June 28, 2019

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

Re: Watco Terminal and Port Services April 24, 2019 Variance Request

To Whom It May Concern:

Thank you for the opportunity to comment on the April 24, 2019 variance request submitted by Watco Terminal and Port Services ("Watco") for its Chicago Ferro Terminal located at 2926 126th Street, Chicago, IL. Watco seeks a variance from the Chicago Department of Public Health's ("CDPH") Rules and Regulations for the Control of Emissions from the Handling and Storage of Bulk Material Piles, Part D ("Dust Rules").[1] These comments are submitted on behalf of the Southeast Side Coalition to Ban Petcoke ("SSCBP"), a community group fighting for a healthy, thriving neighborhood free of manganese, petroleum coke, and other toxins; the Southeast Environmental Task Force ("SETF"), a community group dedicated to improving the Calumet neighborhood's environment; and the Natural Resources Defense Council ("NRDC"), and its thousands of members and activists in the City of Chicago, including residents of the Southeast Side.

I. Introduction

CDPH should deny Watco's variance request, because Watco has failed to demonstrate that the requested variance from the Dust Rules—for materials that contain less than 2% manganese—will not have an adverse impact on the community and the environment. As we have explained in many previously submitted comment letters, this community is an environmentally overburdened community with levels of

[1] Rules and Regulations for the Control of Emissions from the Handling and Storage of Bulk Material Piles, Part D (2019), https://www.chicago.gov/content/dam/city/depts/cdph/InspectionsandPermitting/Control_EmissionsfromHandling&StoringBulkMaterials_January2019.pdf.

exposures to air toxics and other respiratory hazards that are among the highest in the State of Illinois.[2]

We have consistently called for a ban of manganese because the City of Chicago should not allow the community to be subjected to neurotoxic manganese any longer. The City issued a ban on new manganese facilities and prohibited the expansion of existing manganese facilities.[3] Although it has not yet issued a ban on existing manganese facilities, CDPH recognized the need for more regulation of the handling and storage of neurotoxic manganese when it amended the Dust Rules on January 25, 2019. After accepting comments on the scope of the rules, CDPH expressly included all manganese, regardless of the concentration of manganese, in the Dust Rules' definition of Manganese-Bearing Bulk Material ("MBM").[4] CDPH indicated that a company could apply for a variance for materials with lower manganese content, but stated that a company seeking such a variance must "submit supporting documentation that persuasively demonstrates why there should be an exemption;" indeed, only by requiring this documentation could "CDPH and the public can be assured that such an exemption will not create a public nuisance or adversely impact the surrounding area..."[5]

In support of its variance request, Watco asserts: (1) it will no longer handle manganese with concentrations exceeding 2%; (2) it has taken steps to control manganese dust, (3) Federal Reference Monitor ("FRM" or "metals monitoring") data is below the 0.3 ug/m^3 MRL, and (4) the application of the Dust Rules to materials containing less than 2% of manganese "imposes an arbitrary and unreasonable hardship."[6] However, Watco's arguments are undermined by its poor compliance track record, its inaccurate description of the impacted community, and its unsubstantiated claim of hardship. Watco has failed to demonstrate that an exemption will not adversely

[2] See, e.g., NRDC SETF SSCBP Comments on Watco Variance Request 10.16.17 (citing to USEPA Website, "Environmental Issues in Southeast Chicago," https://www.epa.gov/il/environmental-issues-southeast-chicago).
[3] Municipal Code of Chicago § 17-9-0117-D ("Manganese Ordinance").
[4] Manganese Bearing Bulk Material is defined as "any ferrous manganese, manganese silicate, manganese alloy, manganese ore, or any other material form which manganese is extracted or emitted or otherwise becomes airborne." Rules and Regulations for the Control of Emissions from the Handling and Storage of Bulk Material Piles, Part A(2)(14) (2019).
[5] CDPH Official Response to Public Comments on Proposed Amendment to Rules, 4 (January 25, 2019), available at https://www.chicago.gov/content/dam/city/depts/cdph/InspectionsandPermitting/CDPH_Resp_Com_BulkMaterialAmendments_January2019.pdf.
[6] Variance Request from Watco Terminal and Port Services ("Watco 2019 Variance Request,"), 7-8 (April 24, 2019), https://www.chicago.gov/content/dam/city/depts/cdph/InspectionsandPermitting/VarReq_WatcoTerminalandPortServices_4242019.pdf

impact the surrounding area and the community should not be subject to any manganese dust emissions.

II. CDPH Should Deny Watco's Request to Avoid the Dust Rules for Materials with Less than 2% Manganese Because Watco Cannot Meet the Standard for Obtaining a Variance.

A. Watco has a history of dust emission exceedances and poor housekeeping

When CDPH evaluates Watco's request for a variance, it should not do so in a vacuum or rely merely on empty commitments, but should consider this request in the context of Watco's failure to manage manganese dust emissions to date, at times contradicting its own claims of robust control.

The Chicago Ferro Terminal was problematic even before Watco bought it from Kinder Morgan. Indeed, in May 2017, CDPH denied Kinder Morgan's request for a variance from the Particulate Matter (PM) monitor requirements of the Dust Rules, because the company was unable to demonstrate that it was able to suppress fugitive dust.[7]

Conditions at the Chicago Ferro Terminal have continued to pose a public health threat under Watco's ownership. Watco has a record of failing to implement its best management practices ("BMPs"). As CDPH explained in December 2017,

> [n]otwithstanding the expenditures Watco made, and the procedures it has outlined in its BMPs, Watco has not demonstrated that its dust control methods are effective to prevent fugitive dust from leaving the site. In fact, recent inspections found that several of the BMPs were not being implemented.[8]

In particular, CDPH referenced a September 1, 2017 inspection, conducted in conjunction with the United States Environmental Protection Agency ("USEPA"), during which the inspectors observed serious concerns. Fugitive dust emissions were found in multiple places at the Watco facility; Building F's operations were particularly egregious with heavy particulate and fugitive dust emissions, a particulate dust plume of 100 percent from a loaded truck, and a dust plume spanning the entire building.[9] Of particular relevance here, the inspection report explains that the facility manager told the CDPH inspector that Watco staff were not operating the dust collection system

[7] CDPH Determination Letter for Variance Request for Kinder Morgan, 3 (May 3, 2017).
[8] CDPH Determination Letter, 7.
[9] *Id. at 7-8* (referencing the photos attached to the inspection report).

properly. Even though Watco assured CDPH that staff were retrained, the next week inspectors continued to observe problematic dust emissions at Building F.[10]

Despite local and federal attention on these problems, Watco facility's dust emission problems have continued. After its PM monitor variance request was denied in 2017, Watco installed a PM monitor and then was required by USEPA—pursuant to a Clean Air Act Section 114 request—to install a Federal Reference Monitor ("FRM or metals") monitor, USEPA and CDPH continued to identify compliance issues at Watco. On December 12, 2018, CDPH cited Watco with four violations of Dust Rules.[11] On December 18, 2018, USEPA issued a Notice of Violation ("NOV") to Watco for its violations of the Illinois State Implementation Plan ("SIP"); the NOV was based on the first six weeks of FRM monitoring showing an average concentration of 0.416 ug/m^3, which substantially exceeds the 0.3 ug/m^3 health-based standard screening level used by USEPA.

In the aftermath of the NOV from USEPA, CDPH citations, and the issuance of the amended Dust Rules in January 2019, Watco announced in February 2019 that it would no longer handle manganese at its Chicago Ferro Terminal. However, Watco has not provided publicly a timeline for its plan. In its variance request, it indicates that at the time of the request, manganese was being moved inside of Building F, which Watco claims meets the requirements of the amended Dust Rules.[12]

Importantly, problems continue and manganese remains at the site and in the surrounding area. As recently as February 15, 2019, CDPH identified gaps and holes in the walls of Building F.[13] Although its manganese dust emissions have dipped below the 0.3 ug/m^3 MRL, there were several one-day spikes that exceeded the 0.3 ug/m^3 MRL as recently as in April 2019.[14] In addition, USEPA is currently evaluating soil contamination in the community surrounding the Watco facility.

Watco has announced that it will no longer handle manganese and its throughput report for the first quarter of 2019 indicates that it accepted 0 tons of manganese in March 2019. Watco did not report its pig iron throughput or storage, ostensibly employing the 1% manganese content threshold from the throughput reporting requirement.[15] Because Watco did not need to report its pig iron throughput or storage tonnage, it is unclear how much pig iron is at the site. Still, the Q1 2019

[10] *Id. at 8.*

[11] CDPH Citations for Violations of Dust Rules (Exhibit A) (citing Watco for failing to take reasonable precautions to minimize particulate matter/dust, failing to remove spilled material at the end of each work shift, failure to clean leaked material within one hour, and failure to pave internal road used for moving material).

[12] Watco 2019 Variance Request, 1.

[13] Watco 2019 Variance Request, 4; see also CDPH February 15, 2019 Inspection Report (Exhibit B).

[14] EPA Website: Watco Air Monitor Data, available at https://www.epa.gov/il/watco-terminal-and-port-services#data.

[15] Watco Q1 2019 Manganese Throughput Reports (Exhibit C).

throughput report also indicates that Watco is storing as much as 35,000 tons of manganese at the facility.[16]

In light of these facts, CDPH should be wary of promises by Watco to minimize adverse impacts from remaining sources of manganese dust emissions.

B. Watco has not met the standard for issuing a variance

Watco has not met the standard for variance requests set forth in the Dust Rules. First, it offers an inaccurate description of the population potentially affected by the storage of manganese-bearing material. Second, Watco also claims that it has measures in place to prevent adverse impacts, but, as discussed above, its past record should call these claims into question. Third, its claim that the regulation imposes an arbitrary and unreasonable hardship lacks support.

1. Standard

Section 10.0(2) lays out the standard for variance request, including in relevant part:

- A description of the process or activity for which the variance is requested including pertinent data on location, size and the population and the geographic area affected by, or potentially affected by, the process or activity;
- The quantity and types of materials used in the process or activity in connection with which the variance is requested, as appropriate;
- A demonstration that the issuance of the variance will not create a public nuisance or adversely impact the surrounding area, surrounding environment, or surrounding property uses; and
- A statement explaining:
    - Why compliance with the regulations imposes an arbitrary or unreasonable hardship;
    - Why compliance cannot be accomplished during the required timeframe due to events beyond the Facility Owner or Operator's control such as permitting delays or natural disasters; or
    - Why the proposed alternative measure is preferable.[17]

[16] *Id.*
[17] CDPH Dust Rules, § 10.0(2) (2019).

2. Process Description, the Community and the Potential Health Impacts

a. Population

Much like Watco did in its 2017 variance request,[18] its current variance request does not adequately describe the impacted community.[19] Section 10.0(2)(b) requires the variance request to set forth "pertinent data… on the population and geographic area affected by, or potentially affected by, the process or activity." Watco acknowledges that the Avalon Trails neighborhood is located within 300 feet of the terminal; Watco then asserts that because Avalon Trails is one of six Hegewisch communities, it can take the population of Hegewisch and divide it by six to conclude that the impacted population is 1,500.[20] This assertion is flawed for several reasons. First, it is superficial and not logical to assume that the population is divided equally between six areas rather than doing more research on the impacted community. Watco ignores the fact that in response to its 2017 variance request seeking to avoid the installation of PM monitors, CDPH noted,

> [m]ore than 3,700 residents live within a one-mile radius of Watco's facility. Furthermore, densely populated residential streets and youth baseball fields are located directly to the south of the facility on the other side of 126th Street.[21]

Watco ignores the baseball fields and public parks; users of the park will also be exposed to the manganese dust emissions.

Second, as we noted in our comments on Watco's 2017 Variance Request,

> [m]ore than 50% of the people who live within this one-mile radius are Hispanic (48.41%) or African-American (2.59%). U.S. EPA's ECHO database also indicates a total of 1,385 households in this one mile radius, with a total population of 962 children 17 years and younger.[22]

This is an environmental justice community. As we have explained in our previous comments, Watco's population description ignores a critical public health consideration: the likely sensitivity of this population to this public health threat--either due to age or other physical factors or sociodemographic status.[23] The fact that this is an environmentally overburdened community should be considered when evaluating the

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[18] Watco Request for Variance from Section 3.0(4), 3 (July 31, 2017), available at https://www.chicago.gov/content/dam/city/depts/cdph/environmental_health_and_food/VarReqfromWatcoTransloadingLLC_2926E126thSt.pdf.

[19] See NRDC SETF SSCBP Comments on Watco Variance Request, 9-10 (October 10, 2017).

[20] Watco 2019 Variance Request, 2.

[21] CDPH Determination Letter Addressing Watco's Variance Request, 7 (December 20, 2017).

[22] NRDC et al Comments on Watco Variance Request, 10. (October 10, 2017).

[23] *Id.* at 9.

appropriateness of allowing Watco to add to the community's environmental burden by avoiding the requirements of the amended Dust Rules.

Watco thus falls short in describing "the population and geographic area affected by, or potentially affected by, the process or activity" at issue in the variance request. This is particularly concerning considering that CDPH's response to Watco's 2017 Variance Request made clear how it evaluates the impacted community in question.

b. Manganese

We incorporate by reference our prior comments on the threats to public health from chronic and acute exposures to manganese dust,[24] and note that more recent studies and reports provide further support that manganese is detrimental to health, particularly in women and children.[25] As we have explained before, "manganese is a potent neurotoxin that at higher exposures results in Parkinson-like symptoms and at lower exposures more subtle negative impacts to motor coordination and cognitive functions."[26] As USEPA explained recently, in its memorandum supporting the time-critical action to undertake soil excavation near the S.H. Bell facility, "exposure to high levels of manganese in the air can cause damage to the brain, lung irritation and reproductive effects."[27]

According to the Agency for Toxic Substances and Disease Research's Toxicological Profile for Manganese, "[r]eports of human exposure at acute and intermediate durations (*i.e.*, 15–364 days) indicate adverse respiratory and neurological effects," though the reports consist of anecdotal case studies and lack quantitative

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[24] Comments of NRDC, SETF, and SSCBP on S.H. Bell's December 2016 Variance Request, 4-5, 20 (January 11, 2017), https://www.cityofchicago.org/content/dam/city/depts/cdph/environmental_health_and_food/PubCom_NatlNursesUnitedIl_Com_SHBellVarReq_1-11-17.pdf.

[25] See, e.g., Lee, et al., "Growth parameters at birth mediate the relationship between prenatal manganese exposure and cognitive test scores among a cohort of 2- to 3-year old Bangladeshi Children," International Journal of Epidemiology, 1169-1179 (August 2018), abstract available at https://www.ncbi.nlm.nih.gov/pubmed/29733356; Rodrigues, et al., "Airborne manganese exposure and neurobehavior in school-aged children living near a ferro-manganese alloy plant," 78 Environmental Research 66-77 (November 2018), https://www.sciencedirect.com/science/article/pii/S0013935118303694; Haynes, et al, "Impact of air manganese on child neurodevelopment in East Liverpool, Ohio," Neurotoxicology, 94-102 (January 2018), abstract available at https://www.ncbi.nlm.nih.gov/pubmed/28888663; see also Carvalho, et al., "Elevated airborne manganese and low executive function in school-aged children in Brazil," 45 Neurotoxicology 301-308 (2014), https://www.sciencedirect.com/science/article/pii/S0013935118303694.

[26] *Id.*

[27] USEPA Region 5, "Action Memorandum: Request for Approval and Funding for a Time-Critical Removal Action at the S.H. Bell Site, Chicago, Cook County, IL," 5-6 (May 24, 2019) (Exhibit D).

exposure values needed for derivation of an acute screening level.[28] The toxicological profile also discusses animal studies in which short-term exposures to elevated manganese levels resulted in measurable neurological outcomes, *e.g.*, "a spectrum of exposure-related changes in biochemical markers of neurotoxicity in various regions of the exposed monkeys."[29]

Thus, as we have explained before, CDPH should be concerned with both annual and longer-term exposure to elevated manganese, and shorter-term daily and monthly exposures typical of the varying activity levels at bulk material handlers in Chicago. As discussed below, Watco has had spikes in its manganese dust emissions that could have adverse impacts on the surrounding community.

c. Minimization of Adverse Impacts

Section 10.02(d) of the Dust Rules requires that entities seeking a variance demonstrate that the issuance of the variance "will not create a public nuisance or adversely impact the surrounding area, environment, or property uses."[30] As discussed above, more than 3,700 residents live within a one-mile radius of Watco. In addition to the nearby densely populated residential area, two baseball fields sit in close proximity to the Watco facility. Watco argues that there are minimal adverse impacts from its handling of manganese bearing material with less than 2% manganese, because (1) it is phasing out its handling of manganese bearing materials with more than 2% of manganese, and (2) its manganese bearing materials with less than 2% of manganese are not contributing to manganese fugitive dust emissions. These arguments are inadequate.

i. <u>Phase-out of manganese handling</u>

Watco's decision to phase out handling manganese is an important recognition of the need to do more to eliminate public exposure to manganese—but it should not dictate the outcome of the request for the variance for manganese bearing material with less than 2% of manganese. First, although Watco made the announcement in February 2019, it has not indicated publicly when it will stop receiving any manganese and when it will remove all the existing manganese at the facility; Watco is not under any legally enforceable obligation to stop handling such material.[31] Thus, the community has no reassurances that Watco will definitely reduce the amount of these higher content materials that it is handling and that the adverse impacts of its operations will lessen. Second, the manganese stored at the site in the past may still cause significant impacts moving forward; it is possible that past outdoor handling of manganese has left

[28] *Id. (citing* ATSDR Toxicological Profile for Manganese, September 2012, at 20, available at https://www.atsdr.cdc.gov/toxprofiles/tp151.pdf).
[29] ATSDR Toxicological Profile for Manganese, at 21.
[30] Dust Rules, § 10.02(d).
[31] See Exhibit C. Watco's Q1 2019 throughput report indicates that it received zero tons of manganese in March, however, it still maintains as much as 35,000 tons of manganese at the site.

residual manganese on the grounds of the facility that may be picked up by wind and blown into the community.

As recently as April 2019, Watco had four days—April 3, April 9, April 12, and April 15[32]—where in its manganese dust emissions exceeded the Manganese Limit ("ML") established in the Dust Rules.[33] The table below is an excerpt from Watco's Compliance Tracker report;[34] it shows that on each of the days with emissions above the ML, Watco was loading manganese onto trucks. These spikes are particularly notable considering that it recorded 0 tons of manganese received during that period. Until all of the manganese is gone from the facility, it is possible that Watco will continue to have exceedances of the dust rules.

Sample Date	Manganese (Mn) Result ug/m^3	Exceedance (Y/N)	Activity Description	Wind Direction (avg)	Avg Wind Speed (mph)
4.3.19	.706	yes	Loaded 19 manganese bulk truck loads; loaded 33 other bulk loads; filled 25 sacks of manganese in package department; no rail	236.11 WSW	7.22 mph
4.9.19	.395	yes	Loaded 10 manganese bulk truck loads; loaded 31 other bulk loads; filled 11 sacks of manganese in pacakge department; no rail	150.85 ESE	7.96 mph
4.12.19	.462	yes	Loaded 9 manganese bulk truck loads; loaded 32 other bulk loads; filled 11 sacks of manganese in package department; no rail	235.82 WSW	14.94 mph
4.15.2019	.621	yes	Loaded 9 manganese bulk truck loads; loaded 37 other bulk loads; filled 14 sacks of manganese in package department; no rail	245.98 WSW	7.89 mph

Moreover, manganese dust emissions have been emitted from the Watco facility for years, likely at far higher levels than have occurred since monitoring began (given the additional controls that Watco put in place before commencing monitoring), and have likely contaminated residential properties and public parks. Indeed, USEPA is currently sampling soil in the surrounding area to determine whether manganese concentrations present in the soil require remediation. The likelihood of soil

[32] Letter from Shonta' Moore, Corporate Environmental Manager, Watco Companies to USEPA Compliance Tracker, Air Enforcement Branch (April 20, 2019) (Exhibit E).
[33] Section 2.0(16) of the Dust Rules defines ML as "the concentration of manganese equal to or greater than 0.30 micrograms per cubic meter as averaged over a rolling three-month period." Dust Rules, supra.
[34] Exhibit E at 4.

contamination in the surrounding area—which may well be attributable to Watco's operations—also should weigh in favor of requiring Watco to minimize any and all future manganese emissions, including those from relatively low-content manganese materials.

Inspections of the facility over several years have shown continued problems with implementation of the best management practices. Most recently, and as mentioned in Watco's variance request, a February 15, 2019 inspection revealed "some small holes and gaps" in the walls of Building F.[35] Although Watco notes that it has taken steps since February 15 to fill in holes and gaps, it is unclear whether CDPH has revisited the facility to confirm or otherwise confirmed that the problems have been fixed. Unless CDPH has confirmed the needed repairs, Watco's explanation sounds all too familiar. It previously indicated steps it had taken to reduce particulate matter emissions, but when inspectors returned they found that the problem remained. Until CDPH returns to the Watco facility to confirm that the holes and gaps have been filled and checks on other Dust Rule compliance issues, it should not rely on these statements.

ii. Pig Iron and other manganese bearing materials with less than 2% manganese

Inadequate description of quantity

CDPH should view with caution Watco's arguments suggesting that dust emissions from pig iron should not be a concern under the Dust Rules. As a preliminary matter, Watco's description of the materials and quantities being stored outside is confusing. Watco states,

> [a]t 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.[36]

Watco does not indicate the quantity of pig iron being stored, although it states that 7,000 tons of iron ore slag represents 15% of the total tonnage being stored outside and pig iron represents 85% of the total tonnage.[37] If these percentages and the iron ore slag tonnage is correct, then the outdoor storage of pig iron may be approximately 39,666 tons. But, in another portion of the variance

[35] Watco 2019 Variance Request, 4.
[36] Watco 2019 Variance Request, 3.
[37] *Id.*

request, Watco indicates that the total outdoor capacity is 161,731 tons; Watco does not indicate if its outdoor storage is at full capacity and does not explain its plans.[38] Thus, the company leaves open the possibility that Watco could greatly increase its pig iron handling, thereby increasing its manganese dust potential beyond pig iron's current contribution to monitored amounts.

More confusion is created by Watco's description of the iron ore. First, Watco provides the following:

> 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.[39]

As an initial and pressing matter, CDPH should investigate Watco's iron ore slag storage. It is unclear from this description if Watco is storing a waste on site, which explains why the amount has been constant, or whether this is a product that it handles and sends to end users. Even if Watco is handling rather than storing the iron ore slag, other questions emerge because Watco later seems to refer to the same material as iron ore fines.[40] The term "fines" raises concern that the iron ore on site has significant dust potential. Watco must clarify what material it is storing and the respective percentage of manganese for each material. Then, CDPH should consider the likelihood of each material to create dust emissions or cause harm to the surrounding community.

Dust emissions remain a concern

Watco also argues that pig iron's natural densities minimize its potential to create dust. This is a familiar argument and one that failed before. In the context of evaluating Kinder Morgan's 2014 variance request, CDPH considered the pig iron stored at this same site and stated, "it is commonly understood that pig iron has the potential to produce dust."[41] Kinder Morgan acknowledged that fugitive dust from pig iron can be created when the product is physically handled.[42] It is our understanding that such dust occurs because pig iron is a relatively brittle substance, and so that physical knocking of chunks of pig iron against each other causes fines that can become airborne. Watco has not recognized let alone attempted to characterize this dust potential from pig iron, and therefore has not met its burden. This physical potential for dust, combined with Watco's outdoor storage potential and outdoor handling methods (along with past poor implementation of controls), indicates that manganese dust from pig iron storage and handling has the potential to be significant.

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[38] *Id.* at 4. Note that Watco's throughput reports also do not indicate how much pig iron is being stored at the facility.
[39] Watco 2019 Variance Request, 4.
[40] *Id. at 4.*
[41] CDPH Determination Letter, Kinder Morgan Variance, 10 (May 3, 2017) (quoting Kinder Morgan Additional Information, 6 (March 2, 2015)).
[42] *Id.* (quoting Kinder Morgan Variance Request, 12 (June 11, 2014)).

Watco also suggests that dust emissions are minimized by the fact that its outdoor pig iron piles are smaller than allowed under the Dust Rules;[43] it says that they are walled on three sides and "only" go three feet above the wall. Although keeping pile heights small is a useful tool in reducing fugitive dust generally, CDPH has already determined that it is not an adequate measure to control fugitive emissions from MBM, due to the risks associated with this neurotoxin. Further, as noted above, pig iron is very brittle and such storage in piles, with significant amounts of exposed material moved around by construction vehicles, may well contribute to it breaking apart and creating manganese dust. CDPH should reject the claim that pig iron does not create dust and does not pose a concern.

d. Arbitrary and Unreasonable Hardship

Watco has not adequately demonstrated hardship, but instead, relies almost exclusively on an assertion that recent monitoring levels fall below the ML established in the Dust Rules.[44] Watco claims that the application of the Dust Rules to its manganese-bearing materials with less than 2% of manganese "imposes an arbitrary and unreasonable hardship because the Terminal has already demonstrated compliance with the ML using the existing, enhanced dust control measures."[45] Watco also states that "[f]ully enclosing the Terminal operation would require a very large capital investment estimated at many millions of dollars."[46]

While Section 10.0(2)(e) of the Dust Rules does not lay out additional guidance on what constitutes an arbitrary and unreasonable hardship, Section 10.03(b) specifies that the Commissioner may deny a variance request if it is incomplete.[47] Here, Watco does not provide adequate information to support its assertions. The ML is not the only measure of compliance with the Dust Rules. The amended Dust Rules presume that manganese dust emissions *above* the 0.3 ug/m^3 MRL constitute a public nuisance, but they do not preclude a determination that manganese dust emissions *below* the 0.3 ug/m^3 MRL constitute a nuisance. And, although there has been a downward trend in manganese dust emissions, as discussed above, the data showed spikes as recently as April 2019. As discussed above, there is evidence in the health literature that levels below the MRL are of significant concern to community health, and thus indicative of a nuisance.[48]

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[43] Watco is referencing the height limit for outdoor bulk material storage for materials other than coke or manganese. See Dust Rules, supra at § 7.0(2).
[44] Dust Rules, § 2.0(16), supra.
[45] Watco 2019 Variance Request, 7.
[46] *Id.*
[47] Dust Rules, supra at Section 10.0(3).
[48] Haynes E. N., et al. 2017. *Impact of Air Manganese on Child Neurodevelopment in East Liverpool, Ohio.* 26 June 2019. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5809274/>

Moreover, even before CDPH amended the Dust Rules to add the ML, it contemplated that fugitive dust emissions could cause a nuisance or adversely impact the community. The addition of the ML to the Dust Rules is designed to reinforce and supplement the existing controls, not supplant them. Past air monitoring data and recorded violations of the Dust Rules make evident that fugitive dust emissions have left the Watco facility and likely caused adverse impacts or a nuisance; it is likely that USEPA's soil sampling will demonstrate that surrounding soils are also contaminated with manganese. As USEPA explained in the context of soil contamination near S.H. Bell's facility, the presence of high levels of manganese in soil pose a risk to the community as the contamination may migrate through walking across properties and tracking it, winds blowing the material, runoff from rains and more.[49]

On the issue of cost, Watco does not provide any detail or support for its claim that storing all manganese bearing materials inside will cost many millions of dollars. Watco also fails entirely to acknowledge the substantial financial resources of the company as a whole.

III. Conclusion

CDPH must deny the variance request because Watco has not and cannot meet the variance standard for escaping the amended Dust Rule requirements for manganese bearing materials. The Watco facility's history of compliance problems and current site conditions undercut its claims that it will prevent an adverse impact to the community. There is no certainty or legal obligation around Watco's plans to eliminate all high content manganese at the site. Moreover, Watco has repeatedly shown an inability to implement the required fugitive dust prevention measures—as indicated by CDPH's February 15, 2019 inspection report and the spikes in manganese dust emissions in April 2019. The current investigation into potential off-site soil contamination may also reveal a continued threat to the community.

The variance request also fails to show that the application of the Dust Rules to manganese bearing materials with less than 2% of manganese will impose an arbitrary and unreasonable hardship; Watco has provided no support for its assertions about the cost of compliance.

Variances should not be given lightly. Watco has not provided the needed information to support its variance request. Watco has not assured the public that an exemption will not adversely impact the surrounding area and the community should not be subject to any manganese dust emissions.

[49] Exhibit D at 7.

Thank you for your consideration,

/s/ Nancy C. Loeb and Debbie Chizewer
On behalf of the Southeast Side Coalition to Ban Petcoke
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/s/ Meleah Geerstma
Meleah Geerstma
Senior Attorney
Natural Resources Defense Council

ADMINISTRATIVE NOTICE OF ORDINANCE VIOLATION

In the City of Chicago Department of Administrative Hearings
City of Chicago, a Municipal Corporation, Petitioner, vs.

Respondent *if Chicago Business, use name on license*	Last Name, First Name	MI
WATCO COMPANIES		

Resp. Address No.	Dir.	Street Name	ST Suffix	Apt./Ste.
2926	E	126TH PL		

City	State	ZIP
CHICAGO	(•) IL ( ) Other:	60617

Person Served *if other than the respondent*	Last Name, First Name	MI
CAUDLE	STEVE	

Phone	Acct. No. *or* DREV No. *on business license*
7736468010	

Identification	DLN State	D.O.B. (M/D/Y)
( ) DLN/ID ( ) Other	( ) IL ( ) Other:	/ /

Height	Weight	Sex	Race	Eyes	Hair	Service Request Number
/						

Officer, Investigator, Inspector, and/or Complainant on oath states that the Respondent did then and there violate the following section(s) of the Municipal Code of Chicago:

E0000342761 5

COUNT		OTHER: TITLE CHA.SEC.	RULE
	DUMPING ON REAL ESTATE WITHOUT A PERMIT 7-28-440	2 11-4-1703(a)(16)	
	OPERATING A FACILITY WITHOUT A PERMIT ( ) 11-4-030	Offense (if other): VIOLATION OF BULK MATERIAL RULE	
1	HANDLING OF MATERIAL SUSCEPTIBLE TO BECOMING WINDBORNE ( ) 11-4-760 (a)		
	TREATMENT AND DISPOSAL OF SOLID OR LIQUID WASTE 11-4-1500	COUNT OTHER: TITLE CHA.SEC. – –	RULE
	SANDBLASTING, GRINDING, CHEMICAL WASHING VIOLATION ( ) 11-4-2190	Offense (if other):	
	RECYCLING FACILITY PERMIT 11-4-2520		
	CONSTRUCTION SITE CLEANLINESS ( ) 13-32-125(2)		

You Must Describe Actions for Each Count below:

Count 1 In That: RSP. FAILED TO TAKE REASONABLE PRECAUTIONS TO MINIMIZE PARTICULATE MATTER/DUST

Count 2 In That: RSP. FAILED TO REMOVE SPILLED MATERIAL BY THE END OF EACH WORK SHIFT.

Violation Location Nos.	Dir.	Street Name *in the City of Chicago, County of Cook*	ST Suffix
2926.	E	126TH PL	

Vio. Date: Mo/Day	Year	Time of Violation	Notice Date: Mo/Day *if different than Vio. Date*	Year of Notice
12 12	2018	03 : 10 ( ) AM (•) PM	12 13	2018

Complainant's Name *if not issuing officer, investigator, or inspector*

Public Health (Environment) Version 10-24-15

Unit	Star / Badge	Signature of issuing officer, investigator or inspector
P&I	82	X

Administrative Hearing Appearance

IMPORTANT: You must appear for a mandatory hearing on:

Date: Mo/Day	Year	Time	at:	Room No.
02 07	2019	01 : 00 ( ) AM (•) PM	(X) 400 W. Superior	112

FAILURE TO APPEAR may result in the imposition of a fine not to exceed the maximum penalties for each violation as specified in the Municipal Code of Chicago plus costs, restitution, and fees. Failure to comply with the administrative law judge's order may result in the issuance of additional sanctions.

I acknowledge receipt of this notice.
Signature of Respondent or Person Served: X

E

Comments

DEPARTMENT OF ADMINISTRATIVE HEARING COPY

ADMINISTRATIVE NOTICE OF ORDINANCE VIOLATION

In the City of Chicago Department of Administrative Hearings
City of Chicago, a Municipal Corporation, Petitioner, vs.

Respondent *if Chicago Business, use name on license*: WATCO COMPANIES | Last Name, First Name | MI

Resp. Address No.: 2926 | Dir.: E | Street Name: 126TH PL | ST Suffix | Apt./Ste.

City: CHICAGO | State: (•) IL ( ) Other: | ZIP: 60617

Person Served *if other than the respondent*: CAUDLE STEVE | Last Name, First Name | MI

Phone: 7736468010 | Acct. No. *or* DREV No. *on business license*

Identification: ( ) DLN/ID ( ) Other | DLN State: ( ) IL ( ) Other: | D.O.B. (M/D/Y): / /

Height	Weight	Sex	Race	Eyes	Hair	Service Request Number
/						

Officer, Investigator, Inspector, and/or Complainant on oath states that the Respondent did then and there violate the following section(s) of the Municipal Code of Chicago:

E000034278 17

COUNT		COUNT	OTHER: TITLE CHA SEC.	RULE
	DUMPING ON REAL ESTATE WITHOUT A PERMIT 7-28-440	1	11-4-770	3.0(10)
	OPERATING A FACILITY WITHOUT A PERMIT ( ) 11-4-030	Offense (if other): VIOLATION OF BULK MATERIAL RULE		
	HANDLING OF MATERIAL SUSCEPTIBLE TO BECOMING WINDBORNE ( ) 11-4-760			
	TREATMENT AND DISPOSAL OF SOLID OR LIQUID WASTE 11-4-1500	COUNT	OTHER: TITLE CHA SEC.	RULE
	SANDBLASTING, GRINDING, CHEMICAL WASHING VIOLATION ( ) 11-4-2190	2	11-4-770	3.0(4)
	RECYCLING FACILITY PERMIT 11-4-2520	Offense (if other): VIOLATION OF BULK MATERIAL RULE		
	CONSTRUCTION SITE CLEANLINESS ( ) 13-32-125(2)			

You Must Describe Actions for Each Count below:

Count 1 In That: RSP. FAILED TO CLEAN LEAKED MATERIAL WITHIN ONE HOUR.

Count 2 In That: RSP. FAILED TO PAVE INTERNAL ROAD USED FOR MOVING MATERIAL.

Violation Location Nos.: 2926. | Dir.: E | Street Name *in the City of Chicago, County of Cook*: 126TH PL | ST Suffix

Vio. Date: Mo/Day: 12 12 | Year: 2018 | Time of Violation: 03:10 ( ) AM (•) PM | Notice Date: Mo/Day *if different than Vio. Date*: 12 13 | Year of Notice: 2018

Complainant's Name *if not issuing officer, investigator, or inspector* | Public Health (Environment) Version 10-24-15

Unit: P&T | Star / Badge: 82 | Signature of Issuing officer, investigator, or inspector: X

Administrative Hearing Appearance

IMPORTANT: You must appear for a mandatory hearing on:

Date: Mo/Day: 02 07 | Year: 2019 | Time: 01:00 ( ) AM (•) PM | at: (X) 400 W. Superior | Room No.: 112

FAILURE TO APPEAR may result in the imposition of a fine not to exceed the maximum penalties for each violation as specified in the Municipal Code of Chicago plus costs, restitution, and fees. Failure to comply with the administrative law judge's order may result in the issuance of additional sanctions.

I acknowledge receipt of this notice. *Signature of Respondent or Person Served:* X | E

Comments

DEPARTMENT OF ADMINISTRATIVE HEARING COPY

CITY OF CHICAGO

DEPARTMENT OF PUBLIC HEALTH
PERMITTING AND ENFORCEMENT

NARRATIVE EVALUATION

INSPECTION DATE: 02/15/2019
SITE NAME: WATCO COMPANIES
SITE ADDRESS: 2926 E 126TH ST, CHICAGO, IL 60633
SITE CODE: WATCO COMPANIES
PERMIT #: ENVAIR113986

TIME: 2:26 pm
EMPLOYEE:EMMANUEL ADESANYA

COUNTY:COOK / CHICAGO
INSPECTION #: 1358292

SUMMARY

I carried out the routine inspection of Watco Terminal & Port Services (Watco Companies). Michael Enos (CDPH environmental engineer) was with me during this inspection. Today was mostly cloudy, temperature: high 32 degree F, low 8 degree F, wind: West at 14 mph and gust 25 mph, according to Weather Underground. Upon arrival we met Steve Caudle (The Facility Terminal Manager); and Chuck Shaffer (Operations Manager); they both took us around the facility for today's inspection, after a brief meeting. Summary of the facility PROCESS DESCRIPTION, according to Steve: The Chicago Watco Terminal & Port Services Facility is a specialty warehouse and Marine loading/unloading terminal that receives, stores, and loads dry-bulk material for the iron and steel industry. The products are: Ferrous Alloy, FeSi, SiMn, HCFM (high carbon manganese), Iron ore slag magnesite, HCFC (high carbon ferrous chrome), and pig iron. Products are received by the Terminal by barge, truck, and rail. Processing operations include crushing, screening, packaging and bagging of customer products.

Today's inspection revealed the following:
1) I observed accumulation of material on the ground at the Processor (area where there are crushing and screening operations). At the Processor according to Steve the following materials can be crushed and screened: Silicon Manganese (SiMn); High Carbon Ferro Chrome (HCFC); CAL Flux Slag, FE Phos, and 75% Ferrous Silicon (75% FeSi); The accumulated material appeared to have been there for sometime (Please see photo #s 03, 04, & 05);
2) I observed Accumulation of material outside, around the Processor building, it appeared the accumulated material has been there for longer time (Please see photo #s 01, & 02);
3) While on the roof of the processor building; I observed accumulation of material all around conveyor, on top of the conveyor and on the roof of processor building (Please see photo #s 07, 08 & 9);
4) I observed openings on the wall, and doors (Please see photo #s 22, 23, 24, 25, 26, 27, 28, and 29);
5) I observed conveyor not completely enclosed (Please see photo # 06);
6) I observed building F north door wide opened, and many holes on walls (Please see photo #s 30, 31, 32, 33, 34, 35, 36, 37, 38, and 39);
7) I observed bagging building south door wide opened and openings on the walls and door (Please see photo #s 40, 41, 42, 43, 44, 45, 46 and 47);
8) I observed semi/truck on unpaved internal road, with tire tracks all over the internal road (Please see photo #s 15, 16, 20 & 21),
9) I observed tire tracks on unpaved internal road leading to the maintenance shed/building (Please see photo # 17).

See the attachments.

REPORT COMPLETED?	☑ YES	☐ NO	NOV ISSUED?	☐ YES	☑ NO
INVESTIGATION COMPLETED?	☑ YES	☐ NO	ATTACHMENTS?	☑ YES	☐ NO

I, EMMANUEL ADESANYA, an employee of the City of Chicago, Department of Public Health, declare that I have conducted an inspection of the above mentioned property on the date indicated. I further declare that the observations set forth on the report are true and accurate.

82

STAR #

SIGNATURE

DATE: 02/15/2019
SITE: 2926 E 126TH ST
SITE CODE: WATCO COMPANIES
PERMIT #: ENVAIR113986

TIME: 2/15/2019 2:26:00PM
INSPECTOR: EMMANUEL ADESANYA
COUNTY: COOK / CHICAGO
INSPECTION #: 1358292

COMMENTS:

COMMENTS:

DATE: 02/15/2019
SITE: 2926 E 126TH ST
SITE CODE: WATCO COMPANIES
PERMIT #: ENVAIR113986

TIME: 2/15/2019 2:26:00PM
INSPECTOR: EMMANUEL ADESANYA
COUNTY: COOK / CHICAGO
INSPECTION #: 1358292

COMMENTS: Photo #31 Direction: SE Comments: Opening on building F, where heavy loading of manganese occurs.

DATE: 02/15/2019
SITE: 2926 E 126TH ST
SITE CODE: WATCO COMPANIES
PERMIT #: ENVAIR113986

TIME: 2/15/2019 2:26:00PM
INSPECTOR: EMMANUEL ADESANYA
COUNTY: COOK / CHICAGO
INSPECTION #: 1358292

COMMENTS: Photo #32 Direction: SE Comments: Opening on building F, where heavy loading of manganese occurs.

DATE: 02/15/2019
SITE: 2926 E 126TH ST
SITE CODE: WATCO COMPANIES
PERMIT #: ENVAIR113986

TIME: 2/15/2019 2:26:00PM
INSPECTOR: EMMANUEL ADESANYA
COUNTY: COOK / CHICAGO
INSPECTION #: 1358292

COMMENTS: Photo #33 Direction: SE Comments: Opening on building F, where heavy loading of manganese occurs.

DATE: 02/15/2019
SITE: 2926 E 126TH ST
SITE CODE: WATCO COMPANIES
PERMIT #: ENVAIR113986

TIME: 2/15/2019 2:26:00PM
INSPECTOR: EMMANUEL ADESANYA
COUNTY: COOK / CHICAGO
INSPECTION #: 1358292

COMMENTS: Photo #34 Direction: SE Comments: Opening on building F, where heavy loading of manganese occurs.

DATE: 02/15/2019
SITE: 2926 E 126TH ST
SITE CODE: WATCO COMPANIES
PERMIT #: ENVAIR113986

TIME: 2/15/2019 2:26:00PM
INSPECTOR: EMMANUEL ADESANYA
COUNTY: COOK / CHICAGO
INSPECTION #: 1358292

COMMENTS: Photo #35 Direction: SE Comments: Opening on building F, where heavy loading of manganese occurs.

DATE: 02/15/2019
SITE: 2926 E 126TH ST
SITE CODE: WATCO COMPANIES
PERMIT #: ENVAIR113986

TIME: 2/15/2019 2:26:00PM
INSPECTOR: EMMANUEL ADESANYA
COUNTY: COOK / CHICAGO
INSPECTION #: 1358292

COMMENTS: Photo #36 Direction: SE Comments: Opening on building F, where heavy loading of manganese occurs.

DATE: 02/15/2019
SITE: 2926 E 126TH ST
SITE CODE: WATCO COMPANIES
PERMIT #: ENVAIR113986

TIME: 2/15/2019 2:26:00PM
INSPECTOR: EMMANUEL ADESANYA
COUNTY: COOK / CHICAGO
INSPECTION #: 1358292

COMMENTS: Photo #37 Direction: SW Comments: Opening on building F, where heavy loading of manganese occurs.

DATE: 02/15/2019
SITE: 2926 E 126TH ST
SITE CODE: WATCO COMPANIES
PERMIT #: ENVAIR113986

TIME: 2/15/2019 2:26:00PM
INSPECTOR: EMMANUEL ADESANYA
COUNTY: COOK / CHICAGO
INSPECTION #: 1358292

COMMENTS: Photo #38 Direction: SW Comments: Opening on building F, where heavy loading of manganese occurs.

DATE: 02/15/2019
SITE: 2926 E 126TH ST
SITE CODE: WATCO COMPANIES
PERMIT #: ENVAIR113986

TIME: 2/15/2019 2:26:00PM
INSPECTOR: EMMANUEL ADESANYA
COUNTY: COOK / CHICAGO
INSPECTION #: 1358292

COMMENTS: Photo #39 Direction: SW Comments: Opening on building F, where heavy loading of manganese occurs.

DATE: 02/15/2019
SITE: 2926 E 126TH ST
SITE CODE: WATCO COMPANIES
PERMIT #: ENVAIR113986

TIME: 2/15/2019 2:26:00PM
INSPECTOR: EMMANUEL ADESANYA
COUNTY: COOK / CHICAGO
INSPECTION #: 1358292

COMMENTS: Photo #40 Direction: SE Comments: South door of bagging building is always kept opened.

DATE: 02/15/2019
SITE: 2926 E 126TH ST
SITE CODE: WATCO COMPANIES
PERMIT #: ENVAIR113986

TIME: 2/15/2019 2:26:00PM
INSPECTOR: EMMANUEL ADESANYA
COUNTY: COOK / CHICAGO
INSPECTION #: 1358292

COMMENTS: Photo #41 Direction: NE Comments: Openings on walls of building where bagging takes place.

DATE: 02/15/2019
SITE: 2926 E 126TH ST
SITE CODE: WATCO COMPANIES
PERMIT #: ENVAIR113986

TIME: 2/15/2019 2:26:00PM
INSPECTOR: EMMANUEL ADESANYA
COUNTY: COOK / CHICAGO
INSPECTION #: 1358292

COMMENTS: Photo #42 Direction: NW Comments: Wide opening on wall, where exhaust fan was once installed. This is the building where bagging takes place.

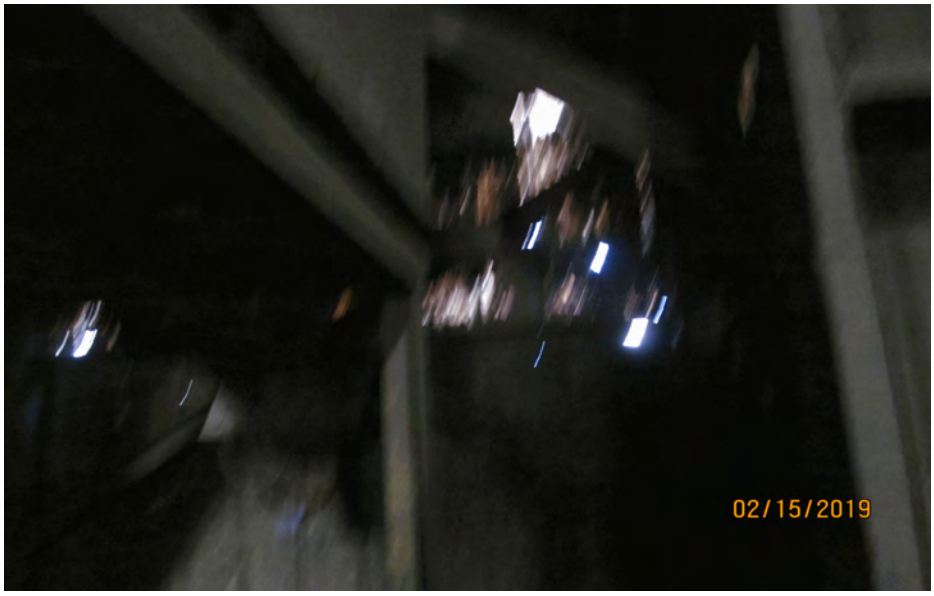
DATE: 02/15/2019
SITE: 2926 E 126TH ST
SITE CODE: WATCO COMPANIES
PERMIT #: ENVAIR113986

TIME: 2/15/2019 2:26:00PM
INSPECTOR: EMMANUEL ADESANYA
COUNTY: COOK / CHICAGO
INSPECTION #: 1358292

COMMENTS: Photo #43 Direction: NW Comments: Opening on wall, where exhaust fan was removed, at the building where bagging takes place.

DATE: 02/15/2019
SITE: 2926 E 126TH ST
SITE CODE: WATCO COMPANIES
PERMIT #: ENVAIR113986

TIME: 2/15/2019 2:26:00PM
INSPECTOR: EMMANUEL ADESANYA
COUNTY: COOK / CHICAGO
INSPECTION #: 1358292



COMMENTS: Photo #44 Direction: NW Comments: Opening on wall, at the building where bagging takes place.

DATE: 02/15/2019
SITE: 2926 E 126TH ST
SITE CODE: WATCO COMPANIES
PERMIT #: ENVAIR113986

TIME: 2/15/2019 2:26:00PM
INSPECTOR: EMMANUEL ADESANYA
COUNTY: COOK / CHICAGO
INSPECTION #: 1358292

COMMENTS: Photo #45 Direction: NW Comments: Opening on wall, at the building where bagging takes place.

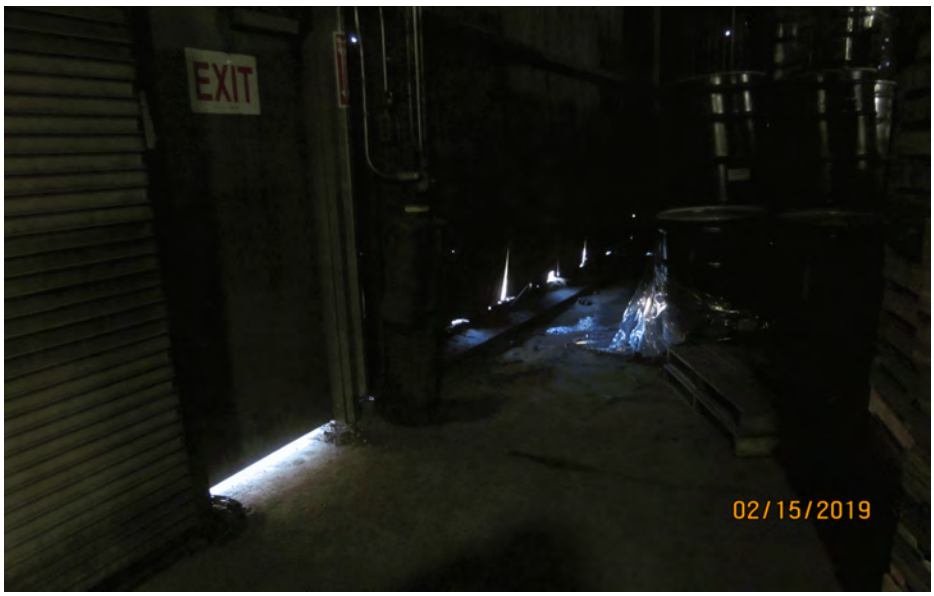
DATE: 02/15/2019
SITE: 2926 E 126TH ST
SITE CODE: WATCO COMPANIES
PERMIT #: ENVAIR113986

TIME: 2/15/2019 2:26:00PM
INSPECTOR: EMMANUEL ADESANYA
COUNTY: COOK / CHICAGO
INSPECTION #: 1358292

COMMENTS: Photo #46 Direction: North Comments: Opening on wall, at the building where bagging takes place.

DATE: 02/15/2019
SITE: 2926 E 126TH ST
SITE CODE: WATCO COMPANIES
PERMIT #: ENVAIR113986

TIME: 2/15/2019 2:26:00PM
INSPECTOR: EMMANUEL ADESANYA
COUNTY: COOK / CHICAGO
INSPECTION #: 1358292



COMMENTS: Photo #47 Direction: NE Comments: Opening on wall and door, at the building where bagging takes place.

DATE: 02/15/2019
SITE: 2926 E 126TH ST
SITE CODE: WATCO COMPANIES
PERMIT #: ENVAIR113986

TIME: 2/15/2019 2:26:00PM
INSPECTOR: EMMANUEL ADESANYA
COUNTY: COOK / CHICAGO
INSPECTION #: 1358292

COMMENTS: Photo #48 Direction: NE Comments: Unpaved parts of the facility near the bagging building.

DATE: 02/15/2019
SITE: 2926 E 126TH ST
SITE CODE: WATCO COMPANIES
PERMIT #: ENVAIR113986

TIME: 2/15/2019 2:26:00PM
INSPECTOR: EMMANUEL ADESANYA
COUNTY: COOK / CHICAGO
INSPECTION #: 1358292

COMMENTS: Photo #49 Direction: NE Comments: Unpaved parts of the facility near the Calumet river.

DATE: 02/15/2019
SITE: 2926 E 126TH ST
SITE CODE: WATCO COMPANIES
PERMIT #: ENVAIR113986

TIME: 2/15/2019 2:26:00PM
INSPECTOR: EMMANUEL ADESANYA
COUNTY: COOK / CHICAGO
INSPECTION #: 1358292

COMMENTS: Photo #50 Direction: NE Comments: Door on the north end of building F is always kept opened during loading and unloading operations.

DATE: 02/15/2019
SITE: 2926 E 126TH ST
SITE CODE: WATCO COMPANIES
PERMIT #: ENVAIR113986

TIME: 2/15/2019 2:26:00PM
INSPECTOR: EMMANUEL ADESANYA
COUNTY: COOK / CHICAGO
INSPECTION #: 1358292

COMMENTS: Photo #51 Direction: NW Comments: Barge unloading of manganese.

DATE: 02/15/2019
SITE: 2926 E 126TH ST
SITE CODE: WATCO COMPANIES
PERMIT #: ENVAIR113986

TIME: 2/15/2019 2:26:00PM
INSPECTOR: EMMANUEL ADESANYA
COUNTY: COOK / CHICAGO
INSPECTION #: 1358292

COMMENTS: Photo #52 Direction: NW Comments: Barge unloading of manganese.

DATE: 02/15/2019
SITE: 2926 E 126TH ST
SITE CODE: WATCO COMPANIES
PERMIT #: ENVAIR113986

TIME: 2/15/2019 2:26:00PM
INSPECTOR: EMMANUEL ADESANYA
COUNTY: COOK / CHICAGO
INSPECTION #: 1358292

COMMENTS: Photo# 26 Direction: SE Comments: Openings on doors.

DATE: 02/15/2019
SITE: 2926 E 126TH ST
SITE CODE: WATCO COMPANIES
PERMIT #: ENVAIR113986

TIME: 2/15/2019 2:26:00PM
INSPECTOR: EMMANUEL ADESANYA
COUNTY: COOK / CHICAGO
INSPECTION #: 1358292

COMMENTS: Photo# 27 Direction: SE Comments: Big opening on door.

DATE: 02/15/2019
SITE: 2926 E 126TH ST
SITE CODE: WATCO COMPANIES
PERMIT #: ENVAIR113986

TIME: 2/15/2019 2:26:00PM
INSPECTOR: EMMANUEL ADESANYA
COUNTY: COOK / CHICAGO
INSPECTION #: 1358292

COMMENTS: Photo#01 Direction: SE Comments: accumulation of particulate dust around the processor building.

DATE: 02/15/2019
SITE: 2926 E 126TH ST
SITE CODE: WATCO COMPANIES
PERMIT #: ENVAIR113986

TIME: 2/15/2019 2:26:00PM
INSPECTOR: EMMANUEL ADESANYA
COUNTY: COOK / CHICAGO
INSPECTION #: 1358292

COMMENTS: Photo#02 Direction: SW Comments: accumulation of particulate dust around the processor building.

DATE: 02/15/2019
SITE: 2926 E 126TH ST
SITE CODE: WATCO COMPANIES
PERMIT #: ENVAIR113986

TIME: 2/15/2019 2:26:00PM
INSPECTOR: EMMANUEL ADESANYA
COUNTY: COOK / CHICAGO
INSPECTION #: 1358292

COMMENTS: Photo#03 Direction: SE Comments: accumulation of particulate dust inside the processor building, with resultant migration all around the building.

DATE: 02/15/2019
SITE: 2926 E 126TH ST
SITE CODE: WATCO COMPANIES
PERMIT #: ENVAIR113986

TIME: 2/15/2019 2:26:00PM
INSPECTOR: EMMANUEL ADESANYA
COUNTY: COOK / CHICAGO
INSPECTION #: 1358292

COMMENTS: Photo#04 Direction: SE Comments: accumulation of particulate dust inside the processor building, under the conveyor, with resultant migration all around the building.

DATE: 02/15/2019
SITE: 2926 E 126TH ST
SITE CODE: WATCO COMPANIES
PERMIT #: ENVAIR113986

TIME: 2/15/2019 2:26:00PM
INSPECTOR: EMMANUEL ADESANYA
COUNTY: COOK / CHICAGO
INSPECTION #: 1358292

COMMENTS: Photo#05 Direction: SE Comments: accumulation of particulate dust inside the processor building, under the conveyor, with resultant migration all around the building.

DATE: 02/15/2019
SITE: 2926 E 126TH ST
SITE CODE: WATCO COMPANIES
PERMIT #: ENVAIR113986

TIME: 2/15/2019 2:26:00PM
INSPECTOR: EMMANUEL ADESANYA
COUNTY: COOK / CHICAGO
INSPECTION #: 1358292

COMMENTS: Photo#06 Direction: SE Comments: The conveyor, with dust all over it, underneath it and on top of it.

DATE: 02/15/2019
SITE: 2926 E 126TH ST
SITE CODE: WATCO COMPANIES
PERMIT #: ENVAIR113986

TIME: 2/15/2019 2:26:00PM
INSPECTOR: EMMANUEL ADESANYA
COUNTY: COOK / CHICAGO
INSPECTION #: 1358292

COMMENTS: Photo#07 Direction: SE Comments: Particulate dust accumulation all over and around the conveyor, on the roof/upper floor of the processor.

DATE: 02/15/2019
SITE: 2926 E 126TH ST
SITE CODE: WATCO COMPANIES
PERMIT #: ENVAIR113986

TIME: 2/15/2019 2:26:00PM
INSPECTOR: EMMANUEL ADESANYA
COUNTY: COOK / CHICAGO
INSPECTION #: 1358292

COMMENTS: Photo#08 Direction: NW Comments: Particulate dust accumulation on the roof of the processor building.

DATE: 02/15/2019
SITE: 2926 E 126TH ST
SITE CODE: WATCO COMPANIES
PERMIT #: ENVAIR113986

TIME: 2/15/2019 2:26:00PM
INSPECTOR: EMMANUEL ADESANYA
COUNTY: COOK / CHICAGO
INSPECTION #: 1358292

COMMENTS: Photo#09 Direction: NE Comments: Particulate dust accumulation all over around the conveyor, and on the roof of the processor building.

DATE: 02/15/2019
SITE: 2926 E 126TH ST
SITE CODE: WATCO COMPANIES
PERMIT #: ENVAIR113986

TIME: 2/15/2019 2:26:00PM
INSPECTOR: EMMANUEL ADESANYA
COUNTY: COOK / CHICAGO
INSPECTION #: 1358292

COMMENTS: Photo#10 Direction: North Comments: The processor building.

DATE: 02/15/2019
SITE: 2926 E 126TH ST
SITE CODE: WATCO COMPANIES
PERMIT #: ENVAIR113986

TIME: 2/15/2019 2:26:00PM
INSPECTOR: EMMANUEL ADESANYA
COUNTY: COOK / CHICAGO
INSPECTION #: 1358292

COMMENTS: Photo#11 Direction: NW Comments: The processor building.

DATE: 02/15/2019
SITE: 2926 E 126TH ST
SITE CODE: WATCO COMPANIES
PERMIT #: ENVAIR113986

TIME: 2/15/2019 2:26:00PM
INSPECTOR: EMMANUEL ADESANYA
COUNTY: COOK / CHICAGO
INSPECTION #: 1358292

COMMENTS: Photo#12 Direction: SE Comments: Particulate dust accumulation and opening around the processor building.

DATE: 02/15/2019
SITE: 2926 E 126TH ST
SITE CODE: WATCO COMPANIES
PERMIT #: ENVAIR113986

TIME: 2/15/2019 2:26:00PM
INSPECTOR: EMMANUEL ADESANYA
COUNTY: COOK / CHICAGO
INSPECTION #: 1358292

COMMENTS: Photo#13 Direction: North Comments: Particulate dust migrating around the dust collector drums.

DATE: 02/15/2019
SITE: 2926 E 126TH ST
SITE CODE: WATCO COMPANIES
PERMIT #: ENVAIR113986

TIME: 2/15/2019 2:26:00PM
INSPECTOR: EMMANUEL ADESANYA
COUNTY: COOK / CHICAGO
INSPECTION #: 1358292

COMMENTS: Photo#14 Direction: SW Comments: Particulate dust migrating all around processor building.

DATE: 02/15/2019
SITE: 2926 E 126TH ST
SITE CODE: WATCO COMPANIES
PERMIT #: ENVAIR113986

TIME: 2/15/2019 2:26:00PM
INSPECTOR: EMMANUEL ADESANYA
COUNTY: COOK / CHICAGO
INSPECTION #: 1358292

COMMENTS: Photo#15 Direction: North Comments: Semi truck observed on the unpaved road, the road is unpaved, muddy and with tire tracks.

DATE: 02/15/2019
SITE: 2926 E 126TH ST
SITE CODE: WATCO COMPANIES
PERMIT #: ENVAIR113986

TIME: 2/15/2019 2:26:00PM
INSPECTOR: EMMANUEL ADESANYA
COUNTY: COOK / CHICAGO
INSPECTION #: 1358292

COMMENTS: Photo#16 Direction: SE Comments: Semi truck observed on the unpaved road, the road is unpaved, muddy and with tire tracks.

DATE: 02/15/2019
SITE: 2926 E 126TH ST
SITE CODE: WATCO COMPANIES
PERMIT #: ENVAIR113986

TIME: 2/15/2019 2:26:00PM
INSPECTOR: EMMANUEL ADESANYA
COUNTY: COOK / CHICAGO
INSPECTION #: 1358292

COMMENTS: Photo#17 Direction: NW Comments: Observed unpaved road, the road is muddy and with tire tracks, leading to maintenance shed, where welding, steel cutting and other maintenance work occur.

DATE: 02/15/2019
SITE: 2926 E 126TH ST
SITE CODE: WATCO COMPANIES
PERMIT #: ENVAIR113986

TIME: 2/15/2019 2:26:00PM
INSPECTOR: EMMANUEL ADESANYA
COUNTY: COOK / CHICAGO
INSPECTION #: 1358292

COMMENTS: Photo#18 Direction: SE Comments: I observed unpaved road, the road is muddy and with tire tracks.

DATE: 02/15/2019
SITE: 2926 E 126TH ST
SITE CODE: WATCO COMPANIES
PERMIT #: ENVAIR113986

TIME: 2/15/2019 2:26:00PM
INSPECTOR: EMMANUEL ADESANYA
COUNTY: COOK / CHICAGO
INSPECTION #: 1358292

COMMENTS: Photo#19 Direction: East Comments: I observed unpaved road, the road is muddy and with tire tracks.

DATE: 02/15/2019
SITE: 2926 E 126TH ST
SITE CODE: WATCO COMPANIES
PERMIT #: ENVAIR113986

TIME: 2/15/2019 2:26:00PM
INSPECTOR: EMMANUEL ADESANYA
COUNTY: COOK / CHICAGO
INSPECTION #: 1358292

COMMENTS: Photo#20 Direction: SE Comments: I observed unpaved road, the road is muddy and with tire tracks.

DATE: 02/15/2019
SITE: 2926 E 126TH ST
SITE CODE: WATCO COMPANIES
PERMIT #: ENVAIR113986

TIME: 2/15/2019 2:26:00PM
INSPECTOR: EMMANUEL ADESANYA
COUNTY: COOK / CHICAGO
INSPECTION #: 1358292

COMMENTS: Photo#21 Direction: SE Comments: I observed unpaved road, the road is muddy and with tire tracks.

DATE: 02/15/2019
SITE: 2926 E 126TH ST
SITE CODE: WATCO COMPANIES
PERMIT #: ENVAIR113986

TIME: 2/15/2019 2:26:00PM
INSPECTOR: EMMANUEL ADESANYA
COUNTY: COOK / CHICAGO
INSPECTION #: 1358292

COMMENTS: Photo#22 Direction: NW Comments: I observed openings on doors and walls where particulate dust and other materials could escape.

DATE: 02/15/2019
SITE: 2926 E 126TH ST
SITE CODE: WATCO COMPANIES
PERMIT #: ENVAIR113986

TIME: 2/15/2019 2:26:00PM
INSPECTOR: EMMANUEL ADESANYA
COUNTY: COOK / CHICAGO
INSPECTION #: 1358292

COMMENTS: Photo#22 Direction: NW Comments: I observed openings on doors and walls where particulate dust could escape.

DATE: 02/15/2019
SITE: 2926 E 126TH ST
SITE CODE: WATCO COMPANIES
PERMIT #: ENVAIR113986

TIME: 2/15/2019 2:26:00PM
INSPECTOR: EMMANUEL ADESANYA
COUNTY: COOK / CHICAGO
INSPECTION #: 1358292

COMMENTS: Photo#24 Direction: NW Comments: I observed openings on doors and walls where particulate dust could escape.

DATE: 02/15/2019
SITE: 2926 E 126TH ST
SITE CODE: WATCO COMPANIES
PERMIT #: ENVAIR113986

TIME: 2/15/2019 2:26:00PM
INSPECTOR: EMMANUEL ADESANYA
COUNTY: COOK / CHICAGO
INSPECTION #: 1358292

COMMENTS: Photo#25 Direction: SE Comments: I observed openings on doors.

DATE: 02/15/2019
SITE: 2926 E 126TH ST
SITE CODE: WATCO COMPANIES
PERMIT #: ENVAIR113986

TIME: 2/15/2019 2:26:00PM
INSPECTOR: EMMANUEL ADESANYA
COUNTY: COOK / CHICAGO
INSPECTION #: 1358292

COMMENTS: Photo#28 Direction: SE Comments: I observed openings on doors.

DATE: 02/15/2019
SITE: 2926 E 126TH ST
SITE CODE: WATCO COMPANIES
PERMIT #: ENVAIR113986

TIME: 2/15/2019 2:26:00PM
INSPECTOR: EMMANUEL ADESANYA
COUNTY: COOK / CHICAGO
INSPECTION #: 1358292

COMMENTS: Photo#30 Direction: SW Comments: I observed north door of building F left opened.

CITY OF CHICAGO

OTHER CDPH PERMITS

Permit Number	Permit Type	Expiration Date
ENVAIR118546	ENV_AIR	
ENVAIR129614	ENV_AIR	
ENVAIR679463	ENV_AIR	
ENVAIR698813	ENV_AIR	
ENVAIR698834	ENV_AIR	

Quarterly Non-Packaged Manganese-Bearing Material Operation Reporting Form
Form20180820

Pursuant to Section 17-9-0117-D of the Municipal Code of the City of Chicago, Owners and operators of manganese-bearing material operation uses shall report and certify, on a quarterly basis, to the Department of Planning and Development the amount of non-packaged manganese-bearing material received, shipped, and stored at their site, in the content and format presented in this form. This form contains formulas and must be filled-out electronically using Adobe's Acrobat software or Reader software. The latest version of Acrobat Reader may be downloaded for free at https://get.adobe.com/reader/otherversions/.

Section 1. Reporting Period

Year: 2019

(●) 1st Quarter, Form due by April 30
( ) 2nd Quarter, Form due by July 31
( ) 3rd Quarter, Form due by October 31
( ) 4th Quarter, Form due by January 31

Section 2. Monthly Quantities

Month: **January**

Material Name	Form	Transport Mode In	Transport Mode Out	Density tons/yard	Percent Manganese	Received tons	Shipped tons	Max. Stored tons	Throughput tons
Ferro Manganese	Lumps	Truck	Truck	3.38	64.00%	484	8,294	35,002.00	4,389
Ferro Manganese	Lumps	Rail	Rail	3.38	64.00%	0	97	0.00	49
Ferro Manganese	Lumps	Barge/Boat	Truck	3.38	64.00%	1,402	0	0.00	701
			Total			**1,886**	**8,391**	**35,002**	**5,139**

All back-up information used in the preparation and completion of this form shall be maintained for a minimum of three years and shall be submitted to the Department of Planning and Development upon request.

Quarterly Non-Packaged Manganese-Bearing Material Operation Reporting Form
Form20180820

Month **February**

Material Name	Form	Transport Mode In	Transport Mode Out	Density tons/yard	Percent Manganese	Received tons	Shipped tons	Max. Stored tons	Throughput tons
Ferro Manganese	Lumps	Truck	Truck	3.38	64.00%	308	7,392	33,152.00	3,850
Ferro Manganese	Lumps	Rail	Rail	3.38	64.00%	94	0	0.00	47
Ferro Manganese	Lumps	Barge/Boat	Truck	3.38	64.00%	1,467	0	0.00	734
				Total		**1,869**	**7,392**	**33,152**	**4,631**

Month **March**

Material Name	Form	Transport Mode In	Transport Mode Out	Density tons/yard	Percent Manganese	Received tons	Shipped tons	Max. Stored tons	Throughput tons
Ferro Manganese	Lumps	Truck	Truck	3.38	64.00%	0	9,130		4,565
				Total		**0**	**9,130**		**4,565**

Section 3. Quarterly Summary

Throughput tons	Throughput yards	Maximum Stored tons	Maximum Stored yards	Manganese Throughput tons	Manganese Throughput yards
14,334	4,243	35,002	10,356	9,174	600

All back-up information used in the preparation and completion of this form shall be maintained for a minimum of three years and shall be submitted to the Department of Planning and Development upon request.

Quarterly Non-Packaged Manganese-Bearing Material Operation Reporting Form
Form20180820

Section 4. Certification

First	Steve	Last Name	Caudle		
Title	Terminal Manager	Company	Watco Companies		
Address	2926 East 126th				
City	Chicago	State	Illinois	Zip Code	60633
Phone Number	+1 (773) 646-8005	Email	steven.caudle@watcocompanies.com		

☒ By clicking on the box, I certify under penalty of law that I am duly authorized to complete and submit this form, and that all the information provided herein and attached hereto is true, accurate, and complete.

Signed By

All back-up information used in the preparation and completion of this form shall be maintained for a minimum of three years and shall be submitted to the Department of Planning and Development upon request.

Quarterly Non-Packaged Manganese-Bearing Material Operation Reporting Form

Instructions

This form contains formulas and must be filled-out electronically using Adobe's Acrobat software or Reader software. The latest version of Acrobat Reader may be downloaded for free at https://get.adobe.com/reader/otherversions/.
Once completed, the form must be signed and emailed to manganese@cityofchicago.org.

Section 1. Reporting Period

Year - Enter the year being reported. Default is current year minus 90 calendar days.
Quarter - Select the quarter being reported. Default is the previous calendar quarter.

Section 2. Material Quantities

For each month, enter all the requested information for every form of non-packaged manganese bearing material handled at your site.

Month - Select the month from drop down field. The default is based on the Quarter selected in Section 1.

Material Name - In this column, select or enter the chemical or trade name of the non-packaged manganese bearing material.

Form - In this column, enter the physical form of the non-packaged manganese bearing material.

Transport Mode (in/Out) - In this column, select or enter the mode (Barge/Boat, Rail, Truck,etc.) used to transport the non-packaged manganese bearing material. "In" means inbound and "out" means outbound.

Density - In this column, enter the density of the non-packaged manganese bearing material in tons per cubic yard.

Percent Manganese - Enter in decimal fraction the percentage of manganese the non-packaged manganese bearing material contains.

Received - In this column, enter the total tonnage of the non-packaged manganese bearing material received at your site over the period being reported.

Shipped - In this column, enter the total tonnage of the non-packaged manganese bearing material shipped out of your site over the period being reported.

Stored - In this column, enter the maximum daily tonnage of the non-packaged manganese bearing material at your site for the month being reported.

Section 3. Quarterly Summary

The fields in this section are automatically calculated.

Section 4. Certification

Provide the company name, address, city, state and zip code of the site handling the non-packaged manganese bearing material. Also, provide the first name, last name, title, email, and phone number of the person completing the form. This person must be qualified in properly gathering and evaluating the information being provided, and is duly authorized by the company.

Certification checkbox - This checkbox must be checked to acknowledge that the person submitting the information is authorized and that the information being submitted is true, accurate, and complete.

Signature - Provide a hand-written or digital signature of the person completing the form.

Quarterly Non-Packaged Manganese-Bearing Material Operation Reporting Form

Definitions:

Manganese-bearing material. Ferrous manganese, manganese silicate, manganese alloy, manganese ore, or any other material from which manganese is extracted or emitted or otherwise becomes airborne. The term "manganese-bearing material" does not include any material which contains an amount of manganese that is less than 1 percent by weight.

Manganese. A hard, brittle, grayish-white, metallic element, whose symbol is Mn, atomic weight is 54.938 and atomic number is 25, and which is used chiefly as an alloying agent in steel.

Manganese-bearing material operation use. Any activity, including, but not limited to, the storing, loading, unloading, stockpiling, handling on-site, blending, mixing, crushing, screening, breaking, wet or dry cleaning, thermal drying, chemically treating or any other processing of manganese-bearing material, or any improvement or development associated therewith.

Non-packaged. Not fully enclosed to prevent the possibility of any dust escaping from the package the entire time the material is in the possession of the owner or operator.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

947100

MAY 24 2019

REPLY TO THE ATTENTION OF:

MEMORANDUM

SUBJECT: ACTION MEMORANDUM - Request for Approval and Funding of a Time-Critical Removal Action at the S.H. Bell Site, Chicago, Cook County, Illinois (Site ID # C5LE)

FROM: Bradley Benning, On-Scene Coordinator (OSC)
Emergency Response Branch 2/Emergency Response Section 3

THRU: Samuel Borries, Chief
Emergency Response Branch 2

TO: Douglas Ballotti, Director for
Superfund & Emergency Management Division

I. PURPOSE

The purpose of this Action Memorandum is to request and document your approval to expend up to $1,286,611 to conduct a time-critical removal action at the S.H. Bell Site ("Site"), in Chicago, Cook County, Illinois (Figure 1). The time-critical removal action proposed herein is necessary to mitigate threats to public health, welfare, and the environment posed by the presence of uncontrolled hazardous substances at the Site. There are no nationally significant, or precedent-setting issues associated with the proposed response at this non-National Priority List (NPL) site.

This Action Memorandum serves as approval for expenditures by the U.S. Environmental Protection Agency, as the lead technical agency, to take actions described herein to abate the imminent and substantial endangerment posed by the hazardous substances at the Site. The proposed removal of the hazardous substances will be taken pursuant to Section 104(a)(1) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. § 9604(a)(1), and Section 300.415 of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 C.F.R. § 300.415.

II. SITE CONDITIONS AND BACKGROUND

CERCLIS ID: C5LE
RCRA ID: ILN000507938
State ID: NA
Category: Time-Critical Removal Action
Site Location: 10218 South Avenue O, Cook County, Illinois 60617, and the surrounding neighborhood directly east from the Calumet River to Ewing Ave. and from 100th Street north to 104th Street south.

A. Site Description

The S.H. Bell Site, located in Chicago, Cook County, Illinois consists of the S.H. Bell facility at 10218 South Avenue O, Chicago, as well as surrounding residential areas between the Calumet River and South Avenue M, and from 100th Street north to 104th Street south. EPA anticipates limited additional residential sampling within this area following the start of this removal action.

S.H. Bell's South Chicago facility consists of an approximately 23.34-acre commodities warehousing facility known as the Chicago Commodities Warehouse. The facility is a U.S. Customs bonded warehouse that provides supply chain warehousing, distribution, and fulfillment services to mining companies as well as producers, marketing agents, traders, and distributors of metal, mineral, and semi-finished industrial material commodities ("Commodities"). The Commodities are used as raw materials in manufacturing, *e.g.,* steel production and metal castings production, and most are imported internationally. At its core, the facility receives and stores Commodities and ships them at the owners' direction to intended end users, the majority being domestic steel mills and foundries. S.H. Bell's clients, and not S.H. Bell, own the Commodities.

Specifically, at the facility, S.H. Bell provides its clients, namely, the mining companies as well as the producers, marketing agents, traders, and distributors of the commodities, warehouse and distribution services that include: unloading and reloading by barge, rail, or truck; storage; inventory recordkeeping and management; order fulfillment; re-packaging; labeling; carrier scheduling and, less often, value-added services that include inventory sizing to meet end-user specifications, inventory blending, and custom packaging and labeling.

1. Removal Site Evaluation

Determining Potential Area of Concern
In November 2013, in response to residents' concerns about pet-coke stockpiles at the KCBX facility nearby, the City required the KCBX facility to install air monitors at the stockpile location. The air monitoring began in February 2014, with results indicating elevated levels of manganese. The S.H. Bell facility was implicated as a possible source of the manganese emissions. The City requested assistance from EPA to conduct air monitoring at the S.H. Bell facility.

In April 2014, EPA began investigating fugitive dust and manganese issues at the S.H. Bell facility. In March 2015, EPA requested that the facility install perimeter air monitors to determine if emissions were exceeding State or Federal regulations. S.H. Bell refused the request and a Stipulated Settlement and Final Consent Order was entered in December 2016, requiring compliance by installing the monitors and taking specific operational steps to reduce fugitive dust emissions. The monitors were installed and operational in March 2017.

In August 2017, EPA issued a Notice of Violation under the Clean Air Act to the S.H. Bell facility. EPA determined manganese emissions at the facility exceeded the health-based screening level. Air monitoring data from March through June 2017, showed an average concentration of 0.32 ug/m3 of manganese. The minimal risk level for chronic inhalation exposure to manganese is 0.3 ug/m3.

Due to possible aerial deposition of S.H. Bell facility manganese in the community, the City identified a residential zone directly east of the facility that was sampled January through March 2018. The City hired a contractor to collect samples on the City's right-of-way, at 27 locations within the sampling zone. The average manganese level in zone samples was 3,275 mg/kg and three samples exceeded the Removal Management Level (RML) of 5,500 mg/kg. Twenty samples exceeded the Illinois EPA Soil Remediation Objective of 1,600 mg/kg.

In April 2018, the Chicago Department of Public Health requested that EPA conduct a removal site evaluation to determine the full scope of the issue and take appropriate action.

In May 2018, EPA initiated residential soil sampling in an area of concern identified by the City. EPA participated in numerous public meetings, sent mailings, and conducted door-to door visits to inform residents of the sampling opportunity. The sampling universe was approximately 400-500 homes. EPA received 123 access agreements, 108 were within the area of concern, and 104 homes were eventually sampled.

Typical sample protocol was to collect samples from 0-6 inches and 6-12 inches. A five-point composite was collected at each depth within the front and back yard. If a garden was present, that was also sampled. Samples were analyzed for total metals screen, which would also detect other toxic metals such as arsenic, cadmium, and lead.

In November 2018, sampling activities were completed. Validated sample results were sent to all property owners and tenants. EPA and the Agency for Toxic Substances and Disease Registry (ATSDR) evaluated the results to determine whether manganese levels in the soil posed an unacceptable health risk to the residents. Five residences were identified with manganese concentrations in surficial soil above the RML of 5,500 mg/kg. The highest surficial concentration of manganese observed during the EPA residential sampling in May to November 2018 was 7,900 mg/kg

Lead was identified in numerous samples, and it appears to be widespread throughout the sample area. The Southeast side of Chicago historically was home to numerous industries such as steel mills and smelters. Elevated lead concentrations are typical throughout the Southeast side. This action memo will only address the manganese contamination attributed to the S.H. Bell Site.

2. Physical location

The S.H. Bell Site, located in Chicago, Cook County, Illinois consists of the S.H. Bell facility at 10218 South Avenue O, Chicago, as well as surrounding residential areas between the Calumet River and Ewing Ave. and from 100th Street north to 104th Street south (Figures 1 and 2). The S.H. Bell facility is 23.34 acres, contains numerous buildings utilized for warehouse storage and packaging. The facility is in a residential and commercial area. It is bounded to the north by City of Chicago Public Works property; to the east by a residential neighborhood; to the south by residential and industrial property; and to the west by the Calumet River. The residential area of concern consists of the properties primarily to the east and south of the facility but has yet to be fully defined.

EPA conducted an Environmental Justice (EJ) analysis for the Site (Attachment 1). Screening of the surrounding area used Region 5's EJ Screen Tool (which applies the interim version of the national EJ Strategic Enforcement Assessment Tool (EJSEAT)). Region 5 has reviewed environmental and demographic data for the area surrounding the Site and determined that there is a high potential for EJ concerns at this location.

3. Site Characteristics

The S.H. Bell facility provides warehouse and distribution services that include: unloading and reloading by barge, rail, or truck; storage; inventory recordkeeping and management; order fulfillment; re-packaging; labeling; carrier scheduling and, value-added services that include inventory sizing to meet end-user specifications, inventory blending, and custom packaging and labeling. In addition to numerous buildings, the facility contains a rail spur and three channels off the Calumet River for barge transportation.

The residential area east and south of the facility is a densely populated area, consisting of mostly single-family homes built during the early 20th century. Most of the homes have smaller yards, with areas averaging 500-1,000 square feet. This area is mixed with commercial buildings along Ewing Avenue. There are churches, schools, and daycares located around the area.

4. Release or threatened release into the environment of a hazardous substance, or pollutant or contaminant

EPA documented a release of hazardous substances, pollutants, or contaminants in the soil in residential areas at the Site. Manganese is a hazardous substance, as defined at Section 101(14) of CERCLA, 42 U.S.C. § 9601(14). *See* 40 C.F.R. § 302.4. Manganese levels at the surface of the soil exceed the residential EPA RML of 5,500 mg/kg. This time-critical removal action is addressing manganese-contaminated particles released from the S.H. Bell facility during its operations into the adjacent neighborhood. This residential contamination was documented previously in the Removal Site Evaluation section. The highest surficial concentration of manganese observed during the EPA residential sampling was 7,900 mg/kg. The highest surficial concentration in a residential right-of-way identified by the City's sampling in January and March 2018 was 13,000 mg/kg.

5. NPL status

This Site is not on the NPL and has not been proposed for listing at this time.

6. Maps, pictures and other graphic representations

Figure 1: Site Location Map
Figure 2: Site Layout Map

Table 1: Occupied Residential Sampling Results (***Redacted***)

B. Other Actions to Date

1. Previous actions

EPA began investigating fugitive dust and manganese air issues at S.H. Bell's Chicago facility in 2014. Due to EPA's efforts, S.H. Bell installed air pollution control equipment, implemented an enhanced fugitive dust plan, and installed air quality monitors to measure PM10 (particulate matter) and pollutants, including manganese. In August 2017, EPA issued a Notice of Violation under the Clean Air Act to the facility. The Agency determined manganese emissions exceeded the minimal risk level for chronic inhalation exposure. Since August 2017, there has been a decrease in manganese emissions measured at the facility.

2. Current actions

EPA continues to inspect the Chicago facility to confirm S.H. Bell is complying with federal and state air requirements. EPA continues to perform outreach activities including fact sheets and community meetings and anticipates additional requests for sampling will continue to come in from the neighborhood.

C. State and Local Authorities' Roles

1. State and local actions to date

In November 2013, in response to residents' concerns about pet-coke stockpiles at the KCBX facility nearby, the City of Chicago required the KCBX facility to install air monitors at the stockpile location. The air monitoring began in February 2014, with results indicating elevated levels of manganese. The S.H. Bell facility was implicated as a possible source of the manganese. The City requested assistance from EPA to conduct air monitoring at the S.H. Bell facility.

Due to possible aerial deposition of manganese in the community, the City identified a residential zone directly east of the facility that was sampled in January through March 2018. The City hired a contractor to collect samples at 27 locations within the zone, on City right-of-way property. The average manganese level was 3,275 milligrams per kilograms (mg/kg) and

three samples exceeded the RML of 5,500 mg/kg. Twenty samples exceeded the Illinois EPA Soil Remediation Objective of 1,600 mg/kg.

In April 2018, the Chicago Department of Public Health requested that EPA conduct a removal site evaluation to determine the full scope of the issue and take appropriate action.

The City of Chicago through local ordinances prevented the construction of any new similar facilities and stopped current facilities from expanding. The City is updating its Bulk Materials Ordinance to ensure its laws meet the needs of the community.

2. Potential for continued state/local response

EPA is coordinating with various local, state, and other federal agencies regarding the Site. These agencies include the City of Chicago, Illinois EPA, and the ATSDR. EPA is providing data to its partner agencies and coordinating discussions about assessment and remediation at the Site. The partner agencies will continue to assist with community outreach.

III. THREATS TO PUBLIC HEALTH, WELFARE, OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

EPA's removal site evaluation indicates that conditions at the Site present an imminent and substantial threat to the public health, or welfare, and the environment and meet the criteria for a time-critical removal action as provided for in 40 C.F.R. § 300.415(b)(1), based on factors in § 300.415(b)(2) of the NCP. These factors include, but are not limited to, the following:

§ 300.415(b)(2)(i) - Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants:

Certain residential properties at the Site are contaminated with manganese in soil that exceeds RMLs in the top six inches. Manganese is a hazardous substance as defined at Section 101(14) of CERCLA. Potential exposure through these pathways could cause imminent endangerment to human health, welfare, or the environment.

As noted above, of the 104 occupied residential properties sampled, 5 of the properties had surficial concentrations that exceeded the EPA RML of 5,500 mg/kg for manganese. The highest manganese concentration found at the surface of one of the residential properties was 7,900 mg/kg.

ATSDR states that manganese is an essential nutrient, and that eating a small amount of it each day is important to stay healthy. The most common health problems in workers exposed to high levels of manganese involve the nervous system. These health effects include behavioral changes and other nervous system effects, which include movements that may become slow and clumsy. Other less severe nervous system effects such as slowed hand movements have been observed in some workers exposed to lower concentrations in the work place. Exposure to high levels of manganese in air can cause damage to the brain, lung irritation and reproductive effects.

Nervous system and reproductive effects have been observed in animals after high oral doses of manganese.

Exposure may occur from direct ingestion of soil, soil tracked on shoes, and inhalation of dust and soil particles from the yard. The known hazardous substance at the Site (manganese) exists in the soil of residential properties. The manganese in soil is unsecured and has no containment. Manganese has the potential to be released from these residential properties by means such as tracking, surface runoff, and wind dispersion. These potential releases may be increased in areas where soil isn't covered by grass or other means.

§ 300.415(b)(2)(iv) - High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate:

As stated previously, surface soils at certain residential properties at the Site exceed RMLs established by the EPA for manganese, which is a listed hazardous substance.

Residents at the Site may cause the high levels of manganese to migrate into other areas including inside the home by walking through and tracking in, gardening, play, and other residential activities, especially in areas where the soil lacks vegetation or other cover. Other means of migration may include routine construction activities.

§ 300.415(b)(2)(v) - Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released:

The manganese contamination at Site residential properties exists in the soil, which is exposed to the elements without proper containment. Release could occur from high winds dispersing surface particulate matter containing manganese, resulting in exposure to residents, including sensitive populations, within the Site. Grass cover is generally lighter in the early spring and fall, allowing more potential tracking of contaminated soil. Rain or thundershowers may cause the outdoor manganese to migrate via surface runoff.

300.415(b)(2)(vii) - The availability of other appropriate federal or state response mechanisms to respond to the release:

At this time, no local or State agencies have the resources to respond to the immediate threat.

IV. ENDANGERMENT DETERMINATION

Given Site conditions, the nature of the known and suspected hazardous substances at the Site, and the potential exposure pathways described in Sections II and III above, actual or threatened releases of hazardous substances from the Site, if not addressed by implementing the response actions selected in this Action Memorandum, may present an imminent and substantial endangerment to public health, welfare, or the environment.

V. PROPOSED ACTIONS AND ESTIMATED COSTS

A. Proposed Actions

1. Proposed action description

The response actions described in this memorandum directly address actual or potential releases of hazardous substances at the Site, which may pose an imminent and substantial endangerment to public health, or welfare, or the environment. Removal activities on-site will include:

a) Development and implementation of site-specific work plans, health and safety plan, and emergency contingency plan;
b) Development and implementation of a sampling and analysis plan including air monitoring;
c) Implementing dust control measures to ensure worker and public health protection;
d) Provide for site security measures, as necessary;
e) Establish and maintain staging and stockpile area(s), as necessary;
f) Excavation of soil at residences where manganese concentrations are equal to or exceed 5,500 mg/kg at the surface, as determined by EPA sampling. To eliminate any direct contact and inhalation threats, soil will be excavated to a depth not to exceed 24 inches below ground surface. EPA may stop excavation prior to 24 inches at a location, if the Illinois Remediation Goal of 1,600 mg/kg is achieved there;
g) Replacement of excavated soil with clean soil;
h) If contaminated soil is identified at a depth greater than approximately 24 inches below ground surface, a visual barrier such as orange construction fencing, or landscape fabric will be placed above the contaminated soil and beneath the clean backfill soil;
i) Restoration of each property to as close to practicable to its pre-removal condition;
j) Staging, treatment as necessary, transportation, and disposal off-site of any hazardous substances, pollutants and contaminants at a CERCLA-approved disposal facility in accordance with EPA's Off-Site Rule (40 C.F.R. § 300.440); and
k) Taking any other response actions to address any release or threatened release of a hazardous substance, pollutant and contaminant that the EPA OSC determines may pose an imminent and substantial endangerment to the public health or the environment.

The exact number of properties requiring time-critical removal action is currently unknown. As of the November 2018 validated sampling results, five properties were identified. The actual number of properties subject to removal action may change due to additional properties within the Site boundaries being sampled during the removal action at the request of the homeowner. The City's right-of-way sampling data identified an additional two properties that were not sampled as part of EPA's removal site evaluation that potentially may have manganese concentrations above the EPA's RML. EPA will reach out to these homeowners and attempt to sample their yards. EPA estimates that it may ultimately remediate up to 15 properties and has built that cost and activity into the scope of this Action Memo. This estimate is based on the percentage of properties discovered in previous sampling, extrapolated to the number of properties in the current area of concern.

The response action proposed herein will mitigate the threats at the Site by properly identifying, consolidating, and packaging hazardous substances and materials on-Site. The consolidated materials will be removed and ultimately disposed off-Site. Site activities may also include security, perimeter air monitoring, and decontamination on the Site, as needed to complete the removal action. This response action will be conducted in accordance with Section 104(a)(1) of CERCLA, 42 U.S.C. § 9604(a)(1) and Section 300.415 of the NCP, 40 C.F.R. § 300.415, to abate or eliminate the immediate threat posed to public health and/or the environment by the presence of the hazardous substances.

The removal action will be conducted in a manner not inconsistent with the NCP. If necessary, post-removal site control may be conducted consistent with the provisions of Section 300.415(l) of the NCP.

2. Contribution to remedial performance

The proposed action will not impede future remedial actions based on available information.

3. Engineering Evaluation/Cost Analysis (EE/CA)

Not Applicable.

4. Applicable or relevant and appropriate requirements (ARARs)

EPA will comply with applicable or relevant and appropriate requirements (ARARs) of federal and State law identified in a timely manner, to the extent practicable considering the exigencies of the situation. On April 11, 2019, EPA sent an email request to Jerry Willman of Illinois EPA requesting any State of Illinois ARARs that may apply. Illinois EPA has identified its State Soil Remediation Goal for manganese (1,600 mg/kg) as an ARAR. EPA will consider and implement the submitted ARARs, as appropriate.

While it is not strictly an ARAR, all hazardous substances removed off-site pursuant to this removal action for treatment, storage, and disposal will be treated, stored, or disposed of at a facility in compliance, as the EPA determines, with the EPA Off-Site Rule, 40 C.F.R. § 300.440.

5. Project schedule

Given the assumption of 15 properties requiring excavation, EPA estimates that the project will take approximately 80 working days.

6. Estimated costs

REMOVAL ACTION PROJECT CEILING ESTIMATE	
Extramural Costs:	
Regional Removal Allowance Costs:	$940,776
Other Extramural Costs Not Funded from the Regional Allowance:	
Total START, including multiplier costs	$131,400
Subtotal Extramural Costs	$1,072,176
Extramural Costs Contingency (20% of Subtotal)	$214,435
TOTAL REMOVAL ACTION PROJECT CEILING	$1,286,611

The response actions described in this memorandum directly address the actual or threatened release of hazardous substances, pollutants or contaminants at the Site which may pose an imminent and substantial endangerment to public health or welfare or to the environment. These response actions do not impose a burden on affected property disproportionate to the extent to which that property contributes to the conditions being addressed.

All hazardous substances, pollutants or contaminants removed off-site pursuant to this removal action for treatment, storage and disposal shall be treated, stored, or disposed at a facility in compliance, as determined by EPA, with the EPA Off-Site Rule, 40 C.F.R. § 300.440.

VI. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

Given Site conditions, the nature of the hazardous substances on-site, the potential exposure pathways to nearby populations described in Sections II, III, and IV above, and the actual or threatened release of hazardous substances from the Site, failing to take or delaying action may present an imminent and substantial endangerment to public health, welfare or the environment.

VII. OUTSTANDING POLICY ISSUES

None

VIII. ENFORCEMENT

For administrative purposes, information concerning the enforcement strategy for this site is contained in the Enforcement Confidential Addendum.

The total EPA costs for this removal action based on full-cost accounting practices that will be eligible for cost recovery are estimated to be $2,083,175[1].

($1,286,611.49 + $54,000) + (55.39% x $1,340,611) = $2,083,175

IX. RECOMMENDATION

This decision document represents the selected removal action for the S.H. Bell Site in Chicago, Cook County, Illinois. This document has been developed in accordance with CERCLA as amended and is not inconsistent with the NCP. This decision is based on the Administrative Record for the Site, see Attachment III. Conditions at the Site meet the NCP criteria at 40 C.F.R. § 300.415(b)(2) for a time-critical removal action, and I recommend your approval.

The total removal project ceiling, if approved, will be $1,286,611. Of this, an estimated $1,155,211 may be used for the cleanup contractor costs. You may indicate your decision by signing below.

APPROVE: _____ for _____ DATE: 5/24/19
Douglas Ballotti, Director
Superfund & Emergency Management Division

DISAPPROVE: _____ DATE: _____
Douglas Ballotti, Director
Superfund & Emergency Management Division

Enforcement Addendum

Figures:
Figure 1: Site Location Map
Figure 2: Site Layout Map

[1] Direct Costs include direct extramural costs and direct intramural costs. Indirect costs are calculated based on an estimated indirect cost rate expressed as a percentage of site specific direct costs, consistent with the full cost accounting methodology effective October 2, 2000. These estimates do not include pre-judgement interest, do not take into account other enforcement costs, including Department of Justice costs, and may be adjusted during the course of a removal action. The estimates are for illustrative purposes only and their use is not intended to create any rights for responsible parties. Neither the lack of a total cost estimate nor deviation of actual total costs from this estimate will affect the United States right to cost recovery.

Tables:
Table 1: Summary of Sample Results at Occupied Residential Properties for Manganese

Attachments:
I: Environmental Justice (EJ) Screen
II: Detailed Cleanup Contractor Estimate
III: Administrative Record Index
IV: Independent Government Cost Estimate (IGCE)

cc: S. Ridenour, U.S. EPA, 5104A/B517F (Ridenour.Steve@epa.gov)
L. Nelson, U.S. DOI, w/o Enf. Addendum, (Lindy_Nelson@ios.doi.gov)
J. Willman, IEPA w/o Enf. Addendum (jerry.willman @illinois.gov)

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NOT RELEVANT TO SELECTION

OF REMOVAL ACTION

ENFORCEMENT ADDENDUM

HAS BEEN REDACTED – THREE PAGES

ENFORCEMENT CONFIDENTIAL

NOT SUBJECT TO DISCOVERY

FOIA EXEMPT

NOT RELEVANT TO SELECTION

OF REMOVAL ACTION

Figure 1
Site Location
S. H. Bell Site, Chicago, IL

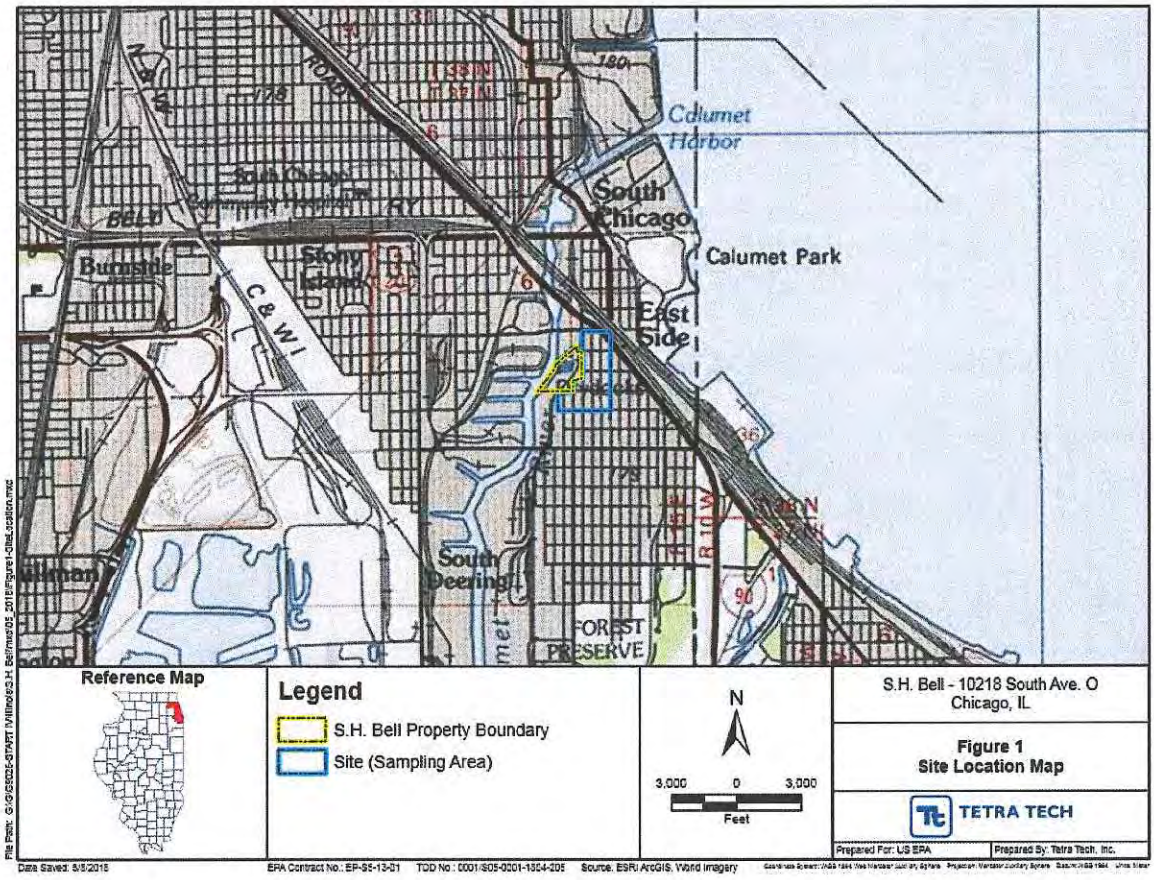


Figure 2
Site Layout map
S.H. Bell Site, Chicago, IL

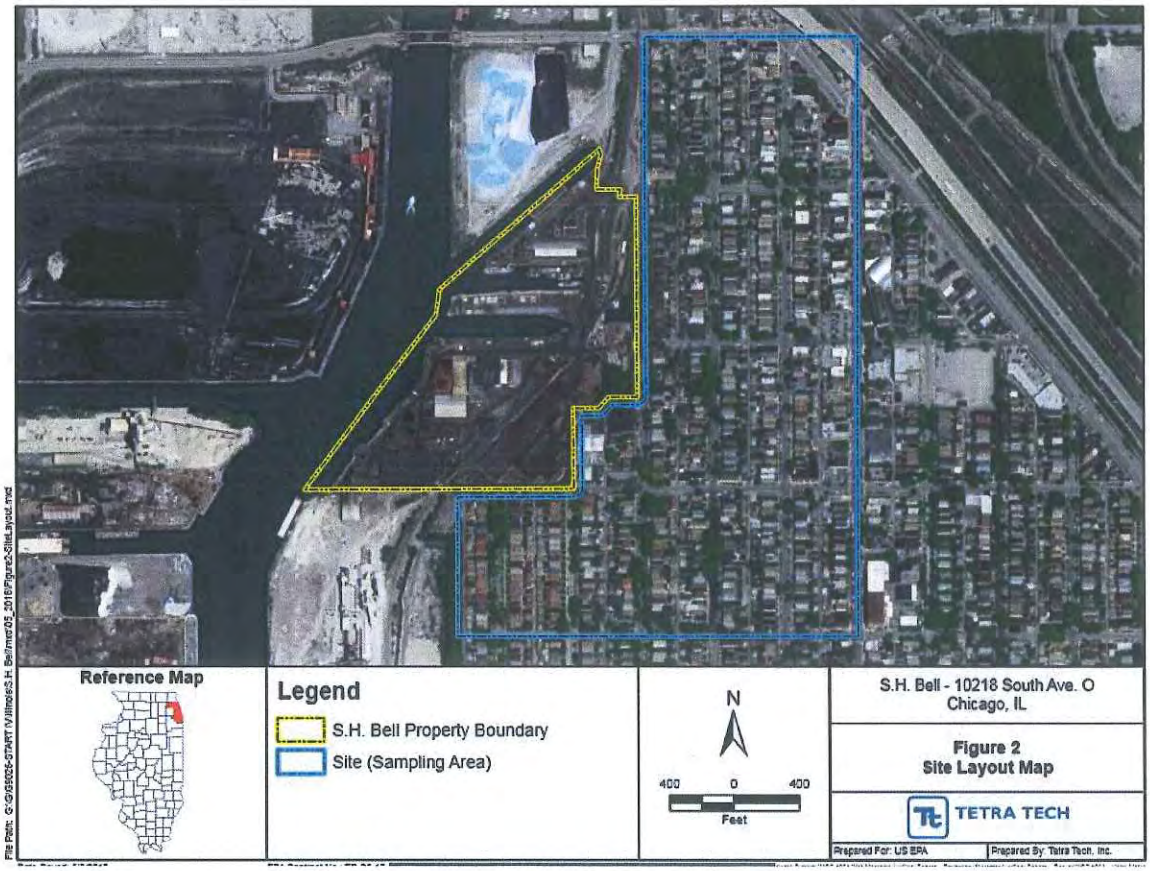


Table 1
Occupied Residential Sample Results May thru November 2018
S.H. Bell Site, Chicago, IL

Residential samples that equaled or exceeded the Manganese RML of 5500 mg/kg

Property	Result
SHB-1289-FY-0006-180524	7900 mg/kg
SHB-1041-FY-0006-180625	5500 mg/kg
SHB-1579-BY-0006-180625	5600 mg/kg
SHB-1749-BY-0612-180726	5800 mg/kg
SHB-1305-FY-0006-180802	6400 mg/kg

ATTACHMENT I

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMOVAL ACTION

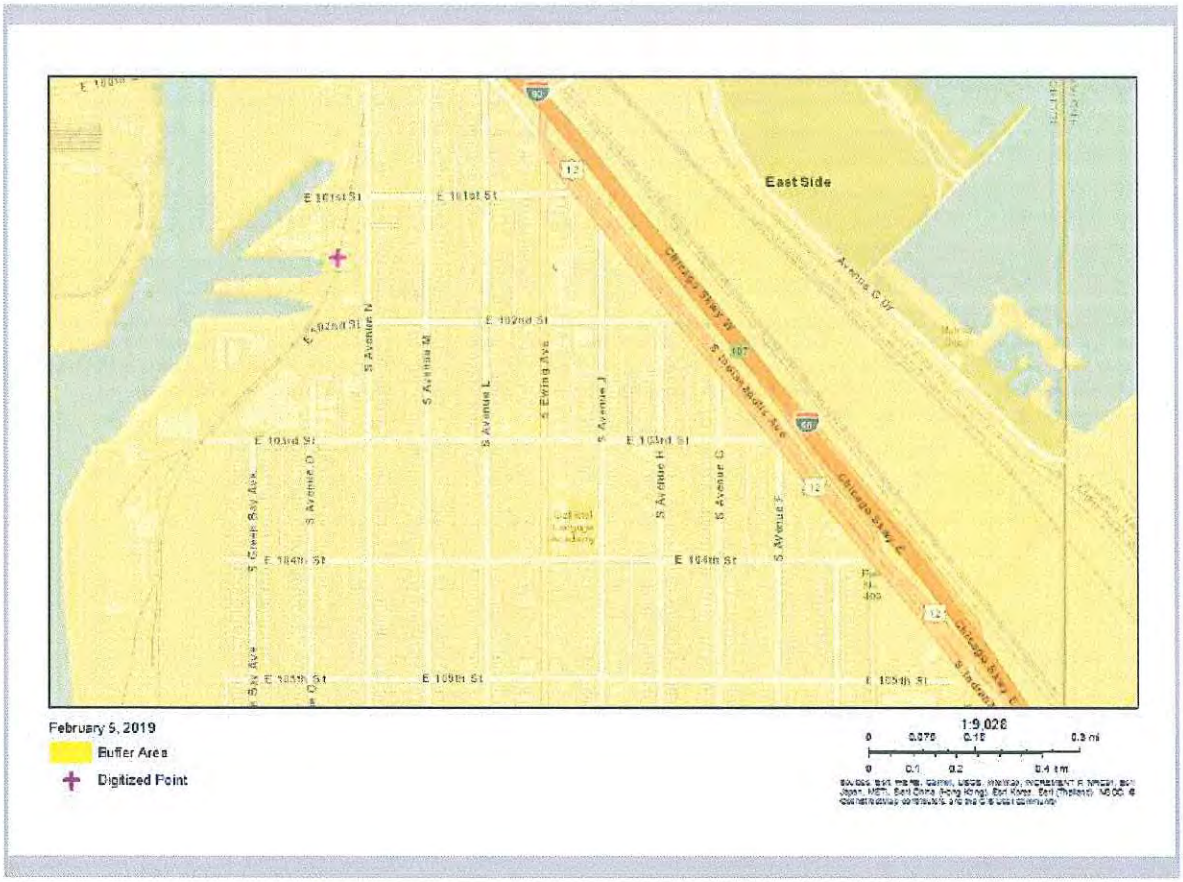
Environmental Justice (EJ) Screen for S.H. Bell Site
Chicago, Cook County, Illinois

EPA United States Environmental Protection Agency

EJSCREEN Report (Version 2018)

1 mile Ring Centered at 41.710998,-87.539569, ILLINOIS, EPA Region 5

Approximate Population: 17,234
Input Area (sq. miles): 3.14
SH Bell



Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	1

EPA United States Environmental Protection Agency

EJSCREEN Report (Version 2018)

1 mile Ring Centered at 41.710998,-87.539569, ILLINOIS, EPA Region 5

Approximate Population: 17,234

Input Area (sq. miles): 3.14

SH Bell

Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in µg/m³)	13.2	12.1	93	10.8	98	9.53	97
Ozone (ppb)	43.8	43.3	75	42.6	70	42.5	65
NATA* Diesel PM (µg/m³)	1.7	1.28	78	0.932	90-95th	0.938	80-90th
NATA* Cancer Risk (lifetime risk per million)	39	36	75	34	70-80th	40	<50th
NATA* Respiratory Hazard Index	2	1.9	63	1.7	70-80th	1.8	60-70th
Traffic Proximity and Volume (daily traffic count/distance to road)	700	510	84	370	87	600	83
Lead Paint Indicator (% Pre-1960 Housing)	0.87	0.41	92	0.38	93	0.29	95
Superfund Proximity (site count/km distance)	0.24	0.091	95	0.12	90	0.12	89
RMP Proximity (facility count/km distance)	1.9	1.1	82	0.81	88	0.72	90
Hazardous Waste Proximity (facility count/km distance)	2.4	2.1	71	1.5	80	4.3	80
Wastewater Discharge Indicator (toxicity-weighted concentration/m distance)	0.0049	0.44	52	4.2	68	30	76
Demographic Indicators							
Demographic Index	72%	34%	89	28%	93	36%	90
Minority Population	88%	38%	87	25%	93	38%	89
Low Income Population	56%	31%	84	32%	85	34%	82
Linguistically Isolated Population	13%	5%	86	2%	94	4%	87
Population With Less Than High School Education	34%	12%	93	10%	96	13%	92
Population Under 5 years of age	6%	6%	52	6%	54	6%	51
Population over 64 years of age	9%	14%	32	15%	25	14%	29

* The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: https://www.epa.gov/national-air-toxics-assessment.

EJSCREEN Report (Version 2018)

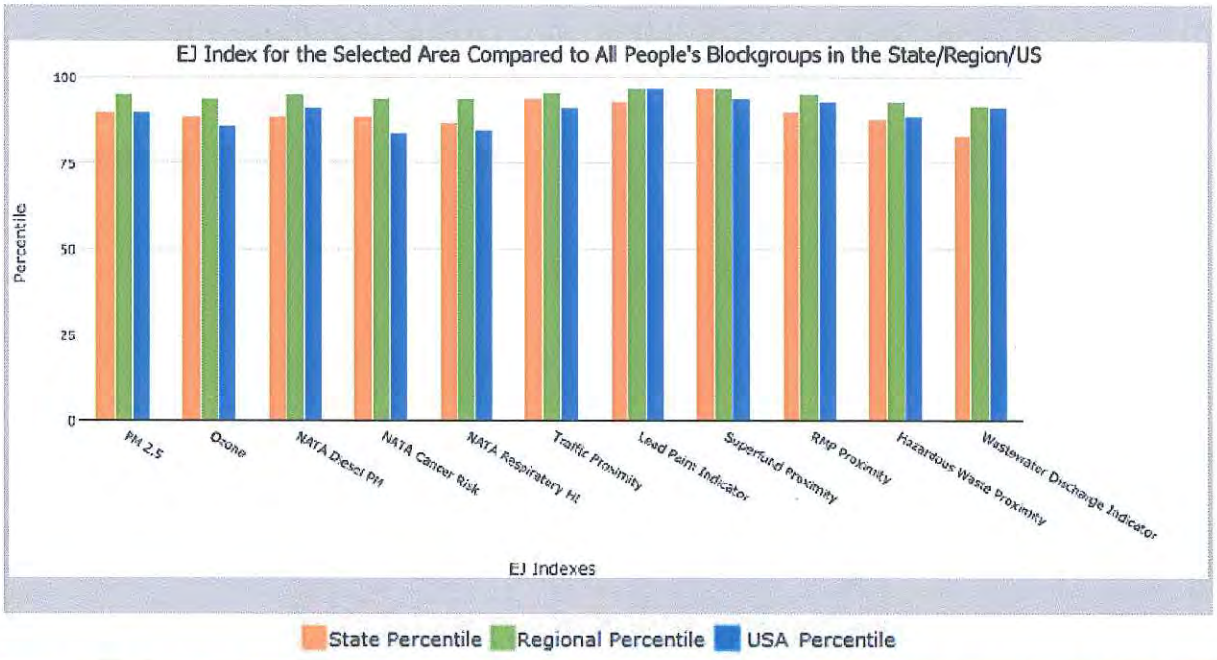
1 mile Ring Centered at 41.710998,-87.539569, ILLINOIS, EPA Region 5

Approximate Population: 17,234

Input Area (sq. miles): 3.14

SH Bell

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
EJ Indexes			
EJ Index for PM2.5	90	95	90
EJ Index for Ozone	89	94	86
EJ Index for NATA* Diesel PM	89	95	91
EJ Index for NATA* Air Toxics Cancer Risk	89	94	84
EJ Index for NATA* Respiratory Hazard Index	87	94	85
EJ Index for Traffic Proximity and Volume	94	96	91
EJ Index for Lead Paint Indicator	93	97	97
EJ Index for Superfund Proximity	97	97	94
EJ Index for RMP Proximity	90	95	93
EJ Index for Hazardous Waste Proximity	88	93	89
EJ Index for Wastewater Discharge Indicator	83	92	91



This report shows the values for environmental and demographic indicators and EJSCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

ATTACHMENT II

DETAILED CONTRACTOR ESTIMATE

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OF REMOVAL ACTION

ATTACHMENT III

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMOVAL ACTION

ADMINISTRATIVE RECORD

S.H. BELL SITE
CHICAGO, IL

No.	Date	Author	Recipient	Title
1	4/16/18	CPHD	EPA	Site Referral
2	1/18	CPHD	EPA	Sampling Results
3	6/28/18	U.S. Congress	EPA	Request for Investigation
4	9/17	EPA	Residents	EPA Fact Sheet
5	5/18	EPA	Residents	EPA Fact Sheets
6	2/6/19	TetraTech	EPA	Site Assessment Report
7	8/7/17	EPA	SH Bell	Notice of Violation
8	-	B. Benning OSC	EPA	Action Memorandum

ATTACHMENT IV

INDEPENDENT GOVERNMENT COST

ESTIMATE HAS BEEN REDACTED –

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NOT RELEVANT TO SELECTION

OF REMOVAL ACTION

315 West 3rd Street
Pittsburg, KS 66762
Phone: 620-231-2230
Fax: 620-231-0812

April 20, 2019

Attn: Compliance Tracker, AE-18J
Air Enforcement and Compliance Assurance Branch
U.S. Environmental Protection Agency Region 5
77 W. Jackson Boulevard
Chicago, Illinois 60604

Dear Sir/Madam:

Watco Terminal and Port Services (WTPS) is submitting the April 2019 FRM monitoring data for the Chicago Ferro facility. Please find the attached filter analysis compiled by Trinity Consultants, the Weather Station Data, and the Loading and Unloading activities performed at the facility.

Watco would like to point out the following observations as they relate to the results of the laboratory analysis:

- There were four (4) days where the 0.3 µg/m^3 manganese threshold limit was exceeded:
  - April 3, 2019, April 9, 2019, April 12, 2019, and April 15, 2019
- Further investigation was conducted for these dates. Please see the Attachment I: Supporting Documentation for an explanation of all activities at the terminal, the wind speed and direction, and the total trucks loaded out.
- Watco is continuing to investigate all instances of exceedances to determine contributing factors.

315 West 3rd Street
Pittsburg, KS 66762
Phone: 620-231-2230
Fax: 620-231-0812

If you have any questions regarding this document or any of the attachments, please contact Shonta' Moore, Environmental Manager with Watco Companies, LLC at (832) 302-6055 or shonta.moore@watcocompanies.com.

Sincerely,

Shonta' Moore, REM
Corporate Environmental Manager – Air

315 West 3rd Street
Pittsburg, KS 66762
Phone: 620-231-2230
Fax: 620-231-0812

Attachment I:
Supporting Documentation

Sample Date	Manganese (Mn) Result ng/m^3	Exceedance (Y/N)	Activity Description	Wind Direction (avg)	Avg Wind Speed (mph)
4.3.19	706	yes	Loaded 19 manganese bulk truck loads; loaded 33 other bulk loads; filled 25 sacks of manganese in package department; no rail	236.11 WSW	7.22 mph
4.6.19	135	no	Terminal Closed	115.42 ESE	3.82 mph
4.9.19	395	yes	Loaded 10 manganese bulk truck loads; loaded 31 other bulk loads; filled 11 sacks of manganese in pacakge department; no rail	150.85 ESE	7.96 mph
4.12.19	462	yes	Loaded 9 manganese bulk truck loads; loaded 32 other bulk loads; filled 11 sacks of manganese in package department; no rail	235.82 WSW	14.94 mph
4.15.19	621	yes	Loaded 9 manganese bulk truck loads; loaded 37 other bulk loads; filled 14 sacks of manganese in package department; no rail	245.98 WSW	7.89 mph
4.18.19	321	yes	Loaded 18 manganese bulk truck loads; loaded 25 other bulk loads	156.03 SSE	8.67 mph
4.21.19	ND	no	Terminal Closed	188.63 S	7.08 mph
4.24.19	118	no	No barge; Loaded 19 Mn bulk truck loads; Loaded 23 other bulk loads	78.99 ENE	4.01 mph
4.27.19	ND	no	Terminal Closed	59.91 ENE	10.38 mph
4.30.19	ND	no	Loaded 5 manganese bulk truck loads; loaded 22 other bulk loads; filled 11 super sacks SIMn in pacage department	58.99 ENE	8.21 mph

Average (ng/m^3)	394.00
Average (µg/m^3)	0.394

315 West 3rd Street
Pittsburg, KS 66762
Phone: 620-231-2230
Fax: 620-231-0812

Attachment II:
April 2019 Data Report

Customer First – Safety Always!

PARTICULATE (PM_{10}), METALS, AND METEOROLOGICAL MONITORING DATA REPORT
WATCO'S CHICAGO FERRO TERMINAL
APRIL 2019

Prepared By:

MSI Trinity
4525 Wasatch Blvd.
Suite 200
Salt Lake City, Utah 84124

Watco Terminal & Port Services
2926 E. 126th Street
Chicago, Illinois 60633

May 2019

Trinity Consultants

Environmental solutions delivered uncommonly well

TABLE OF CONTENTS

FIGURES

TABLES

APPENDICES

This report, prepared for Watco Terminal & Port Services by MSI Trinity Consultants, summarizes PM_{10}, Arsenic (As), Cadmium (Cd), Chromium (Cr), Lead (Pb), Manganese (Mn), Nickel (Ni), and Vanadium (V) metals and wind data for the period April 1 through April 30, 2019 that are being collected at monitoring stations operated by Watco at the Chicago Ferro Terminal. The purpose for the air quality and meteorological measurements is in response to a May 15, 2018 request made from EPA under Section 114(a) of the Clean Air Act in an effort to determine if Watco's emission sources are in compliance with the Clean Air Act and the Illinois State Implementation Program.

The Chicago Ferro Terminal is located near the intersection of E. 126th street and S. Carondolet Ave in Chicago, Illinois. The air quality monitoring station, located in the facility office building area, collects ambient filter-based particulate matter less than 10 (PM_{10}) concentration data. Since the nature of the dust principally contains lead and the toxic metals, these filters are analyzed for the metals listed above. At the meteorological station which is located atop building "D", continuous measurements of wind speed and wind direction are recorded.

1.1 MONITORING STATION DESCRIPTION

On September 5, 2018, a Met One Inc. Model E-SEQ-FRM filter-based PM_{10} sampler was installed at the Chicago Ferro Terminal to document and record respirable PM_{10} concentrations. Official PM_{10} monitoring began on September 17, 2018. The meteorological monitoring station consisting of a wind speed and wind direction sensor was installed prior to September 2018 by Watco at the Chicago Ferro Terminal. The sampling locations of the PM_{10} and meteorological monitoring equipment in latitude and longitude and in UTM coordinates are presented in Table 1-1. Figure 1.1 presents a Google Earth image showing the PM_{10} and meteorological sampling locations. Figures 1.2 and 1.3 present photographs of the PM_{10} sampler and meteorological measurement system.

Table 1-1 PM_{10} and Meteorological Sampling Locations

	Meteorological	Air Quality
Latitude (WGS84)	41°40'7.65"N	41°40'5.69"N
Longitude (WGS84)	87°33'19.90"W	87°33'11.68"W
UTM Easting (m) (NAD83)	453754.62	453944.31
UTM Northing (m) (NAD83)	4613152.66	4613090.99
Elevation (m-msl)	178.3	178.3

Figure 1.1 Google Earth Image Showing PM_{10} and Meteorological Monitoring Locations

Figure 1.2 Photograph of PM_{10} Sampling Location

Figure 1.3 Photograph of Meteorological Tower on Building D

1.2 MONITORING EQUIPMENT

At the PM_{10} sampling location, a Met One E-SEQ-FRM filter-based sampler, which is a candidate EPA federal reference method for PM_{10}, is operated. In this unit, a sample stream passes through filter cassettes containing a 47 mm diameter sample filter. A mass flow controller downstream of the filter controls the flow rate at a constant volumetric level. The sampler is configured to collect 24-hour (midnight to midnight) samples every three days in accordance with the schedule adopted by EPA. The Met One 034B Wind Sensor, attached to tripod mast, combines wind speed and direction measurements in a single sensing unit. Wind measurements are recorded continuously.

This section of the report summarizes the PM_{10} and metals concentration data, and wind data results for April 1 through April 30, 2019. PM_{10} and metal concentration filter results, and hourly wind speed and direction data are tabulated in the appendices. For the meteorological measurements, the appendix tables display the hourly average of measurements recorded in the hour "ending"; that is, the first hour of the day is labeled 01, meaning the hour beginning at 00:00:01 and ending at 01:00:00 a.m. The second hour is labeled 02, meaning the values collected from 01:00:01 a.m. to 02:00:00 a.m.

Gravimetric and metals analysis results were provided by Intermountain Laboratories (IML). For the determination of metals (As, Cd, Cr, Pb, Mn, Ni, and V) on PM air filters, EPA's IO Compendium Method IO-3.5: "Determination of Metals in Ambient Particulate Matter Using Inductively Coupled Plasma/Mass Spectrometry (ICP/MS)" was utilized by the analytical laboratory.

2.1 PM_{10} AND METALS CONCENTRATION DATA

The three-day PM_{10} filter sampling results, in micrograms per cubic meter ($\mu g/m^3$), and sampling information for the April 1 through April 30 monitoring period are presented in Table 2-1 and Appendix A. Metals concentrations, in nanograms per cubic meter (ng/m^3) and corrected to standard temperature and pressure (STP), for the April 1 through April 30 monitoring period are presented in Table 2-2 and Appendix B.

Table 2-1 PM_{10} Concentration Results in Micrograms per Cubic Meter from April 1 through April 30, 2019

Sampling Date	Filter Number	Net Weight (mg)	Elapsed Time (min)	LTP PM_{10} Conc. ($\mu g/m^3$)	STP PM_{10} Conc. ($\mu g/m^3$)	Comments
04/03/19	P2954583	0.6947	1440	28.9	27.7	
04/06/19	P2954584	1.4316	1440	59.6	57.9	
04/09/19	P2954585	0.9372	1440	39.0	38.5	
04/12/19	P2954586	0.5349	1440	22.2	21.6	
04/15/19	P2954588	0.4621	1440	19.2	18.4	
04/18/19	P2954589	0.3318	1440	13.8	13.5	
04/21/19	P2954590	0.3979	1440	16.5	16.4	
04/24/19	P2954591	0.8648	1440	36.0	35.2	
04/27/19	P2954592	0.1142	1440	4.7	4.5	
04/30/19	P2954593	0.2702	1440	11.2	10.7	

Table 2-2 Metal Concentration Results in Nanograms per Cubic Meter from April 1 through April 30, 2019

Sampling Date	Filter Number	As[1] (ng/m³)	Cd[1] (ng/m³)	Cr[1] (ng/m³)	Pb[1] (ng/m³)	Mn[1] (ng/m³)	Ni[1] (ng/m³)	V[1] (ng/m³)
04/03/19	P2954583	0	0	0	4.05	706	0	0
04/06/19	P2954584	8.73	0	0	20.1	135	0	0
04/09/19	P2954585	2.23	0	0	11.1	395	0	0
04/12/19	P2954586	0	0	0	2.35	462	0	0
04/15/19	P2954588	0	0	0	2.63	621	0	0
04/18/19	P2954589	0	0	0	2.6	321	0	0
04/21/19	P2954590	2.26	0	0	3.64	0	0	0
04/24/19	P2954591	2.94	0	0	19	118	0	0
04/27/19	P2954592	0	0	0	0	0	0	0
04/30/19	P2954593	0	0	0	3.33	0	0	0

[1] Corrected to standard temperature and pressure (0°C and 760 mmHg)

2.2 HORIZONTAL WIND DIRECTION AND WIND SPEED

Figure 2.1 presents a diagram of the joint frequency of occurrence distributions (wind rose) of wind speed and wind direction for April 1 through April 30, 2019. Hourly wind speed and wind direction data for April 2019 are presented in Appendix C.

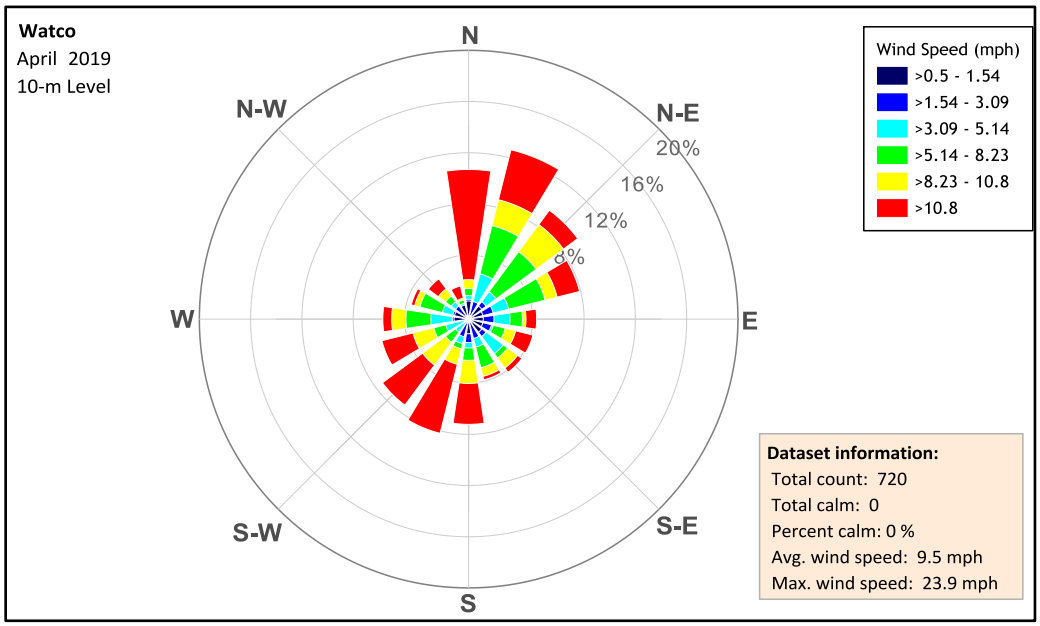

Figure 2.1 Wind Rose, April 1 through April 30, 2019

The predominant wind during April 2019 was from the north-northeast. Reported wind directions represent the directions **from which** the wind is blowing. During April, there were no calm periods. The percentage of wind speeds that were not calm but were less than 5.14 miles per hour (mph) were 21.5 percent. The percentage of wind that were greater than 10.8 mph was 36.8 percent. The maximum wind gust in April at the Watco monitoring station was 41.7 mph.

2.3 DATA RECOVERY

The data recovery for the PM_{10} sampler for the April 1 through April 30, 2019 monitoring period, in percent possible, was 100%.

3. QUALITY CONTROL

Visual inspection of the PM_{10} monitoring station occurs monthly since the Met One E-SEQ-FRM sampler holds 16 filters. At this time, the site technician performs any required maintenance. Monthly, the site operator performs flow checks on the Met One E-SEQ-FRM sampler. Calibration of the PM_{10} equipment occurs quarterly, when changes are made to the sampler, or when problems require it.

The meteorological data are accessed from the Stevens-connect.com website. Meteorological equipment calibrations will be performed when problems are noted and semi-annually. Sensors which do not meet calibration specifications or fail performance audits are repaired and recalibrated.

APPENDIX A

PM_{10} Concentration Data

PM_{10} Sampler Summary

April 1, 2019 - April 30, 2019

Network: **Trinity - Watco**
Site: Watco
Sampler ID: 1 **AQS ID:**
Sampler Type: Met One E-SEQ-FRM

Date	Filter ID	Concentration (µg/m3) LTP	Concentration (µg/m3) STP	Sample Period (hr:min)	Sample Volume (m3)	Std Volume (m3)	Tare (mg)	Mass Gross (mg)	Net (mg)	Flag	Comments
04/03/19	P2954583	**28.9**	**27.7**	24:00	24.0	25.0	384.8191	385.5138	0.6947		
04/06/19	P2954584	**59.6**	**57.9**	24:00	24.0	24.7	390.0334	391.4650	1.4316		
04/09/19	P2954585	**39.0**	**38.5**	24:00	24.0	24.4	391.0285	391.9657	0.9372		
04/12/19	P2954586	**22.2**	**21.6**	24:00	24.0	24.7	390.8742	391.4091	0.5349		
04/15/19	P2954588	**19.2**	**18.4**	24:00	24.0	25.0	400.2707	400.7328	0.4621		
04/18/19	P2954589	**13.8**	**13.5**	24:00	24.0	24.5	406.0249	406.3567	0.3318		
04/21/19	P2954590	**16.5**	**16.4**	24:00	24.0	24.2	388.5258	388.9237	0.3979		
04/24/19	P2954591	**36.0**	**35.2**	24:00	24.0	24.6	392.6224	393.4872	0.8648		
04/27/19	P2954592	**4.7**	**4.5**	24:00	24.0	25.3	396.9319	397.0461	0.1142		
04/30/19	P2954593	**11.2**	**10.7**	24:00	24.0	25.2	389.2857	389.5559	0.2702		
04/14/19	P2954587		**Field Blank**				393.8846	393.8911	0.0065		

# Valid	Recovery	Average	St. Dev.	Max	Min
10	**100%**	**24.4**	**15.8**	**57.9**	**4.5**

APPENDIX B

Metals Concentration Data

Inter-Mountain Labs
1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

Your Environmental Monitoring Partner

Date: 5/8/2019

CLIENT: Trinity Consultants
Project: Watco
Lab Order: S1905085

CASE NARRATIVE

Report ID: S1905085001

Samples 2954583 #246, 2954584 #247, 2954585 #248, 2954586 #249, 2954587 #258, 2954588 #259, 2954589 #260, 2954590 #263, 2954591 #266, 2954592 #268 and 2954593 #270 were received on May 3, 2019.

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

"Standard Methods For The Examination of Water and Wastewater", approved method versions
Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 3rd Edition
40 CFR Parts 136 and 141
40 CFR Part 50, Appendices B, J, L, and O
Methods indicated in the Methods Update Rule published in the Federal Register Friday, May 18, 2012
ASTM approved and recognized standards

All Quality Control parameters met the acceptance criteria defined by EPA and Inter-Mountain Laboratories except as indicated in this case narrative.

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

Inter-Mountain Labs
1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

Your Environmental Monitoring Partner

Sample Analysis Report

CLIENT: Trinity Consultants
4525 Wasatch Blvd.
Suite 200
Salt Lake City, UT 84124

Project: Watco
Lab ID: S1905085-001
Client Sample ID: 2954583 #246

Date Reported: 5/8/2019
Report ID: S1905085001

Work Order: S1905085
Collection Date: 4/3/2019
Date Received: 5/3/2019 9:00:00 AM
Sampler: MS
Matrix: Filter
COC: 181540

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m^3	04/03/2019 0000	Field
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	05/07/2019 1945 MS	IO-3.5
Cadmium	ND	1000		ng/filter	05/07/2019 1945 MS	IO-3.5
Chromium	ND	1500		ng/filter	05/07/2019 1945 MS	IO-3.5
Lead	100	50		ng/filter	05/07/2019 1945 MS	IO-3.5
Manganese	16900	600		ng/filter	05/07/2019 1945 MS	IO-3.5
Nickel	ND	1300		ng/filter	05/07/2019 1945 MS	IO-3.5
Vanadium	ND	2450		ng/filter	05/07/2019 1945 MS	IO-3.5
Filter Metals Concentration						
Arsenic	ND	2.08		ng/m^3	05/08/2019 1501 JJ	Calculation
Cadmium	ND	41.7		ng/m^3	05/08/2019 1501 JJ	Calculation
Chromium	ND	62.5		ng/m^3	05/08/2019 1501 JJ	Calculation
Lead	4.05	2.08		ng/m^3	05/08/2019 1501 JJ	Calculation
Manganese	706	25		ng/m^3	05/08/2019 1501 JJ	Calculation
Nickel	ND	54.2		ng/m^3	05/08/2019 1501 JJ	Calculation
Vanadium	ND	102		ng/m^3	05/08/2019 1501 JJ	Calculation

These results apply only to the samples tested.

Qualifiers:

B	Analyte detected in the associated Method Blank
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
L	Analyzed by another laboratory
ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits
X	Matrix Effect

RL - Reporting Limit

C	Calculated Value
G	Analyzed at IML Gillette laboratory
J	Analyte detected below quantitation limits
M	Value exceeds Monthly Ave or MCL or is less than LCL
O	Outside the Range of Dilutions
U	Analysis reported under the reporting limit

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

Sample Analysis Report

CLIENT: Trinity Consultants
4525 Wasatch Blvd.
Suite 200
Salt Lake City, UT 84124

Project: Watco
Lab ID: S1905085-002
Client Sample ID: 2954584 #247

Date Reported: 5/8/2019
Report ID: S1905085001

Work Order: S1905085
Collection Date: 4/6/2019
Date Received: 5/3/2019 9:00:00 AM
Sampler: MS
Matrix: Filter
COC: 181540

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m^3	04/06/2019 0000	Field
IO-3.5 Teflon Filters						
Arsenic	210	50		ng/filter	05/07/2019 1956 MS	IO-3.5
Cadmium	ND	1000		ng/filter	05/07/2019 1956 MS	IO-3.5
Chromium	ND	1500		ng/filter	05/07/2019 1956 MS	IO-3.5
Lead	480	50		ng/filter	05/07/2019 1956 MS	IO-3.5
Manganese	3200	600		ng/filter	05/07/2019 1956 MS	IO-3.5
Nickel	ND	1300		ng/filter	05/07/2019 1956 MS	IO-3.5
Vanadium	ND	2450		ng/filter	05/07/2019 1956 MS	IO-3.5
Filter Metals Concentration						
Arsenic	8.73	2.08		ng/m^3	05/08/2019 1501 JJ	Calculation
Cadmium	ND	41.7		ng/m^3	05/08/2019 1501 JJ	Calculation
Chromium	ND	62.5		ng/m^3	05/08/2019 1501 JJ	Calculation
Lead	20.1	2.08		ng/m^3	05/08/2019 1501 JJ	Calculation
Manganese	135	25		ng/m^3	05/08/2019 1501 JJ	Calculation
Nickel	ND	54.2		ng/m^3	05/08/2019 1501 JJ	Calculation
Vanadium	ND	102		ng/m^3	05/08/2019 1501 JJ	Calculation

These results apply only to the samples tested.

Qualifiers:

B	Analyte detected in the associated Method Blank
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
L	Analyzed by another laboratory
ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits
X	Matrix Effect

RL - Reporting Limit

C	Calculated Value
G	Analyzed at IML Gillette laboratory
J	Analyte detected below quantitation limits
M	Value exceeds Monthly Ave or MCL or is less than LCL
O	Outside the Range of Dilutions
U	Analysis reported under the reporting limit

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

Sample Analysis Report

CLIENT: Trinity Consultants
4525 Wasatch Blvd.
Suite 200
Salt Lake City, UT 84124

Project: Watco
Lab ID: S1905085-003
Client Sample ID: 2954585 #248

Date Reported: 5/8/2019
Report ID: S1905085001

Work Order: S1905085
Collection Date: 4/9/2019
Date Received: 5/3/2019 9:00:00 AM
Sampler: MS
Matrix: Filter
COC: 181540

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m^3	04/09/2019 0000	Field
IO-3.5 Teflon Filters						
Arsenic	50	50		ng/filter	05/07/2019 2008 MS	IO-3.5
Cadmium	ND	1000		ng/filter	05/07/2019 2008 MS	IO-3.5
Chromium	ND	1500		ng/filter	05/07/2019 2008 MS	IO-3.5
Lead	270	50		ng/filter	05/07/2019 2008 MS	IO-3.5
Manganese	9500	600		ng/filter	05/07/2019 2008 MS	IO-3.5
Nickel	ND	1300		ng/filter	05/07/2019 2008 MS	IO-3.5
Vanadium	ND	2450		ng/filter	05/07/2019 2008 MS	IO-3.5
Filter Metals Concentration						
Arsenic	2.23	2.08		ng/m^3	05/08/2019 1501 JJ	Calculation
Cadmium	ND	41.7		ng/m^3	05/08/2019 1501 JJ	Calculation
Chromium	ND	62.5		ng/m^3	05/08/2019 1501 JJ	Calculation
Lead	11.1	2.08		ng/m^3	05/08/2019 1501 JJ	Calculation
Manganese	395	25		ng/m^3	05/08/2019 1501 JJ	Calculation
Nickel	ND	54.2		ng/m^3	05/08/2019 1501 JJ	Calculation
Vanadium	ND	102		ng/m^3	05/08/2019 1501 JJ	Calculation

These results apply only to the samples tested.

Qualifiers:

B	Analyte detected in the associated Method Blank
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
L	Analyzed by another laboratory
ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits
X	Matrix Effect

RL - Reporting Limit

C	Calculated Value
G	Analyzed at IML Gillette laboratory
J	Analyte detected below quantitation limits
M	Value exceeds Monthly Ave or MCL or is less than LCL
O	Outside the Range of Dilutions
U	Analysis reported under the reporting limit

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

Sample Analysis Report

CLIENT: Trinity Consultants
4525 Wasatch Blvd.
Suite 200
Salt Lake City, UT 84124

Project: Watco
Lab ID: S1905085-004
Client Sample ID: 2954586 #249

Date Reported: 5/8/2019
Report ID: S1905085001

Work Order: S1905085
Collection Date: 4/12/2019
Date Received: 5/3/2019 9:00:00 AM
Sampler: MS
Matrix: Filter
COC: 181540

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m^3	04/12/2019 0000	Field
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	05/07/2019 2032 MS	IO-3.5
Cadmium	ND	1000		ng/filter	05/07/2019 2032 MS	IO-3.5
Chromium	ND	1500		ng/filter	05/07/2019 2032 MS	IO-3.5
Lead	60	50		ng/filter	05/07/2019 2032 MS	IO-3.5
Manganese	11100	600		ng/filter	05/07/2019 2032 MS	IO-3.5
Nickel	ND	1300		ng/filter	05/07/2019 2032 MS	IO-3.5
Vanadium	ND	2450		ng/filter	05/07/2019 2032 MS	IO-3.5
Filter Metals Concentration						
Arsenic	ND	2.08		ng/m^3	05/08/2019 1501 JJ	Calculation
Cadmium	ND	41.7		ng/m^3	05/08/2019 1501 JJ	Calculation
Chromium	ND	62.5		ng/m^3	05/08/2019 1501 JJ	Calculation
Lead	2.35	2.08		ng/m^3	05/08/2019 1501 JJ	Calculation
Manganese	462	25		ng/m^3	05/08/2019 1501 JJ	Calculation
Nickel	ND	54.2		ng/m^3	05/08/2019 1501 JJ	Calculation
Vanadium	ND	102		ng/m^3	05/08/2019 1501 JJ	Calculation

These results apply only to the samples tested.

Qualifiers:

B	Analyte detected in the associated Method Blank
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
L	Analyzed by another laboratory
ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits
X	Matrix Effect

RL - Reporting Limit

C	Calculated Value
G	Analyzed at IML Gillette laboratory
J	Analyte detected below quantitation limits
M	Value exceeds Monthly Ave or MCL or is less than LCL
O	Outside the Range of Dilutions
U	Analysis reported under the reporting limit

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

Sample Analysis Report

CLIENT: Trinity Consultants
4525 Wasatch Blvd.
Suite 200
Salt Lake City, UT 84124

Project: Watco
Lab ID: S1905085-005
Client Sample ID: 2954587 #258

Date Reported: 5/8/2019
Report ID: S1905085001

Work Order: S1905085
Collection Date: 4/14/2019
Date Received: 5/3/2019 9:00:00 AM
Sampler: MS
Matrix: Filter
COC: 181540

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	05/07/2019 2038 MS	IO-3.5
Cadmium	ND	1000		ng/filter	05/07/2019 2038 MS	IO-3.5
Chromium	ND	1500		ng/filter	05/07/2019 2038 MS	IO-3.5
Lead	ND	50		ng/filter	05/07/2019 2038 MS	IO-3.5
Manganese	ND	600		ng/filter	05/07/2019 2038 MS	IO-3.5
Nickel	ND	1300		ng/filter	05/07/2019 2038 MS	IO-3.5
Vanadium	ND	2450		ng/filter	05/07/2019 2038 MS	IO-3.5

These results apply only to the samples tested.

Qualifiers:

B	Analyte detected in the associated Method Blank
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
L	Analyzed by another laboratory
ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits
X	Matrix Effect

RL - Reporting Limit

C	Calculated Value
G	Analyzed at IML Gillette laboratory
J	Analyte detected below quantitation limits
M	Value exceeds Monthly Ave or MCL or is less than LCL
O	Outside the Range of Dilutions
U	Analysis reported under the reporting limit

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

Sample Analysis Report

CLIENT: Trinity Consultants
4525 Wasatch Blvd.
Suite 200
Salt Lake City, UT 84124

Project: Watco
Lab ID: S1905085-006
Client Sample ID: 2954588 #259

Date Reported: 5/8/2019
Report ID: S1905085001

Work Order: S1905085
Collection Date: 4/15/2019
Date Received: 5/3/2019 9:00:00 AM
Sampler: MS
Matrix: Filter
COC: 181540

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m^3	04/15/2019 0000	Field
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	05/07/2019 2044 MS	IO-3.5
Cadmium	ND	1000		ng/filter	05/07/2019 2044 MS	IO-3.5
Chromium	ND	1500		ng/filter	05/07/2019 2044 MS	IO-3.5
Lead	60	50		ng/filter	05/07/2019 2044 MS	IO-3.5
Manganese	14900	600		ng/filter	05/07/2019 2044 MS	IO-3.5
Nickel	ND	1300		ng/filter	05/07/2019 2044 MS	IO-3.5
Vanadium	ND	2450		ng/filter	05/07/2019 2044 MS	IO-3.5
Filter Metals Concentration						
Arsenic	ND	2.08		ng/m^3	05/08/2019 1501 JJ	Calculation
Cadmium	ND	41.7		ng/m^3	05/08/2019 1501 JJ	Calculation
Chromium	ND	62.5		ng/m^3	05/08/2019 1501 JJ	Calculation
Lead	2.63	2.08		ng/m^3	05/08/2019 1501 JJ	Calculation
Manganese	621	25		ng/m^3	05/08/2019 1501 JJ	Calculation
Nickel	ND	54.2		ng/m^3	05/08/2019 1501 JJ	Calculation
Vanadium	ND	102		ng/m^3	05/08/2019 1501 JJ	Calculation

These results apply only to the samples tested.

Qualifiers:

B	Analyte detected in the associated Method Blank
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
L	Analyzed by another laboratory
ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits
X	Matrix Effect

RL - Reporting Limit

C	Calculated Value
G	Analyzed at IML Gillette laboratory
J	Analyte detected below quantitation limits
M	Value exceeds Monthly Ave or MCL or is less than LCL
O	Outside the Range of Dilutions
U	Analysis reported under the reporting limit

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

Sample Analysis Report

CLIENT: Trinity Consultants
4525 Wasatch Blvd.
Suite 200
Salt Lake City, UT 84124

Project: Watco
Lab ID: S1905085-007
Client Sample ID: 2954589 #260

Date Reported: 5/8/2019
Report ID: S1905085001

Work Order: S1905085
Collection Date: 4/18/2019
Date Received: 5/3/2019 9:00:00 AM
Sampler: MS
Matrix: Filter
COC: 181540

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m^3	04/18/2019 0000	Field
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	05/07/2019 2050 MS	IO-3.5
Cadmium	ND	1000		ng/filter	05/07/2019 2050 MS	IO-3.5
Chromium	ND	1500		ng/filter	05/07/2019 2050 MS	IO-3.5
Lead	60	50		ng/filter	05/07/2019 2050 MS	IO-3.5
Manganese	7700	600		ng/filter	05/07/2019 2050 MS	IO-3.5
Nickel	ND	1300		ng/filter	05/07/2019 2050 MS	IO-3.5
Vanadium	ND	2450		ng/filter	05/07/2019 2050 MS	IO-3.5
Filter Metals Concentration						
Arsenic	ND	2.08		ng/m^3	05/08/2019 1501 JJ	Calculation
Cadmium	ND	41.7		ng/m^3	05/08/2019 1501 JJ	Calculation
Chromium	ND	62.5		ng/m^3	05/08/2019 1501 JJ	Calculation
Lead	2.60	2.08		ng/m^3	05/08/2019 1501 JJ	Calculation
Manganese	321	25		ng/m^3	05/08/2019 1501 JJ	Calculation
Nickel	ND	54.2		ng/m^3	05/08/2019 1501 JJ	Calculation
Vanadium	ND	102		ng/m^3	05/08/2019 1501 JJ	Calculation

These results apply only to the samples tested.

Qualifiers:

B	Analyte detected in the associated Method Blank
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
L	Analyzed by another laboratory
ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits
X	Matrix Effect

RL - Reporting Limit

C	Calculated Value
G	Analyzed at IML Gillette laboratory
J	Analyte detected below quantitation limits
M	Value exceeds Monthly Ave or MCL or is less than LCL
O	Outside the Range of Dilutions
U	Analysis reported under the reporting limit

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

Sample Analysis Report

CLIENT: Trinity Consultants
4525 Wasatch Blvd.
Suite 200
Salt Lake City, UT 84124

Project: Watco
Lab ID: S1905085-008
Client Sample ID: 2954590 #263

Date Reported: 5/8/2019
Report ID: S1905085001

Work Order: S1905085
Collection Date: 4/21/2019
Date Received: 5/3/2019 9:00:00 AM
Sampler: MS
Matrix: Filter
COC: 181540

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m^3	04/21/2019 0000	Field
IO-3.5 Teflon Filters						
Arsenic	50	50		ng/filter	05/07/2019 2056 MS	IO-3.5
Cadmium	ND	1000		ng/filter	05/07/2019 2056 MS	IO-3.5
Chromium	ND	1500		ng/filter	05/07/2019 2056 MS	IO-3.5
Lead	90	50		ng/filter	05/07/2019 2056 MS	IO-3.5
Manganese	ND	600		ng/filter	05/07/2019 2056 MS	IO-3.5
Nickel	ND	1300		ng/filter	05/07/2019 2056 MS	IO-3.5
Vanadium	ND	2450		ng/filter	05/07/2019 2056 MS	IO-3.5
Filter Metals Concentration						
Arsenic	2.26	2.08		ng/m^3	05/08/2019 1501 JJ	Calculation
Cadmium	ND	41.7		ng/m^3	05/08/2019 1501 JJ	Calculation
Chromium	ND	62.5		ng/m^3	05/08/2019 1501 JJ	Calculation
Lead	3.64	2.08		ng/m^3	05/08/2019 1501 JJ	Calculation
Manganese	ND	25		ng/m^3	05/08/2019 1501 JJ	Calculation
Nickel	ND	54.2		ng/m^3	05/08/2019 1501 JJ	Calculation
Vanadium	ND	102		ng/m^3	05/08/2019 1501 JJ	Calculation

These results apply only to the samples tested.

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- L Analyzed by another laboratory
- ND Not Detected at the Reporting Limit
- S Spike Recovery outside accepted recovery limits
- X Matrix Effect

RL - Reporting Limit

- C Calculated Value
- G Analyzed at IML Gillette laboratory
- J Analyte detected below quantitation limits
- M Value exceeds Monthly Ave or MCL or is less than LCL
- O Outside the Range of Dilutions
- U Analysis reported under the reporting limit

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

Sample Analysis Report

CLIENT: Trinity Consultants
4525 Wasatch Blvd.
Suite 200
Salt Lake City, UT 84124

Project: Watco
Lab ID: S1905085-009
Client Sample ID: 2954591 #266

Date Reported: 5/8/2019
Report ID: S1905085001

Work Order: S1905085
Collection Date: 4/24/2019
Date Received: 5/3/2019 9:00:00 AM
Sampler: MS
Matrix: Filter
COC: 181540

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m^3	04/24/2019 0000	Field
IO-3.5 Teflon Filters						
Arsenic	70	50		ng/filter	05/07/2019 2102 MS	IO-3.5
Cadmium	ND	1000		ng/filter	05/07/2019 2102 MS	IO-3.5
Chromium	ND	1500		ng/filter	05/07/2019 2102 MS	IO-3.5
Lead	460	50		ng/filter	05/07/2019 2102 MS	IO-3.5
Manganese	2800	600		ng/filter	05/07/2019 2102 MS	IO-3.5
Nickel	ND	1300		ng/filter	05/07/2019 2102 MS	IO-3.5
Vanadium	ND	2450		ng/filter	05/07/2019 2102 MS	IO-3.5
Filter Metals Concentration						
Arsenic	2.94	2.08		ng/m^3	05/08/2019 1501 JJ	Calculation
Cadmium	ND	41.7		ng/m^3	05/08/2019 1501 JJ	Calculation
Chromium	ND	62.5		ng/m^3	05/08/2019 1501 JJ	Calculation
Lead	19.0	2.08		ng/m^3	05/08/2019 1501 JJ	Calculation
Manganese	118	25		ng/m^3	05/08/2019 1501 JJ	Calculation
Nickel	ND	54.2		ng/m^3	05/08/2019 1501 JJ	Calculation
Vanadium	ND	102		ng/m^3	05/08/2019 1501 JJ	Calculation

These results apply only to the samples tested.

Qualifiers:

B	Analyte detected in the associated Method Blank
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
L	Analyzed by another laboratory
ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits
X	Matrix Effect

RL - Reporting Limit

C	Calculated Value
G	Analyzed at IML Gillette laboratory
J	Analyte detected below quantitation limits
M	Value exceeds Monthly Ave or MCL or is less than LCL
O	Outside the Range of Dilutions
U	Analysis reported under the reporting limit

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

Sample Analysis Report

CLIENT: Trinity Consultants
4525 Wasatch Blvd.
Suite 200
Salt Lake City, UT 84124

Project: Watco
Lab ID: S1905085-010
Client Sample ID: 2954592 #268

Date Reported: 5/8/2019
Report ID: S1905085001

Work Order: S1905085
Collection Date: 4/27/2019
Date Received: 5/3/2019 9:00:00 AM
Sampler: MS
Matrix: Filter
COC: 181540

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m^3	04/27/2019 0000	Field
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	05/07/2019 2108 MS	IO-3.5
Cadmium	ND	1000		ng/filter	05/07/2019 2108 MS	IO-3.5
Chromium	ND	1500		ng/filter	05/07/2019 2108 MS	IO-3.5
Lead	ND	50		ng/filter	05/07/2019 2108 MS	IO-3.5
Manganese	ND	600		ng/filter	05/07/2019 2108 MS	IO-3.5
Nickel	ND	1300		ng/filter	05/07/2019 2108 MS	IO-3.5
Vanadium	ND	2450		ng/filter	05/07/2019 2108 MS	IO-3.5
Filter Metals Concentration						
Arsenic	ND	2.08		ng/m^3	05/08/2019 1501 JJ	Calculation
Cadmium	ND	41.7		ng/m^3	05/08/2019 1501 JJ	Calculation
Chromium	ND	62.5		ng/m^3	05/08/2019 1501 JJ	Calculation
Lead	ND	2.08		ng/m^3	05/08/2019 1501 JJ	Calculation
Manganese	ND	25		ng/m^3	05/08/2019 1501 JJ	Calculation
Nickel	ND	54.2		ng/m^3	05/08/2019 1501 JJ	Calculation
Vanadium	ND	102		ng/m^3	05/08/2019 1501 JJ	Calculation

These results apply only to the samples tested.

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- L Analyzed by another laboratory
- ND Not Detected at the Reporting Limit
- S Spike Recovery outside accepted recovery limits
- X Matrix Effect

RL - Reporting Limit

- C Calculated Value
- G Analyzed at IML Gillette laboratory
- J Analyte detected below quantitation limits
- M Value exceeds Monthly Ave or MCL or is less than LCL
- O Outside the Range of Dilutions
- U Analysis reported under the reporting limit

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

Sample Analysis Report

CLIENT: Trinity Consultants
4525 Wasatch Blvd.
Suite 200
Salt Lake City, UT 84124

Project: Watco
Lab ID: S1905085-011
Client Sample ID: 2954593 #270

Date Reported: 5/8/2019
Report ID: S1905085001

Work Order: S1905085
Collection Date: 4/30/2019
Date Received: 5/3/2019 9:00:00 AM
Sampler: MS
Matrix: Filter
COC: 181540

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m^3	04/30/2019 0000	Field
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	05/07/2019 2114 MS	IO-3.5
Cadmium	ND	1000		ng/filter	05/07/2019 2114 MS	IO-3.5
Chromium	ND	1500		ng/filter	05/07/2019 2114 MS	IO-3.5
Lead	80	50		ng/filter	05/07/2019 2114 MS	IO-3.5
Manganese	ND	600		ng/filter	05/07/2019 2114 MS	IO-3.5
Nickel	ND	1300		ng/filter	05/07/2019 2114 MS	IO-3.5
Vanadium	ND	2450		ng/filter	05/07/2019 2114 MS	IO-3.5
Filter Metals Concentration						
Arsenic	ND	2.08		ng/m^3	05/08/2019 1501 JJ	Calculation
Cadmium	ND	41.7		ng/m^3	05/08/2019 1501 JJ	Calculation
Chromium	ND	62.5		ng/m^3	05/08/2019 1501 JJ	Calculation
Lead	3.33	2.08		ng/m^3	05/08/2019 1501 JJ	Calculation
Manganese	ND	25		ng/m^3	05/08/2019 1501 JJ	Calculation
Nickel	ND	54.2		ng/m^3	05/08/2019 1501 JJ	Calculation
Vanadium	ND	102		ng/m^3	05/08/2019 1501 JJ	Calculation

These results apply only to the samples tested.

Qualifiers:

B	Analyte detected in the associated Method Blank
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
L	Analyzed by another laboratory
ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits
X	Matrix Effect

RL - Reporting Limit

C	Calculated Value
G	Analyzed at IML Gillette laboratory
J	Analyte detected below quantitation limits
M	Value exceeds Monthly Ave or MCL or is less than LCL
O	Outside the Range of Dilutions
U	Analysis reported under the reporting limit

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

Inter-Mountain Labs

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.

181540

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

Report Address	Contact Name	Email	Phone
MSI/Trinity	Matt Sloan	msloan@trinityconsultants.com	330-844-6998

Invoice Address: 2926 E 126 St Chicago, IL 60633

Purchase Order # | Quote #

ITEM	LAB ID (Lab Use Only)	DATE SAMPLED	TIME SAMPLED	SAMPLE IDENTIFICATION	Matrix	# of Containers	Metals	REMARKS
1	51905085-00	4-3-19		2 954 583-		246	X	
2	002	4-~~6~~-19		2 954 584-		247	X	
3	003	4-9-19		2 954 585-		248	X	
4	004	4-12-19		2 954 586-		249	X	
5	005	4-14-19		2 954 587-		258	X	Field Sample
6	006	4-15-19		2 954 ~~588~~-		259	X	
7	007	4-18-19		2 954 589-		260	X	
8	008	4-21-19		2 954 590-		263	X	
9	009	4-24-19		2 954 591-		266	X	
10	010	4-27-19		2 954 592-		268	X	
11	011	4-30-19		2 954 593-		270	X	
12								
13								
14								

LAB COMMENTS	Relinquished By (Signature/Printed)	DATE	TIME	Received By (Signature/Printed)	DATE	TIME
	Matt Sloan	5/1/19	3:00 pm	Qayce Burnett - IML	5-3-19	9:00
	Mary Hannigan IML	5/7/19	09:35	Kathy Boyd	5.7.19	9:36

SHIPPING INFO
- [X] UPS
- [ ] Fed Express
- [ ] US Mail
- [ ] Hand Carried
- [ ] Other _____

MATRIX CODES

Water	WT
Soil	SL
Solid	SD
Filter	FT
Other	OT

TURNAROUND TIMES

Check desired service
- [ ] Standard turnaround
- [ ] **RUSH - 5 Working Days**
- [X] **URGENT** - < 2 Working Days

Rush & Urgent Surcharges will be applied

COMPLIANCE INFORMATION

Compliance Monitoring? Y / N
Program (SDWA, NPDES,...)
PWSID / Permit #
Chlorinated? Y / N
Sample Disposal: Lab Client

ADDITIONAL REMARKS

-3.6 Corrected
2054 2 Solid +0.9 Rounded
2 Semi -1.

INTER-MOUNTAIN LABS

Survey Meter # 2241-2
pH strip lot # HC857466
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, please write on back)*

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): 181540			
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 _____	_____

Preserved samples for Rad analysis accompanied by Field Blank? **Yes** **No**

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	Specially requested detection limits (RLs) assigned?	Yes	No	N/A
8	Have rush or project due dates been checked and accepted?	Yes	No	N/A
9	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)*: KB

Set ID: S1905095

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:

APPENDIX C

Hourly Wind Speed and Wind Direction Data

Watco

10M Unit Vector Wind Speed and Direction in mph for April, 2019

Hr Beg Hr End Day	0 1	1 2	2 3	3 4	4 5	5 6	6 7	7 8	8 9	9 10	10 11	11 12	12 13
1	167/04.9	170/04.3	165/04.3	166/05.5	170/04.2	167/05.9	168/05.4	181/07.9	198/08.5	207/10.6	205/12.8	207/14.4	203/16.0
2	208/11.6	208/11.9	212/13.4	211/12.3	211/12.3	213/12.0	206/09.3	207/10.2	214/12.8	217/11.6	223/11.2	231/13.4	234/16.1
3	236/08.7	236/09.4	242/07.2	263/07.2	273/05.7	273/04.9	248/05.0	268/04.9	303/06.4	277/04.5	287/04.4	080/05.9	068/06.4
4	292/02.2	009/03.1	057/01.4	033/03.8	035/05.0	067/04.4	064/05.8	067/08.2	080/07.9	072/09.1	086/09.7	088/08.5	064/08.2
5	118/06.4	119/07.3	123/06.4	129/05.6	131/03.4	095/02.1	058/02.1	028/03.6	031/02.7	022/03.7	028/03.8	020/04.4	025/03.7
6	150/01.6	187/02.0	179/01.6	212/01.9	276/01.2	119/01.3	360/01.4	338/01.3	089/02.9	061/03.0	032/06.7	038/06.0	037/07.0
7	147/04.8	168/04.4	153/04.4	127/04.0	132/04.8	147/05.2	142/05.0	160/06.9	161/06.8	173/06.7	196/08.8	196/09.8	177/10.4
8	223/04.6	223/03.9	256/04.9	251/04.9	252/04.5	266/03.3	307/03.1	299/03.7	310/04.8	286/04.0	014/05.6	039/06.0	066/05.9
9	310/09.0	001/17.3	009/10.2	027/05.0	052/01.3	283/01.4	309/02.9	316/06.0	003/06.7	029/07.1	040/06.9	056/06.4	057/07.2
10	013/12.3	011/11.9	008/11.2	009/11.7	015/12.4	017/13.1	024/13.8	026/11.4	027/11.4	032/11.3	034/10.8	037/12.2	041/10.7
11	068/14.2	087/13.9	088/13.5	101/16.3	095/14.2	076/12.4	077/13.1	093/14.6	104/15.2	103/12.8	097/11.1	061/08.6	048/09.6
12	282/05.4	253/05.0	197/08.3	206/10.6	249/08.4	233/11.4	230/13.7	220/15.4	225/18.1	230/19.8	223/22.2	224/21.9	219/23.9
13	264/07.1	257/09.5	246/09.0	240/08.9	236/08.1	214/07.4	221/07.7	255/11.8	254/12.8	253/12.5	252/13.5	254/12.7	262/12.8
14	029/12.8	027/13.4	025/14.3	034/13.4	052/13.7	044/12.6	047/15.7	045/14.6	019/14.3	012/14.3	013/15.9	011/14.5	011/09.5
15	337/09.8	344/11.3	309/06.9	288/06.9	280/05.7	275/04.3	273/04.5	283/04.9	267/05.1	259/07.6	253/07.7	258/08.6	257/09.4
16	184/10.0	184/11.2	186/13.7	188/12.2	192/12.3	197/11.8	201/12.1	202/11.9	217/11.4	223/11.9	230/10.8	232/10.4	234/08.8
17	027/07.2	031/07.4	023/06.5	016/04.8	013/04.9	026/06.0	055/04.3	061/03.1	129/02.7	131/04.7	149/09.3	161/11.9	171/13.6
18	205/14.8	212/16.0	214/16.7	229/12.5	215/11.2	224/09.2	277/07.3	271/06.1	280/04.8	281/05.2	284/05.8	277/05.0	278/06.0
19	003/12.9	005/17.1	008/15.9	004/18.0	005/18.0	004/18.5	003/18.9	003/19.8	003/20.1	004/19.4	004/20.1	002/21.1	005/22.5
20	015/13.7	010/12.9	007/15.5	007/16.1	004/18.4	004/18.7	005/18.0	007/17.2	006/17.7	005/18.0	006/18.7	005/17.9	359/19.5
21	198/01.8	195/03.9	206/04.6	222/05.3	211/04.5	201/04.3	184/03.0	174/04.1	186/06.2	185/06.4	197/06.8	230/07.6	216/06.8
22	159/07.3	169/07.5	170/05.9	168/05.8	176/06.4	180/08.4	180/09.6	173/11.0	170/11.4	188/13.0	182/15.9	187/14.6	197/16.7
23	213/17.0	229/11.7	256/12.2	261/12.4	269/09.2	005/11.6	015/08.9	025/09.2	012/09.3	017/07.1	017/08.7	032/07.4	049/08.6
24	139/00.9	093/00.9	034/02.6	075/03.0	073/03.4	063/04.3	063/04.3	073/04.0	098/03.8	095/03.8	074/04.1	035/05.1	062/05.4
25	066/01.8	059/02.7	094/01.9	031/02.1	133/00.7	357/01.1	045/01.4	111/02.2	080/03.8	093/04.6	029/07.0	042/07.5	038/07.6
26	351/21.4	354/18.2	351/13.9	329/12.2	311/08.3	291/06.7	284/08.0	315/13.0	327/15.9	327/16.7	333/16.0	323/13.8	314/15.7
27	322/04.9	026/07.7	023/07.3	027/05.0	021/04.3	048/06.9	065/07.0	069/07.8	065/07.7	071/07.5	092/04.9	106/04.7	093/06.0
28	022/16.3	021/11.9	003/12.1	003/11.5	005/12.4	005/11.7	012/11.7	032/10.9	046/10.3	044/08.6	038/09.9	040/09.6	043/07.3
29	130/04.8	116/07.8	123/08.9	119/07.6	115/09.8	118/12.8	141/09.6	152/08.4	134/08.3	133/10.2	136/10.8	126/11.5	128/07.5
30	046/04.5	041/06.8	055/05.1	049/04.6	038/08.2	010/09.9	020/08.1	032/08.3	022/06.9	035/08.7	033/06.9	031/08.0	033/08.2
MEAN	**156/08.5**	**072/09.1**	**078/08.7**	**020/08.4**	**354/07.9**	**019/08.1**	**023/08.0**	**027/08.7**	**047/09.2**	**046/09.5**	**031/10.2**	**039/10.3**	**045/10.6**
MAX	**351/21.4**	**354/18.2**	**214/16.7**	**004/18.0**	**004/18.4**	**004/18.7**	**003/18.9**	**003/19.8**	**003/20.1**	**230/19.8**	**223/22.2**	**224/21.9**	**219/23.9**
MIN	**139/00.9**	**093/00.9**	**057/01.4**	**212/01.9**	**133/00.7**	**357/01.1**	**045/01.4**	**338/01.3**	**129/02.7**	**061/03.0**	**028/03.8**	**020/04.4**	**025/03.7**

MEANS REQUIRE 75% VALID DATA

MISSING DATA DENOTED BY ---

Watco

10M Unit Vector Wind Speed and Direction in mph for April, 2019

Hr Beg Hr End Day	13 14	14 15	15 16	16 17	17 18	18 19	19 20	20 21	21 22	22 23	23 24	MEAN	MAX SPD	MIN SPD
1	199/16.8	206/17.3	203/16.5	206/16.6	206/15.4	202/14.3	195/11.9	195/11.8	201/11.3	198/11.4	203/11.1	**191/10.8**	**206/17.3**	**170/04.2**
2	230/17.0	244/18.0	251/14.6	258/16.0	261/14.0	255/12.1	259/11.7	259/10.1	257/08.0	239/07.9	233/08.4	**231/12.3**	**244/18.0**	**239/07.9**
3	247/11.4	256/13.0	256/11.7	261/11.4	261/09.4	255/08.6	255/09.8	238/10.3	267/02.5	093/02.1	213/01.8	**257/07.2**	**256/13.0**	**213/01.8**
4	066/07.9	064/07.2	059/06.9	068/06.8	104/11.2	107/12.5	109/11.1	114/08.7	113/09.0	120/08.1	119/07.9	**075/07.3**	**107/12.5**	**057/01.4**
5	032/04.4	033/06.8	041/06.0	056/05.7	053/04.4	089/02.6	007/02.0	029/03.3	048/02.7	115/02.2	039/01.8	**059/04.0**	**119/07.3**	**039/01.8**
6	050/06.6	052/06.3	043/07.7	048/06.6	050/05.7	043/03.3	136/01.9	120/01.8	138/05.1	136/04.6	134/04.4	**083/03.8**	**043/07.7**	**276/01.2**
7	182/09.1	213/13.2	213/13.3	209/14.3	211/15.2	219/14.8	252/10.5	276/09.5	272/07.1	275/05.4	252/05.1	**191/08.3**	**211/15.2**	**127/04.0**
8	060/07.0	099/07.7	092/06.9	091/05.1	220/09.4	219/10.6	216/10.3	215/11.1	218/12.2	234/10.3	258/09.8	**251/06.6**	**218/12.2**	**307/03.1**
9	053/07.2	052/05.4	343/07.0	288/10.3	291/10.3	286/08.2	286/07.5	281/06.5	346/15.4	006/14.2	010/12.4	**351/08.0**	**001/17.3**	**052/01.3**
10	027/11.4	041/13.0	041/11.8	041/13.2	057/14.3	062/15.3	062/13.8	064/14.6	068/14.3	064/14.7	062/14.5	**037/12.7**	**062/15.3**	**041/10.7**
11	049/08.7	106/11.6	120/12.0	128/10.1	133/11.0	131/08.5	131/10.1	131/12.0	172/11.7	231/05.6	123/02.9	**103/11.4**	**101/16.3**	**123/02.9**
12	222/22.6	231/22.0	229/20.8	230/21.4	241/19.1	245/16.4	243/13.3	242/11.2	262/10.5	262/09.5	268/07.9	**236/15.0**	**219/23.9**	**253/05.0**
13	262/12.5	271/10.5	280/08.4	278/07.4	315/08.0	049/09.1	060/07.7	066/08.2	068/07.3	053/07.8	035/08.9	**267/09.6**	**252/13.5**	**264/07.1**
14	019/13.3	017/19.8	009/18.8	005/17.6	002/16.5	353/15.1	336/12.9	310/08.7	303/08.6	312/09.0	316/09.0	**009/13.7**	**017/19.8**	**303/08.6**
15	251/08.1	243/07.4	216/08.4	217/10.4	209/08.3	194/07.2	179/09.6	177/09.0	190/09.7	184/09.0	182/09.5	**246/07.9**	**344/11.3**	**275/04.3**
16	217/09.1	226/09.0	229/08.7	247/09.5	030/08.8	026/11.3	027/09.7	028/08.7	027/06.9	025/06.8	019/08.2	**215/10.2**	**186/13.7**	**025/06.8**
17	178/14.4	169/13.6	178/15.5	179/14.6	180/14.5	188/14.9	192/12.3	194/14.6	202/15.4	203/18.1	206/15.5	**149/10.4**	**203/18.1**	**129/02.7**
18	347/07.1	018/07.1	356/05.1	029/08.5	033/07.5	027/07.9	029/07.3	012/06.9	011/07.7	007/11.7	007/10.0	**310/08.6**	**214/16.7**	**280/04.8**
19	003/20.6	005/20.4	006/22.5	004/21.9	005/21.2	005/22.6	004/20.3	003/20.4	009/17.2	016/14.8	009/13.7	**005/19.1**	**005/22.6**	**003/12.9**
20	358/19.8	004/16.1	009/12.6	007/13.2	007/11.8	010/07.9	355/04.6	341/03.2	166/02.2	163/02.1	060/02.0	**009/13.2**	**358/19.8**	**060/02.0**
21	194/06.6	182/09.0	159/11.0	173/12.7	186/12.3	185/11.8	169/08.5	162/09.3	166/08.3	171/08.3	168/07.1	**188/07.1**	**173/12.7**	**198/01.8**
22	178/19.0	179/17.6	182/15.0	194/17.2	193/14.2	224/09.1	154/06.0	154/07.1	177/08.7	181/12.9	200/16.7	**180/11.5**	**178/19.0**	**168/05.8**
23	054/09.1	058/08.5	080/07.1	089/05.0	099/05.0	128/05.1	137/04.4	147/02.8	183/02.7	169/02.5	179/01.4	**076/07.8**	**213/17.0**	**179/01.4**
24	052/06.9	041/06.9	037/06.7	038/07.2	056/06.0	078/04.7	128/04.2	081/02.9	123/02.5	040/01.8	005/00.9	**068/04.0**	**038/07.2**	**093/00.9**
25	047/08.7	041/08.4	052/08.6	058/06.4	062/04.5	023/04.3	014/04.5	020/04.6	008/08.6	359/15.3	356/19.4	**046/05.7**	**356/19.4**	**133/00.7**
26	305/14.0	303/14.2	312/16.0	310/13.6	312/12.9	301/11.7	307/07.8	286/05.9	280/06.8	284/06.2	295/05.3	**313/12.2**	**351/21.4**	**295/05.3**
27	063/10.0	065/11.5	066/12.4	063/14.5	037/14.2	025/18.9	020/19.1	018/18.5	017/15.9	017/15.4	024/18.0	**046/10.4**	**020/19.1**	**021/04.3**
28	037/06.9	028/09.8	026/08.3	036/08.7	040/09.1	047/09.0	067/09.3	068/09.0	064/07.8	088/03.6	130/02.8	**038/09.5**	**022/16.3**	**130/02.8**
29	132/05.2	181/05.4	242/05.3	281/04.8	284/05.8	280/04.5	293/04.0	263/04.1	267/04.1	309/04.1	015/06.9	**156/07.2**	**118/12.8**	**293/04.0**
30	021/08.6	019/10.3	044/10.6	097/11.1	110/12.8	109/09.8	107/08.6	081/06.8	035/08.0	028/08.0	025/08.6	**045/08.2**	**110/12.8**	**046/04.5**
MEAN	**041/11.0**	**044/11.6**	**028/11.2**	**035/11.4**	**034/11.1**	**055/10.4**	**089/09.2**	**090/08.7**	**187/08.6**	**098/08.4**	**027/08.4**	**043/09.5**		
MAX	**222/22.6**	**231/22.0**	**006/22.5**	**004/21.9**	**005/21.2**	**005/22.6**	**004/20.3**	**003/20.4**	**009/17.2**	**203/18.1**	**356/19.4**		**219/23.9**	
MIN	**032/04.4**	**052/05.4**	**356/05.1**	**281/04.8**	**053/04.4**	**089/02.6**	**136/01.9**	**120/01.8**	**166/02.2**	**040/01.8**	**005/00.9**			**133/00.7**

POSSIBLE NUMBER OF OBSERVATIONS = 720 ACTUAL NUMBER OF OBSERVATIONS = 720 DATA RECOVERY RATE = 100.0%

MONTHLY MEAN = 043/09.5 MAXIMUM WIND SPEED = 23.9 AT 219 DEGREES DATE OF OCCURRENCE = 4/12 AT 1300

MEANS REQUIRE 75% VALID DATA MISSING DATA DENOTED BY ---

Watco

10M Joint Frequency Distribution for April, 2019

Percentage frequency of occurence of hourly wind velocities for all stability classes

Wind Direction		Wind Speed (mph) OVER 0.5	1.54 - 3.09	3.09 - 5.14	5.14 - 8.23	8.23 - 10.8	OVER 10.8	TOTAL	AVG SPEED
N	348.75 - 11.25	0.4	0.1	0.3	0.6	0.7	8.6	**10.7**	**14.7**
NNE	11.25 - 33.75	0.0	0.4	2.2	3.9	1.9	4.0	**12.5**	**9.0**
NE	33.75 - 56.25	0.3	0.4	1.0	3.9	2.8	1.4	**9.7**	**7.8**
ENE	56.25 - 78.75	0.1	0.8	1.2	2.9	1.0	1.8	**7.9**	**7.8**
E	78.75 - 101.25	0.1	0.8	1.2	1.0	0.3	0.8	**4.3**	**6.5**
ESE	101.25 - 123.75	0.1	0.7	0.1	1.0	0.8	1.4	**4.2**	**8.4**
SE	123.75 - 146.25	0.3	0.4	1.7	0.4	1.0	0.4	**4.2**	**6.1**
SSE	146.25 - 168.75	0.0	0.6	0.7	1.7	0.7	0.3	**3.9**	**6.2**
S	168.75 - 191.25	0.1	0.7	0.4	1.0	1.8	3.2	**7.2**	**9.8**
SSW	191.25 - 213.75	0.0	0.4	0.6	0.4	1.2	5.6	**8.2**	**11.7**
SW	213.75 - 236.25	0.0	0.0	0.3	1.0	2.2	3.9	**7.4**	**12.2**
WSW	236.25 - 258.75	0.0	0.0	0.8	1.0	1.7	2.5	**6.0**	**10.2**
W	258.75 - 281.25	0.1	0.1	1.7	1.9	1.1	0.7	**5.7**	**7.1**
WNW	281.25 - 303.75	0.1	0.1	0.8	1.8	0.4	0.3	**3.6**	**6.5**
NW	303.75 - 326.25	0.0	0.3	0.4	0.6	0.7	1.0	**2.9**	**9.1**
NNW	326.25 - 348.75	0.1	0.0	0.1	0.3	0.1	1.0	**1.7**	**10.7**
CALM								**0.0**	
TOTAL		**1.9**	**6.0**	**13.6**	**23.2**	**18.5**	**36.8**	**100.0**	**9.5**

TOTAL NUMBER OF OBSERVATIONS = 720

POSSIBLE NUMBER OF OBSERVATIONS = 720

DATA RECOVERY = 100.0%

Watco

10M WIND GUST in mph for APRIL, 2019

Hr Beg / Hr End / Day	0 1	1 2	2 3	3 4	4 5	5 6	6 7	7 8	8 9	9 10	10 11	11 12	12 13	13 14	14 15	15 16	16 17	17 18	18 19	19 20	20 21	21 22	22 23	23 24	MEAN	MAX	MIN
1	8.4	7.8	7.8	9.0	7.2	9.6	10.7	12.5	14.3	18.5	20.9	25.0	28.6	27.4	31.0	27.4	26.2	28.0	23.9	22.1	21.5	19.1	21.5	19.7	**18.7**	**31.0**	**7.2**
2	19.1	20.3	20.3	19.7	21.5	19.1	16.7	16.7	20.3	17.3	20.9	25.0	28.0	28.6	29.8	27.4	30.4	26.8	24.4	23.3	17.3	13.1	13.1	14.3	**21.4**	**30.4**	**13.1**
3	15.5	16.7	13.1	15.5	11.3	9.6	7.8	9.0	12.5	10.7	9.6	11.3	14.9	21.5	23.9	21.5	20.9	19.1	19.1	19.7	18.5	8.4	4.2	3.6	**14.1**	**23.9**	**3.6**
4	5.4	5.4	3.0	10.2	8.4	7.8	11.3	13.7	14.3	15.5	18.5	17.9	14.9	13.7	13.1	12.5	11.9	22.1	25.0	20.3	16.1	19.1	16.7	16.1	**13.9**	**25.0**	**3.0**
5	13.7	13.7	11.9	9.6	8.4	6.6	4.2	5.4	4.8	6.0	6.0	7.2	7.2	7.8	11.3	8.4	9.0	7.2	5.4	4.2	7.8	5.4	4.2	3.6	**7.5**	**13.7**	**3.6**
6	3.6	3.6	4.2	4.2	3.0	3.6	3.0	3.6	6.0	8.4	10.2	9.0	10.7	10.7	10.7	11.9	10.7	10.2	6.0	4.2	4.2	10.2	10.2	9.6	**7.2**	**11.9**	**3.0**
7	9.6	7.2	8.4	6.6	10.2	10.7	9.6	12.5	13.1	11.9	14.9	16.7	17.9	17.3	22.7	25.0	23.9	29.8	25.6	20.9	19.1	16.7	10.7	9.6	**15.4**	**29.8**	**6.6**
8	7.8	8.4	7.8	9.0	7.8	6.6	6.6	6.6	8.4	8.4	9.6	9.6	11.3	12.5	14.9	11.9	9.0	17.3	18.5	16.1	17.3	19.7	17.3	17.9	**11.7**	**19.7**	**6.6**
9	17.9	32.2	22.7	9.6	3.6	3.0	6.0	11.9	11.9	11.9	10.7	11.3	14.9	13.1	9.6	18.5	21.5	20.3	15.5	16.7	10.2	39.3	26.8	25.6	**16.0**	**39.3**	**3.0**
10	23.3	20.9	20.3	20.9	22.7	22.7	23.3	20.9	17.9	18.5	17.9	19.1	19.7	19.1	20.9	20.9	23.3	26.8	26.8	25.6	25.6	25.6	23.9	24.4	**22.1**	**26.8**	**17.9**
11	25.0	26.2	25.0	28.0	29.8	22.7	22.7	27.4	25.6	22.1	18.5	14.3	14.9	15.5	22.1	23.3	19.1	25.0	14.9	21.5	25.0	26.8	16.7	7.8	**21.7**	**29.8**	**7.8**
12	10.7	14.3	15.5	19.7	19.1	19.1	25.6	27.4	32.8	35.2	37.0	37.0	41.7	41.1	39.9	37.6	35.8	34.6	29.2	26.8	22.1	23.9	16.7	18.5	**27.6**	**41.7**	**10.7**
13	14.9	19.7	15.5	16.7	14.9	11.3	14.9	25.6	22.1	21.5	23.3	21.5	23.3	24.4	20.9	16.1	14.3	16.1	17.3	14.9	15.5	12.5	14.3	15.5	**17.8**	**25.6**	**11.3**
14	22.7	22.7	23.3	25.0	25.0	26.8	31.6	28.6	23.9	23.9	26.8	29.2	25.0	31.0	33.4	34.0	37.0	30.4	29.2	27.4	16.7	17.3	16.1	16.1	**26.0**	**37.0**	**16.1**
15	22.1	21.5	11.9	13.1	9.6	7.8	8.4	9.6	10.2	13.7	14.9	14.3	16.7	15.5	14.9	17.9	17.9	16.1	14.9	16.7	15.5	17.3	16.1	15.5	**14.7**	**22.1**	**7.8**
16	18.5	22.7	27.4	22.1	23.9	20.3	20.3	22.1	20.9	20.9	20.3	20.3	16.7	16.7	20.9	17.9	17.9	15.5	18.5	16.1	16.7	12.5	10.7	13.1	**18.9**	**27.4**	**10.7**
17	13.1	14.9	9.6	7.2	9.6	9.6	7.2	5.4	6.0	10.7	18.5	19.1	23.3	30.4	25.6	25.6	25.6	28.0	28.0	25.0	27.4	28.6	32.8	28.0	**19.1**	**32.8**	**5.4**
18	26.8	26.8	28.6	23.9	22.7	17.3	14.9	11.9	9.0	10.7	13.7	9.6	11.3	13.7	12.5	11.3	13.7	11.9	13.1	11.3	11.3	14.3	23.9	17.9	**15.9**	**28.6**	**9.0**
19	23.3	29.8	30.4	33.4	34.6	34.0	35.2	34.0	35.8	34.6	34.0	37.6	39.3	37.0	37.0	38.7	37.6	38.1	36.4	34.0	35.8	28.6	27.4	24.4	**33.8**	**39.3**	**23.3**
20	23.3	24.4	26.8	29.8	31.0	31.0	32.8	30.4	35.2	30.4	32.8	29.8	33.4	35.2	28.6	20.9	24.4	23.3	17.3	11.3	9.0	4.2	4.2	5.4	**24.0**	**35.2**	**4.2**
21	4.2	6.6	9.0	9.6	7.8	7.8	4.8	9.0	10.2	12.5	13.7	14.3	14.9	16.1	16.1	22.1	22.1	22.1	22.7	16.1	17.3	16.1	14.3	13.1	**13.4**	**22.7**	**4.2**
22	12.5	11.9	10.2	10.2	11.3	14.9	17.3	17.9	18.5	25.6	27.4	26.2	29.8	36.4	31.0	30.4	30.4	26.8	21.5	11.3	13.1	17.3	24.4	29.2	**21.1**	**36.4**	**10.2**
23	29.2	22.1	24.4	25.0	19.7	20.3	16.7	16.1	15.5	12.5	14.3	13.7	14.3	14.3	13.7	11.9	10.2	9.0	9.0	7.8	6.0	4.8	4.8	3.0	**14.1**	**29.2**	**3.0**
24	2.4	2.4	6.0	6.6	7.2	8.4	9.0	7.2	7.2	7.2	6.6	7.8	9.6	13.1	10.7	10.7	11.3	10.2	9.6	7.2	6.6	6.0	3.6	3.0	**7.5**	**13.1**	**2.4**
25	4.2	4.2	4.2	4.8	1.8	3.0	3.6	6.0	7.8	9.6	11.3	11.9	12.5	13.1	13.1	13.1	11.3	8.4	7.8	7.8	10.2	17.9	35.2	38.1	**10.9**	**38.1**	**1.8**
26	39.9	41.1	26.8	25.6	15.5	13.7	19.1	31.0	31.6	28.6	27.4	30.4	31.6	32.8	26.8	31.0	29.8	26.2	23.3	17.3	10.2	11.3	11.3	10.7	**24.7**	**41.1**	**10.2**
27	13.7	11.3	12.5	8.4	6.6	11.9	12.5	13.1	12.5	11.9	9.6	9.0	10.7	18.5	21.5	22.7	24.4	24.4	32.2	33.4	32.2	26.8	26.2	29.2	**18.1**	**33.4**	**6.6**
28	29.8	20.9	21.5	19.7	21.5	22.1	18.5	18.5	19.1	16.1	18.5	16.7	12.5	13.1	14.9	13.1	14.9	13.7	15.5	16.7	16.1	15.5	7.2	6.6	**16.8**	**29.8**	**6.6**
29	10.7	14.9	18.5	16.1	19.7	22.7	17.9	16.7	19.7	19.7	21.5	21.5	15.5	11.9	9.0	10.2	9.0	9.6	9.6	8.4	8.4	7.8	7.8	13.7	**14.2**	**22.7**	**7.8**
30	9.0	13.1	9.0	10.2	14.3	17.3	14.9	13.7	17.9	17.3	14.3	13.7	13.1	14.9	23.3	25.0	22.7	24.4	20.3	18.5	15.5	11.9	13.1	14.3	**15.9**	**25.0**	**9.0**
MEAN	**16.0**	**16.9**	**15.9**	**15.6**	**15.0**	**14.7**	**14.9**	**16.1**	**16.8**	**17.1**	**18.1**	**18.3**	**19.3**	**20.5**	**20.8**	**20.6**	**20.5**	**20.7**	**19.4**	**17.4**	**16.3**	**16.6**	**15.8**	**15.6**	**17.5**		
MAX	**39.9**	**41.1**	**30.4**	**33.4**	**34.6**	**34.0**	**35.2**	**34.0**	**35.8**	**35.2**	**37.0**	**37.6**	**41.7**	**41.1**	**39.9**	**38.7**	**37.6**	**38.1**	**36.4**	**34.0**	**35.8**	**39.3**	**35.2**	**38.1**		**41.7**	
MIN	**2.4**	**2.4**	**3.0**	**4.2**	**1.8**	**3.0**	**3.0**	**3.6**	**4.8**	**6.0**	**6.0**	**7.2**	**7.2**	**7.8**	**9.0**	**8.4**	**9.0**	**7.2**	**5.4**	**4.2**	**4.2**	**4.2**	**3.6**	**3.0**			**1.8**

POSSIBLE NUMBER OF OBSERVATIONS = 720 ACTUAL NUMBER OF OBSERVATIONS = 720 DATA RECOVERY RATE = 100.0%

MONTHLY MEAN = 17.5 mph

MAXIMUM 10M WIND GUST = 41.7 mph DATE OF OCCURRENCE = 4/12 AT 1300 MAXIMUM DAILY MEAN = 33.8 mph DATE OF OCCURRENCE = 4/19

MINIMUM 10M WIND GUST = 1.8 mph DATE OF OCCURRENCE = 4/25 AT 0500 MINUMUM DAILY MEAN = 7.2 mph DATE OF OCCURRENCE = 4/6

MEANS REQUIRE 75% VALID DATA MISSING DATA DENOTED BY ---

315 West 3rd Street
Pittsburg, KS 66762
Phone: 620-231-2230
Fax: 620-231-0812

Attachment III:
Inter-Mountain Labs (IML) Sample Report

Inter-Mountain Labs
1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

Your Environmental Monitoring Partner

Date: 5/8/2019

CLIENT: Trinity Consultants
Project: Watco
Lab Order: S1905085

CASE NARRATIVE

Report ID: S1905085001

Samples 2954583 #246, 2954584 #247, 2954585 #248, 2954586 #249, 2954587 #258, 2954588 #259, 2954589 #260, 2954590 #263, 2954591 #266, 2954592 #268 and 2954593 #270 were received on May 3, 2019.

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

"Standard Methods For The Examination of Water and Wastewater", approved method versions
Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 3rd Edition
40 CFR Parts 136 and 141
40 CFR Part 50, Appendices B, J, L, and O
Methods indicated in the Methods Update Rule published in the Federal Register Friday, May 18, 2012
ASTM approved and recognized standards

All Quality Control parameters met the acceptance criteria defined by EPA and Inter-Mountain Laboratories except as indicated in this case narrative.

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

Inter-Mountain Labs
1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

Your Environmental Monitoring Partner

Sample Analysis Report

CLIENT: Trinity Consultants
4525 Wasatch Blvd.
Suite 200
Salt Lake City, UT 84124

Project: Watco
Lab ID: S1905085-001
Client Sample ID: 2954583 #246

Date Reported: 5/8/2019
Report ID: S1905085001

Work Order: S1905085
Collection Date: 4/3/2019
Date Received: 5/3/2019 9:00:00 AM
Sampler: MS
Matrix: Filter
COC: 181540

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m^3	04/03/2019 0000	Field
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	05/07/2019 1945 MS	IO-3.5
Cadmium	ND	1000		ng/filter	05/07/2019 1945 MS	IO-3.5
Chromium	ND	1500		ng/filter	05/07/2019 1945 MS	IO-3.5
Lead	100	50		ng/filter	05/07/2019 1945 MS	IO-3.5
Manganese	16900	600		ng/filter	05/07/2019 1945 MS	IO-3.5
Nickel	ND	1300		ng/filter	05/07/2019 1945 MS	IO-3.5
Vanadium	ND	2450		ng/filter	05/07/2019 1945 MS	IO-3.5
Filter Metals Concentration						
Arsenic	ND	2.08		ng/m^3	05/08/2019 1501 JJ	Calculation
Cadmium	ND	41.7		ng/m^3	05/08/2019 1501 JJ	Calculation
Chromium	ND	62.5		ng/m^3	05/08/2019 1501 JJ	Calculation
Lead	4.05	2.08		ng/m^3	05/08/2019 1501 JJ	Calculation
Manganese	706	25		ng/m^3	05/08/2019 1501 JJ	Calculation
Nickel	ND	54.2		ng/m^3	05/08/2019 1501 JJ	Calculation
Vanadium	ND	102		ng/m^3	05/08/2019 1501 JJ	Calculation

These results apply only to the samples tested.

Qualifiers:

B	Analyte detected in the associated Method Blank
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
L	Analyzed by another laboratory
ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits
X	Matrix Effect

RL - Reporting Limit

C	Calculated Value
G	Analyzed at IML Gillette laboratory
J	Analyte detected below quantitation limits
M	Value exceeds Monthly Ave or MCL or is less than LCL
O	Outside the Range of Dilutions
U	Analysis reported under the reporting limit

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

Sample Analysis Report

CLIENT: Trinity Consultants
4525 Wasatch Blvd.
Suite 200
Salt Lake City, UT 84124

Project: Watco
Lab ID: S1905085-002
Client Sample ID: 2954584 #247

Date Reported: 5/8/2019
Report ID: S1905085001

Work Order: S1905085
Collection Date: 4/6/2019
Date Received: 5/3/2019 9:00:00 AM
Sampler: MS
Matrix: Filter
COC: 181540

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m^3	04/06/2019 0000	Field
IO-3.5 Teflon Filters						
Arsenic	210	50		ng/filter	05/07/2019 1956 MS	IO-3.5
Cadmium	ND	1000		ng/filter	05/07/2019 1956 MS	IO-3.5
Chromium	ND	1500		ng/filter	05/07/2019 1956 MS	IO-3.5
Lead	480	50		ng/filter	05/07/2019 1956 MS	IO-3.5
Manganese	3200	600		ng/filter	05/07/2019 1956 MS	IO-3.5
Nickel	ND	1300		ng/filter	05/07/2019 1956 MS	IO-3.5
Vanadium	ND	2450		ng/filter	05/07/2019 1956 MS	IO-3.5
Filter Metals Concentration						
Arsenic	8.73	2.08		ng/m^3	05/08/2019 1501 JJ	Calculation
Cadmium	ND	41.7		ng/m^3	05/08/2019 1501 JJ	Calculation
Chromium	ND	62.5		ng/m^3	05/08/2019 1501 JJ	Calculation
Lead	20.1	2.08		ng/m^3	05/08/2019 1501 JJ	Calculation
Manganese	135	25		ng/m^3	05/08/2019 1501 JJ	Calculation
Nickel	ND	54.2		ng/m^3	05/08/2019 1501 JJ	Calculation
Vanadium	ND	102		ng/m^3	05/08/2019 1501 JJ	Calculation

These results apply only to the samples tested.

Qualifiers:

B	Analyte detected in the associated Method Blank
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
L	Analyzed by another laboratory
ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits
X	Matrix Effect

RL - Reporting Limit

C	Calculated Value
G	Analyzed at IML Gillette laboratory
J	Analyte detected below quantitation limits
M	Value exceeds Monthly Ave or MCL or is less than LCL
O	Outside the Range of Dilutions
U	Analysis reported under the reporting limit

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

Sample Analysis Report

CLIENT: Trinity Consultants
4525 Wasatch Blvd.
Suite 200
Salt Lake City, UT 84124

Project: Watco
Lab ID: S1905085-003
Client Sample ID: 2954585 #248

Date Reported: 5/8/2019
Report ID: S1905085001

Work Order: S1905085
Collection Date: 4/9/2019
Date Received: 5/3/2019 9:00:00 AM
Sampler: MS
Matrix: Filter
COC: 181540

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m^3	04/09/2019 0000	Field
IO-3.5 Teflon Filters						
Arsenic	50	50		ng/filter	05/07/2019 2008 MS	IO-3.5
Cadmium	ND	1000		ng/filter	05/07/2019 2008 MS	IO-3.5
Chromium	ND	1500		ng/filter	05/07/2019 2008 MS	IO-3.5
Lead	270	50		ng/filter	05/07/2019 2008 MS	IO-3.5
Manganese	9500	600		ng/filter	05/07/2019 2008 MS	IO-3.5
Nickel	ND	1300		ng/filter	05/07/2019 2008 MS	IO-3.5
Vanadium	ND	2450		ng/filter	05/07/2019 2008 MS	IO-3.5
Filter Metals Concentration						
Arsenic	2.23	2.08		ng/m^3	05/08/2019 1501 JJ	Calculation
Cadmium	ND	41.7		ng/m^3	05/08/2019 1501 JJ	Calculation
Chromium	ND	62.5		ng/m^3	05/08/2019 1501 JJ	Calculation
Lead	11.1	2.08		ng/m^3	05/08/2019 1501 JJ	Calculation
Manganese	395	25		ng/m^3	05/08/2019 1501 JJ	Calculation
Nickel	ND	54.2		ng/m^3	05/08/2019 1501 JJ	Calculation
Vanadium	ND	102		ng/m^3	05/08/2019 1501 JJ	Calculation

These results apply only to the samples tested.

Qualifiers:

B	Analyte detected in the associated Method Blank
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
L	Analyzed by another laboratory
ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits
X	Matrix Effect

RL - Reporting Limit

C	Calculated Value
G	Analyzed at IML Gillette laboratory
J	Analyte detected below quantitation limits
M	Value exceeds Monthly Ave or MCL or is less than LCL
O	Outside the Range of Dilutions
U	Analysis reported under the reporting limit

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

Sample Analysis Report

CLIENT: Trinity Consultants
4525 Wasatch Blvd.
Suite 200
Salt Lake City, UT 84124

Project: Watco
Lab ID: S1905085-004
Client Sample ID: 2954586 #249

Date Reported: 5/8/2019
Report ID: S1905085001

Work Order: S1905085
Collection Date: 4/12/2019
Date Received: 5/3/2019 9:00:00 AM
Sampler: MS
Matrix: Filter
COC: 181540

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m^3	04/12/2019 0000	Field
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	05/07/2019 2032 MS	IO-3.5
Cadmium	ND	1000		ng/filter	05/07/2019 2032 MS	IO-3.5
Chromium	ND	1500		ng/filter	05/07/2019 2032 MS	IO-3.5
Lead	60	50		ng/filter	05/07/2019 2032 MS	IO-3.5
Manganese	11100	600		ng/filter	05/07/2019 2032 MS	IO-3.5
Nickel	ND	1300		ng/filter	05/07/2019 2032 MS	IO-3.5
Vanadium	ND	2450		ng/filter	05/07/2019 2032 MS	IO-3.5
Filter Metals Concentration						
Arsenic	ND	2.08		ng/m^3	05/08/2019 1501 JJ	Calculation
Cadmium	ND	41.7		ng/m^3	05/08/2019 1501 JJ	Calculation
Chromium	ND	62.5		ng/m^3	05/08/2019 1501 JJ	Calculation
Lead	2.35	2.08		ng/m^3	05/08/2019 1501 JJ	Calculation
Manganese	462	25		ng/m^3	05/08/2019 1501 JJ	Calculation
Nickel	ND	54.2		ng/m^3	05/08/2019 1501 JJ	Calculation
Vanadium	ND	102		ng/m^3	05/08/2019 1501 JJ	Calculation

These results apply only to the samples tested.

Qualifiers:

B	Analyte detected in the associated Method Blank
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
L	Analyzed by another laboratory
ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits
X	Matrix Effect

RL - Reporting Limit

C	Calculated Value
G	Analyzed at IML Gillette laboratory
J	Analyte detected below quantitation limits
M	Value exceeds Monthly Ave or MCL or is less than LCL
O	Outside the Range of Dilutions
U	Analysis reported under the reporting limit

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

Sample Analysis Report

CLIENT: Trinity Consultants
4525 Wasatch Blvd.
Suite 200
Salt Lake City, UT 84124

Project: Watco
Lab ID: S1905085-005
Client Sample ID: 2954587 #258

Date Reported: 5/8/2019
Report ID: S1905085001

Work Order: S1905085
Collection Date: 4/14/2019
Date Received: 5/3/2019 9:00:00 AM
Sampler: MS
Matrix: Filter
COC: 181540

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	05/07/2019 2038 MS	IO-3.5
Cadmium	ND	1000		ng/filter	05/07/2019 2038 MS	IO-3.5
Chromium	ND	1500		ng/filter	05/07/2019 2038 MS	IO-3.5
Lead	ND	50		ng/filter	05/07/2019 2038 MS	IO-3.5
Manganese	ND	600		ng/filter	05/07/2019 2038 MS	IO-3.5
Nickel	ND	1300		ng/filter	05/07/2019 2038 MS	IO-3.5
Vanadium	ND	2450		ng/filter	05/07/2019 2038 MS	IO-3.5

These results apply only to the samples tested.

Qualifiers:

B	Analyte detected in the associated Method Blank
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
L	Analyzed by another laboratory
ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits
X	Matrix Effect

RL - Reporting Limit

C	Calculated Value
G	Analyzed at IML Gillette laboratory
J	Analyte detected below quantitation limits
M	Value exceeds Monthly Ave or MCL or is less than LCL
O	Outside the Range of Dilutions
U	Analysis reported under the reporting limit

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

Sample Analysis Report

CLIENT: Trinity Consultants
4525 Wasatch Blvd.
Suite 200
Salt Lake City, UT 84124

Project: Watco
Lab ID: S1905085-006
Client Sample ID: 2954588 #259

Date Reported: 5/8/2019
Report ID: S1905085001

Work Order: S1905085
Collection Date: 4/15/2019
Date Received: 5/3/2019 9:00:00 AM
Sampler: MS
Matrix: Filter
COC: 181540

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m^3	04/15/2019 0000	Field
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	05/07/2019 2044 MS	IO-3.5
Cadmium	ND	1000		ng/filter	05/07/2019 2044 MS	IO-3.5
Chromium	ND	1500		ng/filter	05/07/2019 2044 MS	IO-3.5
Lead	60	50		ng/filter	05/07/2019 2044 MS	IO-3.5
Manganese	14900	600		ng/filter	05/07/2019 2044 MS	IO-3.5
Nickel	ND	1300		ng/filter	05/07/2019 2044 MS	IO-3.5
Vanadium	ND	2450		ng/filter	05/07/2019 2044 MS	IO-3.5
Filter Metals Concentration						
Arsenic	ND	2.08		ng/m^3	05/08/2019 1501 JJ	Calculation
Cadmium	ND	41.7		ng/m^3	05/08/2019 1501 JJ	Calculation
Chromium	ND	62.5		ng/m^3	05/08/2019 1501 JJ	Calculation
Lead	2.63	2.08		ng/m^3	05/08/2019 1501 JJ	Calculation
Manganese	621	25		ng/m^3	05/08/2019 1501 JJ	Calculation
Nickel	ND	54.2		ng/m^3	05/08/2019 1501 JJ	Calculation
Vanadium	ND	102		ng/m^3	05/08/2019 1501 JJ	Calculation

These results apply only to the samples tested.

Qualifiers:

B	Analyte detected in the associated Method Blank
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
L	Analyzed by another laboratory
ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits
X	Matrix Effect

RL - Reporting Limit

C	Calculated Value
G	Analyzed at IML Gillette laboratory
J	Analyte detected below quantitation limits
M	Value exceeds Monthly Ave or MCL or is less than LCL
O	Outside the Range of Dilutions
U	Analysis reported under the reporting limit

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

Sample Analysis Report

CLIENT: Trinity Consultants
4525 Wasatch Blvd.
Suite 200
Salt Lake City, UT 84124

Project: Watco
Lab ID: S1905085-007
Client Sample ID: 2954589 #260

Date Reported: 5/8/2019
Report ID: S1905085001

Work Order: S1905085
Collection Date: 4/18/2019
Date Received: 5/3/2019 9:00:00 AM
Sampler: MS
Matrix: Filter
COC: 181540

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m^3	04/18/2019 0000	Field
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	05/07/2019 2050 MS	IO-3.5
Cadmium	ND	1000		ng/filter	05/07/2019 2050 MS	IO-3.5
Chromium	ND	1500		ng/filter	05/07/2019 2050 MS	IO-3.5
Lead	60	50		ng/filter	05/07/2019 2050 MS	IO-3.5
Manganese	7700	600		ng/filter	05/07/2019 2050 MS	IO-3.5
Nickel	ND	1300		ng/filter	05/07/2019 2050 MS	IO-3.5
Vanadium	ND	2450		ng/filter	05/07/2019 2050 MS	IO-3.5
Filter Metals Concentration						
Arsenic	ND	2.08		ng/m^3	05/08/2019 1501 JJ	Calculation
Cadmium	ND	41.7		ng/m^3	05/08/2019 1501 JJ	Calculation
Chromium	ND	62.5		ng/m^3	05/08/2019 1501 JJ	Calculation
Lead	2.60	2.08		ng/m^3	05/08/2019 1501 JJ	Calculation
Manganese	321	25		ng/m^3	05/08/2019 1501 JJ	Calculation
Nickel	ND	54.2		ng/m^3	05/08/2019 1501 JJ	Calculation
Vanadium	ND	102		ng/m^3	05/08/2019 1501 JJ	Calculation

These results apply only to the samples tested.

Qualifiers:

B	Analyte detected in the associated Method Blank
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
L	Analyzed by another laboratory
ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits
X	Matrix Effect

RL - Reporting Limit

C	Calculated Value
G	Analyzed at IML Gillette laboratory
J	Analyte detected below quantitation limits
M	Value exceeds Monthly Ave or MCL or is less than LCL
O	Outside the Range of Dilutions
U	Analysis reported under the reporting limit

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

Sample Analysis Report

CLIENT: Trinity Consultants
4525 Wasatch Blvd.
Suite 200
Salt Lake City, UT 84124

Project: Watco
Lab ID: S1905085-008
Client Sample ID: 2954590 #263

Date Reported: 5/8/2019
Report ID: S1905085001

Work Order: S1905085
Collection Date: 4/21/2019
Date Received: 5/3/2019 9:00:00 AM
Sampler: MS
Matrix: Filter
COC: 181540

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m^3	04/21/2019 0000	Field
IO-3.5 Teflon Filters						
Arsenic	50	50		ng/filter	05/07/2019 2056 MS	IO-3.5
Cadmium	ND	1000		ng/filter	05/07/2019 2056 MS	IO-3.5
Chromium	ND	1500		ng/filter	05/07/2019 2056 MS	IO-3.5
Lead	90	50		ng/filter	05/07/2019 2056 MS	IO-3.5
Manganese	ND	600		ng/filter	05/07/2019 2056 MS	IO-3.5
Nickel	ND	1300		ng/filter	05/07/2019 2056 MS	IO-3.5
Vanadium	ND	2450		ng/filter	05/07/2019 2056 MS	IO-3.5
Filter Metals Concentration						
Arsenic	2.26	2.08		ng/m^3	05/08/2019 1501 JJ	Calculation
Cadmium	ND	41.7		ng/m^3	05/08/2019 1501 JJ	Calculation
Chromium	ND	62.5		ng/m^3	05/08/2019 1501 JJ	Calculation
Lead	3.64	2.08		ng/m^3	05/08/2019 1501 JJ	Calculation
Manganese	ND	25		ng/m^3	05/08/2019 1501 JJ	Calculation
Nickel	ND	54.2		ng/m^3	05/08/2019 1501 JJ	Calculation
Vanadium	ND	102		ng/m^3	05/08/2019 1501 JJ	Calculation

These results apply only to the samples tested.

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- L Analyzed by another laboratory
- ND Not Detected at the Reporting Limit
- S Spike Recovery outside accepted recovery limits
- X Matrix Effect

RL - Reporting Limit

- C Calculated Value
- G Analyzed at IML Gillette laboratory
- J Analyte detected below quantitation limits
- M Value exceeds Monthly Ave or MCL or is less than LCL
- O Outside the Range of Dilutions
- U Analysis reported under the reporting limit

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

Sample Analysis Report

CLIENT: Trinity Consultants
4525 Wasatch Blvd.
Suite 200
Salt Lake City, UT 84124

Project: Watco
Lab ID: S1905085-009
Client Sample ID: 2954591 #266

Date Reported: 5/8/2019
Report ID: S1905085001

Work Order: S1905085
Collection Date: 4/24/2019
Date Received: 5/3/2019 9:00:00 AM
Sampler: MS
Matrix: Filter
COC: 181540

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m^3	04/24/2019 0000	Field
IO-3.5 Teflon Filters						
Arsenic	70	50		ng/filter	05/07/2019 2102 MS	IO-3.5
Cadmium	ND	1000		ng/filter	05/07/2019 2102 MS	IO-3.5
Chromium	ND	1500		ng/filter	05/07/2019 2102 MS	IO-3.5
Lead	460	50		ng/filter	05/07/2019 2102 MS	IO-3.5
Manganese	2800	600		ng/filter	05/07/2019 2102 MS	IO-3.5
Nickel	ND	1300		ng/filter	05/07/2019 2102 MS	IO-3.5
Vanadium	ND	2450		ng/filter	05/07/2019 2102 MS	IO-3.5
Filter Metals Concentration						
Arsenic	2.94	2.08		ng/m^3	05/08/2019 1501 JJ	Calculation
Cadmium	ND	41.7		ng/m^3	05/08/2019 1501 JJ	Calculation
Chromium	ND	62.5		ng/m^3	05/08/2019 1501 JJ	Calculation
Lead	19.0	2.08		ng/m^3	05/08/2019 1501 JJ	Calculation
Manganese	118	25		ng/m^3	05/08/2019 1501 JJ	Calculation
Nickel	ND	54.2		ng/m^3	05/08/2019 1501 JJ	Calculation
Vanadium	ND	102		ng/m^3	05/08/2019 1501 JJ	Calculation

These results apply only to the samples tested.

Qualifiers:

B	Analyte detected in the associated Method Blank
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
L	Analyzed by another laboratory
ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits
X	Matrix Effect

RL - Reporting Limit

C	Calculated Value
G	Analyzed at IML Gillette laboratory
J	Analyte detected below quantitation limits
M	Value exceeds Monthly Ave or MCL or is less than LCL
O	Outside the Range of Dilutions
U	Analysis reported under the reporting limit

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

Sample Analysis Report

CLIENT: Trinity Consultants
4525 Wasatch Blvd.
Suite 200
Salt Lake City, UT 84124

Project: Watco
Lab ID: S1905085-010
Client Sample ID: 2954592 #268

Date Reported: 5/8/2019
Report ID: S1905085001

Work Order: S1905085
Collection Date: 4/27/2019
Date Received: 5/3/2019 9:00:00 AM
Sampler: MS
Matrix: Filter
COC: 181540

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m^3	04/27/2019 0000	Field
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	05/07/2019 2108 MS	IO-3.5
Cadmium	ND	1000		ng/filter	05/07/2019 2108 MS	IO-3.5
Chromium	ND	1500		ng/filter	05/07/2019 2108 MS	IO-3.5
Lead	ND	50		ng/filter	05/07/2019 2108 MS	IO-3.5
Manganese	ND	600		ng/filter	05/07/2019 2108 MS	IO-3.5
Nickel	ND	1300		ng/filter	05/07/2019 2108 MS	IO-3.5
Vanadium	ND	2450		ng/filter	05/07/2019 2108 MS	IO-3.5
Filter Metals Concentration						
Arsenic	ND	2.08		ng/m^3	05/08/2019 1501 JJ	Calculation
Cadmium	ND	41.7		ng/m^3	05/08/2019 1501 JJ	Calculation
Chromium	ND	62.5		ng/m^3	05/08/2019 1501 JJ	Calculation
Lead	ND	2.08		ng/m^3	05/08/2019 1501 JJ	Calculation
Manganese	ND	25		ng/m^3	05/08/2019 1501 JJ	Calculation
Nickel	ND	54.2		ng/m^3	05/08/2019 1501 JJ	Calculation
Vanadium	ND	102		ng/m^3	05/08/2019 1501 JJ	Calculation

These results apply only to the samples tested.

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- L Analyzed by another laboratory
- ND Not Detected at the Reporting Limit
- S Spike Recovery outside accepted recovery limits
- X Matrix Effect

RL - Reporting Limit

- C Calculated Value
- G Analyzed at IML Gillette laboratory
- J Analyte detected below quantitation limits
- M Value exceeds Monthly Ave or MCL or is less than LCL
- O Outside the Range of Dilutions
- U Analysis reported under the reporting limit

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

Sample Analysis Report

CLIENT: Trinity Consultants
4525 Wasatch Blvd.
Suite 200
Salt Lake City, UT 84124

Project: Watco
Lab ID: S1905085-011
Client Sample ID: 2954593 #270

Date Reported: 5/8/2019
Report ID: S1905085001

Work Order: S1905085
Collection Date: 4/30/2019
Date Received: 5/3/2019 9:00:00 AM
Sampler: MS
Matrix: Filter
COC: 181540

Analyses	Result	RL	Qual	Units	Date Analyzed/Init	Method
Field						
Actual Volume	24.0			m^3	04/30/2019 0000	Field
IO-3.5 Teflon Filters						
Arsenic	ND	50		ng/filter	05/07/2019 2114 MS	IO-3.5
Cadmium	ND	1000		ng/filter	05/07/2019 2114 MS	IO-3.5
Chromium	ND	1500		ng/filter	05/07/2019 2114 MS	IO-3.5
Lead	80	50		ng/filter	05/07/2019 2114 MS	IO-3.5
Manganese	ND	600		ng/filter	05/07/2019 2114 MS	IO-3.5
Nickel	ND	1300		ng/filter	05/07/2019 2114 MS	IO-3.5
Vanadium	ND	2450		ng/filter	05/07/2019 2114 MS	IO-3.5
Filter Metals Concentration						
Arsenic	ND	2.08		ng/m^3	05/08/2019 1501 JJ	Calculation
Cadmium	ND	41.7		ng/m^3	05/08/2019 1501 JJ	Calculation
Chromium	ND	62.5		ng/m^3	05/08/2019 1501 JJ	Calculation
Lead	3.33	2.08		ng/m^3	05/08/2019 1501 JJ	Calculation
Manganese	ND	25		ng/m^3	05/08/2019 1501 JJ	Calculation
Nickel	ND	54.2		ng/m^3	05/08/2019 1501 JJ	Calculation
Vanadium	ND	102		ng/m^3	05/08/2019 1501 JJ	Calculation

These results apply only to the samples tested.

Qualifiers:

B	Analyte detected in the associated Method Blank
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
L	Analyzed by another laboratory
ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits
X	Matrix Effect

RL - Reporting Limit

C	Calculated Value
G	Analyzed at IML Gillette laboratory
J	Analyte detected below quantitation limits
M	Value exceeds Monthly Ave or MCL or is less than LCL
O	Outside the Range of Dilutions
U	Analysis reported under the reporting limit

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

Inter-Mountain Labs

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.

181540

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

Report Address	Contact Name	Email	Phone
MSI/Trinity	Matt Sloan	msloan@trinityconsultants.com	330-844-6998

Invoice Address: 2926 E 126 St Chicago, IL 60633

Purchase Order # | Quote #

ITEM	LAB ID (Lab Use Only)	DATE SAMPLED	TIME SAMPLED	SAMPLE IDENTIFICATION	Matrix	# of Containers	Metals	REMARKS
1	51905085-00	4-3-19		2 954 583-		246	X	
2	002	4-~~6~~-19		2 954 584-		247	X	
3	003	4-9-19		2 954 585-		248	X	
4	004	4-12-19		2 954 586-		249	X	
5	005	4-14-19		2 954 587-		258	X	Field Sample
6	006	4-15-19		2 954 ~~588~~-		259	X	
7	007	4-18-19		2 954 589-		260	X	
8	008	4-21-19		2 954 590-		263	X	
9	009	4-24-19		2 954 591-		266	X	
10	010	4-27-19		2 954 592-		268	X	
11	011	4-30-19		2 954 593-		270	X	
12								
13								
14								

LAB COMMENTS	Relinquished By (Signature/Printed)	DATE	TIME	Received By (Signature/Printed)	DATE	TIME
	Matt Sloan	5/1/19	3:00 pm	Qayce Burnett - IML	5-3-19	9:00
	Mary Hannigan IML	5/7/19	09:35	Kathy Boyd	5.7.19	9:36

SHIPPING INFO
- [X] UPS
- [ ] Fed Express
- [ ] US Mail
- [ ] Hand Carried
- [ ] Other _____

MATRIX CODES

Water	WT
Soil	SL
Solid	SD
Filter	FT
Other	OT

TURNAROUND TIMES

Check desired service
- [ ] Standard turnaround
- [ ] **RUSH - 5 Working Days**
- [X] **URGENT** - < 2 Working Days

Rush & Urgent Surcharges will be applied

COMPLIANCE INFORMATION

Compliance Monitoring? Y / N
Program (SDWA, NPDES,...)
PWSID / Permit #
Chlorinated? Y / N
Sample Disposal: Lab Client

ADDITIONAL REMARKS

-3.6 Corrected
2054 2 Solid +0.9 Rounded
2 Semi -1.

INTER-MOUNTAIN LABS

Survey Meter # 2241-2
pH strip lot # HC857466
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, please write on back)*

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): 181540			
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 _____	_____

Preserved samples for Rad analysis accompanied by Field Blank? **Yes** **No**

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	Specially requested detection limits (RLs) assigned?	Yes	No	N/A
8	Have rush or project due dates been checked and accepted?	Yes	No	N/A
9	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)*: KB

Set ID: S1905095

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: