

Fact Sheet

Seattle Iron and Metals (SIM) Phase I Background Monitoring

Produced and Made Public on April 28, 2020

Introduction: Why Read This Fact Sheet?

This Fact Sheet provides an overview and summary results of the Phase I Ambient Air Quality Background Monitoring Project (“Phase I study”) implemented during the Summer of 2019. It reflects work required by a 2019 legal agreement (called a “consent decree”) between Puget Soundkeeper and SIM.

All study results are being made public in English, Spanish and Vietnamese.

The full reports on this work are available at the following website:

<http://www.seairon.com/environmental-documents->

Read on if you are interested in learning more about this study, but perhaps not interested in reading the full report.

Purpose of Phase I: Why Was This Study Done?

This was the first phase of a three-phase air and dust monitoring study. The purpose of this first phase of air monitoring was to capture “background” air data, or data that reflects the condition of the air in the neighborhoods surrounding SIM when that air is not impacted by SIM’s operations. Subsequent phases to occur in 2020 and beyond will focus on investigating conditions associated with the SIM site. New Fact Sheets will be created and made public for each subsequent phase in order to keep the community and interested parties informed.

Study Details: What Was Measured?

The study was focused on measuring “particulate matter” or dust and other important air pollutants. Dust was measured as total suspended particulate (TSP) and also as fine particulate matter (PM) of size 2.5 micrometers or less referred to as PM_{2.5}. These data were collected by special equipment on a continuous basis. In addition, weekly samples were also collected for polychlorinated biphenyl (PCB) compounds as well as dioxin/furan compounds. Finally, the collected dust was analyzed for a number of metals. These pollutants were chosen because they may be associated with operations at SIM.

In addition, at one of the three locations (Heiser) meteorological data including wind speed, wind direction, temperature, precipitation, and relative humidity data were also collected.

Monitor Locations: Where Were Data Collected, When, and Why Those Spots?

Figure 1 below shows the SIM site (yellow push pin) and the three Phase I background monitoring sites (red push pins) chosen for data collection. The background locations are: the Heiser Road

(“Heiser”) site; the City of Seattle’s South Seattle Hazardous Waste Facility (“City”) site; and a residential location (“Residential”).

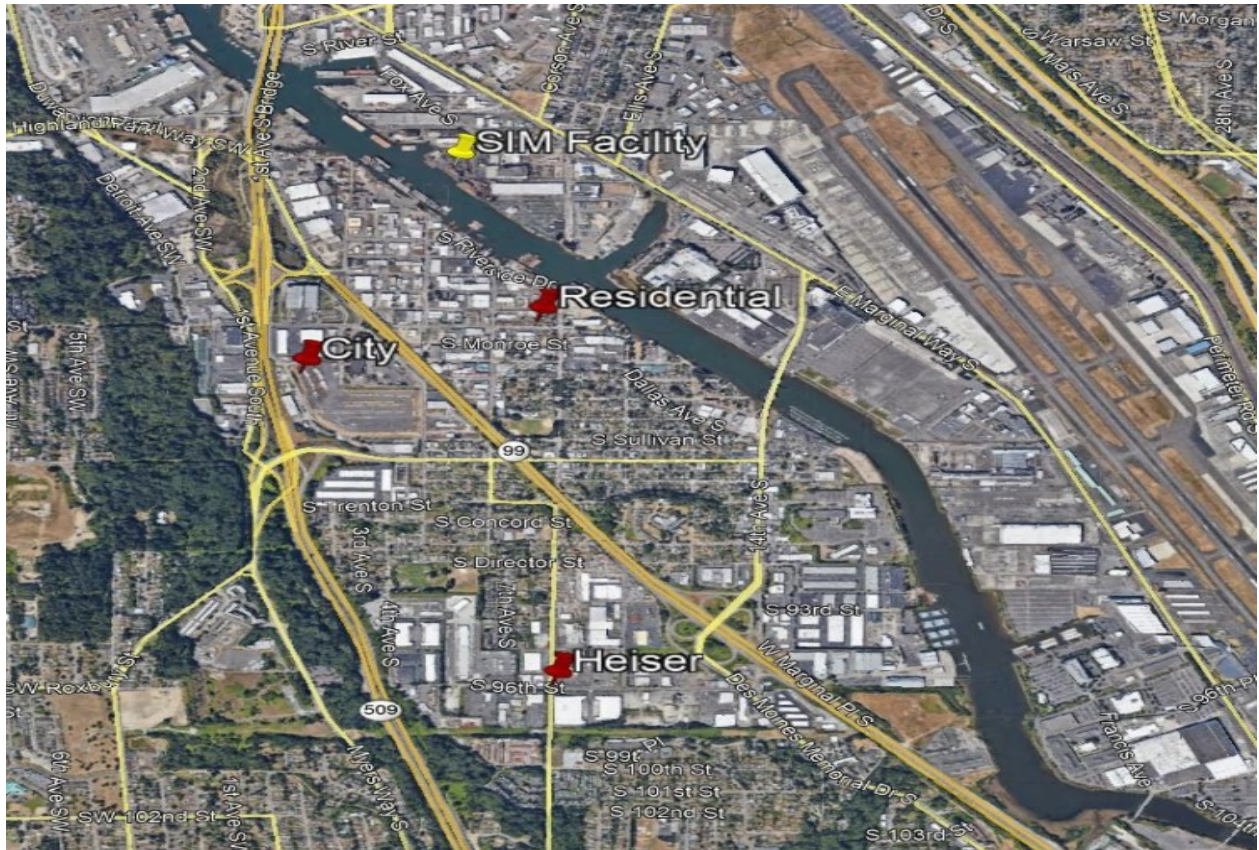


Figure 1 – Location Map of SIM and the Three Background Locations.

The Heiser and Residential sites were installed on May 8, 2019 and the City site was installed on May 9, 2019. The PCB and dioxin monitoring commenced at each of the sites on June 10, 2019. The Phase I study concluded on August 29, 2019.

These Phase I monitoring sites are generally upwind of the SIM site, considering the prevailing winds during the dry season (typically May-September) each year, when dust generation and dispersal is likely to be the highest. Figure 2 shows, as example, the wind rose for June. The “petals” in the wind rose represent the direct the wind is from and the lengths of the petals shows the wind speeds and how often such winds occur. As shown, predominant winds are from the Southwest and South. That is why the three monitoring locations were located upwind, or south of SIM.

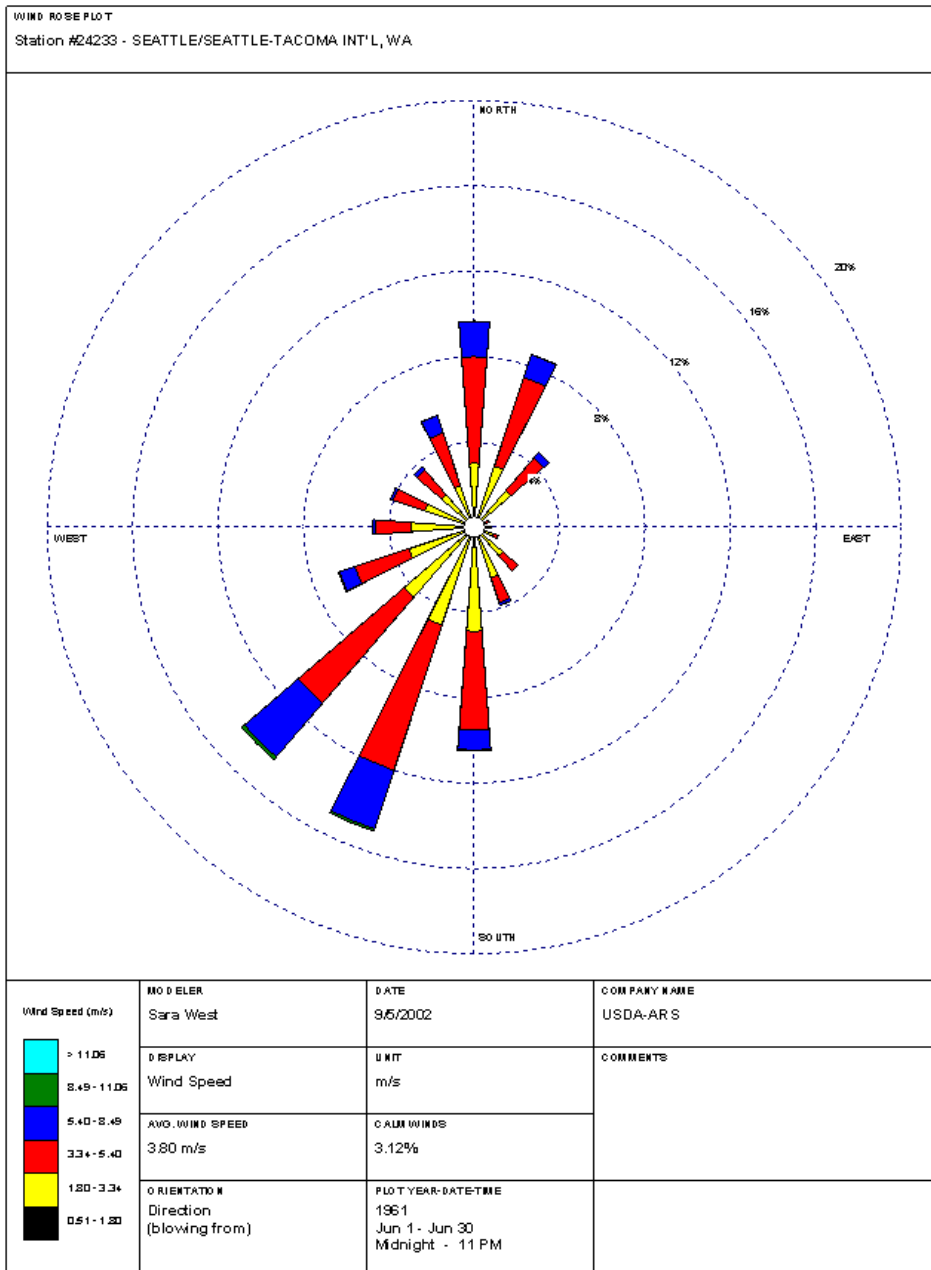


Figure 2 – Typical Dry Season Wind Profile in the Area

Summary Results: What Are The Results?

Summary results from this Phase I study are shown in the Figures below.

Figure 3, below, shows the 24-hour average (blue) and study-duration (i.e., May 9 through August 29, 2019) average (orange) concentrations of PM_{2.5} for each of the three sites, labeled below the groups of bars.

As you can see, the 24-hour average concentrations (blue bars) are higher than the study-duration average concentrations (orange bars) because they include more variability over the shorter (24 hour) time as compared to the almost 4-month study duration concentrations. Figure 3 also shows that the study-duration concentrations (orange bars) are fairly consistent across all three sites. It is also important to note that all of the 24-hour concentrations (blue bars) are lower than the 24-hour PM_{2.5} National Ambient Air Quality Standard (NAAQS), 35 micrograms/m³.

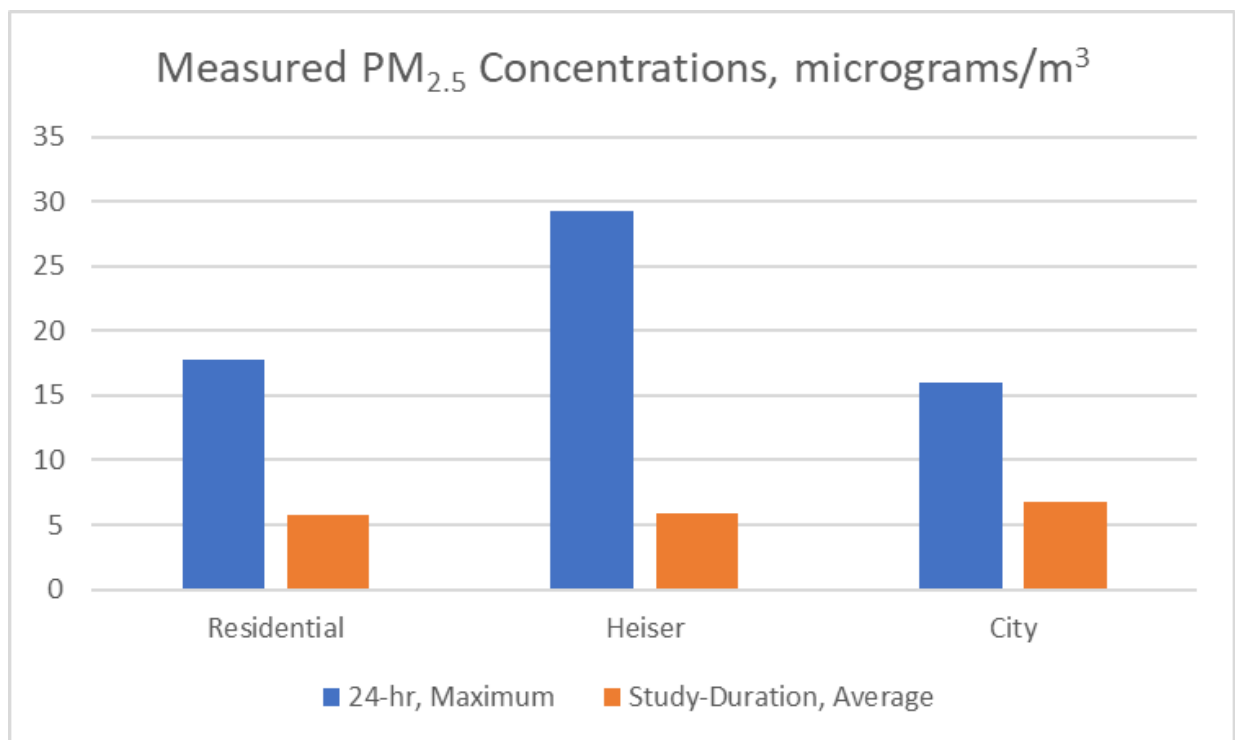


Figure 3 – PM_{2.5} Results

As noted earlier the study also measured various metals. As example, the copper (blue bars) and zinc (orange bars) concentrations are shown below in Figure 4.

There are no specific standards for these metals in the air. And, as Figure 4 shows the concentrations of both metals at all three sites are low (less than 0.25 micrograms/m³). However, the copper concentrations are quite consistent at all three sites but there is more variability in the zinc concentrations. It is not uncommon for there to be variability in measured background concentrations because they reflect the impacts of many sources and activities, especially in an urban setting.

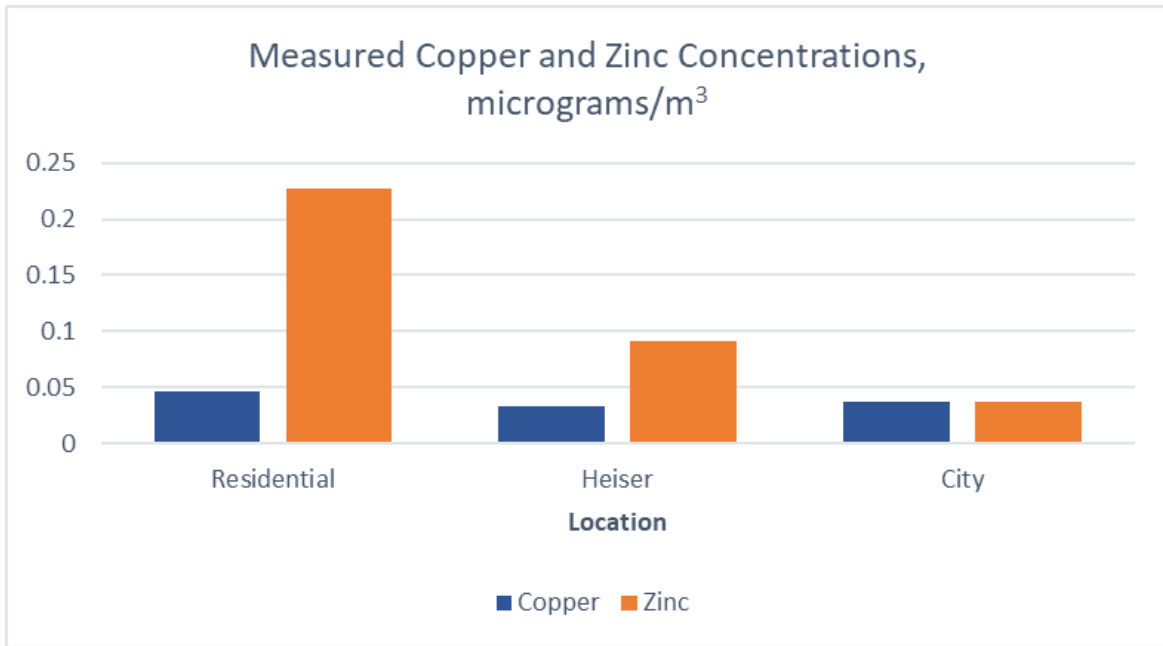


Figure 4 – Copper and Zinc Results

Finally, Figures 5 and 6 below, show the dioxin/furan and PCB results.

Like the metals above there are no standards for these pollutants in air. As you can see, their concentrations were generally very low except for higher values on two specific weeks in early July 2019 (at the Residential and Heiser sites but not the City site). Like the metals, some variability is to be expected during background sampling since many sources and activities (including traffic and even fireworks) can contribute to such pollutants in air.

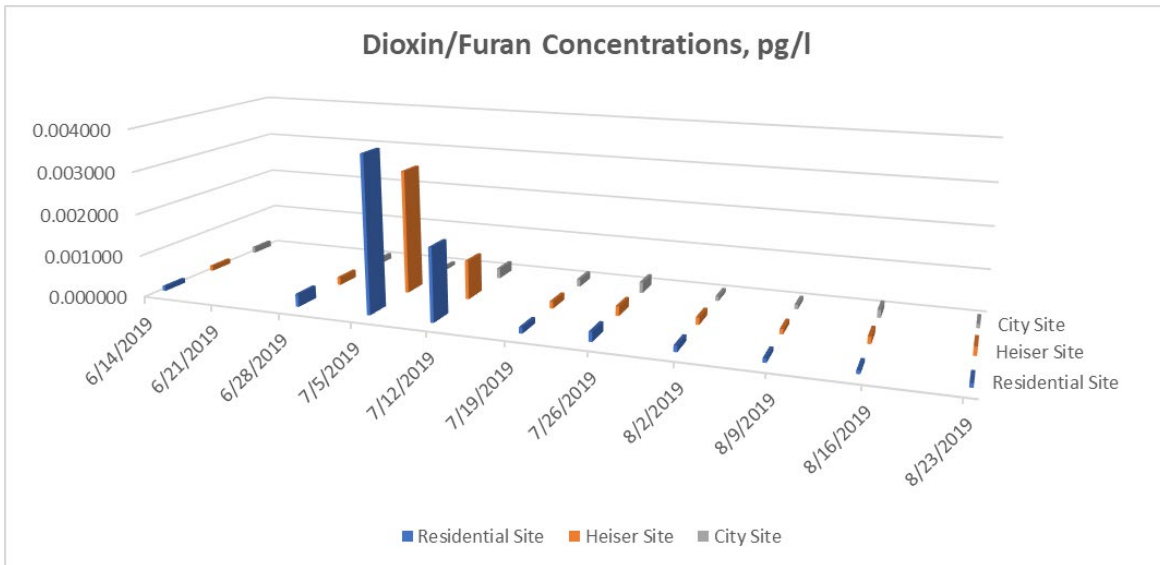


Figure 5 – Dioxin/Furan Results

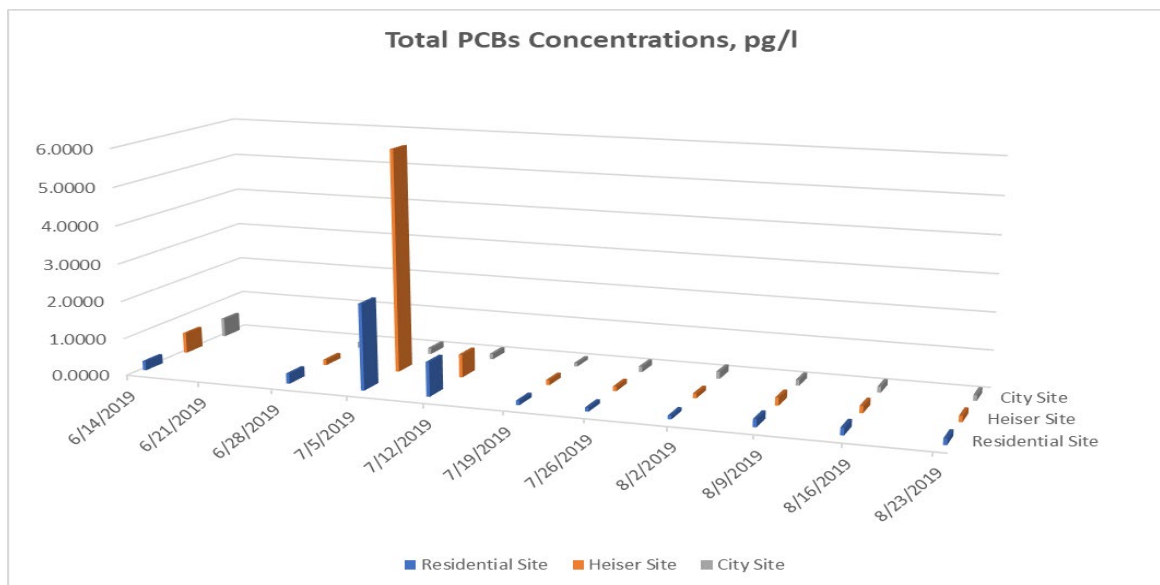


Figure 6 – PCB Results

Next Steps: What Now?

As required by the Consent Decree, these Phase I study results will be compared to similar measurements to be conducted at the SIM site itself in Phase II and Phase III studies. Phase II is anticipated to be conducted beginning in the summer of 2020 and lasting for one year followed by Phase III which is anticipated to begin in the summer of 2021 and lasting for two years. Thus, while the Phase I results (which, by design, do not include any impacts associated with SIM) simply show that there are other sources or activities that can create TSP, PM_{2.5}, metals, dioxin/furan, and PCBs in the area or region, the usefulness of these results will be when they are compared with the Phase II and Phase III study results.

Check back for Fact Sheets and full reports on subsequent study phases.

Questions

If you have questions about the Puget Soundkeeper and SIM legal settlement or its requirements, this Phase I dust study, or anything else you may be observing regarding the SIM site, please contact:

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