:10 MS	IO-3.5
Manganese	ND	600		ng/filter	12/11/2023 16:10 MS	IO-3.5
Nickel	ND	1300		ng/filter	12/11/2023 16:10 MS	IO-3.5
Vanadium	ND	2450		ng/filter	12/11/2023 16:10 MS	IO-3.5
Filter Metals Concentration						
Arsenic	ND	2.08		ng/m³	12/15/2023 09:41 JJ	Calculation
Cadmium	ND	41.7		ng/m³	12/15/2023 09:41 JJ	Calculation
Chromium	ND	62.5		ng/m³	12/15/2023 09:41 JJ	Calculation
Lead	ND	2.08		ng/m³	12/15/2023 09:41 JJ	Calculation
Manganese	ND	25		ng/m³	12/15/2023 09:41 JJ	Calculation
Nickel	ND	54.2		ng/m³	12/15/2023 09:41 JJ	Calculation
Vanadium	ND	102		ng/m³	12/15/2023 09:41 JJ	Calculation

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1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

ANALYTICAL QC SUMMARY REPORT

CLIENT: WATCO Companies **Date:** 12/15/2023
Work Order: S2312071 **Report ID:** S2312071001
Project: Watco

Metals on PM Air Filters by IO-3.5 - ICPMS Sample Type **MBLK** Units: ng/filter

MB-21355 (12/11/23 16:40) RunNo: 216762 PrepDate: 12/07/23 16:11 BatchID: 21355

Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Arsenic	ND	650					
Cadmium	ND	1000					
Chromium	ND	1500					
Lead	ND	100					
Manganese	ND	600					
Nickel	ND	1300					
Vanadium	ND	2450					

Metals on PM Air Filters by IO-3.5 - ICPMS Sample Type **LCS** Units: ng/filter

LCS-21355 (12/11/23 16:46) RunNo: 216762 PrepDate: 12/07/23 16:11 BatchID: 21355

Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Arsenic	19500	650	20000		97.3	80 - 120	
Cadmium	20000	1000	20000		101	80 - 120	
Chromium	19500	1500	20000		97.4	80 - 120	
Lead	20000	100	20000		99.8	80 - 120	
Manganese	20900	600	20000		105	80 - 120	
Nickel	20600	1300	20000		103	80 - 120	
Vanadium	20700	2450	20000		103	80 - 120	

Metals on PM Air Filters by IO-3.5 - ICPMS Sample Type **MS** Units: ng/filter

S2312071-002AS (12/11/23 14:58) RunNo: 216762 PrepDate: 12/07/23 9:00 BatchID: 21355

Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Arsenic	21900	50	22000	ND	99.3	75 - 125	
Cadmium	22000	1000	22000	ND	101	75 - 125	
Chromium	22200	1500	22000	ND	101	75 - 125	
Lead	22300	50	22000	ND	101	75 - 125	
Manganese	22900	600	22000	ND	104	75 - 125	
Nickel	23300	1300	22000	ND	106	75 - 125	
Vanadium	23000	2450	22000	ND	104	75 - 125	

Metals on PM Air Filters by IO-3.5 - ICPMS Sample Type **DUP** Units: ng/filter

S2312071-001AD (12/11/23 14:46) RunNo: 216762 PrepDate: 12/07/23 9:00 BatchID: 21355

Analyte	Result	RL	Ref Samp	%RPD	%REC	% RPD Limits	Qual
Arsenic	ND	50	ND			20	
Cadmium	ND	1000	ND			20	
Chromium	ND	1500	ND			20	
Lead	60	50	60	2.75		20	
Manganese	ND	600	ND			20	
Nickel	ND	1300	ND			20	
Vanadium	ND	2450	ND			20	

Pace Analytical

Pace Analytical Services, LLC

Sheridan, WY and Gillette, WY

- CHAIN OF CUSTODY RECORD -

Page of

All shaded fields must be completed.
This is a legal document: any misrepresentation may be construed as fraud.

191618

Client Name	Project Identification	Sampler (Signature/Attestation of Authenticity)	Telephone #
Watco	Watco		

Report Address	Contact Name	Invoice Address	Purchase Order #	Quote #
2926 E 126th St Chicago IL 60633	Steven Caudle Email Steven.Caudle@Watco.com Phone 773-646-8005			

ANALYSES / PARAMETERS

ITEM	LAB ID (Lab Use Only)	DATE SAMPLED	TIME SAMPLED	SAMPLE IDENTIFICATION	Matrix	# of Containers	REMARKS
1	52312071-001	11.2.23	23:59	P2 986 720		360	
2	-002	11.5.23	23:59	P2 986 721		361	
3	-003	11-8-23	23:59	P2 986 722		362	
4	-004	11.11.23	23:59	P2 986 723		363	
5	-005	11-14-23	23:59	P2 986 724		365	
6	-006	11-15-23	—	P2 986 725		366	Field Blank
7	-007	11-17-23	23:59	P2 986 726		367	
8	-008	11-20-23	23:59	P2 986 728		370	
9	-009	11.23-22	23:59	P2 986 729		371	
10	-010	11.26-23	23:59	P2 986 730		374	
11	-011 ~~-012~~	11.29.23	23:59	P2 986 731		375	
	DJS 12.5.23						
12							
13							
14							

LAB COMMENTS	Relinquished By (Signature/Printed)	DATE	TIME	Received By (Signature/Printed)	DATE	TIME
				Ellen Weber	12/04/23	16:45
	Ellen Weber	12/5/23	1:58		12/5/23	13:58

SHIPPING INFO	MATRIX CODES		TURNAROUND TIMES	COMPLIANCE INFORMATION	ADDITIONAL REMARKS
☐ UPS	Water	WT	**Check desired service**	Compliance Monitoring? (Y) N	~1.5°C IR
☒ Fed Express	Soil	SL	☐ Standard turnaround	Program (SDWA, NPDES,...) AIR	Cooler # 2125
☐ US Mail	Solid	SD	☐ **RUSH - 5 Working Days**	PWSID / Permit # 0316OFDC	4 Semi-Solid Ice Packs
☐ Hand Carried	Filter	FT	☐ **URGENT** - < 2 Working Days	Chlorinated? Y / N	
☐ Other _____	Other	OT	*Rush & Urgent Surcharges will be applied*	Sample Disposal: Lab / Client	None Retain

Survey Meter # Model: 12SA SN: 136491
pH strip lot # HC325179
Thermometer SN# 27130475

Condition Upon Receipt (Attach to COC)

Sample Receipt

1 Number of ice chests/packages received: OTC **ROI?** Yes (No)
Note as "OTC" if samples are received over the counter, unpackaged

2 Temperature of cooler/samples. *(If more than 8 coolers, obtain an additional CUR form.)*

Temps Observed (°C):								
Temps Corrected (°C):								

***Acceptable is: 0.1° to 10°C** for Bacteria; and 0.1° to 6°C for most other water parameters. Samples may not have had adequate time to cool following collection. Indicate ROI (Received on Ice) for iced samples received on the same day as sampled, in addition to temperature at receipt.*

Client contact for temperatures outside method criteria must be documented below.

3 Emission rate of samples for radiochemical analyses < 0.5mR/hr?	Yes	No	(N/A)
4 COC Number (If applicable): 191619			
5 Do the number of bottles agree with the COC?	(Yes)	No	N/A
6 Were the samples received intact? *(no broken bottles, leaks, etc.)*	(Yes)	No	N/A
7 Were the sample custody seals intact?	Yes	No	(N/A)
8 Is the COC properly completed, legible, and signed?	(Yes)	No	

A Castelle # in "# of Containers"

Sample Verification, Labeling & Distribution

1 Were all requested analyses understood and appropriate?	(Yes)	No	
2 Did the bottle labels correspond with the COC information?	(Yes)	No	
3 Samples collected in method-prescribed containers?	(Yes)	No	

4 Sample Preservation:

pH at Receipt:	Final pH (if added in lab):	Preservative/Lot#	Date/Time Added:
_____ Total Metals	_____ Total Metals	HNO_3 _____	_____
_____ Diss Metals	_____ Diss Metals	*Filtered and preserved in metals*	*Filtered and preserved in metals*
_____ Nutrient	_____ Nutrient	H_2SO_4 _____	
_____ Cyanide	_____ Cyanide	NaOH _____	
_____ Sulfide	_____ Sulfide	ZnAcet _____	
_____ Phenol	_____ Phenol	H_2SO_4 _____	
_____ SDWA Rads	_____ SDWA Rads	HNO_3 _____	_____

5 VOA vials have <6mm headspace?	Yes	No	(N/A)
6 Were all analyses within holding time at the time of receipt?	(Yes)	No	
7 Have rush or project due dates been checked and accepted?	Yes	No	(N/A)
8 Do samples require subcontracted analyses?	Yes	(No)	

If "Yes", which type of subcontracting is required? **General** **Customer-Specified** **Certified**

Sample Receipt, Verification, Login, Labeling & Distribution completed by *(initials)*: JS/IS **Set ID:** 53134071

Discrepancy Documentation ***(use back of sheet for notes on discrepancies)***

Any items listed above with a response of "No" or do not meet specifications must be resolved.

Person Contacted: _____ Method of Contact: __ Phone: _____

Initiated By: _____ Date/Time: _____ __ Email: _____

Problem:

Resolution:

February 21, 2024

Attn: Air Pollution Control
City of Chicago Public Health Department
333 S. State Street, Room 200
Chicago, Illinois 60604

Dear Sir/Madam:

Watco Terminal and Port Services (WTPS) is submitting the January 2024 Federal Reference Monitor (FRM) data for the Chicago Ferro facility. Please find attached the filter analysis results and a summary of the Loading and Unloading activities performed at the facility during the month of January.

The facility continues to remain below the Manganese Limit (ML) as defined in the City of Chicago Rules - Control of Emissions from Handling and Storage of Bulk Materials.

If you have any questions regarding this document or any of the attachments, please contact Bryan Paraspolo, Environmental Manager with Watco Companies, LLC at (516) 582-6960 or bryan.paraspolo@watco.com.

Sincerely,

Bryan Paraspolo, CHMM
Environmental Manager

Attachment I:
Monthly Terminal Activities

Sample Date	Manganese (Mn) Result ng/m^3	Exceedance (Y/N)	Activity Description
1-Jan-24	0	No	Terminal Closed
4-Jan-24	30	No	Unloaded 1 bulk barge; Unloaded 4 bulk inbound; Loaded 19 bulk loads
7-Jan-24	0	No	Terminal Closed
10-Jan-24	0	No	Unloaded 1 bulk barge; Unloaded 1 bulk inbound; Loaded 25 bulk loads; Loaded 1 rail car bulk
13-Jan-24	35	No	Terminal Closed
16-Jan-24	0	No	No barge; Unloaded 5 bulk inbound; Loaded 15 bulk trucks
19-Jan-24	0	No	No barge; Unloaded 0 bulk inbound; Loaded 15 bulk trucks
22-Jan-24	0	No	No barge; Unloaded 2 bulk inbound; Loaded 11 bulk trucks
25-Jan-24	0	No	No barge; Unloaded 2 bulk inbound; Loaded 16 bulk trucks
28-Jan-24	0	No	Terminal Closed
31-Jan-24	0	No	Unloaded 1 package barge; Unloaded 1 bulk inbound; Loaded 7 bulk trucks

Average (ng/m^3)	5.91
Average (µg/m^3)	0.006

Attachment II:
January 2024 Monitoring Results & Data

Pace Analytical
1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

Date: 2/19/2024

CLIENT: WATCO Companies
Project: Watco
Lab Order: S2402073

CASE NARRATIVE

Report ID: S2402073001

Entire Report Reviewed by: John M. Jacobs
John Jacobs, Project Manager

Samples P2987544 #370, P2987545 #371, P2987546 #374, P2987547 #375, P2987548 #516, P2987549 #517, P2987550 #518, P2987551 #519, P2987552 #520, P2987553 #521, P2987554 #522 and P2987555 #523 were received on February 6, 2024.

All samples were received and analyzed within recommended holding times, except those noted below in this case narrative. Samples were analyzed using methods outlined in the following references:

Standard Methods for the Examination of Water and Wastewater, approved method versions
EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, online versions
EPA methods 40 CFR Parts 136 and 141EPA 600/2-78-054 methods
NDEP Mining Methods
40 CFR Part 50, Appendices B, J, L, O and FEM EQL-0310-189
IO Compendium Methods
Clean Water Act Methods Update Rule for the Analysis of Effluent, current version.
ASTM approved and recognized standards
ISO approved and recognized standards
USDA Handbook 60
Soil Survey Laboratory Manual Ver 4.0
ASA/SSSA 9 Methods of Analysis Part 2, 1982
ASA/SSSA Methods of Analysis Book 5 Part 3, 1996
Other industry approved methods

All Quality Control parameters met the acceptance criteria defined by EPA and Pace Analytical except as indicated in this case narrative:

Pace Analytical
1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

Date: 2/19/2024

Definitions

RL	Reporting Limit

Qualifiers

*	Value exceeds Maximum Contaminant Level
A	Check MSA specifications
B	Analyte detected in the associated Method Blank
C	Calculated Value
D	Report limit raised due to dilution
E	Value above quantitation range
G	Analyzed at Pace Gillette, WY laboratory
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
L	Analyzed by another laboratory
M	Value exceeds Monthly Ave or MCL or is less than LCL
N	Sample analyzed outside of compliance requirements
ND	Not Detected at the Reporting Limit
O	Outside the Range of Dilutions
P	Sample preserved in lab at time of receipt
R	RPD outside accepted recovery limits
S	Spike Recovery outside accepted recovery limits
U	Analyte below method detection limit
X	Matrix Effect

Pace Analytical
1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

Sample Analysis Report

CLIENT: WATCO Companies
2926 E 126th St
Chicago, IL 60633

Date Reported: 2/19/2024
Report ID: S2402073001

Work Order: S2402073
Collection Date: 1/1/2024
Date Received: 2/6/2024 11:11:00 AM
Sampler:
Matrix: airfilter
COC: 191266

Project: Watco
Lab ID: S2402073-001
Client Sample ID: P2987544 #370

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m³	01/01/2024 00:00	Field
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	02/15/2024 13:09 MS	IO-3.5
Cadmium	ND	1000		ng/filter	02/15/2024 13:09 MS	IO-3.5
Chromium	ND	1500		ng/filter	02/15/2024 13:09 MS	IO-3.5
Lead	ND	50		ng/filter	02/15/2024 13:09 MS	IO-3.5
Manganese	ND	600		ng/filter	02/15/2024 13:09 MS	IO-3.5
Nickel	ND	1300		ng/filter	02/15/2024 13:09 MS	IO-3.5
Vanadium	ND	2450		ng/filter	02/15/2024 13:09 MS	IO-3.5
Filter Metals Concentration						
Arsenic	ND	2.08		ng/m³	02/19/2024 09:00 JJ	Calculation
Cadmium	ND	41.7		ng/m³	02/19/2024 09:00 JJ	Calculation
Chromium	ND	62.5		ng/m³	02/19/2024 09:00 JJ	Calculation
Lead	ND	2.08		ng/m³	02/19/2024 09:00 JJ	Calculation
Manganese	ND	25		ng/m³	02/19/2024 09:00 JJ	Calculation
Nickel	ND	54.2		ng/m³	02/19/2024 09:00 JJ	Calculation
Vanadium	ND	102		ng/m³	02/19/2024 09:00 JJ	Calculation

Pace Analytical
1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

Sample Analysis Report

CLIENT: WATCO Companies
2926 E 126th St
Chicago, IL 60633

Date Reported: 2/19/2024
Report ID: S2402073001

Work Order: S2402073
Collection Date: 1/4/2024
Date Received: 2/6/2024 11:11:00 AM
Sampler:
Matrix: airfilter
COC: 191266

Project: Watco
Lab ID: S2402073-002
Client Sample ID: P2987545 #371

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m³	01/04/2024 00:00	Field
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	02/15/2024 13:22 MS	IO-3.5
Cadmium	ND	1000		ng/filter	02/15/2024 13:22 MS	IO-3.5
Chromium	ND	1500		ng/filter	02/15/2024 13:22 MS	IO-3.5
Lead	ND	50		ng/filter	02/15/2024 13:22 MS	IO-3.5
Manganese	700	600		ng/filter	02/15/2024 13:22 MS	IO-3.5
Nickel	ND	1300		ng/filter	02/15/2024 13:22 MS	IO-3.5
Vanadium	ND	2450		ng/filter	02/15/2024 13:22 MS	IO-3.5
Filter Metals Concentration						
Arsenic	ND	2.08		ng/m³	02/19/2024 09:00 JJ	Calculation
Cadmium	ND	41.7		ng/m³	02/19/2024 09:00 JJ	Calculation
Chromium	ND	62.5		ng/m³	02/19/2024 09:00 JJ	Calculation
Lead	ND	2.08		ng/m³	02/19/2024 09:00 JJ	Calculation
Manganese	30	25		ng/m³	02/19/2024 09:00 JJ	Calculation
Nickel	ND	54.2		ng/m³	02/19/2024 09:00 JJ	Calculation
Vanadium	ND	102		ng/m³	02/19/2024 09:00 JJ	Calculation

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Sample Analysis Report

CLIENT: WATCO Companies
2926 E 126th St
Chicago, IL 60633

Date Reported: 2/19/2024
Report ID: S2402073001

Work Order: S2402073
Collection Date: 1/7/2024
Date Received: 2/6/2024 11:11:00 AM
Sampler:
Matrix: airfilter
COC: 191266

Project: Watco
Lab ID: S2402073-003
Client Sample ID: P2987546 #374

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m³	01/07/2024 00:00	Field
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	02/15/2024 13:33 MS	IO-3.5
Cadmium	ND	1000		ng/filter	02/15/2024 13:33 MS	IO-3.5
Chromium	ND	1500		ng/filter	02/15/2024 13:33 MS	IO-3.5
Lead	50	50		ng/filter	02/15/2024 13:33 MS	IO-3.5
Manganese	ND	600		ng/filter	02/15/2024 13:33 MS	IO-3.5
Nickel	ND	1300		ng/filter	02/15/2024 13:33 MS	IO-3.5
Vanadium	ND	2450		ng/filter	02/15/2024 13:33 MS	IO-3.5
Filter Metals Concentration						
Arsenic	ND	2.08		ng/m³	02/19/2024 09:00 JJ	Calculation
Cadmium	ND	41.7		ng/m³	02/19/2024 09:00 JJ	Calculation
Chromium	ND	62.5		ng/m³	02/19/2024 09:00 JJ	Calculation
Lead	2.25	2.08		ng/m³	02/19/2024 09:00 JJ	Calculation
Manganese	ND	25		ng/m³	02/19/2024 09:00 JJ	Calculation
Nickel	ND	54.2		ng/m³	02/19/2024 09:00 JJ	Calculation
Vanadium	ND	102		ng/m³	02/19/2024 09:00 JJ	Calculation

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Sample Analysis Report

CLIENT: WATCO Companies
2926 E 126th St
Chicago, IL 60633

Date Reported: 2/19/2024
Report ID: S2402073001

Work Order: S2402073
Collection Date: 1/10/2024
Date Received: 2/6/2024 11:11:00 AM
Sampler:
Matrix: airfilter
COC: 191266

Project: Watco
Lab ID: S2402073-004
Client Sample ID: P2987547 #375

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m³	01/10/2024 00:00	Field
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	02/15/2024 13:57 MS	IO-3.5
Cadmium	ND	1000		ng/filter	02/15/2024 13:57 MS	IO-3.5
Chromium	ND	1500		ng/filter	02/15/2024 13:57 MS	IO-3.5
Lead	ND	50		ng/filter	02/15/2024 13:57 MS	IO-3.5
Manganese	ND	600		ng/filter	02/15/2024 13:57 MS	IO-3.5
Nickel	ND	1300		ng/filter	02/15/2024 13:57 MS	IO-3.5
Vanadium	ND	2450		ng/filter	02/15/2024 13:57 MS	IO-3.5
Filter Metals Concentration						
Arsenic	ND	2.08		ng/m³	02/19/2024 09:00 JJ	Calculation
Cadmium	ND	41.7		ng/m³	02/19/2024 09:00 JJ	Calculation
Chromium	ND	62.5		ng/m³	02/19/2024 09:00 JJ	Calculation
Lead	ND	2.08		ng/m³	02/19/2024 09:00 JJ	Calculation
Manganese	ND	25		ng/m³	02/19/2024 09:00 JJ	Calculation
Nickel	ND	54.2		ng/m³	02/19/2024 09:00 JJ	Calculation
Vanadium	ND	102		ng/m³	02/19/2024 09:00 JJ	Calculation

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Sample Analysis Report

CLIENT: WATCO Companies
2926 E 126th St
Chicago, IL 60633

Date Reported: 2/19/2024
Report ID: S2402073001

Work Order: S2402073
Collection Date: 1/13/2024
Date Received: 2/6/2024 11:11:00 AM
Sampler:
Matrix: airfilter
COC: 191266

Project: Watco
Lab ID: S2402073-005
Client Sample ID: P2987548 #516

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m³	01/13/2024 00:00	Field
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	02/15/2024 14:03 MS	IO-3.5
Cadmium	ND	1000		ng/filter	02/15/2024 14:03 MS	IO-3.5
Chromium	ND	1500		ng/filter	02/15/2024 14:03 MS	IO-3.5
Lead	ND	50		ng/filter	02/15/2024 14:03 MS	IO-3.5
Manganese	800	600		ng/filter	02/15/2024 14:03 MS	IO-3.5
Nickel	ND	1300		ng/filter	02/15/2024 14:03 MS	IO-3.5
Vanadium	ND	2450		ng/filter	02/15/2024 14:03 MS	IO-3.5
Filter Metals Concentration						
Arsenic	ND	2.08		ng/m³	02/19/2024 09:00 JJ	Calculation
Cadmium	ND	41.7		ng/m³	02/19/2024 09:00 JJ	Calculation
Chromium	ND	62.5		ng/m³	02/19/2024 09:00 JJ	Calculation
Lead	ND	2.08		ng/m³	02/19/2024 09:00 JJ	Calculation
Manganese	35	25		ng/m³	02/19/2024 09:00 JJ	Calculation
Nickel	ND	54.2		ng/m³	02/19/2024 09:00 JJ	Calculation
Vanadium	ND	102		ng/m³	02/19/2024 09:00 JJ	Calculation

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Sample Analysis Report

CLIENT: WATCO Companies
2926 E 126th St
Chicago, IL 60633

Date Reported: 2/19/2024
Report ID: S2402073001

Work Order: S2402073
Collection Date: 1/15/2024
Date Received: 2/6/2024 11:11:00 AM
Sampler:
Matrix: airfilter
COC: 191266

Project: Watco
Lab ID: S2402073-006
Client Sample ID: P2987549 #517
Comment: Field Blank

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	02/15/2024 14:09 MS	IO-3.5
Cadmium	ND	1000		ng/filter	02/15/2024 14:09 MS	IO-3.5
Chromium	ND	1500		ng/filter	02/15/2024 14:09 MS	IO-3.5
Lead	ND	50		ng/filter	02/15/2024 14:09 MS	IO-3.5
Manganese	ND	600		ng/filter	02/15/2024 14:09 MS	IO-3.5
Nickel	ND	1300		ng/filter	02/15/2024 14:09 MS	IO-3.5
Vanadium	ND	2450		ng/filter	02/15/2024 14:09 MS	IO-3.5

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Sample Analysis Report

CLIENT: WATCO Companies
2926 E 126th St
Chicago, IL 60633

Date Reported: 2/19/2024
Report ID: S2402073001

Work Order: S2402073
Collection Date: 1/16/2024
Date Received: 2/6/2024 11:11:00 AM
Sampler:
Matrix: airfilter
COC: 191266

Project: Watco
Lab ID: S2402073-007
Client Sample ID: P2987550 #518

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m³	01/16/2024 00:00	Field
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	02/15/2024 14:16 MS	IO-3.5
Cadmium	ND	1000		ng/filter	02/15/2024 14:16 MS	IO-3.5
Chromium	ND	1500		ng/filter	02/15/2024 14:16 MS	IO-3.5
Lead	ND	50		ng/filter	02/15/2024 14:16 MS	IO-3.5
Manganese	ND	600		ng/filter	02/15/2024 14:16 MS	IO-3.5
Nickel	ND	1300		ng/filter	02/15/2024 14:16 MS	IO-3.5
Vanadium	ND	2450		ng/filter	02/15/2024 14:16 MS	IO-3.5
Filter Metals Concentration						
Arsenic	ND	2.08		ng/m³	02/19/2024 09:00 JJ	Calculation
Cadmium	ND	41.7		ng/m³	02/19/2024 09:00 JJ	Calculation
Chromium	ND	62.5		ng/m³	02/19/2024 09:00 JJ	Calculation
Lead	ND	2.08		ng/m³	02/19/2024 09:00 JJ	Calculation
Manganese	ND	25		ng/m³	02/19/2024 09:00 JJ	Calculation
Nickel	ND	54.2		ng/m³	02/19/2024 09:00 JJ	Calculation
Vanadium	ND	102		ng/m³	02/19/2024 09:00 JJ	Calculation

Pace Analytical
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Sample Analysis Report

CLIENT: WATCO Companies
2926 E 126th St
Chicago, IL 60633

Date Reported: 2/19/2024
Report ID: S2402073001

Work Order: S2402073
Collection Date: 1/19/2024
Date Received: 2/6/2024 11:11:00 AM
Sampler:
Matrix: airfilter
COC: 191266

Project: Watco
Lab ID: S2402073-008
Client Sample ID: P2987551 #519

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m³	01/19/2024 00:00	Field
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	02/15/2024 14:22 MS	IO-3.5
Cadmium	ND	1000		ng/filter	02/15/2024 14:22 MS	IO-3.5
Chromium	ND	1500		ng/filter	02/15/2024 14:22 MS	IO-3.5
Lead	100	50		ng/filter	02/15/2024 14:22 MS	IO-3.5
Manganese	ND	600		ng/filter	02/15/2024 14:22 MS	IO-3.5
Nickel	ND	1300		ng/filter	02/15/2024 14:22 MS	IO-3.5
Vanadium	ND	2450		ng/filter	02/15/2024 14:22 MS	IO-3.5
Filter Metals Concentration						
Arsenic	ND	2.08		ng/m³	02/19/2024 09:00 JJ	Calculation
Cadmium	ND	41.7		ng/m³	02/19/2024 09:00 JJ	Calculation
Chromium	ND	62.5		ng/m³	02/19/2024 09:00 JJ	Calculation
Lead	4.02	2.08		ng/m³	02/19/2024 09:00 JJ	Calculation
Manganese	ND	25		ng/m³	02/19/2024 09:00 JJ	Calculation
Nickel	ND	54.2		ng/m³	02/19/2024 09:00 JJ	Calculation
Vanadium	ND	102		ng/m³	02/19/2024 09:00 JJ	Calculation

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Sample Analysis Report

CLIENT: WATCO Companies
2926 E 126th St
Chicago, IL 60633

Date Reported: 2/19/2024
Report ID: S2402073001

Work Order: S2402073
Collection Date: 1/22/2024
Date Received: 2/6/2024 11:11:00 AM
Sampler:
Matrix: airfilter
COC: 191266

Project: Watco
Lab ID: S2402073-009
Client Sample ID: P2987552 #520

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m³	01/22/2024 00:00	Field
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	02/15/2024 14:28 MS	IO-3.5
Cadmium	ND	1000		ng/filter	02/15/2024 14:28 MS	IO-3.5
Chromium	ND	1500		ng/filter	02/15/2024 14:28 MS	IO-3.5
Lead	ND	50		ng/filter	02/15/2024 14:28 MS	IO-3.5
Manganese	ND	600		ng/filter	02/15/2024 14:28 MS	IO-3.5
Nickel	ND	1300		ng/filter	02/15/2024 14:28 MS	IO-3.5
Vanadium	ND	2450		ng/filter	02/15/2024 14:28 MS	IO-3.5
Filter Metals Concentration						
Arsenic	ND	2.08		ng/m³	02/19/2024 09:00 JJ	Calculation
Cadmium	ND	41.7		ng/m³	02/19/2024 09:00 JJ	Calculation
Chromium	ND	62.5		ng/m³	02/19/2024 09:00 JJ	Calculation
Lead	ND	2.08		ng/m³	02/19/2024 09:00 JJ	Calculation
Manganese	ND	25		ng/m³	02/19/2024 09:00 JJ	Calculation
Nickel	ND	54.2		ng/m³	02/19/2024 09:00 JJ	Calculation
Vanadium	ND	102		ng/m³	02/19/2024 09:00 JJ	Calculation

Pace Analytical
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Sample Analysis Report

CLIENT: WATCO Companies
2926 E 126th St
Chicago, IL 60633

Date Reported: 2/19/2024
Report ID: S2402073001

Work Order: S2402073
Collection Date: 1/25/2024
Date Received: 2/6/2024 11:11:00 AM
Sampler:
Matrix: airfilter
COC: 191266

Project: Watco
Lab ID: S2402073-010
Client Sample ID: P2987553 #521

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m³	01/25/2024 00:00	Field
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	02/15/2024 14:34 MS	IO-3.5
Cadmium	ND	1000		ng/filter	02/15/2024 14:34 MS	IO-3.5
Chromium	ND	1500		ng/filter	02/15/2024 14:34 MS	IO-3.5
Lead	150	50		ng/filter	02/15/2024 14:34 MS	IO-3.5
Manganese	ND	600		ng/filter	02/15/2024 14:34 MS	IO-3.5
Nickel	ND	1300		ng/filter	02/15/2024 14:34 MS	IO-3.5
Vanadium	ND	2450		ng/filter	02/15/2024 14:34 MS	IO-3.5
Filter Metals Concentration						
Arsenic	ND	2.08		ng/m³	02/19/2024 09:00 JJ	Calculation
Cadmium	ND	41.7		ng/m³	02/19/2024 09:00 JJ	Calculation
Chromium	ND	62.5		ng/m³	02/19/2024 09:00 JJ	Calculation
Lead	6.43	2.08		ng/m³	02/19/2024 09:00 JJ	Calculation
Manganese	ND	25		ng/m³	02/19/2024 09:00 JJ	Calculation
Nickel	ND	54.2		ng/m³	02/19/2024 09:00 JJ	Calculation
Vanadium	ND	102		ng/m³	02/19/2024 09:00 JJ	Calculation

Pace Analytical
1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

Sample Analysis Report

CLIENT: WATCO Companies
2926 E 126th St
Chicago, IL 60633

Date Reported: 2/19/2024
Report ID: S2402073001

Work Order: S2402073
Collection Date: 1/28/2024
Date Received: 2/6/2024 11:11:00 AM
Sampler:
Matrix: airfilter
COC: 191266

Project: Watco
Lab ID: S2402073-011
Client Sample ID: P2987554 #522

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m³	01/28/2024 00:00	Field
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	02/15/2024 14:40 MS	IO-3.5
Cadmium	ND	1000		ng/filter	02/15/2024 14:40 MS	IO-3.5
Chromium	ND	1500		ng/filter	02/15/2024 14:40 MS	IO-3.5
Lead	100	50		ng/filter	02/15/2024 14:40 MS	IO-3.5
Manganese	ND	600		ng/filter	02/15/2024 14:40 MS	IO-3.5
Nickel	ND	1300		ng/filter	02/15/2024 14:40 MS	IO-3.5
Vanadium	ND	2450		ng/filter	02/15/2024 14:40 MS	IO-3.5
Filter Metals Concentration						
Arsenic	ND	2.08		ng/m³	02/19/2024 09:00 JJ	Calculation
Cadmium	ND	41.7		ng/m³	02/19/2024 09:00 JJ	Calculation
Chromium	ND	62.5		ng/m³	02/19/2024 09:00 JJ	Calculation
Lead	4.12	2.08		ng/m³	02/19/2024 09:00 JJ	Calculation
Manganese	ND	25		ng/m³	02/19/2024 09:00 JJ	Calculation
Nickel	ND	54.2		ng/m³	02/19/2024 09:00 JJ	Calculation
Vanadium	ND	102		ng/m³	02/19/2024 09:00 JJ	Calculation

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Sample Analysis Report

CLIENT: WATCO Companies
2926 E 126th St
Chicago, IL 60633

Date Reported: 2/19/2024
Report ID: S2402073001

Work Order: S2402073
Collection Date: 1/31/2024
Date Received: 2/6/2024 11:11:00 AM
Sampler:
Matrix: airfilter
COC: 191266

Project: Watco
Lab ID: S2402073-012
Client Sample ID: P2987555 #523

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m³	01/31/2024 00:00	Field
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	02/15/2024 14:46 MS	IO-3.5
Cadmium	ND	1000		ng/filter	02/15/2024 14:46 MS	IO-3.5
Chromium	ND	1500		ng/filter	02/15/2024 14:46 MS	IO-3.5
Lead	ND	50		ng/filter	02/15/2024 14:46 MS	IO-3.5
Manganese	ND	600		ng/filter	02/15/2024 14:46 MS	IO-3.5
Nickel	ND	1300		ng/filter	02/15/2024 14:46 MS	IO-3.5
Vanadium	ND	2450		ng/filter	02/15/2024 14:46 MS	IO-3.5
Filter Metals Concentration						
Arsenic	ND	2.08		ng/m³	02/19/2024 09:00 JJ	Calculation
Cadmium	ND	41.7		ng/m³	02/19/2024 09:00 JJ	Calculation
Chromium	ND	62.5		ng/m³	02/19/2024 09:00 JJ	Calculation
Lead	ND	2.08		ng/m³	02/19/2024 09:00 JJ	Calculation
Manganese	ND	25		ng/m³	02/19/2024 09:00 JJ	Calculation
Nickel	ND	54.2		ng/m³	02/19/2024 09:00 JJ	Calculation
Vanadium	ND	102		ng/m³	02/19/2024 09:00 JJ	Calculation

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1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

ANALYTICAL QC SUMMARY REPORT

CLIENT: WATCO Companies **Date:** 2/19/2024
Work Order: S2402073 **Report ID:** S2402073001
Project: Watco

Metals on PM Air Filters by IO-3.5 - ICPMS Sample Type **MBLK** Units: ng/filter

MB-21571 (02/15/24 12:58) RunNo: 218478 PrepDate: 02/13/24 10:08 BatchID: 21571

Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Arsenic	ND	650					
Cadmium	ND	1000					
Chromium	ND	1500					
Lead	ND	100					
Manganese	ND	600					
Nickel	ND	1300					
Vanadium	ND	2450					

MB-21571 (02/15/24 16:17) RunNo: 218478 PrepDate: 02/13/24 10:08 BatchID: 21571

Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Arsenic	ND	650					
Cadmium	ND	1000					
Chromium	ND	1500					
Lead	ND	100					
Manganese	ND	600					
Nickel	ND	1300					
Vanadium	ND	2450					

Metals on PM Air Filters by IO-3.5 - ICPMS Sample Type **LCS** Units: ng/filter

LCS-21571 (02/15/24 13:04) RunNo: 218478 PrepDate: 02/13/24 10:08 BatchID: 21571

Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Arsenic	20900	650	20000		105	80 - 120	
Cadmium	22000	1000	20000		109	80 - 120	
Chromium	21300	1500	20000		107	80 - 120	
Lead	20700	100	20000		104	80 - 120	
Manganese	22500	600	20000		113	80 - 120	
Nickel	22000	1300	20000		110	80 - 120	
Vanadium	22000	2450	20000		110	80 - 120	

LCS-21571 (02/15/24 16:23) RunNo: 218478 PrepDate: 02/13/24 10:08 BatchID: 21571

Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Arsenic	20700	650	20000		103	80 - 120	
Cadmium	21000	1000	20000		107	80 - 120	
Chromium	21100	1500	20000		105	80 - 120	
Lead	20400	100	20000		102	80 - 120	
Manganese	22300	600	20000		111	80 - 120	
Nickel	21800	1300	20000		109	80 - 120	
Vanadium	21300	2450	20000		107	80 - 120	

Metals on PM Air Filters by IO-3.5 - ICPMS Sample Type **MS** Units: ng/filter

S2402073-002AS (02/15/24 13:28) RunNo: 218478 PrepDate: 02/13/24 9:00 BatchID: 21571

Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Arsenic	21600	50	22000	ND	97.9	75 - 125	
Cadmium	22000	1000	22000	ND	99.3	75 - 125	
Chromium	22100	1500	22000	ND	101	75 - 125	
Lead	21500	50	22000	ND	97.4	75 - 125	
Manganese	23300	600	22000	700	103	75 - 125	
Nickel	22800	1300	22000	ND	104	75 - 125	

Pace Analytical
1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

ANALYTICAL QC SUMMARY REPORT

CLIENT: WATCO Companies **Date:** 2/19/2024
Work Order: S2402073 **Report ID:** S2402073001
Project: Watco

Metals on PM Air Filters by IO-3.5 - ICPMS Sample Type **MS** Units: ng/filter

S2402073-002AS (02/15/24 13:28)	RunNo: 218478	PrepDate: 02/13/24 9:00			BatchID: 21571		
Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Vanadium	22400	2450	22000	ND	102	75 - 125	

S2402110-010AS (02/15/24 16:46)	RunNo: 218478	PrepDate: 02/13/24 9:00			BatchID: 21571		
Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Arsenic	21400	50	22000	ND	97.1	75 - 125	
Cadmium	22000	1000	22000	ND	100	75 - 125	
Chromium	23100	1500	22000	ND	101	75 - 125	
Lead	21700	50	22000	110	98.2	75 - 125	
Manganese	23900	600	22000	800	105	75 - 125	
Nickel	23700	1300	22000	ND	106	75 - 125	
Vanadium	22700	2450	22000	ND	103	75 - 125	

Metals on PM Air Filters by IO-3.5 - ICPMS Sample Type **DUP** Units: ng/filter

S2402073-001AD (02/15/24 13:16)	RunNo: 218478	PrepDate: 02/13/24 9:00			BatchID: 21571		
Analyte	Result	RL	Ref Samp	%RPD	%REC	% RPD Limits	Qual
Arsenic	ND	50	ND			20	
Cadmium	ND	1000	ND			20	
Chromium	ND	1500	ND			20	
Lead	ND	50	ND			20	
Manganese	ND	600	ND			20	
Nickel	ND	1300	ND			20	
Vanadium	ND	2450	ND			20	

S2402110-009AD (02/15/24 16:34)	RunNo: 218478	PrepDate: 02/13/24 9:00			BatchID: 21571		
Analyte	Result	RL	Ref Samp	%RPD	%REC	% RPD Limits	Qual
Arsenic	2830	50	2830	0.269		20	
Cadmium	ND	1000	ND			20	
Chromium	ND	1500	ND			20	
Lead	2000	50	2060	2.79		20	
Manganese	14400	600	14900	2.99		20	
Nickel	ND	1300	ND			20	
Vanadium	ND	2450	ND			20	

Pace Analytical

Pace Analytical Services, LLC

Sheridan, WY and Gillette, WY

- CHAIN OF CUSTODY RECORD -

Page of

All shaded fields must be completed.
This is a legal document: any misrepresentation may be construed as fraud.

191266

Client Name	Project Identification	Sampler (Signature/Attestation of Authenticity)	Telephone #
WATCO	WATCO		

Report Address	Contact Name	Invoice Address
2926 E 126th St Chicago IL 60633	Steve Candle Email steven.candle@watco.com Phone 773-646-8005	

Purchase Order # | Quote #

ITEM	LAB ID (Lab Use Only)	DATE SAMPLED	TIME	SAMPLE IDENTIFICATION	Matrix	# of Containers	ANALYSES / PARAMETERS	REMARKS
1	2402073-001	1-1-24	23:59	P2 987 544		370		
2	-002	1-4-24	23:59	P2 987 545		371		
3	-003	1-7-24	23:59	P2 987 546		374		
4	-004	1-10-24	23:59	P2 987 547		375		
5	-005	1-13-24	23:59	P2 987 548		516		
6	-006	1-15-24	—	P2 987 549		517		Field blank
7	-007	1-16-24	23:59	P2 987 550		518		
8	-008	1-19-24	23:59	P2 987 551		519		
9	-009	1-22-24	23:59	P2 987 552		520		
10	-010	1-25-24	23:59	P2 987 553		521		
11	-011	1-28-24	23:59	P2 987 554		522		
12	-012	1-31-24	23:59	P2 987 555		523		
13								
14								

LAB COMMENTS	Relinquished By (Signature/Printed)	DATE	TIME	Received By (Signature/Printed)	DATE	TIME
				Joyce Burnett Pace	2/5/24	9:30
	Ellen Weber	2/6/24	11:10	Daniel Sloop	2/6/24	1111

SHIPPING INFO	MATRIX CODES		TURNAROUND TIMES	COMPLIANCE INFORMATION	ADDITIONAL REMARKS
☐ UPS	Water	WT	**Check desired service**	Compliance Monitoring? (Y) N	7.2 CIR
☑ Fed Express	Soil	SL	☐ Standard turnaround	Program (SDWA, NPDES,...)	Cooler 7114
☐ US Mail	Solid	SD	☐ **RUSH - 5 Working Days**	PWSID / Permit # 03166FDC	4 melted ice packs
☐ Hand Carried	Filter	FT	☐ **URGENT** - < 2 Working Days	Chlorinated? Y / N	
☐ Other _____	Other	OT	*Rush & Urgent Surcharges will be applied*	Sample Disposal: Lab / Client	None Retain

Survey Meter # Model: 12SA Serial #: 136491
pH strip lot # HC333774
Thermometer SN# 27130475

Condition Upon Receipt (Attach to COC)

Sample Receipt

1 Number of ice chests/packages received: OTC ROI? Yes (No)
Note as "OTC" if samples are received over the counter, unpackaged

2 Temperature of cooler/samples. *(If more than 8 coolers, obtain an additional CUR form.)*

Temps Observed (°C):								
Temps Corrected (°C):								

***Acceptable is: 0.1° to 10°C** for Bacteria; and 0.1° to 6°C for most other water parameters. Samples may not have had adequate time to cool following collection. Indicate ROI (Received on Ice) for iced samples received on the same day as sampled, in addition to temperature at receipt.*

Client contact for temperatures outside method criteria must be documented below.

3 Emission rate of samples for radiochemical analyses < 0.5mR/hr?	Yes	No	(N/A)
4 COC Number (If applicable): 191266			
5 Do the number of bottles agree with the COC?	(Yes)	No	N/A
6 Were the samples received intact? *(no broken bottles, leaks, etc.)*	(Yes)	No	N/A
7 Were the sample custody seals intact?	Yes	No	(N/A)
8 Is the COC properly completed, legible, and signed?	Yes	(No)	No analytes. Used Water project.

Sample Verification, Labeling & Distribution

1 Were all requested analyses understood and appropriate?	(Yes)	No	
2 Did the bottle labels correspond with the COC information?	(Yes)	No	
3 Samples collected in method-prescribed containers?	(Yes)	No	

4 Sample Preservation:

pH at Receipt:	Final pH (if added in lab):	Preservative/Lot#	Date/Time Added:
_____ Total Metals	_____ Total Metals	HNO_3 _____	_____
_____ Diss Metals	_____ Diss Metals	*Filtered and preserved in metals*	*Filtered and preserved in metals*
_____ Nutrient	_____ Nutrient	H_2SO_4 _____	
_____ Cyanide	_____ Cyanide	NaOH _____	
_____ Sulfide	_____ Sulfide	ZnAcet _____	
_____ Phenol	_____ Phenol	H_2SO_4 _____	
_____ SDWA Rads	_____ SDWA Rads	HNO_3 _____	_____

5 VOA vials have <6mm headspace?	Yes	No	(N/A)
6 Were all analyses within holding time at the time of receipt?	(Yes)	No	
7 Have rush or project due dates been checked and accepted?	Yes	No	(N/A)
8 Do samples require subcontracted analyses?	Yes	(No)	

If "Yes", which type of subcontracting is required? **General** **Customer-Specified** **Certified**

Sample Receipt, Verification, Login, Labeling & Distribution completed by *(initials)*: DS *Set ID:* 240273

Discrepancy Documentation ***(use back of sheet for notes on discrepancies)***

Any items listed above with a response of "No" or do not meet specifications must be resolved.

Person Contacted: _____ Method of Contact: __ Phone: _____

Initiated By: _____ Date/Time: _____ __ Email: _____

Problem:

Resolution:

March 13, 2024

Attn: Air Pollution Control
City of Chicago Public Health Department
333 S. State Street, Room 200
Chicago, Illinois 60604

Dear Sir/Madam:

Watco Terminal and Port Services (WTPS) is submitting the February 2024 Federal Reference Monitor (FRM) data for the Chicago Ferro facility. Please find attached the filter analysis results and a summary of the Loading and Unloading activities performed at the facility during the month of February.

The facility continues to remain below the Manganese Limit (ML) as defined in the City of Chicago Rules - Control of Emissions from Handling and Storage of Bulk Materials.

If you have any questions regarding this document or any of the attachments, please contact Bryan Paraspolo, Environmental Manager with Watco Companies, LLC at (516) 582-6960 or bryan.paraspolo@watco.com.

Sincerely,

Bryan Paraspolo, CHMM
Environmental Manager

Attachment I:
Monthly Terminal Activities

Sample Date	Manganese (Mn) Result ng/m^3	Exceedance (Y/N)	Activity Description
3-Feb-24	0	No	Terminal Closed
6-Feb-24	42	No	Unloaded 1 bulk barge; Unloaded 7 bulk inbound; Loaded 15 bulk loads
9-Feb-24	28	No	Unloaded 1 pig iron barge; Unloaded 0 bulk inbound; Loaded 17 bulk loads
12-Feb-24	53	No	Unloaded 1 bulk barge; Unloaded 1 bulk inbound; Loaded 16 bulk loads
15-Feb-24	38	No	No barge; Unlaoded 6 bulk inbound; Loaded 14 bulk loads
18-Feb-24	25	No	Terminal Closed
12-Feb-24	54	No	No barge; Unloaded 1 bulk inbound; Loaded 16 bulk trucks
24-Feb-24	0	No	Terminal Closed
27-Feb-24	58	No	No barge; Unloaded 0 bulk inbound; Loaded 14 bulk trucks

Average (ng/m^3)	33.11
Average (µg/m^3)	0.033

Attachment II:
February 2024 Monitoring Results & Data

Pace Analytical
1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

Date: 3/12/2024

CLIENT: WATCO Companies
Project: Watco
Lab Order: S2403078

CASE NARRATIVE

Report ID: S2403078001

Entire Report Reviewed by: John M. Jacobs
John Jacobs, Project Manager

Samples P2988261 #377, P2988262 #379, P2988263 #383, P2988264 #384, P2988265 #393, P2988266 #395, P2988267 #396, P2988268 #397, P2988269 #398 and P2988270 #406 were received on March 4, 2024.

All samples were received and analyzed within recommended holding times, except those noted below in this case narrative. Samples were analyzed using methods outlined in the following references:

Standard Methods for the Examination of Water and Wastewater, approved method versions
EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, online versions
EPA methods 40 CFR Parts 136 and 141EPA 600/2-78-054 methods
NDEP Mining Methods
40 CFR Part 50, Appendices B, J, L, O and FEM EQL-0310-189
IO Compendium Methods
Clean Water Act Methods Update Rule for the Analysis of Effluent, current version.
ASTM approved and recognized standards
ISO approved and recognized standards
USDA Handbook 60
Soil Survey Laboratory Manual Ver 4.0
ASA/SSSA 9 Methods of Analysis Part 2, 1982
ASA/SSSA Methods of Analysis Book 5 Part 3, 1996
Other industry approved methods

All Quality Control parameters met the acceptance criteria defined by EPA and Pace Analytical except as indicated in this case narrative:

Pace Analytical
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Date: 3/12/2024

Definitions

RL	Reporting Limit

Qualifiers

*	Value exceeds Maximum Contaminant Level
A	Check MSA specifications
B	Analyte detected in the associated Method Blank
C	Calculated Value
D	Report limit raised due to dilution
E	Value above quantitation range
G	Analyzed at Pace Gillette, WY laboratory
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
L	Analyzed by another laboratory
M	Value exceeds Monthly Ave or MCL or is less than LCL
N	Sample analyzed outside of compliance requirements
ND	Not Detected at the Reporting Limit
O	Outside the Range of Dilutions
P	Sample preserved in lab at time of receipt
R	RPD outside accepted recovery limits
S	Spike Recovery outside accepted recovery limits
U	Analyte below method detection limit
X	Matrix Effect

Pace Analytical
1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

Sample Analysis Report

CLIENT: WATCO Companies
2926 E 126th St
Chicago, IL 60633

Date Reported: 3/12/2024
Report ID: S2403078001

Work Order: S2403078
Collection Date: 2/3/2024
Date Received: 3/4/2024 9:30:00 AM
Sampler:
Matrix: airfilter
COC: 191420

Project: Watco
Lab ID: S2403078-001
Client Sample ID: P2988261 #377

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m³	02/03/2024 00:00	Field
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	03/08/2024 13:06 MS	IO-3.5
Cadmium	ND	1000		ng/filter	03/08/2024 13:06 MS	IO-3.5
Chromium	ND	1500		ng/filter	03/08/2024 13:06 MS	IO-3.5
Lead	70	50		ng/filter	03/08/2024 13:06 MS	IO-3.5
Manganese	ND	600		ng/filter	03/08/2024 13:06 MS	IO-3.5
Nickel	ND	1300		ng/filter	03/08/2024 13:06 MS	IO-3.5
Vanadium	ND	2450		ng/filter	03/08/2024 13:06 MS	IO-3.5
Filter Metals Concentration						
Arsenic	ND	2.08		ng/m³	03/12/2024 07:50 JJ	Calculation
Cadmium	ND	41.7		ng/m³	03/12/2024 07:50 JJ	Calculation
Chromium	ND	62.5		ng/m³	03/12/2024 07:50 JJ	Calculation
Lead	3.08	2.08		ng/m³	03/12/2024 07:50 JJ	Calculation
Manganese	ND	25		ng/m³	03/12/2024 07:50 JJ	Calculation
Nickel	ND	54.2		ng/m³	03/12/2024 07:50 JJ	Calculation
Vanadium	ND	102		ng/m³	03/12/2024 07:50 JJ	Calculation

Pace Analytical
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Sample Analysis Report

CLIENT: WATCO Companies
2926 E 126th St
Chicago, IL 60633

Date Reported: 3/12/2024
Report ID: S2403078001

Work Order: S2403078
Collection Date: 2/6/2024
Date Received: 3/4/2024 9:30:00 AM
Sampler:
Matrix: airfilter
COC: 191420

Project: Watco
Lab ID: S2403078-002
Client Sample ID: P2988262 #379

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m³	02/06/2024 00:00	Field
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	03/08/2024 13:18 MS	IO-3.5
Cadmium	ND	1000		ng/filter	03/08/2024 13:18 MS	IO-3.5
Chromium	ND	1500		ng/filter	03/08/2024 13:18 MS	IO-3.5
Lead	250	50		ng/filter	03/08/2024 13:18 MS	IO-3.5
Manganese	1000	600		ng/filter	03/08/2024 13:18 MS	IO-3.5
Nickel	ND	1300		ng/filter	03/08/2024 13:18 MS	IO-3.5
Vanadium	ND	2450		ng/filter	03/08/2024 13:18 MS	IO-3.5
Filter Metals Concentration						
Arsenic	ND	2.08		ng/m³	03/12/2024 07:50 JJ	Calculation
Cadmium	ND	41.7		ng/m³	03/12/2024 07:50 JJ	Calculation
Chromium	ND	62.5		ng/m³	03/12/2024 07:50 JJ	Calculation
Lead	10.3	2.08		ng/m³	03/12/2024 07:50 JJ	Calculation
Manganese	42	25		ng/m³	03/12/2024 07:50 JJ	Calculation
Nickel	ND	54.2		ng/m³	03/12/2024 07:50 JJ	Calculation
Vanadium	ND	102		ng/m³	03/12/2024 07:50 JJ	Calculation

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Sample Analysis Report

CLIENT: WATCO Companies
2926 E 126th St
Chicago, IL 60633

Date Reported: 3/12/2024
Report ID: S2403078001

Work Order: S2403078
Collection Date: 2/9/2024
Date Received: 3/4/2024 9:30:00 AM
Sampler:
Matrix: airfilter
COC: 191420

Project: Watco
Lab ID: S2403078-003
Client Sample ID: P2988263 #383

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m³	02/09/2024 00:00	Field
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	03/08/2024 13:30 MS	IO-3.5
Cadmium	ND	1000		ng/filter	03/08/2024 13:30 MS	IO-3.5
Chromium	ND	1500		ng/filter	03/08/2024 13:30 MS	IO-3.5
Lead	ND	50		ng/filter	03/08/2024 13:30 MS	IO-3.5
Manganese	700	600		ng/filter	03/08/2024 13:30 MS	IO-3.5
Nickel	ND	1300		ng/filter	03/08/2024 13:30 MS	IO-3.5
Vanadium	ND	2450		ng/filter	03/08/2024 13:30 MS	IO-3.5
Filter Metals Concentration						
Arsenic	ND	2.08		ng/m³	03/12/2024 07:50 JJ	Calculation
Cadmium	ND	41.7		ng/m³	03/12/2024 07:50 JJ	Calculation
Chromium	ND	62.5		ng/m³	03/12/2024 07:50 JJ	Calculation
Lead	ND	2.08		ng/m³	03/12/2024 07:50 JJ	Calculation
Manganese	28	25		ng/m³	03/12/2024 07:50 JJ	Calculation
Nickel	ND	54.2		ng/m³	03/12/2024 07:50 JJ	Calculation
Vanadium	ND	102		ng/m³	03/12/2024 07:50 JJ	Calculation

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Sample Analysis Report

CLIENT: WATCO Companies
2926 E 126th St
Chicago, IL 60633

Date Reported: 3/12/2024
Report ID: S2403078001

Work Order: S2403078
Collection Date: 2/12/2024
Date Received: 3/4/2024 9:30:00 AM
Sampler:
Matrix: airfilter
COC: 191420

Project: Watco
Lab ID: S2403078-004
Client Sample ID: P2988264 #384

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m³	02/12/2024 00:00	Field
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	03/08/2024 13:55 MS	IO-3.5
Cadmium	ND	1000		ng/filter	03/08/2024 13:55 MS	IO-3.5
Chromium	ND	1500		ng/filter	03/08/2024 13:55 MS	IO-3.5
Lead	70	50		ng/filter	03/08/2024 13:55 MS	IO-3.5
Manganese	1300	600		ng/filter	03/08/2024 13:55 MS	IO-3.5
Nickel	ND	1300		ng/filter	03/08/2024 13:55 MS	IO-3.5
Vanadium	ND	2450		ng/filter	03/08/2024 13:55 MS	IO-3.5
Filter Metals Concentration						
Arsenic	ND	2.08		ng/m³	03/12/2024 07:50 JJ	Calculation
Cadmium	ND	41.7		ng/m³	03/12/2024 07:50 JJ	Calculation
Chromium	ND	62.5		ng/m³	03/12/2024 07:50 JJ	Calculation
Lead	3.02	2.08		ng/m³	03/12/2024 07:50 JJ	Calculation
Manganese	53	25		ng/m³	03/12/2024 07:50 JJ	Calculation
Nickel	ND	54.2		ng/m³	03/12/2024 07:50 JJ	Calculation
Vanadium	ND	102		ng/m³	03/12/2024 07:50 JJ	Calculation

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Sample Analysis Report

CLIENT: WATCO Companies
2926 E 126th St
Chicago, IL 60633

Date Reported: 3/12/2024
Report ID: S2403078001

Work Order: S2403078
Collection Date: 2/15/2024
Date Received: 3/4/2024 9:30:00 AM
Sampler:
Matrix: airfilter
COC: 191420

Project: Watco
Lab ID: S2403078-005
Client Sample ID: P2988265 #393

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m³	02/15/2024 00:00	Field
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	03/08/2024 14:01 MS	IO-3.5
Cadmium	ND	1000		ng/filter	03/08/2024 14:01 MS	IO-3.5
Chromium	ND	1500		ng/filter	03/08/2024 14:01 MS	IO-3.5
Lead	70	50		ng/filter	03/08/2024 14:01 MS	IO-3.5
Manganese	900	600		ng/filter	03/08/2024 14:01 MS	IO-3.5
Nickel	ND	1300		ng/filter	03/08/2024 14:01 MS	IO-3.5
Vanadium	ND	2450		ng/filter	03/08/2024 14:01 MS	IO-3.5
Filter Metals Concentration						
Arsenic	ND	2.08		ng/m³	03/12/2024 07:50 JJ	Calculation
Cadmium	ND	41.7		ng/m³	03/12/2024 07:50 JJ	Calculation
Chromium	ND	62.5		ng/m³	03/12/2024 07:50 JJ	Calculation
Lead	2.89	2.08		ng/m³	03/12/2024 07:50 JJ	Calculation
Manganese	38	25		ng/m³	03/12/2024 07:50 JJ	Calculation
Nickel	ND	54.2		ng/m³	03/12/2024 07:50 JJ	Calculation
Vanadium	ND	102		ng/m³	03/12/2024 07:50 JJ	Calculation

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Sample Analysis Report

CLIENT: WATCO Companies
2926 E 126th St
Chicago, IL 60633

Date Reported: 3/12/2024
Report ID: S2403078001

Work Order: S2403078
Collection Date: 2/16/2024
Date Received: 3/4/2024 9:30:00 AM
Sampler:
Matrix: airfilter
COC: 191420

Project: Watco
Lab ID: S2403078-006
Client Sample ID: P2988266 #395
Comment: Field Blank

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	03/08/2024 14:07 MS	IO-3.5
Cadmium	ND	1000		ng/filter	03/08/2024 14:07 MS	IO-3.5
Chromium	ND	1500		ng/filter	03/08/2024 14:07 MS	IO-3.5
Lead	ND	50		ng/filter	03/08/2024 14:07 MS	IO-3.5
Manganese	ND	600		ng/filter	03/08/2024 14:07 MS	IO-3.5
Nickel	ND	1300		ng/filter	03/08/2024 14:07 MS	IO-3.5
Vanadium	ND	2450		ng/filter	03/08/2024 14:07 MS	IO-3.5

Pace Analytical
1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

Sample Analysis Report

CLIENT: WATCO Companies
2926 E 126th St
Chicago, IL 60633

Date Reported: 3/12/2024
Report ID: S2403078001

Work Order: S2403078
Collection Date: 2/18/2024
Date Received: 3/4/2024 9:30:00 AM
Sampler:
Matrix: airfilter
COC: 191420

Project: Watco
Lab ID: S2403078-007
Client Sample ID: P2988267 #396

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m³	02/18/2024 00:00	Field
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	03/08/2024 14:14 MS	IO-3.5
Cadmium	ND	1000		ng/filter	03/08/2024 14:14 MS	IO-3.5
Chromium	ND	1500		ng/filter	03/08/2024 14:14 MS	IO-3.5
Lead	70	50		ng/filter	03/08/2024 14:14 MS	IO-3.5
Manganese	600	600		ng/filter	03/08/2024 14:14 MS	IO-3.5
Nickel	ND	1300		ng/filter	03/08/2024 14:14 MS	IO-3.5
Vanadium	ND	2450		ng/filter	03/08/2024 14:14 MS	IO-3.5
Filter Metals Concentration						
Arsenic	ND	2.08		ng/m³	03/12/2024 07:50 JJ	Calculation
Cadmium	ND	41.7		ng/m³	03/12/2024 07:50 JJ	Calculation
Chromium	ND	62.5		ng/m³	03/12/2024 07:50 JJ	Calculation
Lead	3.05	2.08		ng/m³	03/12/2024 07:50 JJ	Calculation
Manganese	25	25		ng/m³	03/12/2024 07:50 JJ	Calculation
Nickel	ND	54.2		ng/m³	03/12/2024 07:50 JJ	Calculation
Vanadium	ND	102		ng/m³	03/12/2024 07:50 JJ	Calculation

Pace Analytical
1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

Sample Analysis Report

CLIENT: WATCO Companies
2926 E 126th St
Chicago, IL 60633

Date Reported: 3/12/2024
Report ID: S2403078001

Work Order: S2403078
Collection Date: 2/21/2024
Date Received: 3/4/2024 9:30:00 AM
Sampler:
Matrix: airfilter
COC: 191420

Project: Watco
Lab ID: S2403078-008
Client Sample ID: P2988268 #397

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m³	02/21/2024 00:00	Field
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	03/08/2024 14:20 MS	IO-3.5
Cadmium	ND	1000		ng/filter	03/08/2024 14:20 MS	IO-3.5
Chromium	ND	1500		ng/filter	03/08/2024 14:20 MS	IO-3.5
Lead	300	50		ng/filter	03/08/2024 14:20 MS	IO-3.5
Manganese	1300	600		ng/filter	03/08/2024 14:20 MS	IO-3.5
Nickel	ND	1300		ng/filter	03/08/2024 14:20 MS	IO-3.5
Vanadium	ND	2450		ng/filter	03/08/2024 14:20 MS	IO-3.5
Filter Metals Concentration						
Arsenic	ND	2.08		ng/m³	03/12/2024 07:50 JJ	Calculation
Cadmium	ND	41.7		ng/m³	03/12/2024 07:50 JJ	Calculation
Chromium	ND	62.5		ng/m³	03/12/2024 07:50 JJ	Calculation
Lead	12.5	2.08		ng/m³	03/12/2024 07:50 JJ	Calculation
Manganese	54	25		ng/m³	03/12/2024 07:50 JJ	Calculation
Nickel	ND	54.2		ng/m³	03/12/2024 07:50 JJ	Calculation
Vanadium	ND	102		ng/m³	03/12/2024 07:50 JJ	Calculation

Pace Analytical
1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

Sample Analysis Report

CLIENT: WATCO Companies
2926 E 126th St
Chicago, IL 60633

Date Reported: 3/12/2024
Report ID: S2403078001

Work Order: S2403078
Collection Date: 2/24/2024
Date Received: 3/4/2024 9:30:00 AM
Sampler:
Matrix: airfilter
COC: 191420

Project: Watco
Lab ID: S2403078-009
Client Sample ID: P2988269 #398

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m³	02/24/2024 00:00	Field
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	03/08/2024 14:26 MS	IO-3.5
Cadmium	ND	1000		ng/filter	03/08/2024 14:26 MS	IO-3.5
Chromium	ND	1500		ng/filter	03/08/2024 14:26 MS	IO-3.5
Lead	ND	50		ng/filter	03/08/2024 14:26 MS	IO-3.5
Manganese	ND	600		ng/filter	03/08/2024 14:26 MS	IO-3.5
Nickel	ND	1300		ng/filter	03/08/2024 14:26 MS	IO-3.5
Vanadium	ND	2450		ng/filter	03/08/2024 14:26 MS	IO-3.5
Filter Metals Concentration						
Arsenic	ND	2.08		ng/m³	03/12/2024 07:50 JJ	Calculation
Cadmium	ND	41.7		ng/m³	03/12/2024 07:50 JJ	Calculation
Chromium	ND	62.5		ng/m³	03/12/2024 07:50 JJ	Calculation
Lead	ND	2.08		ng/m³	03/12/2024 07:50 JJ	Calculation
Manganese	ND	25		ng/m³	03/12/2024 07:50 JJ	Calculation
Nickel	ND	54.2		ng/m³	03/12/2024 07:50 JJ	Calculation
Vanadium	ND	102		ng/m³	03/12/2024 07:50 JJ	Calculation

Pace Analytical
1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

Sample Analysis Report

CLIENT: WATCO Companies
2926 E 126th St
Chicago, IL 60633

Date Reported: 3/12/2024
Report ID: S2403078001

Work Order: S2403078
Collection Date: 2/27/2024
Date Received: 3/4/2024 9:30:00 AM
Sampler:
Matrix: airfilter
COC: 191420

Project: Watco
Lab ID: S2403078-010
Client Sample ID: P2988270 #406

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m³	02/27/2024 00:00	Field
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	03/08/2024 14:32 MS	IO-3.5
Cadmium	ND	1000		ng/filter	03/08/2024 14:32 MS	IO-3.5
Chromium	ND	1500		ng/filter	03/08/2024 14:32 MS	IO-3.5
Lead	ND	50		ng/filter	03/08/2024 14:32 MS	IO-3.5
Manganese	1400	600		ng/filter	03/08/2024 14:32 MS	IO-3.5
Nickel	ND	1300		ng/filter	03/08/2024 14:32 MS	IO-3.5
Vanadium	ND	2450		ng/filter	03/08/2024 14:32 MS	IO-3.5
Filter Metals Concentration						
Arsenic	ND	2.08		ng/m³	03/12/2024 07:50 JJ	Calculation
Cadmium	ND	41.7		ng/m³	03/12/2024 07:50 JJ	Calculation
Chromium	ND	62.5		ng/m³	03/12/2024 07:50 JJ	Calculation
Lead	ND	2.08		ng/m³	03/12/2024 07:50 JJ	Calculation
Manganese	58	25		ng/m³	03/12/2024 07:50 JJ	Calculation
Nickel	ND	54.2		ng/m³	03/12/2024 07:50 JJ	Calculation
Vanadium	ND	102		ng/m³	03/12/2024 07:50 JJ	Calculation

Pace Analytical
1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

ANALYTICAL QC SUMMARY REPORT

CLIENT: WATCO Companies **Date:** 3/12/2024
Work Order: S2403078 **Report ID:** S2403078001
Project: Watco

Metals on PM Air Filters by IO-3.5 - ICPMS Sample Type **MBLK** Units: ng/filter

MB-21637 (03/08/24 12:54) RunNo: 219035 PrepDate: 03/07/24 10:09 BatchID: 21637

Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Arsenic	ND	650					
Cadmium	ND	1000					
Chromium	ND	1500					
Lead	ND	100					
Manganese	ND	600					
Nickel	ND	1300					
Vanadium	ND	2450					

Metals on PM Air Filters by IO-3.5 - ICPMS Sample Type **LCS** Units: ng/filter

LCS-21637 (03/08/24 13:00) RunNo: 219035 PrepDate: 03/07/24 10:09 BatchID: 21637

Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Arsenic	19800	650	20000		98.8	80 - 120	
Cadmium	20000	1000	20000		99.9	80 - 120	
Chromium	19300	1500	20000		96.7	80 - 120	
Lead	19900	100	20000		99.3	80 - 120	
Manganese	20500	600	20000		102	80 - 120	
Nickel	20200	1300	20000		101	80 - 120	
Vanadium	21000	2450	20000		105	80 - 120	

Metals on PM Air Filters by IO-3.5 - ICPMS Sample Type **MS** Units: ng/filter

S2403078-002AS (03/08/24 13:24) RunNo: 219035 PrepDate: 03/07/24 9:30 BatchID: 21637

Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Arsenic	21100	50	22000	ND	95.9	75 - 125	
Cadmium	21000	1000	22000	ND	95.7	75 - 125	
Chromium	21100	1500	22000	ND	95.9	75 - 125	
Lead	22100	50	22000	250	99.5	75 - 125	
Manganese	22500	600	22000	1000	97.6	75 - 125	
Nickel	21900	1300	22000	ND	99.6	75 - 125	
Vanadium	21900	2450	22000	ND	99.7	75 - 125	

Metals on PM Air Filters by IO-3.5 - ICPMS Sample Type **DUP** Units: ng/filter

S2403078-001AD (03/08/24 13:12) RunNo: 219035 PrepDate: 03/07/24 9:30 BatchID: 21637

Analyte	Result	RL	Ref Samp	%RPD	%REC	% RPD Limits	Qual
Arsenic	ND	50	ND			20	
Cadmium	ND	1000	ND			20	
Chromium	ND	1500	ND			20	
Lead	70	50	70	1.30		20	
Manganese	ND	600	ND			20	
Nickel	ND	1300	ND			20	
Vanadium	ND	2450	ND			20	

Pace Analytical

Pace Analytical Services, LLC

Sheridan, WY and Gillette, WY

- CHAIN OF CUSTODY RECORD -

All shaded fields must be completed.
This is a legal document: any misrepresentation may be construed as fraud.

Page of

191420

Client Name: WATCO

Project Identification: WATCO

Sampler (Signature/Attestation of Authenticity):

Telephone #:

Report Address: 2926 E 126th St Chicago IL 60633

Contact Name: Steve Caudle

Email: Steven.caudle@watco.com

Phone: 773-646-8005

Invoice Address:

Purchase Order #:

Quote #:

ANALYSES / PARAMETERS

ITEM	LAB ID (Lab Use Only)	DATE SAMPLED	TIME SAMPLED	SAMPLE IDENTIFICATION	Matrix	# of Containers								REMARKS
1	2403278-001	2-3-24	23:59	P2 988 261		377								
2	-002	2-6-24	23:59	P2 988 262		379								
3	-003	2-9-24	23:59	P2 988 263		383								
4	-004	2-12-24	23:59	P2 988 264		384								
5	-005	2-15-24	23:59	P2 988 265		393								
6	-006	2-16-24	—	P2 988 266		395								Field blank
7	-007	2-18-24	23:59	P2 988 267		396								
8	-008	2-21-24	23:59	P2 988 268		397								
9	-009	2-24-24	23:59	P2 988 269		398								
10	-010	2-27-24	23:59	P2 988 270		406								
11	~~-011~~ JS 3.5.24													
12														
13														
14														

LAB COMMENTS	Relinquished By (Signature/Printed)	DATE	TIME	Received By (Signature/Printed)	DATE	TIME
				Jaya Burnett Pace	3/4/24	9:30
	[signature]	3/5/24	15:40	[signature] Daniel Slipp	3/5/24	1539

SHIPPING INFO	MATRIX CODES		TURNAROUND TIMES	COMPLIANCE INFORMATION		ADDITIONAL REMARKS
☐ UPS	Water	WT	**Check desired service**	Compliance Monitoring?	(Y)/N	18.7 c IR
☒ Fed Express	Soil	SL	☐ Standard turnaround	Program (SDWA, NPDES,...)		
☐ US Mail	Solid	SD	☐ **RUSH - 5 Working Days**	PWSID / Permit #		3 melted ice
☐ Hand Carried	Filter	FT	☐ **URGENT** - < 2 Working Days	Chlorinated?	Y / N	Cooler 2156
☐ Other ______	Other	OT	***Rush & Urgent Surcharges will be applied***	Sample Disposal: Lab	Client	None

Survey Meter # Model 2241-2; SN 182119
pH strip lot # HC333774
Thermometer SN# 27130475

Condition Upon Receipt (Attach to COC)

Sample Receipt

1 Number of ice chests/packages received: OTC **ROI?** **Yes** **(No)**
*Note as "**OTC**" if samples are received over the counter, unpackaged*

2 Temperature of cooler/samples. *(If more than 8 coolers, obtain an additional CUR form.)*

Temps Observed (°C):	—							
Temps Corrected (°C):								

***Acceptable is: 0.1° to 10°C** for Bacteria; and 0.1° to 6°C for most other water parameters. Samples may not have had adequate time to cool following collection. Indicate ROI (Received on Ice) for iced samples received on the same day as sampled, in addition to temperature at receipt.*

Client contact for temperatures outside method criteria must be documented below.

3 Emission rate of samples for radiochemical analyses < 0.5mR/hr?	**Yes**	**No**	**(N/A)**
4 COC Number (If applicable): 191470			
5 Do the number of bottles agree with the COC?	**Yes**	**No**	**(N/A)**
6 Were the samples received intact? *(no broken bottles, leaks, etc.)*	**(Yes)**	**No**	**N/A**
7 Were the sample custody seals intact?	**Yes**	**No**	**(N/A)**
8 Is the COC properly completed, legible, and signed?	**(Yes)**	**No**	

Sample Verification, Labeling & Distribution

1 Were all requested analyses understood and appropriate?	**(Yes)**	**No**	
2 Did the bottle labels correspond with the COC information?	**(Yes)**	**No**	
3 Samples collected in method-prescribed containers?	**(Yes)**	**No**	

4 Sample Preservation:

pH at Receipt:	**Final pH** (if added in lab):	**Preservative/Lot#**	**Date/Time Added:**
_____ Total Metals	_____ Total Metals	HNO_3 _____	_____
_____ Diss Metals	_____ Diss Metals	*Filtered and preserved in metals*	*Filtered and preserved in metals*
_____ Nutrient	_____ Nutrient	H_2SO_4 _____	
_____ Cyanide	_____ Cyanide	NaOH _____	
_____ Sulfide	_____ Sulfide	ZnAcet _____	
_____ Phenol	_____ Phenol	H_2SO_4 _____	
_____ SDWA Rads	_____ SDWA Rads	HNO_3 _____	_____

5 VOA vials have <6mm headspace?	**Yes**	**No**	**(N/A)**
6 Were all analyses within holding time at the time of receipt?	**(Yes)**	**No**	
7 Have rush or project due dates been checked and accepted?	**Yes**	**No**	**(N/A)**
8 Do samples require subcontracted analyses?	**Yes**	**(No)**	

If "Yes", which type of subcontracting is required? **General** **Customer-Specified** **Certified**

Sample Receipt, Verification, Login, Labeling & Distribution completed by *(initials)*: DB

Set ID: 240307B

Discrepancy Documentation ***(use back of sheet for notes on discrepancies)***

Any items listed above with a response of "No" or do not meet specifications must be resolved.

Person Contacted: _____ Method of Contact: __ Phone: _____

Initiated By: _____ Date/Time: _____ __ Email: _____

Problem:

Resolution:

April 15, 2024

Attn: Air Pollution Control
City of Chicago Public Health Department
333 S. State Street, Room 200
Chicago, Illinois 60604

Dear Sir/Madam:

Watco Terminal and Port Services (WTPS) is submitting the March 2024 Federal Reference Monitor (FRM) data for the Chicago Ferro facility. Please find attached the filter analysis results and a summary of the Loading and Unloading activities performed at the facility during the month of March.

The facility continues to remain below the Manganese Limit (ML) as defined in the City of Chicago Rules - Control of Emissions from Handling and Storage of Bulk Materials.

If you have any questions regarding this document or any of the attachments, please contact Bryan Paraspolo, Environmental Manager with Watco Companies, LLC at (516) 582-6960 or bryan.paraspolo@watco.com.

Sincerely,

Bryan Paraspolo, CHMM
Environmental Manager

Attachment I:
Monthly Terminal Activities

Sample Date	Manganese (Mn) Result ng/m^3	Exceedance (Y/N)	Activity Description
1-Mar-24	0	No	No barge; Unloaded 1 bulk inbound; loaded 15 bulk loads
4-Mar-24	0	No	No barge; Unloaded 4 bulk inbound; Loaded 18 bulk loads
7-Mar-24	27	No	No barge; Unloaded 0 bulk inbound; Loaded 11 bulk loads
10-Mar-24	0	No	Terminal Closed
13-Mar-24	28	No	No barge; Unloaded 1 bulk inbound; Loaded 18 bulk loads
16-Mar-24	51	No	Terminal Closed
19-Mar-24	0	No	Unloaded 1 super sack barge; Unloaded 2 bulk inbound; loaded 21 bulk trucks
22-Mar-24	26	No	Unloaded 1 super sack barge; Unloaded 1 bulk inbound; Loaded 17 bulk trucks
25-Mar-24	0	No	No barge; Unloaded 1 bulk inbound; Loaded 15 bulk trucks; Loaded 1 pig iron gondola car
28-Mar-24	30	No	Unloaded 1 bulk barge; Unloaded 1 bulk inbound; Loaded 2 bulk trucks
31-Mar-24	0	No	Terminal Closed

Average (ng/m^3)	14.73
Average (µg/m^3)	0.015

Attachment II:
March 2024 Monitoring Results & Data

Pace Analytical
1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

Date: 4/12/2024

CLIENT: WATCO Companies
Project: WATCO
Lab Order: S2404089

CASE NARRATIVE

Report ID: S2404089001

Entire Report Reviewed by: John M. Jacobs
John Jacobs, Project Manager

Samples P2988715 #79, P2988716 #80, P2988717 #81, P2988718 #82, P2988719 #83, P2988720 #84, P2988721 #85, P2988722 #86, P2988723 #87, P2988724 #88, P2988725 #89 and P2988726 #90 were received on April 3, 2024.

All samples were received and analyzed within recommended holding times, except those noted below in this case narrative. Samples were analyzed using methods outlined in the following references:

Standard Methods for the Examination of Water and Wastewater, approved method versions
EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, online versions
EPA methods 40 CFR Parts 136 and 141EPA 600/2-78-054 methods
NDEP Mining Methods
40 CFR Part 50, Appendices B, J, L, O and FEM EQL-0310-189
IO Compendium Methods
Clean Water Act Methods Update Rule for the Analysis of Effluent, current version.
ASTM approved and recognized standards
ISO approved and recognized standards
USDA Handbook 60
Soil Survey Laboratory Manual Ver 4.0
ASA/SSSA 9 Methods of Analysis Part 2, 1982
ASA/SSSA Methods of Analysis Book 5 Part 3, 1996
Other industry approved methods

All Quality Control parameters met the acceptance criteria defined by EPA and Pace Analytical except as indicated in this case narrative:

Pace Analytical
1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

Date: 4/12/2024

Definitions

RL	Reporting Limit

Qualifiers

*	Value exceeds Maximum Contaminant Level
A	Check MSA specifications
B	Analyte detected in the associated Method Blank
C	Calculated Value
D	Report limit raised due to dilution
E	Value above quantitation range
G	Analyzed at Pace Gillette, WY laboratory
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
L	Analyzed by another laboratory
M	Value exceeds Monthly Ave or MCL or is less than LCL
N	Sample analyzed outside of compliance requirements
ND	Not Detected at the Reporting Limit
O	Outside the Range of Dilutions
P	Sample preserved in lab at time of receipt
R	RPD outside accepted recovery limits
S	Spike Recovery outside accepted recovery limits
U	Analyte below method detection limit
X	Matrix Effect

Pace Analytical
1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

Sample Analysis Report

CLIENT: WATCO Companies
2926 E 126th St
Chicago, IL 60633

Date Reported: 4/12/2024
Report ID: S2404089001

Work Order: S2404089
Collection Date: 3/1/2024
Date Received: 4/3/2024 9:00:00 AM
Sampler:
Matrix: airfilter
COC: 198743

Project: WATCO
Lab ID: S2404089-001
Client Sample ID: P2988715 #79

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m³	03/01/2024 00:00	Field
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	04/09/2024 18:30 MS	IO-3.5
Cadmium	ND	1000		ng/filter	04/09/2024 18:30 MS	IO-3.5
Chromium	ND	1500		ng/filter	04/09/2024 18:30 MS	IO-3.5
Lead	ND	50		ng/filter	04/09/2024 18:30 MS	IO-3.5
Manganese	ND	600		ng/filter	04/09/2024 18:30 MS	IO-3.5
Nickel	ND	1300		ng/filter	04/09/2024 18:24 MS	IO-3.5
Vanadium	ND	2450		ng/filter	04/09/2024 18:30 MS	IO-3.5
Filter Metals Concentration						
Arsenic	ND	2.08		ng/m³	04/12/2024 09:15 JJ	Calculation
Cadmium	ND	41.7		ng/m³	04/12/2024 09:15 JJ	Calculation
Chromium	ND	62.5		ng/m³	04/12/2024 09:15 JJ	Calculation
Lead	ND	2.08		ng/m³	04/12/2024 09:15 JJ	Calculation
Manganese	ND	25		ng/m³	04/12/2024 09:15 JJ	Calculation
Nickel	ND	54.2		ng/m³	04/12/2024 09:15 JJ	Calculation
Vanadium	ND	102		ng/m³	04/12/2024 09:15 JJ	Calculation

Pace Analytical
1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

Sample Analysis Report

CLIENT: WATCO Companies
2926 E 126th St
Chicago, IL 60633

Date Reported: 4/12/2024
Report ID: S2404089001

Work Order: S2404089
Collection Date: 3/4/2024
Date Received: 4/3/2024 9:00:00 AM
Sampler:
Matrix: airfilter
COC: 198743

Project: WATCO
Lab ID: S2404089-002
Client Sample ID: P2988716 #80

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m³	03/04/2024 00:00	Field
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	04/09/2024 18:36 MS	IO-3.5
Cadmium	ND	1000		ng/filter	04/09/2024 18:36 MS	IO-3.5
Chromium	ND	1500		ng/filter	04/09/2024 18:36 MS	IO-3.5
Lead	ND	50		ng/filter	04/09/2024 18:36 MS	IO-3.5
Manganese	ND	600		ng/filter	04/09/2024 18:36 MS	IO-3.5
Nickel	ND	1300		ng/filter	04/09/2024 18:36 MS	IO-3.5
Vanadium	ND	2450		ng/filter	04/09/2024 18:36 MS	IO-3.5
Filter Metals Concentration						
Arsenic	ND	2.08		ng/m³	04/12/2024 09:15 JJ	Calculation
Cadmium	ND	41.7		ng/m³	04/12/2024 09:15 JJ	Calculation
Chromium	ND	62.5		ng/m³	04/12/2024 09:15 JJ	Calculation
Lead	ND	2.08		ng/m³	04/12/2024 09:15 JJ	Calculation
Manganese	ND	25		ng/m³	04/12/2024 09:15 JJ	Calculation
Nickel	ND	54.2		ng/m³	04/12/2024 09:15 JJ	Calculation
Vanadium	ND	102		ng/m³	04/12/2024 09:15 JJ	Calculation

Pace Analytical
1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

Sample Analysis Report

CLIENT: WATCO Companies
2926 E 126th St
Chicago, IL 60633

Date Reported: 4/12/2024
Report ID: S2404089001

Work Order: S2404089
Collection Date: 3/7/2024
Date Received: 4/3/2024 9:00:00 AM
Sampler:
Matrix: airfilter
COC: 198743

Project: WATCO
Lab ID: S2404089-003
Client Sample ID: P2988717 #81

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m³	03/07/2024 00:00	Field
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	04/09/2024 18:48 MS	IO-3.5
Cadmium	ND	1000		ng/filter	04/09/2024 18:48 MS	IO-3.5
Chromium	ND	1500		ng/filter	04/09/2024 18:48 MS	IO-3.5
Lead	80	50		ng/filter	04/09/2024 18:48 MS	IO-3.5
Manganese	600	600		ng/filter	04/09/2024 18:48 MS	IO-3.5
Nickel	ND	1300		ng/filter	04/09/2024 18:48 MS	IO-3.5
Vanadium	ND	2450		ng/filter	04/09/2024 18:48 MS	IO-3.5
Filter Metals Concentration						
Arsenic	ND	2.08		ng/m³	04/12/2024 09:15 JJ	Calculation
Cadmium	ND	41.7		ng/m³	04/12/2024 09:15 JJ	Calculation
Chromium	ND	62.5		ng/m³	04/12/2024 09:15 JJ	Calculation
Lead	3.34	2.08		ng/m³	04/12/2024 09:15 JJ	Calculation
Manganese	27	25		ng/m³	04/12/2024 09:15 JJ	Calculation
Nickel	ND	54.2		ng/m³	04/12/2024 09:15 JJ	Calculation
Vanadium	ND	102		ng/m³	04/12/2024 09:15 JJ	Calculation

Pace Analytical
1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

Sample Analysis Report

CLIENT: WATCO Companies
2926 E 126th St
Chicago, IL 60633

Date Reported: 4/12/2024
Report ID: S2404089001

Work Order: S2404089
Collection Date: 3/10/2024
Date Received: 4/3/2024 9:00:00 AM
Sampler:
Matrix: airfilter
COC: 198743

Project: WATCO
Lab ID: S2404089-004
Client Sample ID: P2988718 #82

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m³	03/10/2024 00:00	Field
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	04/09/2024 19:12 MS	IO-3.5
Cadmium	ND	1000		ng/filter	04/09/2024 19:12 MS	IO-3.5
Chromium	ND	1500		ng/filter	04/09/2024 19:12 MS	IO-3.5
Lead	ND	50		ng/filter	04/09/2024 19:12 MS	IO-3.5
Manganese	ND	600		ng/filter	04/09/2024 19:12 MS	IO-3.5
Nickel	ND	1300		ng/filter	04/09/2024 19:12 MS	IO-3.5
Vanadium	ND	2450		ng/filter	04/09/2024 19:12 MS	IO-3.5
Filter Metals Concentration						
Arsenic	ND	2.08		ng/m³	04/12/2024 09:15 JJ	Calculation
Cadmium	ND	41.7		ng/m³	04/12/2024 09:15 JJ	Calculation
Chromium	ND	62.5		ng/m³	04/12/2024 09:15 JJ	Calculation
Lead	ND	2.08		ng/m³	04/12/2024 09:15 JJ	Calculation
Manganese	ND	25		ng/m³	04/12/2024 09:15 JJ	Calculation
Nickel	ND	54.2		ng/m³	04/12/2024 09:15 JJ	Calculation
Vanadium	ND	102		ng/m³	04/12/2024 09:15 JJ	Calculation

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Sample Analysis Report

CLIENT: WATCO Companies
2926 E 126th St
Chicago, IL 60633

Date Reported: 4/12/2024
Report ID: S2404089001

Work Order: S2404089
Collection Date: 3/13/2024
Date Received: 4/3/2024 9:00:00 AM
Sampler:
Matrix: airfilter
COC: 198743

Project: WATCO
Lab ID: S2404089-005
Client Sample ID: P2988719 #83

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m³	03/13/2024 00:00	Field
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	04/09/2024 19:18 MS	IO-3.5
Cadmium	ND	1000		ng/filter	04/09/2024 19:18 MS	IO-3.5
Chromium	ND	1500		ng/filter	04/09/2024 19:18 MS	IO-3.5
Lead	100	50		ng/filter	04/09/2024 19:18 MS	IO-3.5
Manganese	700	600		ng/filter	04/09/2024 19:18 MS	IO-3.5
Nickel	ND	1300		ng/filter	04/09/2024 19:18 MS	IO-3.5
Vanadium	ND	2450		ng/filter	04/09/2024 19:18 MS	IO-3.5
Filter Metals Concentration						
Arsenic	ND	2.08		ng/m³	04/12/2024 09:15 JJ	Calculation
Cadmium	ND	41.7		ng/m³	04/12/2024 09:15 JJ	Calculation
Chromium	ND	62.5		ng/m³	04/12/2024 09:15 JJ	Calculation
Lead	4.29	2.08		ng/m³	04/12/2024 09:15 JJ	Calculation
Manganese	28	25		ng/m³	04/12/2024 09:15 JJ	Calculation
Nickel	ND	54.2		ng/m³	04/12/2024 09:15 JJ	Calculation
Vanadium	ND	102		ng/m³	04/12/2024 09:15 JJ	Calculation

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Sample Analysis Report

CLIENT: WATCO Companies
2926 E 126th St
Chicago, IL 60633

Date Reported: 4/12/2024
Report ID: S2404089001

Work Order: S2404089
Collection Date: 3/15/2024
Date Received: 4/3/2024 9:00:00 AM
Sampler:
Matrix: airfilter
COC: 198743

Project: WATCO
Lab ID: S2404089-006
Client Sample ID: P2988720 #84
Comment: Field Blank

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	04/09/2024 19:24 MS	IO-3.5
Cadmium	ND	1000		ng/filter	04/09/2024 19:24 MS	IO-3.5
Chromium	ND	1500		ng/filter	04/09/2024 19:24 MS	IO-3.5
Lead	ND	50		ng/filter	04/09/2024 19:24 MS	IO-3.5
Manganese	ND	600		ng/filter	04/09/2024 19:24 MS	IO-3.5
Nickel	ND	1300		ng/filter	04/09/2024 19:24 MS	IO-3.5
Vanadium	ND	2450		ng/filter	04/09/2024 19:24 MS	IO-3.5

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Sample Analysis Report

CLIENT: WATCO Companies
2926 E 126th St
Chicago, IL 60633

Date Reported: 4/12/2024
Report ID: S2404089001

Work Order: S2404089
Collection Date: 3/16/2024
Date Received: 4/3/2024 9:00:00 AM
Sampler:
Matrix: airfilter
COC: 198743

Project: WATCO
Lab ID: S2404089-007
Client Sample ID: P2988721 #85

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m³	03/16/2024 00:00	Field
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	04/09/2024 19:30 MS	IO-3.5
Cadmium	ND	1000		ng/filter	04/09/2024 19:30 MS	IO-3.5
Chromium	ND	1500		ng/filter	04/09/2024 19:30 MS	IO-3.5
Lead	ND	50		ng/filter	04/09/2024 19:30 MS	IO-3.5
Manganese	1200	600		ng/filter	04/09/2024 19:30 MS	IO-3.5
Nickel	ND	1300		ng/filter	04/09/2024 19:30 MS	IO-3.5
Vanadium	ND	2450		ng/filter	04/09/2024 19:30 MS	IO-3.5
Filter Metals Concentration						
Arsenic	ND	2.08		ng/m³	04/12/2024 09:15 JJ	Calculation
Cadmium	ND	41.7		ng/m³	04/12/2024 09:15 JJ	Calculation
Chromium	ND	62.5		ng/m³	04/12/2024 09:15 JJ	Calculation
Lead	ND	2.08		ng/m³	04/12/2024 09:15 JJ	Calculation
Manganese	51	25		ng/m³	04/12/2024 09:15 JJ	Calculation
Nickel	ND	54.2		ng/m³	04/12/2024 09:15 JJ	Calculation
Vanadium	ND	102		ng/m³	04/12/2024 09:15 JJ	Calculation

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Sample Analysis Report

CLIENT: WATCO Companies
2926 E 126th St
Chicago, IL 60633

Date Reported: 4/12/2024
Report ID: S2404089001

Work Order: S2404089
Collection Date: 3/19/2024
Date Received: 4/3/2024 9:00:00 AM
Sampler:
Matrix: airfilter
COC: 198743

Project: WATCO
Lab ID: S2404089-008
Client Sample ID: P2988722 #86

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m³	03/19/2024 00:00	Field
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	04/09/2024 19:36 MS	IO-3.5
Cadmium	ND	1000		ng/filter	04/09/2024 19:36 MS	IO-3.5
Chromium	ND	1500		ng/filter	04/09/2024 19:36 MS	IO-3.5
Lead	ND	50		ng/filter	04/09/2024 19:36 MS	IO-3.5
Manganese	ND	600		ng/filter	04/09/2024 19:36 MS	IO-3.5
Nickel	ND	1300		ng/filter	04/09/2024 19:36 MS	IO-3.5
Vanadium	ND	2450		ng/filter	04/09/2024 19:36 MS	IO-3.5
Filter Metals Concentration						
Arsenic	ND	2.08		ng/m³	04/12/2024 09:15 JJ	Calculation
Cadmium	ND	41.7		ng/m³	04/12/2024 09:15 JJ	Calculation
Chromium	ND	62.5		ng/m³	04/12/2024 09:15 JJ	Calculation
Lead	ND	2.08		ng/m³	04/12/2024 09:15 JJ	Calculation
Manganese	ND	25		ng/m³	04/12/2024 09:15 JJ	Calculation
Nickel	ND	54.2		ng/m³	04/12/2024 09:15 JJ	Calculation
Vanadium	ND	102		ng/m³	04/12/2024 09:15 JJ	Calculation

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1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

Sample Analysis Report

CLIENT: WATCO Companies
2926 E 126th St
Chicago, IL 60633

Date Reported: 4/12/2024
Report ID: S2404089001

Work Order: S2404089
Collection Date: 3/22/2024
Date Received: 4/3/2024 9:00:00 AM
Sampler:
Matrix: airfilter
COC: 198743

Project: WATCO
Lab ID: S2404089-009
Client Sample ID: P2988723 #87

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m^3	03/22/2024 00:00	Field
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	04/09/2024 19:42 MS	IO-3.5
Cadmium	ND	1000		ng/filter	04/09/2024 19:42 MS	IO-3.5
Chromium	ND	1500		ng/filter	04/09/2024 19:42 MS	IO-3.5
Lead	70	50		ng/filter	04/09/2024 19:42 MS	IO-3.5
Manganese	600	600		ng/filter	04/09/2024 19:42 MS	IO-3.5
Nickel	ND	1300		ng/filter	04/09/2024 19:42 MS	IO-3.5
Vanadium	ND	2450		ng/filter	04/09/2024 19:42 MS	IO-3.5
Filter Metals Concentration						
Arsenic	ND	2.08		ng/m^3	04/12/2024 09:15 JJ	Calculation
Cadmium	ND	41.7		ng/m^3	04/12/2024 09:15 JJ	Calculation
Chromium	ND	62.5		ng/m^3	04/12/2024 09:15 JJ	Calculation
Lead	3.03	2.08		ng/m^3	04/12/2024 09:15 JJ	Calculation
Manganese	26	25		ng/m^3	04/12/2024 09:15 JJ	Calculation
Nickel	ND	54.2		ng/m^3	04/12/2024 09:15 JJ	Calculation
Vanadium	ND	102		ng/m^3	04/12/2024 09:15 JJ	Calculation

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1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

Sample Analysis Report

CLIENT: WATCO Companies
2926 E 126th St
Chicago, IL 60633

Date Reported: 4/12/2024
Report ID: S2404089001

Work Order: S2404089
Collection Date: 3/25/2024
Date Received: 4/3/2024 9:00:00 AM
Sampler:
Matrix: airfilter
COC: 198743

Project: WATCO
Lab ID: S2404089-010
Client Sample ID: P2988724 #88

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m³	03/25/2024 00:00	Field
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	04/09/2024 19:48 MS	IO-3.5
Cadmium	ND	1000		ng/filter	04/09/2024 19:48 MS	IO-3.5
Chromium	ND	1500		ng/filter	04/09/2024 19:48 MS	IO-3.5
Lead	ND	50		ng/filter	04/09/2024 19:48 MS	IO-3.5
Manganese	ND	600		ng/filter	04/09/2024 19:48 MS	IO-3.5
Nickel	ND	1300		ng/filter	04/09/2024 19:48 MS	IO-3.5
Vanadium	ND	2450		ng/filter	04/09/2024 19:48 MS	IO-3.5
Filter Metals Concentration						
Arsenic	ND	2.08		ng/m³	04/12/2024 09:15 JJ	Calculation
Cadmium	ND	41.7		ng/m³	04/12/2024 09:15 JJ	Calculation
Chromium	ND	62.5		ng/m³	04/12/2024 09:15 JJ	Calculation
Lead	ND	2.08		ng/m³	04/12/2024 09:15 JJ	Calculation
Manganese	ND	25		ng/m³	04/12/2024 09:15 JJ	Calculation
Nickel	ND	54.2		ng/m³	04/12/2024 09:15 JJ	Calculation
Vanadium	ND	102		ng/m³	04/12/2024 09:15 JJ	Calculation

Pace Analytical
1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

Sample Analysis Report

CLIENT: WATCO Companies
2926 E 126th St
Chicago, IL 60633

Date Reported: 4/12/2024
Report ID: S2404089001

Work Order: S2404089
Collection Date: 3/28/2024
Date Received: 4/3/2024 9:00:00 AM
Sampler:
Matrix: airfilter
COC: 198743

Project: WATCO
Lab ID: S2404089-011
Client Sample ID: P2988725 #89

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m³	03/28/2024 00:00	Field
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	04/09/2024 19:54 MS	IO-3.5
Cadmium	ND	1000		ng/filter	04/09/2024 19:54 MS	IO-3.5
Chromium	ND	1500		ng/filter	04/09/2024 19:54 MS	IO-3.5
Lead	70	50		ng/filter	04/09/2024 19:54 MS	IO-3.5
Manganese	700	600		ng/filter	04/09/2024 19:54 MS	IO-3.5
Nickel	ND	1300		ng/filter	04/09/2024 19:54 MS	IO-3.5
Vanadium	ND	2450		ng/filter	04/09/2024 19:54 MS	IO-3.5
Filter Metals Concentration						
Arsenic	ND	2.08		ng/m³	04/12/2024 09:15 JJ	Calculation
Cadmium	ND	41.7		ng/m³	04/12/2024 09:15 JJ	Calculation
Chromium	ND	62.5		ng/m³	04/12/2024 09:15 JJ	Calculation
Lead	2.80	2.08		ng/m³	04/12/2024 09:15 JJ	Calculation
Manganese	30	25		ng/m³	04/12/2024 09:15 JJ	Calculation
Nickel	ND	54.2		ng/m³	04/12/2024 09:15 JJ	Calculation
Vanadium	ND	102		ng/m³	04/12/2024 09:15 JJ	Calculation

Pace Analytical
1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

Sample Analysis Report

CLIENT: WATCO Companies
2926 E 126th St
Chicago, IL 60633

Date Reported: 4/12/2024
Report ID: S2404089001

Work Order: S2404089
Collection Date: 3/31/2024
Project: WATCO
Date Received: 4/3/2024 9:00:00 AM
Lab ID: S2404089-012
Sampler:
Client Sample ID: P2988726 #90
Matrix: airfilter
COC: 198743

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m³	03/31/2024 00:00	Field
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	04/09/2024 20:00 MS	IO-3.5
Cadmium	ND	1000		ng/filter	04/09/2024 20:00 MS	IO-3.5
Chromium	ND	1500		ng/filter	04/09/2024 20:00 MS	IO-3.5
Lead	ND	50		ng/filter	04/09/2024 20:00 MS	IO-3.5
Manganese	ND	600		ng/filter	04/09/2024 20:00 MS	IO-3.5
Nickel	ND	1300		ng/filter	04/09/2024 20:00 MS	IO-3.5
Vanadium	ND	2450		ng/filter	04/09/2024 20:00 MS	IO-3.5
Filter Metals Concentration						
Arsenic	ND	2.08		ng/m³	04/12/2024 09:15 JJ	Calculation
Cadmium	ND	41.7		ng/m³	04/12/2024 09:15 JJ	Calculation
Chromium	ND	62.5		ng/m³	04/12/2024 09:15 JJ	Calculation
Lead	ND	2.08		ng/m³	04/12/2024 09:15 JJ	Calculation
Manganese	ND	25		ng/m³	04/12/2024 09:15 JJ	Calculation
Nickel	ND	54.2		ng/m³	04/12/2024 09:15 JJ	Calculation
Vanadium	ND	102		ng/m³	04/12/2024 09:15 JJ	Calculation

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1673 Terra Avenue Sheridan, WY 82801 ph: (307) 672-8945

ANALYTICAL QC SUMMARY REPORT

CLIENT: WATCO Companies **Date:** 4/12/2024
Work Order: S2404089 **Report ID:** S2404089001
Project: WATCO

Metals on PM Air Filters by IO-3.5 - ICPMS Sample Type **MBLK** Units: ng/filter

MB-21728 (04/09/24 18:12) RunNo: 219895 PrepDate: 04/09/24 11:31 BatchID: 21728

Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Arsenic	ND	650					
Cadmium	ND	1000					
Chromium	ND	1500					
Lead	ND	100					
Manganese	ND	600					
Nickel	ND	1300					
Vanadium	ND	2450					

Metals on PM Air Filters by IO-3.5 - ICPMS Sample Type **LCS** Units: ng/filter

LCS-21728 (04/09/24 18:18) RunNo: 219895 PrepDate: 04/09/24 11:31 BatchID: 21728

Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Arsenic	20800	650	20000		104	80 - 120	
Cadmium	21000	1000	20000		104	80 - 120	
Chromium	20700	1500	20000		103	80 - 120	
Lead	20400	100	20000		102	80 - 120	
Manganese	21600	600	20000		108	80 - 120	
Nickel	21100	1300	20000		106	80 - 120	
Vanadium	21200	2450	20000		106	80 - 120	

Metals on PM Air Filters by IO-3.5 - ICPMS Sample Type **MS** Units: ng/filter

S2404089-002AS (04/09/24 18:42) RunNo: 219895 PrepDate: 04/09/24 8:00 BatchID: 21728

Analyte	Result	RL	Spike	Ref Samp	%REC	% Rec Limits	Qual
Arsenic	21900	50	22000	ND	99.5	75 - 125	
Cadmium	22000	1000	22000	ND	100	75 - 125	
Chromium	22500	1500	22000	ND	102	75 - 125	
Lead	21800	50	22000	ND	98.8	75 - 125	
Manganese	22700	600	22000	ND	101	75 - 125	
Nickel	22900	1300	22000	ND	104	75 - 125	
Vanadium	22100	2450	22000	ND	101	75 - 125	

Pace Analytical

Pace Analytical Services, LLC

Sheridan, WY and Gillette, WY

- CHAIN OF CUSTODY RECORD -

Page of

All shaded fields must be completed.
This is a legal document: any misrepresentation may be construed as fraud.

198743

Client Name	Project Identification	Sampler (Signature/Attestation of Authenticity)	Telephone #
WATCO	WATCO		

Report Address	Contact Name	Invoice Address	Purchase Order #	Quote #
2926 E 126th St Chicago FL 60633	Steve Caudle Email Steven.caudle@watco.com Phone 773-646-8005			

ANALYSES / PARAMETERS

ITEM	LAB ID (Lab Use Only)	DATE SAMPLED	TIME	SAMPLE IDENTIFICATION	Matrix	# of Containers	REMARKS
1	5240489-001	3-1-24	23:59	P2 988 715		79	
2	-002	3-4-24	23:59	P2 988 716		80	
3	-003	3-7-24	23:59	P2 988 717		81	
4	-004 (05 4/4/24)	3-10-24	23:59	P2 988 718		82	
5	-005 ~~-004~~	3-13-24	23:59	P2 988 719		83	
6	-006	3-15-24	—	P2 988 720		84	Field blank
7	-007	3-16-24	23:59	P2 988 721		85	
8	-008	3-19-24	23:59	P2 988 722		86	
9	-009	3-22-24	23:59	P2 988 723		87	
10	-010	3-25-24	23:59	P2 988 724		88	
11	-011	3-28-24	23:59	P2 988 725		89	
12	-012	3-31-24	23:59	P2 988 726		90	
13							
14							

LAB COMMENTS	Relinquished By (Signature/Printed)	DATE	TIME	Received By (Signature/Printed)	DATE	TIME
				Jaya Burnett Pace	4/3/24	9:00
	Jaweber O'Brien / Pace	4/4/24	13:07	Daniel Sipp	4/4/24	1408

SHIPPING INFO	MATRIX CODES		TURNAROUND TIMES	COMPLIANCE INFORMATION	ADDITIONAL REMARKS
☐ UPS	Water	WT	**Check desired service**	Compliance Monitoring? (Y) N	DC FR
☒ Fed Express	Soil	SL	☐ Standard turnaround	Program (SDWA, NPDES,...)	
☐ US Mail	Solid	SD	☐ **RUSH - 5 Working Days**	PWSID / Permit #	2 Solid ice packs
☐ Hand Carried	Filter	FT	☐ **URGENT** - < 2 Working Days	Chlorinated? Y / N	2 Small ice packs
☐ Other _____	Other	OT	***Rush & Urgent Surcharges will be applied***	Sample Disposal: Lab Client	None Order 2143

Survey Meter # Model 2241-2; SN 182119
pH strip lot # HC333774
Thermometer SN# 27130475

Condition Upon Receipt (Attach to COC)

Sample Receipt

1 Number of ice chests/packages received: OTC ROI? Yes (No)
Note as "OTC" if samples are received over the counter, unpackaged

2 Temperature of cooler/samples. *(If more than 8 coolers, obtain an additional CUR form.)*

Temps Observed (°C):								
Temps Corrected (°C):								

***Acceptable is: 0.1° to 10°C** for Bacteria; and 0.1° to 6°C for most other water parameters. Samples may not have had adequate time to cool following collection. Indicate ROI (Received on Ice) for iced samples received on the same day as sampled, in addition to temperature at receipt.*

Client contact for temperatures outside method criteria must be documented below.

3 Emission rate of samples for radiochemical analyses < 0.5mR/hr?	Yes	No	(N/A)
4 COC Number (If applicable): 198743			
5 Do the number of bottles agree with the COC?	(Yes)	No	N/A
6 Were the samples received intact? *(no broken bottles, leaks, etc.)*	(Yes)	No	N/A
7 Were the sample custody seals intact?	Yes	No	(N/A)
8 Is the COC properly completed, legible, and signed?	(Yes)	(No)	

Is yum P Cassette # in # of bottles area.

Sample Verification, Labeling & Distribution

1 Were all requested analyses understood and appropriate?	(Yes)	No	
2 Did the bottle labels correspond with the COC information?	(Yes)	No	
3 Samples collected in method-prescribed containers?	(Yes)	No	

4 Sample Preservation:

pH at Receipt:	Final pH (if added in lab):	Preservative/Lot#	Date/Time Added:
_____ Total Metals	_____ Total Metals	HNO_3 _____	_____
_____ Diss Metals	_____ Diss Metals	*Filtered and preserved in metals*	*Filtered and preserved in metals*
_____ Nutrient	_____ Nutrient	H_2SO_4 _____	
_____ Cyanide	_____ Cyanide	NaOH _____	
_____ Sulfide	_____ Sulfide	ZnAcet _____	
_____ Phenol	_____ Phenol	H_2SO_4 _____	
_____ SDWA Rads	_____ SDWA Rads	HNO_3 _____	_____

5 VOA vials have <6mm headspace?	Yes	No	(N/A)
6 Were all analyses within holding time at the time of receipt?	(Yes)	No	
7 Have rush or project due dates been checked and accepted?	Yes	No	(N/A)
8 Do samples require subcontracted analyses?	Yes	(No)	

If "Yes", which type of subcontracting is required? **General** **Customer-Specified** **Certified**

Sample Receipt, Verification, Login, Labeling & Distribution completed by *(initials)*: BS
Set ID: 24204089

Discrepancy Documentation ***(use back of sheet for notes on discrepancies)***

Any items listed above with a response of "No" or do not meet specifications must be resolved.

Person Contacted: _____ Method of Contact: __ Phone: _____

Initiated By: _____ Date/Time: _____ __ Email: _____

Problem:

Resolution: