Naval Facilities Engineering Systems Command Southwest
BRAC PMO West
San Diego, CA

# Interim

# Air Sampling Summary Report No. 05

Data Date Range: August 24, 2020 through February 16, 2021
Parcel G

Former Hunters Point Naval Shipyard, San Francisco, CA

May 2021



DCN: APTM-0006-5065-0038

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**Prepared for:**

Department of the Navy
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BRAC PMO West
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# Table of Contents

# List of Attachments



# List of Figures



# List of Tables (in text)

# Acronyms and Abbreviations

| | |
|---|---|
| µCi/mL | microcurie per milliliter |
| µg/m$^3$ | microgram per cubic meter |
| $^{232}$Th | thorium-232 |
| APTIM | Aptim Federal Services, LLC |
| BAAQMD | Bay Area Air Quality Management District |
| DMP | Final, Revision 1, Dust Management and Air Monitoring Plan |
| DTSC | California Department of Toxic Substances Control |
| EPA | U.S. Environmental Protection Agency |
| HERO | Human and Ecological Risk Office |
| LCS | laboratory control sample |
| LCSD | laboratory control sample duplicate |
| MS | matrix spike |
| MSD | matrix spike duplicate |
| NIST | National Institute of Standards and Technology |
| NORM | naturally occurring radioactive material |
| PM2.5 | particulate matter larger than 2.5 microns in size |
| PM10 | particulate matter larger than 10 microns in size |
| ROC | radionuclide of concern |
| RPD | relative percent difference |
| SDG | sample delivery group |
| TSP | total suspended particulates |

# 1.0 Introduction

Aptim Federal Services, LLC (APTIM) is providing environmental remediation services to the U.S. Department of the Navy under the Radiological Environmental Multiple Award Contract, Contract Number N62473-17-D-0006, Contract Task Order N6247318F5065. APTIM is performing air sampling of fugitive dust emissions in support of Parcel G removal activities in accordance with the Final, Revision 1, Dust Management and Air Monitoring Plan (DMP) (included as Appendix E of the *Final, Revision 1, Parcel G Removal Site Evaluation Work Plan Addendum, Hunters Point Naval Shipyard, San Francisco, California* [APTIM, 2020]). The DMP describes procedures to reduce fugitive dust during work activities and outlines air sampling procedures to ensure these procedures are effective. Air sampling ensures on-site worker safety and provides reasonable assurance of the protection of the surrounding residents and public receptors.

This summary report describes the following:

- Where and how air samples are collected
- What test methods are used to analyze air samples
- How air sampling data are evaluated

This summary report presents the air sampling analytical results from August 24, 2020 through February 16, 2021, and compares the results with the established action levels included in the DMP (APTIM, 2020 [Appendix E]).

# 2.0 Sampling Site Locations

Air sampling stations were mobilized to collect air samples upwind and downwind of work areas for the duration of the project. The predominant wind direction at former Hunters Point Naval Shipyard is from the west or west-northwest. Figure 1 shows locations of air sampling stations and predominant wind direction. For the fieldwork performed during this period, APTIM used one upwind sampling location and two downwind sampling locations marked as follows:

- “Air Sampling Station 1 (Upwind)”
- “Air Sampling Station 17 (Downwind)”
- “Air Sampling Station 17A (Downwind)”
- “Air Sampling Station 18 (Downwind)”

The Downwind Air Sampling Stations 17, 17A, or 18 were used based on the location of fieldwork. One downwind sampling station was in use at a time. A windsock installed on site was used to show wind direction and weather forecasts were checked daily at www.noaa.gov. Sampling stations remained stationary while sampling was conducted. Each sampling station included four separate air sampling systems for the following:

- Total suspended particulates (TSP) and metals (lead and manganese)
- Particulate matter larger than 10 microns in size (PM10)
- Asbestos
- Radionuclides of concern (ROCs)

# 3.0 Analytical Methods

**TSP, Lead, and Manganese:** TSP samples were collected with a high-volume (39 to 60 cubic feet per minute) air sampler in accordance with U.S. Environmental Protection Agency's (EPA's) reference sampling method for TSP, described in Title 40 Code of Federal Regulations, Part 50, Appendix B. Each sample was collected on a filter over the course of a period not to exceed 25 hours; the filter was then weighed to determine the amount of TSP collected. Once the amount of TSP was determined, the sample was analyzed for lead and manganese in accordance with one of the IO-3 methods identified in the *Compendium of Methods for the Determination of Inorganic Compounds in Ambient Air* (EPA, 1999). The equipment specifications and sampling procedures used, including the sampling apparatus, filters, equipment accuracy, equipment calibration, and quality assurance checks conformed to those specified in the analytical method. The TSP high-volume samplers were calibrated using a National Institute of Standards and Technology (NIST)-traceable flow controller to 40.0 cubic feet per minute on a monthly basis and flowrates were recorded daily and adjusted as needed to maintain the flowrates.

**PM10:** Air samples were collected and analyzed for PM10 in accordance with EPA's reference sampling method for PM10, described in 40 Code of Federal Regulations Part 50, Appendix J. Each sample was collected on a filter over the course of a period not to exceed 25 hours; the filter was then weighed to evaluate the concentrations of PM10 in ambient air. The PM10 high-volume samplers were calibrated using a NIST-traceable flow controller to 40.0 cubic feet per minute on a monthly basis and flowrates were recorded daily and adjusted as needed to maintain flowrates.

**Asbestos:** Air samples were collected and analyzed for asbestos in accordance with the National Institute for Occupational Safety and Health Method 7400, in the *NIOSH Manual of Analytical Methods* (1994). Method 7400 requires that samples be collected on three-piece cellulose ester filters, which are fitted with conductive cowlings, at a sampling rate of between 0.5 liter per minute and 16 liters per minute. Each sample was collected on a filter over the course of a period not to exceed 25 hours. The GilAir Plus pumps were calibrated using a NIST-traceable flow controller to 2.0 liters per minute on a monthly basis, and flowrates were recorded daily and adjusted as needed to maintain flowrates.

**ROCs:** Air samples were collected and analyzed for ROCs to demonstrate dust management controls were protective of worker health and public health for off-site

receptors. Radiological air samples were collected using low-volume air samplers, F&J Specialty Products, Inc. Model LV-1D over 104 hours (Monday morning to Friday afternoon) to achieve the sample volume required to provide minimum detectable activities below the action levels. The samples were analyzed at the off-site laboratory for Gamma Spectroscopy (EPA 901.1/DOE EML HASL-300), gas flow proportional counting (EPA Method 905.0), and Alpha Spectroscopy.

# 4.0 Analysis of Air Sampling Data

Analytical results from air sampling samples were compared with the action levels listed in Table 4-1 and in accordance with the DMP (APTIM, 2020 [Appendix E]).

**Table 4-1: Air Sampling Action Levels**

| Test Parameters | Action Level | Basis |
|---|---|---|
| PM10 | 50 µg/m$^3$ | DTSC HERO developed action level (residents and public receptors) [a] |
| | 5,000 µg/m$^3$ [b] | Cal/OSHA PEL (on-site workers) |
| TSP | 500 µg/m$^3$ | Basewide HPNS level chosen to minimize overall permissible dust release from sites (on-site workers) |
| Lead | 50 µg/m$^3$ | Cal/OSHA PEL (on-site workers) |
| Manganese | 200 µg/m$^3$ | Cal/OSHA PEL (on-site workers) |
| Asbestos | 0.1 fiber/cm$^3$ | Cal/OSHA PEL (on-site workers) |
| Cesium-137 | 4.00E-11 µCi/mL | 10 CFR, Part 20, Appendix B, Table 2 Column 1 adjusted from 50 mrem per year to a maximum annual exposure of 10 mrem per year at the receptor (public receptor) [c] |
| Plutonium-239 | 4.00E-15 µCi/mL | |
| Radium-226 | 1.80E-13 µCi/mL | |
| Strontium-90 | 1.20E-12 µCi/mL | |
| Thorium-232 | 1.20E-15 µCi/mL | |
| Uranium-235 | 6.00E-13 µCi/mL | |

Notes:

[a] The DTSC HERO action level is based on the CSAAQS. The CSAAQS is designed to protect the general public from airborne particulates generated in the urban, suburban, and rural environments. The CSAAQS is not meant to be applied to general project-specific construction actions and related air quality. Rather, the standard is used to attain city- or regional-wide ambient air quality goals for the benefit of the general public. The current CSAAQS for PM10 is 50 µg/m$^3$ average per 24-hour day. The City and County of San Francisco is currently a non-attainment area for the CSAAQS for PM10.

[b] Cal/OSHA PEL for particulates not otherwise regulated (respiratory) used for PM10.

[c] Results may be evaluated using 40 CFR Appendix E to Part 61 to demonstrate compliance with the National Emission Standards for Hazardous Air Pollutants (40 CFR Part 61).

| | |
|---|---|
| µCi/mL | microcurie per milliliter (activity) |
| µg/m$^3$ | microgram per cubic meter |
| Cal/OSHA | California Occupational Safety and Health Administration |
| CFR | Code of Federal Regulations |
| CSAAQS | California State ambient air quality standard |

| | |
|---|---|
| DTSC | California Department of Toxic Substances Control |
| fiber/cm$^3$ | fiber per cubic centimeter |
| HERO | Human and Ecological Risk Office |
| HPNS | former Hunters Point Naval Shipyard |
| mrem | millirem |
| PEL | permissible exposure limit |
| PM10 | particulate matter larger than 10 microns in diameter |
| TSP | total suspended particulates |

# 5.0 Air Sampling Results

The tables included as Attachment 1 present weather information (including ambient pressure and temperature data) and air sampling results. Air sampling data were collected from the upwind sampling station and downwind sampling station (Section 2.0). Table 5-1 lists each interim air sampling report and the dates covered in each report.

**Table 5-1: Air Sampling Report Summary**

| Interim Report Number | New Data Date Range |
|---|---|
| 01 | 08/24/20–09/11/20 |
| 02 | 09/14/20–09/25/20 |
| 03 | 09/28/20–12/05/20 |
| 04 | 12/07/20–02/05/21 |
| 05 | 02/08/21–02/16/21 |

## 5.1 Report 01

There were no site-related exceedances above air sampling threshold criteria and action levels during this reporting period.

There were PM10 exceedances (above 50 micrograms per cubic meter [µg/$m^3$]) in both upwind and downwind samples on August 28, September 9, September 10, and September 11, 2020. PM10 concentrations were unusually high due to forest fires near the area and not related to site activities.

A summary of air sampling station downtime for the reporting period is as follows:

- August 24, 2020—The TSP sampler at the downwind air sampling station was down for approximately 1 hour. The generator was repaired on August 24 and replaced on August 25.
- August 27, 2020—While conducting daily filter changeouts, the air sampling technician noticed the upwind generator was shut off due to low fuel. The duration of shut off time is unknown. Generator was refueled and sampling was restarted at 0805.
- September 2, 2020—Downwind station was shut off for 15 minutes, from approximately 0830 to 0845. The generator exhaust was re-positioned

downwind from the samplers to minimize pollutant contamination from the exhaust.

- September 8, 2020—Downwind sampling was shut off for approximately 1 hour, from 0922 to 1022. The station was relocated to Air Sampling Station 17A.

## 5.2 Report 02

There were no site-related exceedances above air sampling threshold criteria and action levels during this reporting period.

There was a PM10 exceedance (above 50 µg/$m^3$) in the downwind sample on September 14, 2020. PM10 concentrations were unusually high due to forest fires near the area and not related to site activities. The upwind sample from that day contributed 48.6 µg/$m^3$ and the downwind sample was 88.4 µg/$m^3$; the site-related PM10 concentration was 39.8 µg/$m^3$.

A summary of air sampling station downtime for the reporting period is as follows:

- September 16, 2020—The downwind sampling station was down for one hour while replacing the generator.
- September 18, 2020—The upwind sampling station was down for approximately 0.75 hours while replacing the generator.
- September 25, 2020—The upwind sampling station was down for approximately four hours due to a generator malfunction. The new generator was brought on site, and the upwind air sampling station returned to service at 1119.

## 5.3 Report 03

There were PM10 exceedances above the California Department of Toxic Substances Control (DTSC) Human and Ecological Risk Office (HERO) developed action level (50 µg/$m^3$) on the following dates (Attachment 1, Table 3):

- October 1, 2020 (upwind and downwind)
- October 2, 2020 (upwind and downwind)
- October 6, 2020 (upwind)
- October 15, 2020 (upwind and downwind)

- October 23, 2020 (upwind and downwind)
- October 28, 2020 (upwind)
- November 16, 2020 (upwind)
- November 21, 2020 (downwind)
- December 3, 2020 (upwind and downwind)
- December 4, 2020 (upwind and downwind)
- December 5, 2020 (upwind and downwind)

Air sampling results are subtracted based on predominant wind direction when wind speeds are greater than 5 miles per hour. Attachment 2 presents a summary of the subtraction criteria. Based on wind direction and wind speed, site-related PM10 concentrations were below the 50 µg/m$^3$ action level on October 2, 2020, October 6, 2020, October 23, 2020, and October 28, 2020.

In early October, PM10 concentrations were unusually high due to forest fires near the area and not related to site activities. PM10 results above the DTSC HERO developed action level (50 µg/m$^3$) on October 1, 2020 were not related to site activities. The regional concentration of particulate matter larger than 2.5 microns in size (PM2.5), measured at the Bay Area Air Quality Management District (BAAQMD) Arkansas Street Station, was also elevated at 130 µg/m$^3$, according to the BAAQMD website. Elevated results on this day are not related to site activities.

On October 15, 2020, PM10 results were above the DTSC HERO developed action level (50 µg/m$^3$) at both the upwind and downwind air sampler locations (89.1 µg/m$^3$ and 79.7 µg/m$^3$, respectively). Wind speed was below 5 miles per hour and the wind direction was north (Attachment 1, Table1).

On November 16, 2020, the upwind result was 63.8 µg/m$^3$, above the 50 µg/m$^3$ action level; however, the downwind result was below the action level (34.5 µg/m$^3$). Wind speed was below 5 miles per hour and the wind direction was south-southeast (Attachment 1, Table1).

On November 21, 2020, the downwind PM10 result was 76 µg/m$^3$, above the 50 µg/m$^3$ action level. Wind speed was below 5 miles per hour and the wind direction was northeast (Attachment 1, Table1).

In accordance with the DMP (APTIM, 2020 [Appendix E]), dust (measured as PM10) is also monitored in real-time using DustTrak™ monitors. Although the PM10 filter-based air sample results, analyzed at the off-site laboratory, were above the DTSC HERO developed action level (50 µg/m$^3$), the average daily real-time dust monitoring results (DustTrak™ results) were below the DTSC action level on October 15, November 16, and November 21, 2020.

On December 3, 4, and 5, 2020, site PM10 results ranged from 51 to 74 µg/m$^3$ from both upwind and downwind air sampler locations. Wind speed ranged from 0.9 to 2 miles per hour, and the wind direction was northeast or south (Attachment 1, Table 1). Regional concentrations of PM2.5, measured at the BAAQMD Arkansas Street Station, were also elevated, and ranged from 62 to 69 µg/m$^3$, according to the BAAQMD website. The PM2.5 regional data suggests the elevated results on these days were not related to site activities.

A summary of air sampling station downtime for the reporting period is as follows:

- October 13, 2020—The downwind air sampling station was offline from 0745 to 0928 (approximately 1.5 hours). The Parcel G radiologically controlled area was expanded, and the air sampling station was moved to the other side of the fence to keep the station outside the radiologically controlled area. The station was relocated less than 10 meters.
- October 19, 2020—The downwind air sampling station 17A was offline from approximately 0800 to 0820 for generator maintenance.
- December 3, 2020—The upwind air sampling station 1 was offline from approximately 0707 to 0720 (13 minutes) and the downwind air sampling station 18 was offline from approximately 0734 to 0752 (18 minutes) for generator maintenance.

## 5.4 Report 04

There were PM10 exceedances above the DTSC HERO developed action level (50 µg/m$^3$) on the following dates (Attachment 1, Table 3):

- December 8, 2020 (upwind)
- December 9, 2020 (upwind and downwind)
- January 19, 2021 (upwind and downwind)

- January 20, 2021 (upwind and downwind)
- January 21, 2021 (upwind)
- February 5, 2021 (upwind)

Air sampling results are subtracted based on predominant wind direction when wind speeds are greater than 5 miles per hour. Based on wind direction and wind speed, site-related PM10 concentrations were not subtracted for the listed dates.

On December 8, 2020, the upwind result was above the 50 µg/m$^3$ action level and the downwind result was below the action level (63.9 µg/m$^3$ and 32.3 µg/m$^3$, respectively). Wind speed was below 5 miles per hour and the wind direction was northeast (Attachment 1, Table 1). In accordance with the DMP (APTIM, 2020 [Appendix E]), dust (measured as PM10) is also monitored in real-time using DustTrak™ monitors. Although the PM10 filter-based air sample result, analyzed at the off-site laboratory, was above the DTSC HERO developed action level (50 µg/m$^3$), the average daily real-time dust monitoring results (DustTrak™ results) were below the DTSC action level on December 8, 2020.

On December 9, 2020, PM10 results were above the DTSC HERO developed action level (50 µg/m$^3$) at both the upwind and downwind air sampler locations (90.5 µg/m$^3$ and 64.0 µg/m$^3$, respectively). Wind speed was below 5 miles per hour and the wind direction was south-southwest (Attachment 1, Table 1). Regional concentrations of PM2.5, measured at the BAAQMD Arkansas Street Station, were also elevated on December 9, 2020 (78 µg/m$^3$) according to the BAAQMD website. The PM2.5 regional data suggests the elevated results on this day may not be related to site activities.

On January 19, 2021, PM10 results were above the DTSC HERO developed action level (50 µg/m$^3$) at both the upwind and downwind air sampler locations (50.8 µg/m$^3$ and 73.7 µg/m$^3$, respectively). Wind speed was 15.4 miles per hour and the wind direction was north-northeast (Attachment 1, Table 1). Although the PM10 filter-based air sample results, analyzed at the off-site laboratory, were above the DTSC HERO developed action level (50 µg/m$^3$), the average daily real-time dust monitoring results (DustTrak™ results) were below the DTSC action level on January 19, 2021.

On January 20, 2021, PM10 results were above the DTSC HERO developed action level (50 µg/m$^3$) at both the upwind and downwind air sampler locations (81.3 µg/m$^3$ and 62.2 µg/m$^3$, respectively). Wind speed was below 5 miles per hour and the wind direction was south (Attachment 1, Table 1). Regional concentrations of PM2.5,

measured at the BAAQMD Arkansas Street Station, were also elevated on January 20, 2021 (57 µg/$m^3$) according to the BAAQMD website. The PM2.5 regional data suggests the elevated results on this day may not be related to site activities.

On January 21, 2021, the upwind result was above the 50 µg/$m^3$ action level and the downwind result was below the action level (71.2 µg/$m^3$ and 35.5 µg/$m^3$, respectively). Wind speed was below 5 miles per hour and the wind direction was southwest (Attachment 1, Table 1). Although the PM10 filter-based air sample results, analyzed at the off-site laboratory, were above the DTSC HERO developed action level (50 µg/$m^3$), the average daily real-time dust monitoring results (DustTrak™ results) were below the DTSC action level on January 21, 2021.

On February 5, 2021, the upwind result was above the 50 µg/$m^3$ action level and the downwind result was below the action level (51.0 µg/$m^3$ and 17.0 µg/$m^3$, respectively). Wind speed was below 5 miles per hour and the wind direction was west-southwest (Attachment 1, Table 1). Although the PM10 filter-based air sample results, analyzed at the off-site laboratory, were above the DTSC HERO developed action level (50 µg/$m^3$), the average daily real-time dust monitoring results (DustTrak™ results) were below the DTSC action level on February 5, 2021.

There were thorium-232 ($^{232}$Th) exceedances above the action limit (1.20E-15 microcurie per milliliter [µCi/mL]) in the upwind and downwind samples collected between December 21 and December 22, 2020. The upwind sample result was 1.97 E-15 µCi/mL $^{232}$Th, and the downwind sample result was 1.29E-15 µCi/mL $^{232}$Th (Attachment 1, Table 5). Wind speed on these dates ranged from 3.8 to 4.3 miles per hour and the wind direction was north-northeast (Attachment 1, Table 1). The samples had a shorter duration (27 hours versus typical 104 hours) due to the site shutting down for weather between December 23, 2020 and January 4, 2021. Shorter sample durations equate to smaller sample volumes. The shorter sample durations increase total uncertainty in the measurement which may bias the sample results. Additionally, $^{232}$Th was detected in the field blank sample from this week above the action limit at 1.92E-15 µCi/mL $^{232}$Th (Table 6-4). Field blank filter sample results have ranged from 5.26E-17 to 1.92E-15 µCi/mL $^{232}$Th (Table 6-4) between August 24, 2020 and February 5, 2021. Air samples are collected on glass fiber filters, which may contain naturally occurring radioactive material (NORM). The $^{232}$Th detections in the field blank samples, coupled with the low $^{232}$Th results, suggest these exceedances may be due to NORM background in the sample filter media. Communications with the laboratory have also

confirmed many filter media contain small amounts of NORM, and further investigation relative to the background of current filters in use is in progress.

A summary of air sampling station downtime for the reporting period is as follows:

- December 17, 2020—Upwind TSP air sampler was offline for approximately 2 hours from 1000 to 1210.
- December 23, 2020-January 1, 2021—Air sampling not performed because the site was shut down due to weather conditions or holidays, and no workers were on site.
- January 4, 2021—Air sampling not performed due to rain.
- January 6, 2021—Air sampling performed for half the day (morning) due to rain.
- January 26, 2021-February 3, 2021—Air sampling not performed because the site was shut down due to weather conditions, and no workers were on site. Workers were on site February 4 and 5, 2021, for storm damage repairs only.

## 5.5 Report 05

There were PM10 exceedances above the DTSC HERO developed action level (50 µg/$m^3$) on the following dates (Attachment 1, Table 3):

- February 11, 2021 (upwind)
- February 16, 2021 (upwind)

On February 11, 2021, the upwind result was above the 50 µg/$m^3$ action level and the downwind result was below the action level (66.5 µg/$m^3$ and 9.7 µg/$m^3$, respectively). Wind speed was below 5 miles per hour and the wind direction was south-southwest (Attachment 1, Table 1). Although the PM10 filter-based air sample results, analyzed at the off-site laboratory, were above the DTSC HERO developed action level (50 µg/$m^3$), the average daily real-time dust monitoring results (DustTrak™ results) were below the DTSC action level on February 11, 2021.

On February 16, 2021, the upwind result was above the 50 µg/$m^3$ action level and the downwind result was below the action level (74.8 µg/$m^3$ and 19.6 µg/$m^3$, respectively). Wind speed was below 5 miles per hour and the wind direction was southwest (Attachment 1, Table 1). Although the PM10 filter-based air sample results, analyzed at the off-site laboratory, were above the DTSC HERO developed action level (50 µg/$m^3$),

the average daily real-time dust monitoring results (DustTrak™ results) were below the DTSC action level on February 16, 2021.

A summary of air sampling station downtime for the reporting period is as follows:

- February 15, 2021—No air sampling due to rain conditions.

# 6.0 Data Quality Assessment

Laboratory data were reviewed by the APTIM chemist to verify that analytical results were received from the laboratory, that the results provided in the electronic data deliverable and hard copy forms were the same, and that standard laboratory procedures and protocols were followed. Analytical data for this project were assessed in terms of precision, accuracy, representativeness, completeness, and comparability based on the requirements of the published EPA analytical methods and laboratory standard operating procedures and as specified in the DMP (APTIM, 2020 [Appendix E]).

**Accuracy** is demonstrated by recovery of target analytes from fortified blank and sample matrices, laboratory control sample (LCS), laboratory control sample duplicate (LCSD), matrix spike (MS), and matrix spike duplicate (MSD), respectively. The recovery of target analytes from fortified samples is compared to acceptance criteria. When these criteria are not met, the data are flagged appropriately.

**Precision** is expressed as relative percent difference (RPD) between the results of laboratory replicate sample analyses: sample duplicates, LCSDs, and MSDs. When analyte RPDs exceed the acceptance criteria, the data are flagged appropriately.

**Representativeness** of the samples submitted for analysis is ensured by adherence to standard sampling techniques and protocols.

**Comparability** of sample results is ensured through the use of approved consistent sampling and analysis methods.

**Completeness** is expressed as a ratio of number of usable data to all analytical data collected.

**Sensitivity** of sample results is ensured through the use of appropriate sampling techniques and analytical methods with detection limits below decision levels.

The laboratory data packages were reviewed at EPA Level II. As applicable to referenced methodology, a Level II data review includes reviewing the following:

- Chain-of-custody/sample receipt
- Method blanks
- Field filter blanks

- Tracer compound recovery (ROCs)
- LCS/LCSD
- MS and MSD and sample duplicates
- Sensitivity
- Completeness (field and technical)

Table 6-1 lists samples collected, collection dates, analyses performed, and laboratory sample delivery groups (SDGs) that are discussed in the following subsections.

**Table 6-1: Sample Delivery Group Summary**

| Date Range | SDG | Analyses |
|---|---|---|
| 08/24/20 through 08/28/20 | 37375 | PM10, TSP, Metals, Asbestos |
| 08/24/20 through 08/28/20 | 39364 | ROCs |
| 08/31/20 through 09/04/20 | 37971 | PM10, TSP, Metals, Asbestos |
| 08/31/20 through 09/04/20 | 39383 | ROCs |
| 09/08/20 through 09/11/20 | 38566 | PM10, TSP, Metals, Asbestos |
| 09/08/20 through 09/11/20 | 39450 | ROCs |
| 09/14/20 through 09/18/20 | 39178 | PM10, TSP, Metals, Asbestos |
| 09/14/20 through 09/18/20 | 39533 | ROCs |
| 09/21/20 through 09/25/20 | 39763 | PM10, TSP, Metals, Asbestos |
| 09/21/20 through 09/25/20 | 39632 | ROCs |
| 09/28/20 through 10/02/20 | 40465 | PM10, TSP, Metals, Asbestos |
| 09/28/20 through 10/02/20 | 39752 | ROCs |
| 10/05/20 through 10/09/20 | 40980 | PM10, TSP, Metals, Asbestos |
| 10/05/20 through 10/09/20 | 39863 | ROCs |
| 10/12/20 through 10/16/20 | 41663 | PM10, TSP, Metals, Asbestos |
| 10/12/20 through 10/16/20 | 39983 | ROCs |
| 10/19/20 through 10/24/20 | 42226 | PM10, TSP, Metals, Asbestos |
| 10/19/20 through 10/24/20 | 40123 | ROCs |
| 10/26/20 through 10/30/20 | 42858 | PM10, TSP, Metals, Asbestos |
| 10/26/20 through 10/31/20 | 40264 | ROCs |
| 10/31/20, 11/02/20 through 11/07/20 | 43457 | PM10, TSP, Metals, Asbestos |
| 10/31/20 through 11/07/20 | 40343 | ROCs |
| 11/09/20 through 11/13/20 | 44183 | PM10, TSP, Metals, Asbestos |
| 11/11/20 through 11/16/20 | 40427 | ROCs |
| 11/16/20 through 11/21/20 | 44764 | PM10, TSP, Metals, Asbestos |
| 11/16/20 through 11/21/20 | 40558 | ROCs |
| 11/23/20 through 11/25/20 | 45096 | PM10, TSP, Metals, Asbestos |
| 11/23/20 through 11/25/20 | 40659 | ROCs |

| Date Range | SDG | Analyses |
|---|---|---|
| 11/30/20 through 12/05/20 | 45687 | PM10, TSP, Metals, Asbestos |
| 11/30/20 through 12/05/20 | 40701 | ROCs |
| 12/07/20 through 12/12/20 | 46537 | PM10, TSP, Metals, Asbestos |
| 12/07/20 through 12/12/20 | 40798 | ROCs |
| 12/14/20 through 12/18/20 | 47011 | PM10, TSP, Metals, Asbestos |
| 12/14/20 through 12/18/20 | 40877 | ROCs |
| 12/21/20 through 12/22/20 | 47068 | PM10, TSP, Metals, Asbestos |
| 12/21/20 through 12/22/20 | 40901 | ROCs |
| 01/05/21 through 01/08/21 | 48272 | PM10, TSP, Metals, Asbestos |
| 01/05/21 through 01/08/21 | 40982 | ROCs |
| 01/11/21 through 01/15/21 | 48977 | PM10, TSP, Metals, Asbestos |
| 01/11/21 through 01/15/21 | 41038 | ROCs |
| 01/19/21 through 01/22/21 | 49458 | PM10, TSP, Metals, Asbestos |
| 01/20/21 through 01/22/21 | 41108 | ROCs |
| 01/25/21 | 50057 | PM10, TSP, Metals, Asbestos |
| 02/04/21 through 02/05/21 | 50884 | PM10, TSP, Metals, Asbestos |
| 02/08/21 through 02/12/21 | 51584 | PM10, TSP, Metals, Asbestos |
| 02/08/21 through 02/12/21 | 41247 | ROCs |
| 02/16/21 | 52289 | PM10, TSP, Metals, Asbestos |
| 02/15/21 through 02/19/21 | 41385 | ROCs |

Notes:
PM10 particulate matter larger than 10 microns in size
ROC radionuclide of concern
SDG sample delivery group
TSP total suspended particulates

The data quality assessment discusses data review findings and their potential impact on the data quality and usability. Definitions of EPA qualifiers and reason codes applied to the affected sample results that are outside the established control requirements are presented as follows:

**Table 6-2: Qualifier Definitions**

| Qualifier | Definition |
|---|---|
| | No qualifier indicates that the data are acceptable both qualitatively and quantitatively. |
| U | The analyte was analyzed for but was not detected above the reported sample quantitation limit. |
| J | The analyte was analyzed for and was positively identified, but the reported numerical value is estimated. Although the data are considered usable and may be used as appropriate to meet project objectives. Results are qualitatively acceptable and quantitatively uncertain. |

| Qualifier | Definition |
|---|---|
| UJ | The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate. |
| R | The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Qualifier denotes the data are unusable due to deficiencies in the ability to analyze the sample and meet quality control criteria. Results are rejected and data are unusable for project decisions. |

## 6.1 Sample Receipt and Laboratory Narrative

As required by EPA, samples were received at the laboratory under chain-of-custody and were logged in for analysis. Minor log-in discrepancies, if noted by the laboratory were resolved with the Project Chemist prior to analysis. Analyses were completed within method specified holding times for applicable methods. Sample analysis deviations or discrepancies are described as follows:

**Table 6-3: Sample Analysis Discrepancies**

| SDG | Analysis | Anomaly/Issue | Resolution |
|---|---|---|---|
| 37971 | Asbestos | PG-ASB090120-17DOWNWIND and PG-ASB090220-17DOWNWIND overloaded for asbestos (filters with particulate loading of greater than 50 percent cause potentially biased results) | Due to local forest fires, ash and smoke in the area affected sample collection. No asbestos results reported for 09/01/20 downwind and 09/02/20 downwind. |
| 38566 | Asbestos | PG-ASB091020-1UPWIND and PG-ASB091020-17DOWNWIND overloaded for asbestos (filters with particulate loading of greater than 50 percent cause potentially biased results) | Due to local forest fires, ash and smoke in the area affected sample collection. No asbestos results reported for 09/10/20. |

Notes:
SDG sample delivery group

## 6.2 Blanks

Laboratory method blanks and field filter blanks were prepared and analyzed as recommended by the referenced methods and the DMP (APTIM, 2020 [Appendix E]). The concentration of target analytes in the laboratory blanks and field blanks were either not detected or below the limit of detection for SDGs with the exceptions noted in this section.

The following radiological results were qualified “JB” due to method blank or field blank contamination:

**Table 6-4: Blank Discrepancies for Radionuclides of Concern**

| Analyte | SDG | Sample ID | Result (µCi/mL) |
|---|---|---|---|
| $^{239}$Pu/ $^{240}$Pu | 39364<br>39383<br>39450 | Method Blank (one prep batch for indicated SDGs) | 6.582E-17 |
| | 39364 | PG-RAD-08282020-17/DOWNWIND | 8.38E-17 |
| | 39383 | PG-RAD-09042020-17/DOWNWIND | 1.01E-16 |
| | 39450 | PG-RAD-09112020-1/UPWIND | 1.24E-16 |
| $^{226}$Ra | 39364<br>39383<br>39450 | Method Blank (one prep batch for indicated SDGs) | 2.923E-15 |
| | 39364 | PG-RAD-08/282020-BLANK | 7.86E-16 |
| | | PG-RAD-08282020-17/DOWNWIND | 1.87E-15 |
| | 39383 | PG-RAD-09042020-BLANK | 2.32E-15 |
| | | PG-RAD-09042020-1/UPWIND | 1.87E-15 |
| | | PG-RAD-09042020-17/DOWNWIND | 1.39E-15 |
| | 39450 | PG-RAD-09112020-BLANK | 2.66E-15 |
| | | PG-RAD-09112020-1/UPWIND | 1.17E-15 |
| | | PG-RAD-09112020-17A/DOWNWIND | 1.96E-15 |
| | 39632 | Method Blank | 1.937E-15 |
| | | PG-RAD-09252020-1/UPWIND | 3.65E-15 |
| | | PG-RAD-09252020-17A/DOWNWIND | 1.73E-15 |
| | 40901 | PG-RAD-12222020-BLANK | 2.77E-15 |
| | | PG-RAD-12222020-18/DOWNWIND | 1.93E-15 |
| | 40982 | Method Blank | 9.075E-16 |
| | | PG-RAD-01082021-18/DOWNWIND | 1.31E-15 |
| | 41385 | PG-RAD-02192021-BLANK | 9.01E-16 |
| | | PG-RAD-02192021-1/UPWIND | 5.08E-16 |
| | | PG-RAD-02192021-18/DOWNWIND | 9.06E-16 |
| $^{90}$Sr | 39383 | PG-RAD-09042020-BLANK | 1.76E-15 |
| | | PG-RAD-09042020-1/UPWIND | 3.33E-15 |
| | 39533<br>39632 | Method Blank (one prep batch for indicated SDGs) | 3.394E-15 |
| | 39533 | PG-RAD-09182020-1/UPWIND | 2.00E-15 |
| | 39632 | PG-RAD-09252020-1/UPWIND | 4.00E-15 |
| | 39983 | PG-RAD-10162020-BLANK | 1.59E-15 |
| | | PG-RAD-10162020-17A/DOWNWIND | 2.06E-15 |
| | 40343 | PG-RAD-11072020-BLANK | 1.16E-14 |

| Analyte | SDG | Sample ID | Result (µCi/mL) |
|---|---|---|---|
| | | PG-RAD-11072020-1/UPWIND | 1.01E-14 |
| | | PG-RAD-11072020-18/DOWNWIND | 6.50E-15 |
| | 41385 | PG-RAD-02192021-BLANK | 1.44E-15 |
| | | PG-RAD-02192021-18/DOWNWIND | 8.64E-16 |
| $^{232}$Th | 39364 | PG-RAD-08/282020-BLANK | 2.44E-16 |
| | | PG-RAD-08/282020-1/UPWIND | 1.98E-16 |
| | | PG-RAD-08/282020-17/DOWNWIND | 3.19E-16 |
| | 39383 | PG-RAD-09042020-BLANK | 1.20E-15 |
| | | PG-RAD-09042020-1/UPWIND | 4.93E-16 |
| | | PG-RAD-09042020-17/DOWNWIND | 5.20E-16 |
| | 39450 | PG-RAD-09112020-BLANK | 3.86E-16 |
| | | PG-RAD-09112020-1/UPWIND | 3.90E-16 |
| | | PG-RAD-09112020-17A/DOWNWIND | 2.86E-16 |
| | 39533 | PG-RAD-09182020-BLANK | 3.60E-16 |
| | | PG-RAD-09182020-1/UPWIND | 3.29E-16 |
| | | PG-RAD-09182020-17A/DOWNWIND | 4.76E-16 |
| | 39632 | PG-RAD-09252020-BLANK | 1.69E-16 |
| | | PG-RAD-09252020-1/UPWIND | 1.51E-16 |
| | | PG-RAD-09252020-17A/DOWNWIND | 1.80E-16 |
| | 39752<br>39863<br>39983 | Method Blank (one prep batch for indicated SDGs) | 1.224E-16 |
| | 39752 | PG-RAD-10022020-BLANK | 1.76E-16 |
| | | PG-RAD-10022020-1/UPWIND | 2.37E-16 |
| | | PG-RAD-10022020-17A/DOWNWIND | 2.43E-16 |
| | 39863 | PG-RAD-10092020-BLANK | 3.88E-16 |
| | | PG-RAD-10092020-1/UPWIND | 2.54E-16 |
| | | PG-RAD-10092020-17A/DOWNWIND | 1.61E-16 |
| | 39983 | PG-RAD-10162020-BLANK | 1.99E-16 |
| | | PG-RAD-10162020-17A/DOWNWIND | 6.22E-17 |
| | 40264 | PG-RAD-10312020-BLANK | 5.26E-17 |
| | | PG-RAD-10312020-1/UPWIND | 1.31E-16 |
| | | PG-RAD-10312020-17A/DOWNWIND | 1.36E-16 |
| | 40343 | Method Blank | 3.627E-17 |
| | | PG-RAD-11072020-BLANK | 8.73E-17 |
| | | PG-RAD-11072020-1/UPWIND | 8.80E-17 |
| | | PG-RAD-11072020-18/DOWNWIND | 9.67E-17 |
| | 40472 | PG-RAD-11162020-BLANK | 1.07E-16 |
| | | PG-RAD-11162020-1/UPWIND | 1.27E-16 |
| | | PG-RAD-11162020-18/DOWNWIND | 1.58E-16 |
| | 40558 | PG-RAD-11212020-BLANK | 1.71E-16 |

| Analyte | SDG | Sample ID | Result (µCi/mL) |
|---|---|---|---|
| | | PG-RAD-11212020-1/UPWIND | 1.12E-16 |
| | | PG-RAD-11212020-18/DOWNWIND | 1.27E-16 |
| | 40659 | PG-RAD-11252020-BLANK | 4.40E-16 |
| | | PG-RAD-11252020-1/UPWIND | 4.63E-16 |
| | | PG-RAD-11252020-18/DOWNWIND | 1.44E-16 |
| | 40798 | Method Blank | 6.910E-17 |
| | | PG-RAD-12122020-BLANK | 1.21E-16 |
| | | PG-RAD-12122020-1/UPWIND | 3.65E-16 |
| | | PG-RAD-12122020-18/DOWNWIND | 1.31E-16 |
| | 40877 | PG-RAD-12182020-BLANK | 6.38E-16 |
| | | PG-RAD-12182020-1/UPWIND | 7.79E-16 |
| | | PG-RAD-12182020-18/DOWNWIND | 7.92E-16 |
| | 40901 | PG-RAD-12222020-BLANK | 1.92E-15 |
| | | PG-RAD-12222020-1/UPWIND | 1.97E-15 |
| | | PG-RAD-12222020-18/DOWNWIND | 1.29E-15 |
| | 40982 | PG-RAD-01082021-BLANK | 6.48E-16 |
| | | PG-RAD-01082021-1/UPWIND | 6.05E-16 |
| | | PG-RAD-01082021-18/DOWNWIND | 1.05E-15 |
| | 41038 | PG-RAD-01152021-BLANK | 3.66E-16 |
| | | PG-RAD-01152021-1/UPWIND | 6.11E-16 |
| | | PG-RAD-01152021-18/DOWNWIND | 3.73E-16 |
| | 41108 | Method Blank | 1.889E-16 |
| | | PG-RAD-01222021-BLANK | 1.51E-15 |
| | | PG-RAD-01222021-1/UPWIND | 1.12E-15 |
| | | PG-RAD-01222021-18/DOWNWIND | 8.49E-16 |
| | 41247 | PG-RAD-02122021-BLANK | 4.81E-16 |
| | | PG-RAD-02122021-1/UPWIND | 2.27E-16 |
| | | PG-RAD-02122021-18/DOWNWIND | 5.48E-16 |
| | 41385 | PG-RAD-02192021-BLANK | 5.24E-16 |
| | | PG-RAD-02192021-1/UPWIND | 6.54E-16 |
| | | PG-RAD-02192021-18/DOWNWIND | 5.40E-16 |
| $^{235}U$/ $^{236}U$ | 39450 | PG-RAD-09112020-BLANK | 2.04E-16 |
| | | PG-RAD-09112020-1/UPWIND | 1.96E-16 |
| | 39632 | Method Blank | 1.099E-16 |
| | | PG-RAD-09252020-1/UPWIND | 1.59E-16 |
| | 39752 | PG-RAD-10022020-BLANK | 1.04E-16 |
| | | PG-RAD-10022020-1/UPWIND | 1.99E-16 |
| | 40343 | Method Blank | 1.043E-16 |
| | | PG-RAD-11072020-1/UPWIND | 8.82E-17 |

Notes:

| | |
|---|---|
| µCi/mL | microcurie per milliliter |
| $^{90}Sr$ | strontium-90 |
| $^{226}Ra$ | radium-226 |
| $^{232}Th$ | thorium-232 |
| $^{235}U$ | uranium-235 |
| $^{236}U$ | uranium-236 |
| $^{239}Pu$ | plutonium-239 |
| $^{240}Pu$ | plutonium-240 |
| SDG | sample delivery group |

Sample radiological results summarized in this section are greater than the minimum detectable concentration but less than 10 times the associated blank results. Sample results were qualified as estimated (JB).

Trace detections of ROCs, specifically $^{232}Th$, in filter field blanks and samples have been consistent throughout the sampling periods. Communications with the laboratory have also confirmed many filter media contain small amounts of NORM, and further investigation relative to the background of current glass fiber filters in use is in progress.

The following metals results were qualified “B” due to method blank contamination:

**Table 6-5: Blank Discrepancies for PM10/Total Suspended Particulates/Metals/Asbestos**

| Analyte | SDG | Sample ID | Result (µg/sample) | Final Result (µg/m$^3$) |
|---|---|---|---|---|
| Lead | 41663 | Method Blank | 3.500 J | N/A |
| | | PG-TSP101220-17ADOWNWIND | 4.58 J | <0.007 B |
| | 43457 | Method Blank | 5.395 J | N/A |
| | | PG-TSP103120-1UPWIND | 7.22 J | <0.028 B |
| | | PG-TSP103120-18DOWNWIND | 7.40 J | <0.027 B |
| | | PG-TSP110220-18DOWNWIND | 9.50 J | <0.007 B |
| | | PG-TSP110320-18DOWNWIND | 3.82 J | <0.007 B |
| | | PG-TSP110420-18DOWNWIND | 6.06 J | <0.007 B |
| | | PG-TSP110520-18DOWNWIND | 9.17 J | <0.007 B |
| | 45096 | Method Blank | 5.960 J | N/A |
| | | PG-TSP-112420-1UPWIND | 10.2 J | <0.007 B |
| | | PG-TSP-112520-1UPWIND | 8.73 J | <0.022 B |
| | | PG-TSP-112520-18DOWNWIND | 4.93 J | <0.021 B |

| Analyte | SDG | Sample ID | Result (µg/sample) | Final Result (µg/m$^3$) |
|---|---|---|---|---|
| | 48977 | Method Blank | 10.69 | N/A |
| | | PG-TSP011121-1UPWIND | 19.0 | <0.007 B |
| | | PG-TSP011221-1UPWIND | 19.8 | <0.007 B |
| | | PG-TSP011221-18DOWNWIND | 17.7 | <0.007 B |
| | | PG-TSP011321-1UPWIND | 14.1 | <0.007 B |
| | | PG-TSP011321-18DOWNWIND | 17.1 | <0.007 B |
| | | PG-TSP011421-1UPWIND | 10.6 | <0.007 J B |
| | | PG-TSP011421-18DOWNWIND | 15.6 | <0.007 B |
| | | PG-TSP011521-1UPWIND | 13.4 | <0.024 B |
| | | PG-TSP011521-18DOWNWIND | 9.79 | <0.025 J B |
| | 50884 | Method Blank | 5.549 | N/A |
| | | PG-TSP020521-18DOWNWIND | 8.42 | <0.025 J B |
| Manganese | 47011 | Method Blank | 4.481 | N/A |
| | | PG-TSP121620-18DOWNWIND | 4.68 | <0.023 J B |
| | | PG-TSP121820-18DOWNWIND | 5.57 | <0.020 J B |
| | 50884 | Method Blank | 4.205 | N/A |
| | | PG-TSP020521-18DOWNWIND | 6.30 | <0.025 B |

Notes:

| | |
|---|---|
| µg/sample | microgram per sample |
| µg/m$^3$ | microgram per cubic meter |
| < | less than |
| J | the concentration is an estimated value |
| B | compound was found in the blank and sample |
| N/A | not applicable |
| PM10 | particulate matter larger than 10 microns in size |
| SDG | sample delivery group |

Sample results for metals that were detected less than the laboratory reporting limit (J-qualified) and were less than two times the associated blank results, were qualified as not detected at the reporting limit.

## 6.3 Laboratory Control Samples

LCSs were prepared and analyzed as required by the referenced methods. The percent recoveries for LCS, LCSD, and RPD were within control limits for all analytical batches containing the samples for this project.

## 6.4 Matrix Spikes/Matrix Spike Duplicates/Laboratory Duplicates

Laboratory quality control samples, MS/MSD, and laboratory duplicates were prepared using project samples. The percent recovery MS and MSD were all within the specified control limits, and the RPD between MS/MSD or sample/sample duplicate were within the specific precision control limit with the exceptions noted as follows:

**Table 6-6: Matrix Spike/Matrix Spike Duplicate Discrepancies**

| SDG | Sample Spiked | Analyte | MS/MSD % Recovery | Control Limit | Qualifier |
|---|---|---|---|---|---|
| 38566 | PG-TSP090820-1UPWIND | Mn | 68% / 68% | 75%–125% | All manganese results in the SDG were qualified as estimated (J) due to low MS and MSD recovery; matrix interference is suspected. |
| 42858 | PG-TSP102620-1UPWIND | Mn | 71% / 88% | 75%–125% | All manganese results in the SDG were qualified as estimated (J) due to low MS recovery; matrix interference is suspected. |

Notes:

| | |
|---|---|
| % | percent |
| Mn | manganese |
| MS | matrix spike |
| MSD | matrix spike duplicate |
| SDG | sample delivery group |

Even though the sample results above were qualified as estimated (J) the MS/MSD exceedance were minor and LCS/LCSD recoveries indicate acceptable analytical batch precision. The sample data usability is not affected.

## 6.5 Tracers (Radionuclides of Concern)

A tracer is either an isotope of the same element as the isotope of interest, or an isotope of an element different from the element of the isotope of interest, but one that behaves chemically very similar to the isotope of interest. Tracers are added to both field samples and batch quality control samples prior to sample preparation. The percent recovery of the tracer is used to normalize the measured activity of the isotope

of interest. The review indicated that tracer recoveries were within the established control limits with the exceptions noted as follows:

**Table 6-7: Tracer Recovery Discrepancies**

| SDG | Sample | Analyte | Tracer Recovery | Control Limit | Qualifier |
|---|---|---|---|---|---|
| 39450 | PG-RAD-09112020-1/UPWIND | $^{232}$Th | 111% | 40%–110% | Sample results were qualified as estimated (J) due to potential low bias reflected in high tracer recovery. |
| 39383 | PG-RAD-09042020-17/DOWNWIND | $^{232}$U | 112% | 40%–110% | Sample results were qualified as estimated (J) due to potential low bias reflected in high tracer recovery. |
| 39533 | PG-RAD-09182020-1/UPWIND | $^{242}$Pu | 112% | 40%–110% | Sample results were qualified as estimated (J) due to potential low bias reflected in high tracer recovery. |
| 39533 | PG-RAD-09182020-17A/DOWNWIND | $^{242}$Pu | 111% | 40%–110% | Sample results were qualified as estimated (UJ) due to potential low bias reflected in high tracer recovery. |
| 39632 | PG-RAD-09252020-1/UPWIND | $^{242}$Pu | 112% | 40%–110% | Sample results were qualified as estimated (UJ) due to potential low bias reflected in high tracer recovery. |
| 39632 | PG-RAD-09252020-17A/DOWNWIND | $^{242}$Pu | 111% | 40%–110% | Sample results were qualified as estimated (UJ) due to potential low bias reflected in high tracer recovery. |
| 39983 | PG-RAD-10162020-BLANK | $^{242}$Pu | 111% | 40%–110% | Sample results were qualified as estimated (J/UJ) due to potential low bias reflected in high tracer recovery. |

| SDG | Sample | Analyte | Tracer Recovery | Control Limit | Qualifier |
|---|---|---|---|---|---|
| 40427 | PG-RAD-11162020-1/UPWIND | $^{242}$Pu | 112% | 40%–110% | Sample results were qualified as estimated (UJ) due to potential low bias reflected in high tracer recovery. |
| 40701 | PG-RAD-12052020-1/UPWIND | $^{242}$Pu | 111% | 40%–110% | Sample results were qualified as estimated (UJ) due to potential low bias reflected in high tracer recovery. |
| 40701 | PG-RAD-12052020-18/DOWNWIND | $^{242}$Pu | 112% | 40%–110% | Sample results were qualified as estimated (UJ) due to potential low bias reflected in high tracer recovery. |
| 40901 | PG-RAD-12222020-BLANK | $^{232}$U | 111% | 30%-110% | Sample results were qualified as estimated (J/UJ) due to potential low bias reflected in high tracer recovery. |
| 41247 | PG-RAD-021222021-1/UPWIND | $^{232}$U | 114% | 30%-110% | Sample results were qualified as estimated (UJ) due to potential low bias reflected in high tracer recovery. |

Notes:

| | |
|---|---|
| % | percent |
| $^{232}$Th | thorium-232 |
| $^{232}$Ur | uranium-232 |
| $^{242}$Pu | plutonium-242 |
| SDG | sample delivery group |

Although tracer recoveries were outside of specified control limits, the amount of exceedance was minor, the relative error ratio values were within laboratory control limits. Data usability was not affected.

## 6.6 Sensitivity

Reporting limits for results reported by the laboratory were sufficiently low enough for project decisions.

## 6.7 Completeness

The following subsections present a discussion of field and technical completeness for the sampling events.

Field completeness is based on the number of samples/analyses planned compared to the number of results obtained. Field completeness is 100 percent for TSP, PM10, and metals for the sampling between August 24, 2020 and February 5, 2021. Field completeness is 98 percent for asbestos for the sampling between August 24, 2020 and February 19, 2021 due to sample loss (overload) caused by local forest fires in August through October 2020. Field completeness is 96 percent for ROCs for the sampling between August 24, 2020 and February 16, 2021, due to sample loss caused by rain damage for the samples collected on January 25, 2021.

Technical completeness is a quantitative measure of the data usability based on the number of rejected data compared to the total number of sample results. The technical-completeness calculation considers data that are not rejected to be usable. The technical-completeness objective is 90 percent. As discussed in the previous subsection, sample results were qualified as estimated (J/UJ) due to method blank laboratory quality control outliers. However, the degree of the quality control exceedances was small and did not affect the data usability. The technical completeness was 100 percent for all analyses.

## 6.8 Summary and Statement of Data Usability

Based on the above data review there were no significant systematic problems identified with the analytical method performance. Although some results were flagged as estimated due to deficiencies, the data usability was not affected. Data meet the quality objectives for the intended use.

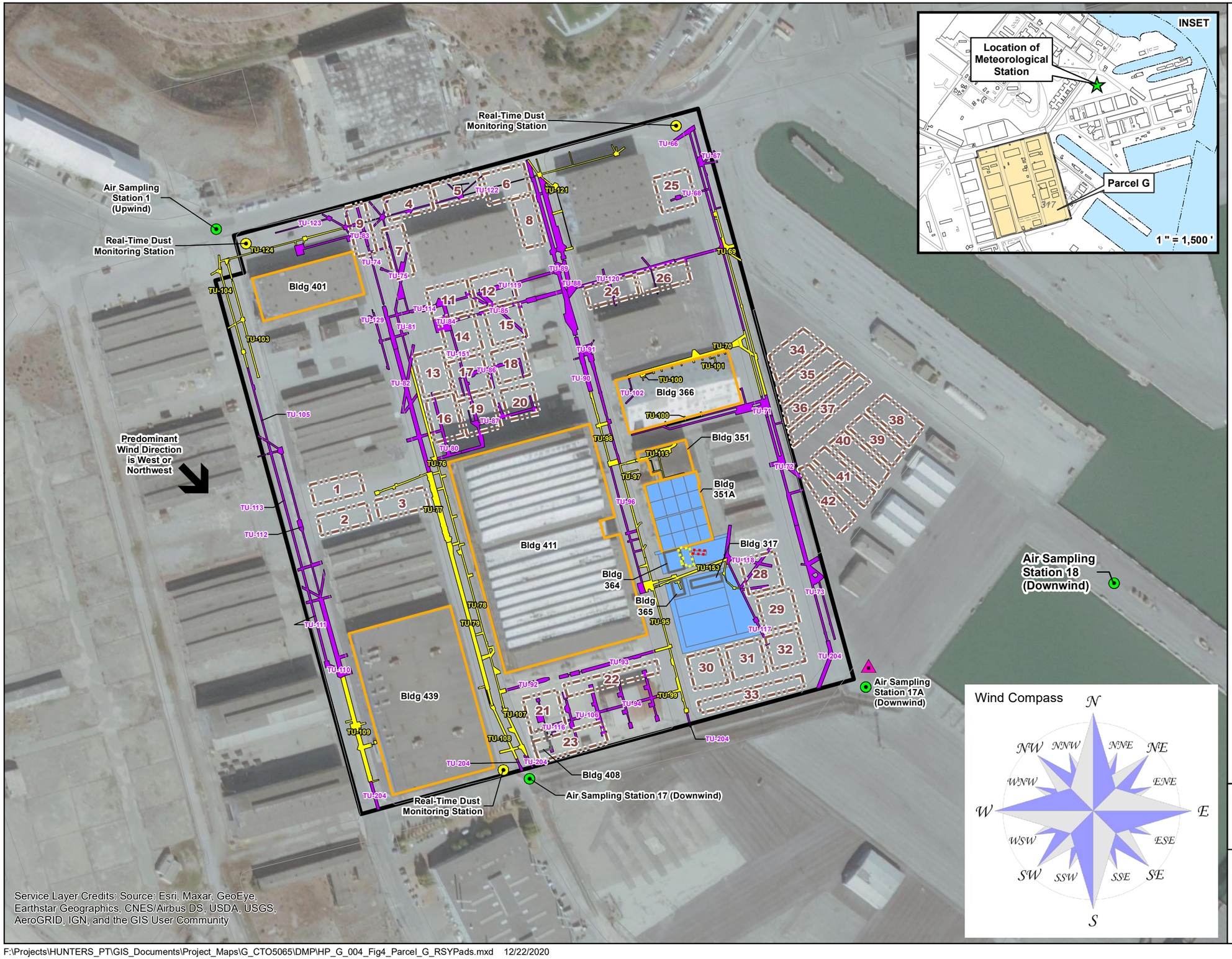
# 7.0 References

Aptim Federal Services, LLC, 2020, *Final, Revision 1, Parcel G Removal Site Evaluation Work Plan Addendum, Former Hunters Point Naval Shipyard, San Francisco, California,* July.

National Institute for Occupational Safety and Health, 1994, *NIOSH Manual of Analytical Methods,* Method 7400, August.

U.S. Environmental Protection Agency, 1999, *Compendium of Methods for the Determination of Inorganic Compounds in Ambient Air*.

# FIGURE




- Air Sampling Station (Worker Action Levels for COCs [Table 1] and Public Action Levels for ROCs [Table 2])
- Real-Time Dust Monitoring Station (Public Action Level for Dust [PM10] [Table 1])
- Windsock
- ROADS
- RSY Pad
- Parcel G Boundary
- Impacted Building
- Impacted Demolished Building
- Phase 1 Trench Unit
- Phase 2 Trench Unit
- Survey Unit
- Liquid Waste Transfer System Excavation Limits (to 10 ft bgs)
- Peanut Spill Excavation Limits (to 2 ft bgs)

Notes:
1) Air sampling will be performed at two stations, one upwind (Station 1) and one downwind (Station 17, 17A, or 18). Air sampling station locations represent potential locations and may be modified to accomodate changing site conditions and/or wind direction.
2) Additional dust monitoring locations may be established based on field activities.
3) COC - Chemical of Concern.
4) ROC - Radionuclide of Concern.

1 inch = 227 feet

0 230 460 Feet

U.S. Department of the Navy
BRAC PMO West
San Diego, California

FIGURE 1
PARCEL G
AIR SAMPLING AND DUST MONITORING LOCATIONS

INVESTIGATION, SURVEY, AND REPORTING AT PARCEL G
HUNTERS POINT NAVAL SHIPYARD, SAN FRANCISCO, CA

F:\Projects\HUNTERS_PT\GIS_Documents\Project_Maps\G_CTO5065\DMP\HP_G_004_Fig4_Parcel_G_RSYPads.mxd 12/22/2020

# ATTACHMENT 1
## AIR SAMPLING RESULTS

**Attachment 1, Table 1: Ambient Pressure and Temperature Monitoring Results**

| Date | Ambient Pressure (in Hg) | Ambient Temperature (°C) | Wind Speed (mph) | Wind Direction |
|---|---|---|---|---|
| 8/24/20 | 29.83 | 17.11 | 11.30 | WNW |
| 8/25/20 | 29.86 | 16.94 | 11.30 | NW |
| 8/26/20 | 29.85 | 15.06 | 6.10 | WSW |
| 8/27/20 | 29.82 | 15.00 | 5.80 | SW |
| 8/28/20 | 29.81 | 15.39 | 6.10 | WSW |
| 8/31/20 | 29.83 | 16.17 | 5.40 | W |
| 9/1/20 | 29.94 | 16.72 | 5.4 | W |
| 9/2/20 | 30.03 | 17.00 | 6.0 | W |
| 9/3/20 | 30.03 | 15.89 | 5.20 | WSW |
| 9/4/20 | 29.99 | 17.11 | 5.80 | WSW |
| 9/8/20 | 29.68 | 17.61 | 5.0 | W |
| 9/9/20 | 29.83 | 16.22 | 3.4 | NW |
| 9/10/20 | 30.00 | 16.56 | 2.4 | NW |
| 9/11/20 | 30.00 | 16.28 | 1.7 | SSW |
| 9/14/20 | 30.05 | 16.17 | 4.3 | WSW |
| 9/15/20 | 30.10 | 17.78 | 3.60 | SW |
| 9/16/20 | 30.07 | 19.83 | 3.20 | W |
| 9/17/20 | 30.02 | 17.83 | 4.6 | WSW |
| 9/18/20 | 30.04 | 19.33 | 4.8 | WSW |
| 9/21/20 | 29.91 | 17.39 | 4.9 | WSW |
| 9/22/20 | 30.03 | 17.78 | 6.2 | W |
| 9/23/20 | 30.07 | 18.83 | 5.7 | WSW |
| 9/24/20 | 30.03 | 18.72 | 5.2 | WSW |
| 9/25/20 | 30.01 | 17.83 | 5.0 | W |
| 9/28/20 | 29.89 | 23.94 | 9.60 | WNW |
| 9/29/20 | 30.00 | 16.44 | 12.70 | WNW |
| 9/30/20 | 30.04 | 19.22 | 8.30 | WNW |

**Attachment 1, Table 1: Ambient Pressure and Temperature Monitoring Results**

| Date | Ambient Pressure (in Hg) | Ambient Temperature (°C) | Wind Speed (mph) | Wind Direction |
|---|---|---|---|---|
| 10/1/20 | 29.96 | 22.28 | 4.70 | N |
| 10/2/20 | 29.94 | 19.61 | 7.40 | WNW |
| 10/5/20 | 30.00 | 14.89 | 9.50 | WNW |
| 10/6/20 | 29.97 | 14.33 | 12.50 | WNW |
| 10/7/20 | 29.93 | 15.06 | 13.30 | WNW |
| 10/8/20 | 29.95 | 16.50 | 10.50 | W |
| 10/9/20 | 29.95 | 16.83 | 6.20 | WNW |
| 10/12/20 | 30.07 | 19.17 | 6.00 | WNW |
| 10/13/20 | 30.06 | 19.78 | 7.10 | WNW |
| 10/14/20 | 30.06 | 21.94 | 6.30 | WNW |
| 10/15/20 | 29.97 | 24.44 | 4.00 | N |
| 10/16/20 | 29.94 | 25.72 | 7.50 | SSE |
| 10/19/20 | 29.96 | 16.61 | 10.70 | WNW |
| 10/20/20 | 29.88 | 17.78 | 7.20 | WNW |
| 10/21/20 | 29.80 | 18.11 | 8.50 | WNW |
| 10/22/20 | 29.84 | 16.11 | 9.30 | WNW |
| 10/23/20 | 29.96 | 15.50 | 7.70 | WNW |
| 10/24/20 | 29.96 | 15.39 | 6.60 | W |
| 10/26/20 | 30.10 | 18.22 | 12.50 | NNE |
| 10/27/20 | 30.07 | 18.72 | 6.10 | N |
| 10/28/20 | 30.06 | 16.39 | 5.40 | WNW |
| 10/29/20 | 30.05 | 15.28 | 6.00 | N |
| 10/30/20 | 30.05 | 13.39 | 9.80 | WNW |
| 10/31/20 | 30.07 | 15.00 | 6.00 | WNW |
| 11/2/20 | 3.07 | 15.44 | 7.90 | WNW |
| 11/3/20 | 30.08 | 13.44 | 12.90 | WNW |
| 11/4/20 | 30.19 | 15.56 | 8.50 | WNW |
| 11/5/20 | 30.04 | 16.61 | 8.60 | WNW |

**Attachment 1, Table 1: Ambient Pressure and Temperature Monitoring Results**

| Date | Ambient Pressure (in Hg) | Ambient Temperature (°C) | Wind Speed (mph) | Wind Direction |
|---|---|---|---|---|
| 11/6/20 | 29.77 | 13.78 | 17.20 | WNW |
| 11/7/20 | 29.72 | 12.39 | 12.80 | WNW |
| 11/9/20 | 30.21 | 11.22 | 2.80 | SSW |
| 11/10/20 | 30.26 | 11.39 | 2.80 | SE |
| 11/11/20 | 30.13 | 12.33 | 3.20 | NNE |
| 11/12/20 | 30.13 | 11.61 | 3.60 | NE |
| 11/13/20 | 30.17 | 12.22 | 5.00 | SSW |
| 11/16/20 | 30.06 | 15.06 | 2.10 | SSE |
| 11/17/20 | 29.94 | 14.94 | 6.50 | SW |
| 11/18/20 | 30.11 | 14.89 | 4.60 | SW |
| 11/19/20 | 30.32 | 12.28 | 2.30 | S |
| 11/20/20 | 30.29 | 12.56 | 2.50 | NE |
| 11/21/20 | 30.22 | 11.94 | 1.70 | NE |
| 11/23/20 | 30.08 | 12.39 | 2.10 | SSW |
| 11/24/20 | 30.16 | 11.61 | 2.60 | SSW |
| 11/25/20 | 30.25 | 12.11 | 3.70 | SSW |
| 11/30/20 | 30.31 | 10.83 | 1.50 | S |
| 12/1/20 | 30.24 | 10.94 | 1.30 | S |
| 12/2/20 | 30.16 | 12.33 | 2.10 | NE |
| 12/3/20 | 30.29 | 11.89 | 1.50 | NE |
| 12/4/20 | 30.29 | 11.61 | 0.90 | S |
| 12/5/20 | 30.29 | 10.61 | 2.00 | S |
| 12/7/20 | 30.22 | 15.39 | 4.10 | NNE |
| 12/8/20 | 30.19 | 12.78 | 0.90 | NE |
| 12/9/20 | 30.11 | 12.61 | 2.30 | SSW |
| 12/10/20 | 30.10 | 12.22 | 4.80 | W |
| 12/11/20 | 30.20 | 11.00 | 3.50 | SSW |
| 12/12/20 | 30.17 | 12.22 | 5.00 | ENE |

**Attachment 1, Table 1: Ambient Pressure and Temperature Monitoring Results**

| Date | Ambient Pressure (in Hg) | Ambient Temperature (°C) | Wind Speed (mph) | Wind Direction |
|---|---|---|---|---|
| 12/14/20 | 30.32 | 10.11 | 2.1 | SSW |
| 12/15/20 | 30.37 | 10.56 | 1.3 | S |
| 12/16/20 | 30.24 | 11.50 | 2.3 | S |
| 12/17/20 | 30.11 | 12.06 | 6.6 | W |
| 12/18/20 | 30.35 | 11.00 | 1.7 | SSW |
| 12/21/20 | 30.14 | 9.89 | 4.3 | NNE |
| 12/22/20 | 30.22 | 10.72 | 3.8 | NNE |
| 1/4/21 | 30.19 | 12.28 | 6.6 | SW |
| 1/5/21 | 30.31 | 9.83 | 2.6 | N |
| 1/6/21 | 30.28 | 9.28 | 2.2 | SE |
| 1/7/21 | 30.26 | 10.83 | 2.9 | SE |
| 1/8/21 | 30.32 | 11.06 | 2.3 | N |
| 1/11/21 | 30.29 | 10.56 | 3.2 | NNE |
| 1/12/21 | 30.35 | 11.33 | 1.3 | SE |
| 1/13/21 | 30.41 | 12.94 | 2.4 | S |
| 1/14/21 | 30.37 | 12.72 | 2.4 | SSW |
| 1/15/21 | 30.33 | 13.39 | 2.2 | N |
| 1/19/21 | 30.02 | 14.83 | 15.4 | NNE |
| 1/20/21 | 30.14 | 12.94 | 1.7 | S |
| 1/21/21 | 30.10 | 9.61 | 2.9 | SW |
| 1/22/21 | 29.95 | 10.11 | 3.9 | SW |
| 1/25/21 | 29.89 | 8.33 | 11.8 | NW |
| 2/4/21 | 30.30 | 11.17 | 3.3 | NNE |
| 2/5/21 | 30.25 | 10.72 | 2.0 | WSW |
| 2/8/21 | 30.02 | 10.11 | 3.50 | SSW |
| 2/9/21 | 30.08 | 11.39 | 3.20 | SW |
| 2/10/21 | 30.15 | 11.56 | 4.20 | SW |
| 2/11/21 | 30.10 | 10.89 | 4.30 | SSW |

**Attachment 1, Table 1: Ambient Pressure and Temperature Monitoring Results**

| Date | Ambient Pressure (in Hg) | Ambient Temperature (°C) | Wind Speed (mph) | Wind Direction |
|---|---|---|---|---|
| 2/12/21 | 30.09 | 11.61 | 7.20 | WNW |
| 2/15/21 | 30.14 | 11.94 | 6.30 | W |
| 2/16/21 | 30.21 | 10.67 | 3.80 | SW |
| 2/17/21 | 30.26 | 11.39 | 3.40 | SSW |
| 2/18/21 | 30.38 | 11.50 | 2.60 | SSW |
| 2/19/21 | 30.36 | 10.94 | 4.10 | W |

Notes:
Wind, ambient pressure and ambient temperature data were retrieved from on-site APTIM MET Station (8/26/20-8/28/20, 8/31/20-9/18/20, 11/9/20-02/05/21).
Wind, ambient pressure and ambient temperature data were retrieved from KSFO, San Francisco, San Francisco International Airport (8/24/20-8/25/20, 9/21/20-11/7/20).
°C - degrees Celsius
in Hg - inches of mercury
mph - miles per hour

**Attachment 1, Table 2: TSP and Metals Sampling Results**

| Date | Sample Location | Sampling Period (hours) | TSP | TSP Exceedance? (Yes/No) | Lead | Lead Exceedance? (Yes/No) | Manganese | Manganese Exceedance? (Yes/No) |
|---|---|---|---|---|---|---|---|---|
| Action Level | | | 500 | | 50 | | 200 | |
| Units | | | (µg/m$^3$) | | (µg/m$^3$) | | (µg/m$^3$) | |
| 8/24/20 | 1Upwind | 23.5 | 46.0 | No | 0.01 | No | 0.04 | No |
| 8/24/20 | 17Downwind | 24.3 | 47.4 | No | 0.04 | No | 0.04 | No |
| 8/25/20 | 1Upwind | 23.9 | 54.5 | No | 0.01 | No | 0.05 | No |
| 8/25/20 | 17Downwind | 24.3 | 41.7 | No | 0.01 | No | 0.01 | No |
| 8/26/20 | 1Upwind | 24.1 | 37.8 | No | 0.01 J | No | 0.03 | No |
| 8/26/20 | 17Downwind | 24.1 | 55.9 | No | 0.01 | No | 0.02 | No |
| 8/27/20 | 1Upwind | 24.1 | 31.0 | No | 0.01 | No | 0.02 | No |
| 8/27/20 | 17Downwind | 24.1 | 41.6 | No | 0.01 | No | 0.02 | No |
| 8/28/20 | 1Upwind | 7.3 | 117 | No | 0.02 J | No | 0.06 | No |
| 8/28/20 | 17Downwind | 7.1 | 105.0 | No | 0.08 | No | 0.03 | No |
| 8/31/20 | 1Upwind | 23.8 | 50.0 | No | <0.01 | No | 0.02 | No |
| 8/31/20 | 17Downwind | 23.7 | 47.4 | No | 0.01 | No | 0.02 | No |
| 9/1/20 | 1Upwind | 24.2 | 63.8 | No | 0.01 J | No | 0.05 | No |
| 9/1/20 | 17Downwind | 24.1 | 56.1 | No | 0.02 | No | 0.03 | No |
| 9/1/20 | 1Upwind | 24.2 | 63.8 | No | 0.01 J | No | 0.05 | No |
| 9/1/20 | 17Downwind | 24.1 | 56.1 | No | 0.02 | No | 0.03 | No |
| 9/2/20 | 1Upwind | 23.6 | 51.0 | No | 0.003 J | No | 0.04 | No |
| 9/2/20 | 17Downwind | 23.6 | 50.2 | No | 0.005 J | No | 0.03 | No |
| 9/3/20 | 1Upwind | 23.9 | 43.4 | No | <0.01 | No | 0.03 | No |
| 9/3/20 | 17Downwind | 23.9 | 33.3 | No | <0.01 | No | 0.02 | No |
| 9/4/20 | 1Upwind | 8.3 | 46.3 | No | <0.02 | No | 0.03 | No |
| 9/4/20 | 17Downwind | 8.1 | 50.8 | No | <0.02 | No | 0.03 | No |
| 9/8/20 | 1Upwind | 23.9 | 108 | No | 0.01 | No | 0.31 J | No |
| 9/8/20 | 17ADownwind | 24.1 | 106 | No | 0.01 J | No | 0.49 J | No |
| 9/9/20 | 1Upwind | 23.9 | 59.0 | No | 0.002 J | No | 0.11 J | No |
| 9/9/20 | 17ADownwind | 24.0 | 62.4 | No | <0.01 | No | 0.08 J | No |
| 9/10/20 | 1Upwind | 24.3 | 169 | No | 0.01 | No | 0.27 J | No |
| 9/10/20 | 17ADownwind | 24.2 | 20.2 | No | 0.01 J | No | 0.25 J | No |
| 9/11/20 | 1Upwind | 7.5 | 225 | No | 0.01 J | No | 0.29 J | No |
| 9/11/20 | 17ADownwind | 7.2 | 204 | No | 0.01 J | No | 0.18 J | No |
| 9/14/20 | 1Upwind | 24.4 | 69.0 | No | 0.004 J | No | 0.11 | No |
| 9/14/20 | 17ADownwind | 24.4 | 93.0 | No | 0.008 | No | 0.08 | No |
| 9/15/20 | 1Upwind | 23.8 | 62.3 | No | 0.007 J | No | 0.08 | No |
| 9/15/20 | 17ADownwind | 23.9 | 26.3 | No | 0.010 | No | 0.05 | No |
| 9/16/20 | 1Upwind | 23.3 | 33.5 | No | 0.005 J | No | 0.05 | No |
| 9/16/20 | 17ADownwind | 23.7 | 12.3 | No | <0.007 | No | 0.019 | No |
| 9/17/20 | 1Upwind | 24.2 | 52.5 | No | 0.011 | No | 0.06 | No |
| 9/17/20 | 17ADownwind | 24.3 | 22.5 | No | 0.012 | No | 0.03 | No |
| 9/18/20 | 1Upwind | 8.1 | 39.5 | No | 0.02 | No | 0.05 | No |

**Attachment 1, Table 2: TSP and Metals Sampling Results**

| Date | Sample Location | Sampling Period (hours) | TSP | TSP Exceedance? (Yes/No) | Lead | Lead Exceedance? (Yes/No) | Manganese | Manganese Exceedance? (Yes/No) |
|---|---|---|---|---|---|---|---|---|
| Action Level | | | 500 | | 50 | | 200 | |
| Units | | | (µg/m$^3$) | | (µg/m$^3$) | | (µg/m$^3$) | |
| 9/18/20 | 17ADownwind | 7.3 | 34.9 | No | 0.01 J | No | 0.03 | No |
| 9/21/20 | 1Upwind | 23.9 | 65.2 | No | 0.014 | No | 0.10 | No |
| 9/21/20 | 17ADownwind | 24.2 | 36.1 | No | 0.009 | No | 0.03 | No |
| 9/22/20 | 1Upwind | 23.4 | 44.3 | No | 0.008 | No | 0.04 | No |
| 9/22/20 | 17ADownwind | 23.5 | 22.3 | No | 0.008 | No | 0.017 | No |
| 9/23/20 | 1Upwind | 23.9 | 33.6 | No | 0.005 J | No | 0.02 | No |
| 9/23/20 | 17ADownwind | 24.7 | 19.8 | No | 0.004 J | No | 0.014 | No |
| 9/24/20 | 1Upwind | 24.3 | 19.6 | No | 0.002 J | No | 0.021 | No |
| 9/24/20 | 17ADownwind | 24.6 | 10.4 | No | <0.007 | No | 0.005 | No |
| 9/25/20 | 1Upwind | 3.8 | 79.8 | No | <0.05 | No | 0.0 | No |
| 9/25/20 | 17ADownwind | 7.1 | 53.2 | No | <0.02 | No | 0.02 | No |
| 9/28/20 | 1Upwind | 23.9 | 60.5 | No | 0.013 | No | 0.17 | No |
| 9/28/20 | 17ADownwind | 23.8 | 58.7 | No | 0.003 J | No | 0.15 | No |
| 9/29/20 | 1Upwind | 24.2 | 37.2 | No | <0.007 | No | 0.03 | No |
| 9/29/20 | 17ADownwind | 24.0 | 30.3 | No | 0.007 J | No | 0.02 | No |
| 9/30/20 | 1Upwind | 24.5 | 41.3 | No | 0.006 J | No | 0.03 | No |
| 9/30/20 | 17ADownwind | 24.4 | 41.6 | No | 0.007 | No | 0.02 | No |
| 10/1/20 | 1Upwind | 23.4 | 55.6 | No | 0.007 J | No | 0.03 | No |
| 10/1/20 | 17ADownwind | 23.9 | 65.2 | No | <0.007 | No | 0.04 | No |
| 10/2/20 | 1Upwind | 8.0 | 82.2 | No | <0.022 | No | 0.04 | No |
| 10/2/20 | 17ADownwind | 7.5 | 83.4 | No | 0.010 J | No | 0.03 | No |
| 10/5/20 | 1Upwind | 24.2 | 24.4 | No | 0.005 J | No | 0.02 | No |
| 10/5/20 | 17ADownwind | 24.3 | 23.0 | No | 0.004 J | No | 0.02 | No |
| 10/6/20 | 1Upwind | 24.5 | 39.5 | No | 0.009 | No | 0.03 | No |
| 10/6/20 | 17ADownwind | 24.8 | 47.2 | No | 0.009 | No | 0.03 | No |
| 10/7/20 | 1Upwind | 23.6 | 40.7 | No | 0.004 J | No | 0.02 | No |
| 10/7/20 | 17ADownwind | 23.6 | 36.5 | No | <0.007 | No | 0.02 | No |
| 10/8/20 | 1Upwind | 23.6 | 29.2 | No | 0.006 J | No | 0.02 | No |
| 10/8/20 | 17ADownwind | 23.2 | 20.6 | No | 0.003 J | No | 0.01 | No |
| 10/9/20 | 1Upwind | 8.0 | 14.2 | No | 0.009 J | No | 0.02 | No |
| 10/9/20 | 17ADownwind | 8.0 | 13.9 | No | <0.022 | No | 0.02 | No |
| 10/12/20 | 1Upwind | 23.9 | 33.2 | No | 0.006 J B | No | 0.02 | No |
| 10/12/20 | 17ADownwind | 23.9 | 28.8 | No | <0.007 B | No | 0.02 | No |
| 10/13/20 | 1Upwind | 24.2 | 38.8 | No | 0.007 J B | No | 0.03 | No |
| 10/13/20 | 17ADownwind | 24.2 | 28.6 | No | 0.006 J B | No | 0.02 | No |
| 10/14/20 | 1Upwind | 23.8 | 46.8 | No | 0.024 B | No | 0.04 | No |
| 10/14/20 | 17ADownwind | 24.0 | 41.1 | No | 0.030 B | No | 0.04 | No |

**Attachment 1, Table 2: TSP and Metals Sampling Results**

| Date | Sample Location | Sampling Period (hours) | TSP | TSP Exceedance? (Yes/No) | Lead | Lead Exceedance? (Yes/No) | Manganese | Manganese Exceedance? (Yes/No) |
|---|---|---|---|---|---|---|---|---|
| Action Level | | | 500 | | 50 | | 200 | |
| Units | | | (µg/m$^3$) | | (µg/m$^3$) | | (µg/m$^3$) | |
| 10/15/20 | 1Upwind | 23.8 | 101 | No | 0.017 B | No | 0.14 | No |
| 10/15/20 | 17ADownwind | 24.1 | 94.2 | No | 0.012 B | No | 0.16 | No |
| 10/16/20 | 1Upwind | 8.1 | 48.4 | No | <0.022 | No | 0.24 | No |
| 10/16/20 | 17ADownwind | 7.6 | 57.3 | No | 0.014 J B | No | 0.11 | No |
| 10/19/20 | 1Upwind | 23.5 | 41.6 | No | 0.009 | No | 0.03 B | No |
| 10/19/20 | 17ADownwind | 24.3 | 38.2 | No | 0.008 | No | 0.02 B | No |
| 10/20/20 | 1Upwind | 24.0 | 42.3 | No | 0.007 J | No | 0.03 B | No |
| 10/20/20 | 17ADownwind | 23.6 | 30.0 | No | 0.005 J | No | 0.02 B | No |
| 10/21/20 | 1Upwind | 24.0 | 56.2 | No | 0.007 J | No | 0.03 B | No |
| 10/21/20 | 17ADownwind | 24.0 | 55.7 | No | 0.009 | No | 0.02 B | No |
| 10/22/20 | 1Upwind | 24.1 | 92.1 | No | 0.012 | No | 0.07 B | No |
| 10/22/20 | 17ADownwind | 24.1 | 56.8 | No | 0.006 J | No | 0.03 B | No |
| 10/23/20 | 1Upwind | 7.9 | 237 | No | 0.035 | No | 0.20 B | No |
| 10/23/20 | 17ADownwind | 7.8 | 138 | No | 0.019 J | No | 0.10 B | No |
| 10/24/20 | 1Upwind | 8.3 | 102 | No | 0.008 J | No | 0.03 B | No |
| 10/24/20 | 17ADownwind | 8.4 | 39.3 | No | 0.022 | No | 0.10 B | No |
| 10/26/20 | 1Upwind | 24.0 | 63.1 | No | 0.008 | No | 0.16 J | No |
| 10/26/20 | 17ADownwind | 23.5 | 53.8 | No | 0.002 J | No | 0.13 J | No |
| 10/27/20 | 1Upwind | 23.7 | 53.2 | No | 0.003 J | No | 0.02 J | No |
| 10/27/20 | 17ADownwind | 23.7 | 47.2 | No | 0.007 J | No | 0.05 J | No |
| 10/28/20 | 1Upwind | 24.2 | 71.1 | No | 0.007 J | No | 0.10 J | No |
| 10/28/20 | 17ADownwind | 24.2 | 64.4 | No | 0.003 J | No | 0.09 J | No |
| 10/29/20 | 1Upwind | 23.8 | 61.9 | No | 0.009 | No | 0.08 J | No |
| 10/29/20 | 17ADownwind | 24.3 | 52.2 | No | 0.002 J | No | 0.04 J | No |
| 10/30/20 | 1Upwind | 25.5 | 67.0 | No | 0.007 J | No | 0.03 J | No |
| 10/30/20 | 17ADownwind | 23.4 | 37.6 | No | 0.004 J | No | 0.03 J | No |
| 10/31/20 | 1Upwind | 6.4 | 37.3 | No | <0.028 B | No | 0.06 | No |
| 10/31/20 | 18Downwind | 6.5 | 34.4 | No | <0.027 B | No | 0.06 | No |
| 11/2/20 | 1Upwind | 24.1 | 80.3 | No | 0.016 B | No | 0.07 | No |
| 11/2/20 | 18Downwind | 24.1 | 32.0 | No | <0.007 B | No | 0.03 | No |
| 11/3/20 | 1Upwind | 24.2 | 53.4 | No | 0.011 B | No | 0.04 | No |
| 11/3/20 | 18Downwind | 24.2 | 15.7 | No | <0.007 B | No | 0.01 | No |
| 11/4/20 | 1Upwind | 23.9 | 8.62 | No | <0.007 | No | 0.01 | No |
| 11/4/20 | 18Downwind | 23.9 | 21.1 | No | <0.007 B | No | 0.02 | No |
| 11/5/20 | 1Upwind | 24.1 | 78.2 | No | 0.011 B | No | 0.05 | No |
| 11/5/20 | 18Downwind | 24.1 | 27.7 | No | <0.007 B | No | 0.02 | No |
| 11/6/20 | 1Upwind | 23.7 | 101 | No | 0.017 B | No | 0.07 | No |

**Attachment 1, Table 2: TSP and Metals Sampling Results**

| Date | Sample Location | Sampling Period (hours) | TSP | TSP Exceedance? (Yes/No) | Lead | Lead Exceedance? (Yes/No) | Manganese | Manganese Exceedance? (Yes/No) |
|---|---|---|---|---|---|---|---|---|
| Action Level | | | 500 | | 50 | | 200 | |
| Units | | | (µg/m$^3$) | | (µg/m$^3$) | | (µg/m$^3$) | |
| 11/6/20 | 18Downwind | 24.2 | 24.8 | No | 0.007 J B | No | 0.01 | No |
| 11/7/20 | 1Upwind | 7.2 | 20.9 | No | <0.025 | No | 0.03 | No |
| 11/7/20 | 18Downwind | 6.7 | ND | No | <0.026 | No | 0.02 | No |
| 11/9/20 | 1Upwind | 23.8 | 31.1 | No | 0.034 | No | 0.03 | No |
| 11/9/20 | 18Downwind | 23.9 | 19.6 | No | 0.003 J | No | 0.01 | No |
| 11/10/20 | 1Upwind | 23.8 | 25.3 | No | 0.004 J | No | 0.02 | No |
| 11/10/20 | 18Downwind | 24.1 | 18.1 | No | <0.007 | No | 0.01 | No |
| 11/11/20 | 1Upwind | 24.2 | 25.7 | No | 0.003 J | No | 0.02 | No |
| 11/11/20 | 18Downwind | 23.9 | 26.6 | No | 0.003 J | No | 0.02 | No |
| 11/12/20 | 1Upwind | 24.1 | 21.0 | No | 0.002 J | No | 0.01 | No |
| 11/12/20 | 18Downwind | 24.0 | 28.6 | No | <0.007 | No | 0.02 | No |
| 11/13/20 | 1Upwind | 5.8 | 8.25 | No | 0.008 J | No | 0.01 J | No |
| 11/13/20 | 18Downwind | 5.8 | 3.94 | No | <0.031 | No | <0.02 | No |
| 11/16/20 | 1Upwind | 24.6 | 98.0 | No | 0.011 | No | 0.04 | No |
| 11/16/20 | 18Downwind | 24.6 | 70.9 | No | 0.005 J | No | 0.02 | No |
| 11/17/20 | 1Upwind | 27.1 | 8.51 | No | 0.004 J | No | 0.01 | No |
| 11/17/20 | 18Downwind | 27.1 | ND | No | <0.007 | No | 0.002 J | No |
| 11/18/20 | 1Upwind | 24.1 | 28.3 | No | 0.005 J | No | 0.01 | No |
| 11/18/20 | 18Downwind | 24.0 | 10.1 | No | 0.003 J | No | 0.003 J | No |
| 11/19/20 | 1Upwind | 24.5 | 28.7 | No | 0.007 J | No | 0.02 | No |
| 11/19/20 | 18Downwind | 24.4 | 31.7 | No | 0.005 J | No | 0.01 | No |
| 11/20/20 | 1Upwind | 23.6 | 59.2 | No | 0.006 J | No | 0.02 | No |
| 11/20/20 | 18Downwind | 23.7 | 39.0 | No | 0.008 | No | 0.01 | No |
| 11/21/20 | 1Upwind | 6.5 | 109 | No | 0.018 J | No | 0.02 | No |
| 11/21/20 | 18Downwind | 6.6 | 191 | No | 0.014 J | No | <0.01 | No |
| 11/23/20 | 1Upwind | 24.1 | 9.88 | No | 0.009 B | No | 0.01 | No |
| 11/23/20 | 18Downwind | 24.0 | 13.6 | No | 0.008 B | No | 0.01 | No |
| 11/24/20 | 1Upwind | 24.5 | 20.8 | No | <0.007 B | No | 0.03 | No |
| 11/24/20 | 18Downwind | 24.6 | 7.72 | No | 0.008 B | No | 0.01 | No |
| 11/25/20 | 1Upwind | 8.0 | 33.1 | No | <0.022 B | No | 0.03 | No |
| 11/25/20 | 18Downwind | 8.3 | ND | No | <0.021 B | No | 0.01 J | No |
| 11/30/20 | 1Upwind | 23.1 | 56.7 | No | 0.009 | No | 0.03 | No |
| 11/30/20 | 18Downwind | 23.9 | 23.3 | No | 0.004 J | No | 0.01 | No |
| 12/1/20 | 1Upwind | 23.4 | 44.2 | No | 0.012 | No | 0.03 | No |
| 12/1/20 | 18Downwind | 24.0 | 25.9 | No | 0.005 J | No | 0.01 | No |
| 12/2/20 | 1Upwind | 24.3 | 18.0 | No | 0.003 J | No | 0.01 | No |
| 12/2/20 | 18Downwind | 24.4 | 28.7 | No | 0.007 J | No | 0.01 | No |

**Attachment 1, Table 2: TSP and Metals Sampling Results**

| Date | Sample Location | Sampling Period (hours) | TSP | TSP Exceedance? (Yes/No) | Lead | Lead Exceedance? (Yes/No) | Manganese | Manganese Exceedance? (Yes/No) |
|---|---|---|---|---|---|---|---|---|
| Action Level | | | 500 | | 50 | | 200 | |
| Units | | | (µg/m$^3$) | | (µg/m$^3$) | | (µg/m$^3$) | |
| 12/3/20 | 1Upwind | 23.7 | 91.1 | No | 0.015 | No | 0.06 | No |
| 12/3/20 | 18Downwind | 23.5 | 96.9 | No | 0.009 | No | 0.06 | No |
| 12/4/20 | 1Upwind | 23.8 | 64.1 | No | 0.015 | No | 0.05 | No |
| 12/4/20 | 18Downwind | 24.1 | 61.4 | No | 0.007 J | No | 0.03 | No |
| 12/5/20 | 1Upwind | 7.1 | 51.6 | No | 0.011 J | No | 0.03 | No |
| 12/5/20 | 18Downwind | 7.1 | 48.7 | No | 0.013 J | No | 0.02 | No |
| 12/7/20 | 1Upwind | 23.9 | 64.3 | No | 0.019 | No | 0.08 | No |
| 12/7/20 | 18Downwind | 23.9 | 50.0 | No | 0.017 | No | 0.06 | No |
| 12/8/20 | 1Upwind | 24.1 | 98.7 | No | 0.029 | No | 0.09 | No |
| 12/8/20 | 18Downwind | 24.0 | 44.6 | No | 0.004 J | No | 0.03 | No |
| 12/9/20 | 1Upwind | 23.8 | 109 | No | 0.022 | No | 0.09 | No |
| 12/9/20 | 18Downwind | 23.9 | 76.4 | No | 0.013 | No | 0.05 | No |
| 12/10/20 | 1Upwind | 24.0 | 101 | No | 0.018 | No | 0.07 | No |
| 12/10/20 | 18Downwind | 24.1 | 47.5 | No | 0.008 | No | 0.02 | No |
| 12/10/20 | 1Upwind | 24.0 | 101 | No | 0.018 | No | 0.07 | No |
| 12/10/20 | 18Downwind | 24.1 | 47.5 | No | 0.008 | No | 0.02 | No |
| 12/11/20 | 1Upwind | 8.8 | 76.4 | No | 0.021 | No | 0.06 | No |
| 12/11/20 | 18Downwind | 9.0 | 20.6 | No | 0.009 J | No | 0.01 | No |
| 12/12/20 | 1Upwind | 7.2 | ND | No | <0.024 | No | 0.01 J | No |
| 12/12/20 | 18Downwind | 7.3 | ND | No | 0.007 J | No | 0.01 J | No |
| 12/14/20 | 1Upwind | 24.1 | 52.2 | No | 0.010 | No | 0.04 B | No |
| 12/14/20 | 18Downwind | 24.1 | 20.5 | No | <0.007 | No | 0.01 B | No |
| 12/15/20 | 1Upwind | 24.1 | 55.8 | No | 0.009 | No | 0.04 B | No |
| 12/15/20 | 18Downwind | 24.0 | 22.0 | No | 0.002 J | No | 0.01 B | No |
| 12/16/20 | 1Upwind | 7.6 | 54.1 | No | 0.012 J | No | 0.05 B | No |
| 12/16/20 | 18Downwind | 7.7 | 21.1 | No | <0.023 | No | <0.02 J B | No |
| 12/17/20 | 1Upwind | 24.3 | 63.3 | No | 0.008 | No | 0.03 B | No |
| 12/17/20 | 18Downwind | 24.2 | 18.5 | No | 0.007 | No | 0.01 B | No |
| 12/18/20 | 1Upwind | 8.7 | 53.6 | No | 0.015 J | No | 0.05 B | No |
| 12/18/20 | 18Downwind | 8.7 | 5.59 | No | <0.020 | No | <0.02 J B | No |
| 12/21/20 | 1Upwind | 23.6 | 51.1 | No | 0.008 | No | 0.04 | No |
| 12/21/20 | 18Downwind | 23.6 | 19.3 | No | 0.007 J | No | 0.01 | No |
| 12/22/20 | 1Upwind | 3.6 | ND | No | <0.049 | No | 0.03 | No |
| 12/22/20 | 18Downwind | 3.6 | ND | No | <0.049 | No | <0.02 | No |
| 12/23/20 | 1Upwind | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 |
| 12/23/20 | 18Downwind | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 |
| 12/28/20 | 1Upwind | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 |
| 12/28/20 | 18Downwind | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 |
| 12/29/20 | 1Upwind | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 |

**Attachment 1, Table 2: TSP and Metals Sampling Results**

| Date | Sample Location | Sampling Period (hours) | TSP | TSP Exceedance? (Yes/No) | Lead | Lead Exceedance? (Yes/No) | Manganese | Manganese Exceedance? (Yes/No) |
|---|---|---|---|---|---|---|---|---|
| Action Level | | | 500 | | 50 | | 200 | |
| Units | | | (µg/m$^3$) | | (µg/m$^3$) | | (µg/m$^3$) | |
| 12/29/20 | 18Downwind | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 |
| 12/30/20 | 1Upwind | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 |
| 12/30/20 | 18Downwind | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 |
| 12/31/20 | 1Upwind | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 |
| 12/31/20 | 18Downwind | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 |
| 1/4/21 | 1Upwind | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 |
| 1/4/21 | 18Downwind | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 |
| 1/5/21 | 1Upwind | 24.0 | 44.9 | No | 0.003 J | No | 0.03 | No |
| 1/5/21 | 18Downwind | 23.9 | 23.0 | No | <0.007 | No | 0.01 | No |
| 1/6/21 | 1Upwind | 4.3 | 18.7 | No | <0.042 | No | 0.02 J | No |
| 1/6/21 | 18Downwind | 4.5 | 19.0 | No | <0.039 | No | <0.02 | No |
| 1/7/21 | 1Upwind | 23.7 | 105 | No | 0.003 J | No | 0.01 | No |
| 1/7/21 | 18Downwind | 23.8 | 20.2 | No | 0.006 J | No | 0.01 | No |
| 1/8/21 | 1Upwind | 2.6 | ND | No | <0.068 | No | <0.03 | No |
| 1/8/21 | 18Downwind | 2.6 | ND | No | <0.068 | No | <0.03 | No |
| 1/11/21 | 1Upwind | 23.8 | 56.8 | No | <0.007 B | No | 0.03 B | No |
| 1/11/21 | 18Downwind | 24.2 | 27.5 | No | 0.015 B | No | 0.01 B | No |
| 1/12/21 | 1Upwind | 24.3 | 44.7 | No | <0.007 B | No | 0.02 B | No |
| 1/12/21 | 18Downwind | 23.9 | 33.2 | No | <0.007 B | No | 0.01 B | No |
| 1/13/21 | 1Upwind | 24.0 | 27.7 | No | <0.007 B | No | 0.01 B | No |
| 1/13/21 | 18Downwind | 24.0 | 20.8 | No | <0.007 B | No | 0.01 B | No |
| 1/14/21 | 1Upwind | 23.6 | 43.6 | No | <0.007 J B | No | 0.02 B | No |
| 1/14/21 | 18Downwind | 24.1 | 35.6 | No | <0.007 B | No | 0.01 B | No |
| 1/15/21 | 1Upwind | 7.3 | 54.6 | No | <0.024 B | No | 0.03 B | No |
| 1/15/21 | 18Downwind | 7.0 | 57.9 | No | <0.025 J B | No | 0.03 B | No |
| 1/19/21 | 1Upwind | 23.5 | 78.2 | No | 0.005 J | No | 0.06 | No |
| 1/19/21 | 18Downwind | 23.4 | 95.5 | No | <0.008 | No | 0.05 | No |
| 1/20/21 | 1Upwind | 24.1 | 111 | No | 0.008 | No | 0.06 | No |
| 1/20/21 | 18Downwind | 24.2 | 68.9 | No | 0.003 J | No | 0.04 | No |
| 1/21/21 | 1Upwind | 9.5 | 204 | No | 0.012 J | No | 0.13 | No |
| 1/21/21 | 18Downwind | 9.1 | 54.2 | No | 0.005 J | No | 0.03 | No |
| 1/22/21 | 1Upwind | 3.8 | 36.2 | No | <0.047 | No | 0.02 | No |
| 1/22/21 | 18Downwind | 3.5 | ND | No | <0.050 | No | 0.02 | No |
| 1/25/21 | 1Upwind | 23.7 | 127.0 | No | 0.010 | No | 0.08 | No |
| 1/25/21 | 18Downwind | 23.7 | 25.0 | No | 0.006 J | No | 0.01 | No |
| 1/26/21 | 1Upwind | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 |
| 1/26/21 | 18Downwind | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 |

**Attachment 1, Table 2: TSP and Metals Sampling Results**

| Date | Sample Location | Sampling Period (hours) | TSP | TSP Exceedance? (Yes/No) | Lead | Lead Exceedance? (Yes/No) | Manganese | Manganese Exceedance? (Yes/No) |
|---|---|---|---|---|---|---|---|---|
| Action Level | | | 500 | | 50 | | 200 | |
| Units | | | (µg/m$^3$) | | (µg/m$^3$) | | (µg/m$^3$) | |
| 1/27/21 | 1Upwind | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 |
| 1/27/21 | 18Downwind | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 |
| 1/28/21 | 1Upwind | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 |
| 1/28/21 | 18Downwind | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 |
| 1/29/21 | 1Upwind | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 |
| 1/29/21 | 18Downwind | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 |
| 2/1/21 | 1Upwind | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 |
| 2/1/21 | 18Downwind | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 |
| 2/2/21 | 1Upwind | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 |
| 2/2/21 | 18Downwind | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 |
| 2/3/21 | 1Upwind | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 |
| 2/3/21 | 18Downwind | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 | Note 2 |
| 2/4/21 | 1Upwind | 24.1 | 73.4 | No | 0.008 B | No | 0.04 B | No |
| 2/4/21 | 18Downwind | 24.2 | 17.3 | No | 0.077 B | No | 0.01 B | No |
| 2/5/21 | 1Upwind | 7.6 | 113 | No | 0.024 B | No | 0.06 B | No |
| 2/5/21 | 18Downwind | 7.1 | 15.2 | No | <0.025 J B | No | <0.02 B | No |
| 2/8/21 | 1Upwind | 23.2 | 86.4 | No | 0.038 | No | 0.08 B | No |
| 2/8/21 | 18Downwind | 23.3 | 23.4 | No | <0.008 | No | 0.01 B | No |
| 2/9/21 | 1Upwind | 23.6 | 69.7 | No | 0.008 | No | 0.04 B | No |
| 2/9/21 | 18Downwind | 23.7 | 17.8 | No | 0.005 J | No | 0.01 B | No |
| 2/10/21 | 1Upwind | 23.8 | 156 | No | 0.017 | No | 0.09 B | No |
| 2/10/21 | 18Downwind | 24.2 | 17.1 | No | <0.007 | No | 0.01 B | No |
| 2/11/21 | 1Upwind | 5.4 | 363 | No | 0.046 | No | 0.33 B | No |
| 2/11/21 | 18Downwind | 5.2 | 16.5 | No | <0.034 | No | <0.02 J B | No |
| 2/12/21 | 1Upwind | 7.7 | 229 | No | 0.026 | No | 0.18 B | No |
| 2/12/21 | 18Downwind | 7.2 | 11.2 | No | 0.012 J | No | <0.01 J B | No |
| 2/15/21 | 1Upwind | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 |
| 2/15/21 | 18Downwind | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 |
| 2/16/21 | 1Upwind | 24.5 | 176 | No | 0.015 | No | 0.11 | No |
| 2/16/21 | 18Downwind | 24.0 | 25.9 | No | 0.008 | No | 0.01 | No |

**Attachment 1, Table 2: TSP and Metals Sampling Results**

Notes:
Note 1: Sample not collected due to inclement conditions (rain).
Note 2: Sample not collected because the site was temporarily shut down and no workers were on site.
Sample locations are shown on Figure 1.
$\mu g/m^3$ - microgram per cubic meter
TSP - total suspended particulates
B - compound was found in the blank and sample
J - the concentration is an estimated value

## Attachment 1, Table 3: PM10 Air Sampling Results

| Date | Sample Location | Sampling Period | PM10 Result | PM10 Exceedance? (Yes/No) | PM10 Exceedance? (Yes/No) |
|---|---|---|---|---|---|
| Action Level | | ≤ 25 | | 5000 [a] | 50 [b] |
| Units | | hours | (µg/m$^3$) | (µg/m$^3$) | (µg/m$^3$) |
| 8/24/20 | 1Upwind | 23.55 | 24.2 | No | No |
| 8/24/20 | 17Downwind | 24.32 | 21.1 | No | No |
| 8/25/20 | 1Upwind | 23.90 | 26.6 | No | No |
| 8/25/20 | 17Downwind | 24.25 | 23.1 | No | No |
| 8/26/20 | 1Upwind | 24.12 | 16.7 | No | No |
| 8/26/20 | 17Downwind | 24.08 | 17.9 | No | No |
| 8/27/20 | 1Upwind | 24.10 | 18.3 | No | No |
| 8/27/20 | 17Downwind | 24.07 | 23.5 | No | No |
| 8/28/20 | 1Upwind | 7.33 | 70.4 | No | Yes (Note 1) |
| 8/28/20 | 17Downwind | 7.12 | 64.7 | No | Yes (Note 1) |
| 8/31/20 | 1Upwind | 23.85 | 27.3 | No | No |
| 8/31/20 | 17Downwind | 23.65 | 26.4 | No | No |
| 9/1/20 | 1Upwind | 24.17 | 29.2 | No | No |
| 9/1/20 | 17Downwind | 24.08 | 28.3 | No | No |
| 9/2/20 | 1Upwind | 23.62 | 21.1 | No | No |
| 9/2/20 | 17Downwind | 23.60 | 19.8 | No | No |
| 9/3/20 | 1Upwind | 23.88 | 18.9 | No | No |
| 9/3/20 | 17Downwind | 23.90 | 16.6 | No | No |
| 9/4/20 | 1Upwind | 8.33 | 28.1 | No | No |
| 9/4/20 | 17Downwind | 8.08 | 22.9 | No | No |
| 9/8/20 | 1Upwind | 23.85 | 50.0 | No | No |
| 9/8/20 | 17ADownwind | 24.15 | 47.8 | No | No |
| 9/9/20 | 1Upwind | 23.93 | 131 | No | Yes (Note 1) |
| 9/9/20 | 17ADownwind | 23.97 | 119 | No | Yes (Note 1) |
| 9/10/20 | 1Upwind | 24.27 | 159 | No | Yes (Note 1) |
| 9/10/20 | 17ADownwind | 24.20 | 161 | No | Yes (Note 1) |
| 9/11/20 | 1Upwind | 7.45 | 192 | No | Yes (Note 1) |
| 9/11/20 | 17ADownwind | 7.23 | 178 | No | Yes (Note 1) |
| 9/14/20 | 1Upwind | 24.38 | 48.6 | No | No |
| 9/14/20 | 17ADownwind | 24.45 | 88.4 | No | Yes (Note 1) |
| 9/15/20 | 1Upwind | 23.82 | 23.9 | No | No |
| 9/15/20 | 17ADownwind | 23.85 | 13.6 | No | No |
| 9/16/20 | 1Upwind | 23.33 | 13.6 | No | No |
| 9/16/20 | 17ADownwind | 23.67 | 9.64 | No | No |
| 9/17/20 | 1Upwind | 24.17 | 20.8 | No | No |
| 9/17/20 | 17ADownwind | 24.25 | 21.9 | No | No |
| 9/18/20 | 1Upwind | 8.08 | 7.83 | No | No |

## Attachment 1, Table 3: PM10 Air Sampling Results

| Date | Sample Location | Sampling Period | PM10 Result | PM10 Exceedance? (Yes/No) | PM10 Exceedance? (Yes/No) |
|---|---|---|---|---|---|
| Action Level | | ≤ 25 | | 5000 [a] | 50 [b] |
| Units | | hours | (µg/m$^3$) | (µg/m$^3$) | (µg/m$^3$) |
| 9/18/20 | 17ADownwind | 7.33 | 8.43 | No | No |
| 9/21/20 | 1Upwind | 23.85 | 11.5 | No | No |
| 9/21/20 | 17ADownwind | 24.20 | 20.1 | No | No |
| 9/22/20 | 1Upwind | 23.40 | 22.1 | No | No |
| 9/22/20 | 17ADownwind | 23.48 | 16.0 | No | No |
| 9/23/20 | 1Upwind | 23.85 | 14.7 | No | No |
| 9/23/20 | 17ADownwind | 24.68 | 8.40 | No | No |
| 9/24/20 | 1Upwind | 24.28 | 8.79 | No | No |
| 9/24/20 | 17ADownwind | 24.60 | 1.79 | No | No |
| 9/25/20 | 1Upwind | 3.82 | 47.4 | No | No |
| 9/25/20 | 17ADownwind | 7.08 | 32.0 | No | No |
| 9/28/20 | 1Upwind | 23.90 | 39.3 | No | No |
| 9/28/20 | 17ADownwind | 23.82 | 35.2 | No | No |
| 9/29/20 | 1Upwind | 24.25 | 13.4 | No | No |
| 9/29/20 | 17ADownwind | 24.00 | 12.8 | No | No |
| 9/30/20 | 1Upwind | 24.50 | 43.0 | No | No |
| 9/30/20 | 17ADownwind | 24.45 | 13.9 | No | No |
| 10/1/20 | 1Upwind | 23.42 | 66.7 | No | Yes (Note 1) |
| 10/1/20 | 17ADownwind | 23.93 | 82.3 | No | Yes (Note 1) |
| 10/2/20 | 1Upwind | 7.97 | 96.2 | No | No (Note 2) |
| 10/2/20 | 17ADownwind | 7.53 | 91.7 | No | No (Note 2) |
| 10/5/20 | 1Upwind | 24.22 | 15.7 | No | No |
| 10/5/20 | 17ADownwind | 24.27 | 14.3 | No | No |
| 10/6/20 | 1Upwind | 24.48 | 199 | No | No (Note 2) |
| 10/6/20 | 17ADownwind | 24.78 | 23.0 | No | No |
| 10/7/20 | 1Upwind | 23.55 | 29.6 | No | No |
| 10/7/20 | 17ADownwind | 23.57 | 27.3 | No | No |
| 10/8/20 | 1Upwind | 23.57 | 17.5 | No | No |
| 10/8/20 | 17ADownwind | 23.23 | 14.1 | No | No |
| 10/9/20 | 1Upwind | 8.00 | ND | No | No |
| 10/9/20 | 17ADownwind | 8.05 | 5.77 | No | No |
| 10/12/20 | 1Upwind | 23.90 | 29.6 | No | No |
| 10/12/20 | 17ADownwind | 23.90 | 23.7 | No | No |
| 10/13/20 | 1Upwind | 24.20 | 32.8 | No | No |
| 10/13/20 | 17ADownwind | 24.17 | 21.9 | No | No |
| 10/14/20 | 1Upwind | 23.83 | 40.6 | No | No |
| 10/14/20 | 17ADownwind | 24.03 | 33.7 | No | No |

## Attachment 1, Table 3: PM10 Air Sampling Results

| Date | Sample Location | Sampling Period | PM10 Result | PM10 Exceedance? (Yes/No) | PM10 Exceedance? (Yes/No) |
|---|---|---|---|---|---|
| Action Level | | ≤ 25 | | 5000 [a] | 50 [b] |
| Units | | hours | (µg/m$^3$) | (µg/m$^3$) | (µg/m$^3$) |
| 10/15/20 | 1Upwind | 23.77 | 89.1 | No | Yes |
| 10/15/20 | 17ADownwind | 24.12 | 79.7 | No | Yes |
| 10/16/20 | 1Upwind | 8.08 | 34.6 | No | No |
| 10/16/20 | 17ADownwind | 7.60 | 28.8 | No | No |
| 10/19/20 | 1Upwind | 23.53 | 26.3 | No | No |
| 10/19/20 | 17ADownwind | 24.33 | 23.0 | No | No |
| 10/20/20 | 1Upwind | 23.98 | 28.8 | No | No |
| 10/20/20 | 17ADownwind | 23.57 | 25.7 | No | No |
| 10/21/20 | 1Upwind | 24.03 | 41.8 | No | No |
| 10/21/20 | 17ADownwind | 24.02 | 38.2 | No | No |
| 10/22/20 | 1Upwind | 24.12 | 38.9 | No | No |
| 10/22/20 | 17ADownwind | 24.15 | 30.7 | No | No |
| 10/23/20 | 1Upwind | 7.87 | 107 | No | No (Note 2) |
| 10/23/20 | 17ADownwind | 7.77 | 75.0 | No | No (Note 2) |
| 10/24/20 | 1Upwind | 8.32 | 40.2 | No | No |
| 10/24/20 | 17ADownwind | 8.42 | 19.4 | No | No |
| 10/26/20 | 1Upwind | 23.95 | 39.9 | No | No |
| 10/26/20 | 17ADownwind | 23.52 | 38.8 | No | No |
| 10/27/20 | 1Upwind | 23.67 | 39.8 | No | No |
| 10/27/20 | 17ADownwind | 23.65 | 46.3 | No | No |
| 10/28/20 | 1Upwind | 24.18 | 53.4 | No | No (Note 2) |
| 10/28/20 | 17ADownwind | 24.25 | 49.1 | No | No |
| 10/29/20 | 1Upwind | 23.82 | 42.3 | No | No |
| 10/29/20 | 17ADownwind | 24.33 | 40.2 | No | No |
| 10/30/20 | 1Upwind | 25.52 | 30.5 | No | No |
| 10/30/20 | 17ADownwind | 23.42 | 24.9 | No | No |
| 10/31/20 | 1Upwind | 6.38 | 30.2 | No | No |
| 10/31/20 | 18Downwind | 6.45 | 31.2 | No | No |
| 11/2/20 | 1Upwind | 24.10 | 38.0 | No | No |
| 11/2/20 | 18Downwind | 24.10 | 14.2 | No | No |
| 11/3/20 | 1Upwind | 24.22 | 15.4 | No | No |
| 11/3/20 | 18Downwind | 24.23 | 6.92 | No | No |
| 11/4/20 | 1Upwind | 23.88 | 6.84 | No | No |
| 11/4/20 | 18Downwind | 23.85 | 4.46 | No | No |
| 11/5/20 | 1Upwind | 24.08 | 27.7 | No | No |
| 11/5/20 | 18Downwind | 24.15 | 14.3 | No | No |
| 11/6/20 | 1Upwind | 23.75 | 32.3 | No | No |

## Attachment 1, Table 3: PM10 Air Sampling Results

| Date | Sample Location | Sampling Period | PM10 Result | PM10 Exceedance? (Yes/No) | PM10 Exceedance? (Yes/No) |
|---|---|---|---|---|---|
| Action Level | | ≤ 25 | | 5000 [a] | 50 [b] |
| Units | | hours | (µg/m$^3$) | (µg/m$^3$) | (µg/m$^3$) |
| 11/6/20 | 18Downwind | 24.17 | 8.77 | No | No |
| 11/7/20 | 1Upwind | 7.17 | 6.36 | No | No |
| 11/7/20 | 18Downwind | 6.67 | ND | No | No |
| 11/9/20 | 1Upwind | 23.83 | 24.0 | No | No |
| 11/9/20 | 18Downwind | 23.85 | 17.7 | No | No |
| 11/10/20 | 1Upwind | 23.75 | 16.5 | No | No |
| 11/10/20 | 18Downwind | 24.08 | 12.6 | No | No |
| 11/11/20 | 1Upwind | 24.25 | 20.7 | No | No |
| 11/11/20 | 18Downwind | 23.90 | 18.7 | No | No |
| 11/12/20 | 1Upwind | 24.07 | 17.1 | No | No |
| 11/12/20 | 18Downwind | 24.02 | 21.7 | No | No |
| 11/13/20 | 1Upwind | 5.77 | 3.06 | No | No |
| 11/13/20 | 18Downwind | 5.78 | 2.33 | No | No |
| 11/16/20 | 1Upwind | 24.57 | 63.8 | No | Yes (Note 3) |
| 11/16/20 | 18Downwind | 24.55 | 34.5 | No | No |
| 11/17/20 | 1Upwind | 27.13 | ND | No | No |
| 11/17/20 | 18Downwind | 27.08 | 11.3 | No | No |
| 11/18/20 | 1Upwind | 24.13 | 21.0 | No | No |
| 11/18/20 | 18Downwind | 24.05 | 21.4 | No | No |
| 11/19/20 | 1Upwind | 24.52 | 30.5 | No | No |
| 11/19/20 | 18Downwind | 24.43 | 9.82 | No | No |
| 11/20/20 | 1Upwind | 23.65 | 43.1 | No | No |
| 11/20/20 | 18Downwind | 23.72 | 27.3 | No | No |
| 11/21/20 | 1Upwind | 6.52 | ND | No | No |
| 11/21/20 | 18Downwind | 6.60 | 76.0 | No | Yes |
| 11/23/20 | 1Upwind | 24.13 | 7.68 | No | No |
| 11/23/20 | 18Downwind | 23.97 | 6.26 | No | No |
| 11/24/20 | 1Upwind | 24.53 | 10.6 | No | No |
| 11/24/20 | 18Downwind | 24.58 | 13.6 | No | No |
| 11/25/20 | 1Upwind | 7.95 | ND | No | No |
| 11/25/20 | 18Downwind | 8.33 | ND | No | No |
| 11/30/20 | 1Upwind | 23.08 | 27.2 | No | No |
| 11/30/20 | 18Downwind | 23.90 | 15.6 | No | No |
| 12/1/20 | 1Upwind | 23.42 | 28.5 | No | No |
| 12/1/20 | 18Downwind | 24.02 | 22.6 | No | No |
| 12/2/20 | 1Upwind | 24.32 | 19.5 | No | No |
| 12/2/20 | 18Downwind | 24.37 | 26.1 | No | No |

## Attachment 1, Table 3: PM10 Air Sampling Results

| Date | Sample Location | Sampling Period | PM10 Result | PM10 Exceedance? (Yes/No) | PM10 Exceedance? (Yes/No) |
|---|---|---|---|---|---|
| Action Level | | ≤ 25 | | 5000 [a] | 50 [b] |
| Units | | hours | (µg/m$^3$) | (µg/m$^3$) | (µg/m$^3$) |
| 12/3/20 | 1Upwind | 23.68 | 74.0 | No | Yes (Note 1) |
| 12/3/20 | 18Downwind | 23.53 | 51.0 | No | Yes (Note 1) |
| 12/4/20 | 1Upwind | 23.83 | 62.9 | No | Yes (Note 1) |
| 12/4/20 | 18Downwind | 24.07 | 58.1 | No | Yes (Note 1) |
| 12/5/20 | 1Upwind | 7.10 | 61.7 | No | Yes (Note 1) |
| 12/5/20 | 18Downwind | 7.10 | 56.4 | No | Yes (Note 1) |
| 12/7/20 | 1Upwind | 23.85 | 44.2 | No | No |
| 12/7/20 | 18Downwind | 23.88 | 29.0 | No | No |
| 12/8/20 | 1Upwind | 24.08 | 63.9 | No | Yes (Note 3) |
| 12/8/20 | 18Downwind | 24.03 | 32.3 | No | No |
| 12/9/20 | 1Upwind | 23.83 | 90.5 | No | Yes |
| 12/9/20 | 18Downwind | 23.87 | 64.0 | No | Yes |
| 12/10/20 | 1Upwind | 23.98 | 41.8 | No | No |
| 12/10/20 | 18Downwind | 24.08 | 24.3 | No | No |
| 12/11/20 | 1Upwind | 8.78 | 28.8 | No | No |
| 12/11/20 | 18Downwind | 8.98 | 9.66 | No | No |
| 12/12/20 | 1Upwind | 7.23 | 14.8 | No | No |
| 12/12/20 | 18Downwind | 7.33 | 15.7 | No | No |
| 12/14/20 | 1Upwind | 24.13 | 22.7 | No | No |
| 12/14/20 | 18Downwind | 24.10 | 15.9 | No | No |
| 12/15/20 | 1Upwind | 24.10 | 31.4 | No | No |
| 12/15/20 | 18Downwind | 24.05 | 19.8 | No | No |
| 12/16/20 | 1Upwind | 7.58 | 34.1 | No | No |
| 12/16/20 | 18Downwind | 7.67 | 19.2 | No | No |
| 12/17/20 | 1Upwind | 24.25 | 31.6 | No | No |
| 12/17/20 | 18Downwind | 24.22 | 12.5 | No | No |
| 12/18/20 | 1Upwind | 8.67 | 21.0 | No | No |
| 12/18/20 | 18Downwind | 8.68 | ND | No | No |
| 12/21/20 | 1Upwind | 23.58 | 17.0 | No | No |
| 12/21/20 | 18Downwind | 23.58 | 9.36 | No | No |
| 12/22/20 | 1Upwind | 3.62 | ND | No | No |
| 12/22/20 | 18Downwind | 3.60 | ND | No | No |
| 12/23/20 | 1Upwind | Note 5 | Note 5 | Note 5 | Note 5 |
| 12/23/20 | 18Downwind | Note 5 | Note 5 | Note 5 | Note 5 |
| 12/28/20 | 1Upwind | Note 5 | Note 5 | Note 5 | Note 5 |
| 12/28/20 | 18Downwind | Note 5 | Note 5 | Note 5 | Note 5 |
| 12/29/20 | 1Upwind | Note 5 | Note 5 | Note 5 | Note 5 |

## Attachment 1, Table 3: PM10 Air Sampling Results

| Date | Sample Location | Sampling Period | PM10 Result | PM10 Exceedance? (Yes/No) | PM10 Exceedance? (Yes/No) |
|---|---|---|---|---|---|
| Action Level | | ≤ 25 | | 5000 [a] | 50 [b] |
| Units | | hours | (µg/m$^3$) | (µg/m$^3$) | (µg/m$^3$) |
| 12/29/20 | 18Downwind | Note 5 | Note 5 | Note 5 | Note 5 |
| 12/30/20 | 1Upwind | Note 5 | Note 5 | Note 5 | Note 5 |
| 12/30/20 | 18Downwind | Note 5 | Note 5 | Note 5 | Note 5 |
| 12/31/20 | 1Upwind | Note 5 | Note 5 | Note 5 | Note 5 |
| 12/31/20 | 18Downwind | Note 5 | Note 5 | Note 5 | Note 5 |
| 1/4/21 | 1Upwind | Note 4 | Note 4 | Note 4 | Note 4 |
| 1/4/21 | 18Downwind | Note 4 | Note 4 | Note 4 | Note 4 |
| 1/5/21 | 1Upwind | 24.00 | 22.9 | No | No |
| 1/5/21 | 18Downwind | 23.92 | 16.1 | No | No |
| 1/6/21 | 1Upwind | 4.25 | 10.4 | No | No |
| 1/6/21 | 18Downwind | 4.50 | 13.1 | No | No |
| 1/7/21 | 1Upwind | 23.68 | 19.6 | No | No |
| 1/7/21 | 18Downwind | 23.83 | 20.0 | No | No |
| 1/8/21 | 1Upwind | 2.58 | ND | No | No |
| 1/8/21 | 18Downwind | 2.58 | ND | No | No |
| 1/11/21 | 1Upwind | 23.80 | 32.9 | No | No |
| 1/11/21 | 18Downwind | 24.20 | 22.8 | No | No |
| 1/12/21 | 1Upwind | 24.27 | 36.9 | No | No |
| 1/12/21 | 18Downwind | 23.85 | 38.1 | No | No |
| 1/13/21 | 1Upwind | 23.98 | 21.2 | No | No |
| 1/13/21 | 18Downwind | 23.98 | 19.8 | No | No |
| 1/14/21 | 1Upwind | 23.62 | 17.8 | No | No |
| 1/14/21 | 18Downwind | 24.07 | 16.6 | No | No |
| 1/15/21 | 1Upwind | 7.35 | 28.6 | No | No |
| 1/15/21 | 18Downwind | 7.02 | 31.0 | No | No |
| 1/19/21 | 1Upwind | 23.52 | 50.8 | No | Yes |
| 1/19/21 | 18Downwind | 23.38 | 73.7 | No | Yes |
| 1/20/21 | 1Upwind | 24.15 | 81.3 | No | Yes |
| 1/20/21 | 18Downwind | 24.20 | 62.2 | No | Yes |
| 1/21/21 | 1Upwind | 9.50 | 71.2 | No | Yes (Note 3) |
| 1/21/21 | 18Downwind | 9.12 | 35.5 | No | No |
| 1/22/21 | 1Upwind | 3.78 | ND | No | No |
| 1/22/21 | 18Downwind | 3.52 | ND | No | No |
| 1/25/21 | 1Upwind | 23.73 | 49.0 | No | No |
| 1/25/21 | 18Downwind | 23.67 | 12.4 | No | No |
| 1/26/21 | 1Upwind | Note 5 | Note 5 | Note 5 | Note 5 |
| 1/26/21 | 18Downwind | Note 5 | Note 5 | Note 5 | Note 5 |

## Attachment 1, Table 3: PM10 Air Sampling Results

| Date | Sample Location | Sampling Period | PM10 Result | PM10 Exceedance? (Yes/No) | PM10 Exceedance? (Yes/No) |
|---|---|---|---|---|---|
| Action Level | | ≤ 25 | | 5000 [a] | 50 [b] |
| Units | | hours | (µg/m$^3$) | (µg/m$^3$) | (µg/m$^3$) |
| 1/27/21 | 1Upwind | Note 5 | Note 5 | Note 5 | Note 5 |
| 1/27/21 | 18Downwind | Note 5 | Note 5 | Note 5 | Note 5 |
| 1/28/21 | 1Upwind | Note 5 | Note 5 | Note 5 | Note 5 |
| 1/28/21 | 18Downwind | Note 5 | Note 5 | Note 5 | Note 5 |
| 1/29/21 | 1Upwind | Note 5 | Note 5 | Note 5 | Note 5 |
| 1/29/21 | 18Downwind | Note 5 | Note 5 | Note 5 | Note 5 |
| 2/1/21 | 1Upwind | Note 5 | Note 5 | Note 5 | Note 5 |
| 2/1/21 | 18Downwind | Note 5 | Note 5 | Note 5 | Note 5 |
| 2/2/21 | 1Upwind | Note 5 | Note 5 | Note 5 | Note 5 |
| 2/2/21 | 18Downwind | Note 5 | Note 5 | Note 5 | Note 5 |
| 2/3/21 | 1Upwind | Note 5 | Note 5 | Note 5 | Note 5 |
| 2/3/21 | 18Downwind | Note 5 | Note 5 | Note 5 | Note 5 |
| 2/4/21 | 1Upwind | 24.13 | 36.2 | No | No |
| 2/4/21 | 18Downwind | 24.20 | 13.5 | No | No |
| 2/5/21 | 1Upwind | 7.62 | 51.0 | No | Yes (Note 3) |
| 2/5/21 | 18Downwind | 7.08 | 17.0 | No | No |
| 2/8/21 | 1Upwind | 23.22 | 32.4 | No | No |
| 2/8/21 | 18Downwind | 23.35 | 18.8 | No | No |
| 2/9/21 | 1Upwind | 23.60 | 25.9 | No | No |
| 2/9/21 | 18Downwind | 23.70 | 13.3 | No | No |
| 2/10/21 | 1Upwind | 23.83 | 42.7 | No | No |
| 2/10/21 | 18Downwind | 24.18 | 10.5 | No | No |
| 2/11/21 | 1Upwind | 5.42 | 66.5 | No | Yes (Note 3) |
| 2/11/21 | 18Downwind | 5.17 | 9.68 | No | No |
| 2/12/21 | 1Upwind | 7.68 | 46.2 | No | No |
| 2/12/21 | 18Downwind | 7.25 | 11.9 | No | No |
| 2/15/21 | 1Upwind | Note 4 | Note 4 | Note 4 | Note 4 |
| 2/15/21 | 18Downwind | Note 4 | Note 4 | Note 4 | Note 4 |
| 2/16/21 | 1Upwind | 24.50 | 74.8 | No | Yes (Note 3) |
| 2/16/21 | 18Downwind | 23.97 | 19.6 | No | No |

**Attachment 1, Table 3: PM10 Air Sampling Results**

Notes:

Note 1: Elevated particulate matter levels observed regionally. This exceedance is likely not due to site activities.

Note 2: Based on wind direction and wind speed, site-related PM10 concentrations were below the 50 µg/$m^3$ action level.

Note 3: Upwind air sample result is above the action level; however, the downwind result is below the action level.

Note 4: Sample not collected due to inclement conditions (rain).

Note 5: Sample not collected because the site was temporarily shut down and no workers were onsite.

BAAQMD implements the CSAAQS for the Bay Area. The CSAAQS is designed to protect the general public from airborne particulates generated in the urban, suburban, and rural environments. The CSAAQS is not meant to be applied to general project-specific construction actions and related air quality. Rather, the standard is used to attain city- or regional-wide ambient air quality goals for the benefit of the general public. The current CSAAQS for PM10 is 50 µg/$m^3$ average per 24-hour day. The City and County of San Francisco is currently a non-attainment area for the CSAAQS for PM10.

Sample locations are shown on Figure 1.

[a] Cal/OSHA PEL (on-site workers)

[b] DTSC HERO developed action level (residents and public receptors), based on the CSAAQS

≤ - less than or equal to

µg/$m^3$ - microgram per cubic meter

BAAQMD - Bay Area Air Quality Management District

Cal/OSHA - California Occupational Safety and Health Administration

CSAAQS - California State ambient air quality standard

DTSC - California Department of Toxic Substances Control

HERO - Human and Ecological Risk Office

PEL - permissible exposure limit

PM10 - particulate matter smaller than 10 microns in diameter

## Attachment 1, Table 4: Asbestos Sampling Results

| Date | Sample Location | Sampling Period | Asbestos | Asbestos Exceedance? (Yes/No) |
|---|---|---|---|---|
| Action Level | | ≤ 25 | 0.1 | |
| Units | | hours | (fibers/cm$^3$) | |
| 8/24/20 | 1Upwind | 24.3 | <0.0009 | No |
| 8/24/20 | 17Downwind | 24.2 | <0.0009 | No |
| 8/25/20 | 1Upwind | 23.9 | <0.0009 | No |
| 8/25/20 | 17Downwind | 24.3 | <0.0009 | No |
| 8/26/20 | 1Upwind | 24.6 | <0.0009 | No |
| 8/26/20 | 17Downwind | 24.1 | <0.0009 | No |
| 8/27/20 | 1Upwind | 24.1 | <0.0009 | No |
| 8/27/20 | 17Downwind | 24.1 | <0.0009 | No |
| 8/28/20 | 1Upwind | 8.3 | <0.0030 | No |
| 8/28/20 | 17Downwind | 8.1 | <0.0032 | No |
| 8/31/20 | 1Upwind | 23.9 | <0.0009 | No |
| 8/31/20 | 17Downwind | 23.7 | <0.0009 | No |
| 9/1/20 | 1Upwind | 24.2 | <0.0009 | No |
| 9/1/20 | 17Downwind | 24.1 | Note 2 | No |
| 9/2/20 | 1Upwind | 23.6 | <0.0010 | No |
| 9/2/20 | 17Downwind | 23.6 | Note 2 | No |
| 9/3/20 | 1Upwind | 23.9 | 0.0019 | No |
| 9/3/20 | 17Downwind | 23.9 | 0.0010 | No |
| 9/4/20 | 1Upwind | 8.3 | <0.0027 | No |
| 9/4/20 | 17Downwind | 8.1 | <0.0028 | No |
| 9/8/20 | 1Upwind | 23.9 | 0.0014 | No |
| 9/8/20 | 17ADownwind | 24.2 | 0.0010 | No |
| 9/9/20 | 1Upwind | 23.9 | <0.0009 | No |
| 9/9/20 | 17ADownwind | 24.0 | <0.0009 | No |
| 9/10/20 | 1Upwind | 24.3 | Note 2 | No |
| 9/10/20 | 17ADownwind | 24.2 | Note 2 | No |
| 9/11/20 | 1Upwind | 7.5 | <0.0030 | No |
| 9/11/20 | 17ADownwind | 7.2 | <0.0031 | No |
| 9/14/20 | 1Upwind | 24.4 | <0.0009 | No |
| 9/14/20 | 17ADownwind | 24.4 | <0.0009 | No |
| 9/15/20 | 1Upwind | 23.8 | 0.0013 | No |
| 9/15/20 | 17ADownwind | 23.9 | <0.0009 | No |
| 9/16/20 | 1Upwind | 23.3 | 0.0018 | No |
| 9/16/20 | 17ADownwind | 23.7 | <0.0009 | No |
| 9/17/20 | 1Upwind | 24.2 | <0.0009 | No |
| 9/17/20 | 17ADownwind | 24.3 | <0.0009 | No |
| 9/18/20 | 1Upwind | 8.1 | 0.0038 | No |
| 9/18/20 | 17ADownwind | 7.3 | <0.0031 | No |

## Attachment 1, Table 4: Asbestos Sampling Results

| Date | Sample Location | Sampling Period | Asbestos | Asbestos Exceedance? (Yes/No) |
|---|---|---|---|---|
| Action Level | | ≤ 25 | 0.1 | |
| Units | | hours | (fibers/cm$^3$) | |
| 9/21/20 | 1Upwind | 23.9 | <0.0009 | No |
| 9/21/20 | 17ADownwind | 24.2 | <0.0009 | No |
| 9/22/20 | 1Upwind | 23.4 | <0.0010 | No |
| 9/22/20 | 17ADownwind | 23.5 | <0.0010 | No |
| 9/23/20 | 1Upwind | 23.9 | 0.0012 | No |
| 9/23/20 | 17ADownwind | 24.7 | <0.0009 | No |
| 9/24/20 | 1Upwind | 24.3 | 0.0017 | No |
| 9/24/20 | 17ADownwind | 24.6 | <0.0009 | No |
| 9/25/20 | 1Upwind | 3.8 | <0.0059 | No |
| 9/25/20 | 17ADownwind | 7.1 | <0.0032 | No |
| 9/28/20 | 1Upwind | 23.9 | <0.0009 | No |
| 9/28/20 | 17ADownwind | 23.8 | <0.0009 | No |
| 9/29/20 | 1Upwind | 24.2 | <0.0009 | No |
| 9/29/20 | 17ADownwind | 24.0 | <0.0009 | No |
| 9/30/20 | 1Upwind | 24.5 | <0.0009 | No |
| 9/30/20 | 17ADownwind | 24.4 | <0.0009 | No |
| 10/1/20 | 1Upwind | 23.4 | <0.0010 | No |
| 10/1/20 | 17ADownwind | 23.9 | <0.0009 | No |
| 10/2/20 | 1Upwind | 8.0 | <0.0028 | No |
| 10/2/20 | 17ADownwind | 7.5 | <0.0031 | No |
| 10/5/20 | 1Upwind | 24.2 | <0.0009 | No |
| 10/5/20 | 17ADownwind | 24.3 | <0.0009 | No |
| 10/6/20 | 1Upwind | 24.5 | <0.0009 | No |
| 10/6/20 | 17ADownwind | 24.8 | <0.0009 | No |
| 10/7/20 | 1Upwind | 23.6 | <0.0010 | No |
| 10/7/20 | 17ADownwind | 23.6 | <0.0010 | No |
| 10/8/20 | 1Upwind | 23.6 | <0.0010 | No |
| 10/8/20 | 17ADownwind | 23.2 | <0.0010 | No |
| 10/9/20 | 1Upwind | 8.0 | <0.0028 | No |
| 10/9/20 | 17ADownwind | 8.0 | <0.0028 | No |
| 10/12/20 | 1Upwind | 23.9 | 0.0011 | No |
| 10/12/20 | 17ADownwind | 23.9 | 0.0017 | No |
| 10/13/20 | 1Upwind | 24.2 | 0.0012 | No |
| 10/13/20 | 17ADownwind | 24.2 | 0.0010 | No |
| 10/14/20 | 1Upwind | 23.8 | 0.0024 | No |
| 10/14/20 | 17ADownwind | 24.0 | 0.0013 | No |
| 10/15/20 | 1Upwind | 23.8 | 0.0034 | No |
| 10/15/20 | 17ADownwind | 24.1 | 0.0026 | No |

## Attachment 1, Table 4: Asbestos Sampling Results

| Date | Sample Location | Sampling Period | Asbestos | Asbestos Exceedance? (Yes/No) |
|---|---|---|---|---|
| Action Level | | ≤ 25 | 0.1 | |
| Units | | hours | (fibers/cm$^3$) | |
| 10/16/20 | 1Upwind | 8.1 | <0.0028 | No |
| 10/16/20 | 17ADownwind | 7.6 | 0.0030 | No |
| 10/19/20 | 1Upwind | 23.5 | <0.0009 | No |
| 10/19/20 | 17ADownwind | 24.3 | <0.0009 | No |
| 10/20/20 | 1Upwind | 24.0 | <0.0009 | No |
| 10/20/20 | 17ADownwind | 23.6 | <0.0005 | No |
| 10/21/20 | 1Upwind | 24.0 | <0.0009 | No |
| 10/21/20 | 17ADownwind | 24.0 | <0.0009 | No |
| 10/22/20 | 1Upwind | 24.1 | 0.0012 | No |
| 10/22/20 | 17ADownwind | 24.1 | <0.0009 | No |
| 10/23/20 | 1Upwind | 7.9 | <0.0028 | No |
| 10/23/20 | 17ADownwind | 7.8 | <0.0030 | No |
| 10/24/20 | 1Upwind | 8.3 | <0.0027 | No |
| 10/24/20 | 17ADownwind | 8.4 | <0.0027 | No |
| 10/26/20 | 1Upwind | 24.0 | 0.0018 | No |
| 10/26/20 | 17ADownwind | 23.5 | 0.0037 | No |
| 10/27/20 | 1Upwind | 23.7 | 0.0025 | No |
| 10/27/20 | 17ADownwind | 23.7 | 0.0023 | No |
| 10/28/20 | 1Upwind | 24.2 | 0.0015 | No |
| 10/28/20 | 17ADownwind | 24.2 | <0.0009 | No |
| 10/29/20 | 1Upwind | 23.8 | 0.0015 | No |
| 10/29/20 | 17ADownwind | 24.3 | 0.0013 | No |
| 10/30/20 | 1Upwind | 25.5 | 0.0010 | No |
| 10/30/20 | 17ADownwind | 23.4 | 0.0011 | No |
| 10/31/20 | 1Upwind | 6.4 | <0.0035 | No |
| 10/31/20 | 18Downwind | 6.5 | <0.0035 | No |
| 11/2/20 | 1Upwind | 24.1 | <0.0009 | No |
| 11/2/20 | 18Downwind | 24.1 | 0.0012 | No |
| 11/3/20 | 1Upwind | 24.2 | <0.0009 | No |
| 11/3/20 | 18Downwind | 24.2 | <0.0009 | No |
| 11/4/20 | 1Upwind | 23.9 | <0.0009 | No |
| 11/4/20 | 18Downwind | 23.9 | <0.0009 | No |
| 11/5/20 | 1Upwind | 24.1 | <0.0009 | No |
| 11/5/20 | 18Downwind | 24.1 | <0.0009 | No |
| 11/6/20 | 1Upwind | 23.7 | <0.0009 | No |
| 11/6/20 | 18Downwind | 24.2 | <0.0009 | No |
| 11/7/20 | 1Upwind | 7.2 | <0.0031 | No |
| 11/7/20 | 18Downwind | 6.7 | <0.0034 | No |

## Attachment 1, Table 4: Asbestos Sampling Results

| Date | Sample Location | Sampling Period | Asbestos | Asbestos Exceedance? (Yes/No) |
|---|---|---|---|---|
| Action Level | | ≤ 25 | 0.1 | |
| Units | | hours | (fibers/cm$^3$) | |
| 11/9/20 | 1Upwind | 23.8 | <0.0009 | No |
| 11/9/20 | 18Downwind | 23.9 | <0.0009 | No |
| 11/10/20 | 1Upwind | 23.8 | <0.0009 | No |
| 11/10/20 | 18Downwind | 24.1 | <0.0009 | No |
| 11/11/20 | 1Upwind | 24.2 | <0.0009 | No |
| 11/11/20 | 18Downwind | 23.9 | <0.0009 | No |
| 11/12/20 | 1Upwind | 24.1 | <0.0009 | No |
| 11/12/20 | 18Downwind | 24.0 | <0.0009 | No |
| 11/13/20 | 1Upwind | 5.8 | <0.0008 | No |
| 11/13/20 | 18Downwind | 5.8 | <0.0008 | No |
| 11/16/20 | 1Upwind | 24.6 | 0.0012 | No |
| 11/16/20 | 18Downwind | 24.6 | <0.0009 | No |
| 11/17/20 | 1Upwind | 27.1 | <0.0008 | No |
| 11/17/20 | 18Downwind | 27.1 | <0.0008 | No |
| 11/18/20 | 1Upwind | 24.1 | <0.0009 | No |
| 11/18/20 | 18Downwind | 24.0 | <0.0009 | No |
| 11/19/20 | 1Upwind | 24.5 | <0.0009 | No |
| 11/19/20 | 18Downwind | 24.4 | <0.0009 | No |
| 11/20/20 | 1Upwind | 23.6 | <0.0009 | No |
| 11/20/20 | 18Downwind | 23.7 | <0.0009 | No |
| 11/21/20 | 1Upwind | 6.5 | <0.0034 | No |
| 11/21/20 | 18Downwind | 6.6 | <0.0034 | No |
| 11/23/20 | 1Upwind | 24.1 | 0.0017 | No |
| 11/23/20 | 18Downwind | 24.0 | <0.0009 | No |
| 11/24/20 | 1Upwind | 24.5 | 0.0010 | No |
| 11/24/20 | 18Downwind | 24.6 | <0.0009 | No |
| 11/25/20 | 1Upwind | 8.0 | <0.0028 | No |
| 11/25/20 | 18Downwind | 8.3 | <0.0027 | No |
| 11/30/20 | 1Upwind | 23.1 | <0.0010 | No |
| 11/30/20 | 18Downwind | 23.9 | <0.0009 | No |
| 12/1/20 | 1Upwind | 23.4 | <0.0010 | No |
| 12/1/20 | 18Downwind | 24.0 | <0.0009 | No |
| 12/2/20 | 1Upwind | 24.3 | <0.0009 | No |
| 12/2/20 | 18Downwind | 24.4 | <0.0009 | No |
| 12/3/20 | 1Upwind | 23.7 | <0.0009 | No |
| 12/3/20 | 18Downwind | 23.5 | 0.0025 | No |
| 12/4/20 | 1Upwind | 23.8 | <0.0009 | No |
| 12/4/20 | 18Downwind | 24.1 | <0.0009 | No |

## Attachment 1, Table 4: Asbestos Sampling Results

| Date | Sample Location | Sampling Period | Asbestos | Asbestos Exceedance? (Yes/No) |
|---|---|---|---|---|
| Action Level | | ≤ 25 | 0.1 | |
| Units | | hours | (fibers/cm$^3$) | |
| 12/5/20 | 1Upwind | 7.1 | <0.0030 | No |
| 12/5/20 | 18Downwind | 7.1 | <0.0030 | No |
| 12/7/20 | 1Upwind | 23.9 | <0.0009 | No |
| 12/7/20 | 18Downwind | 23.9 | 0.0012 | No |
| 12/8/20 | 1Upwind | 24.1 | 0.0012 | No |
| 12/8/20 | 18Downwind | 24.0 | 0.0010 | No |
| 12/9/20 | 1Upwind | 23.8 | <0.0009 | No |
| 12/9/20 | 18Downwind | 23.9 | <0.0009 | No |
| 12/10/20 | 1Upwind | 24.0 | <0.0009 | No |
| 12/10/20 | 18Downwind | 24.1 | <0.0009 | No |
| 12/11/20 | 1Upwind | 8.8 | <0.0026 | No |
| 12/11/20 | 18Downwind | 9.0 | <0.0025 | No |
| 12/12/20 | 1Upwind | 7.2 | <0.0030 | No |
| 12/12/20 | 18Downwind | 7.3 | <0.0030 | No |
| 12/14/20 | 1Upwind | 24.1 | <0.0009 | No |
| 12/14/20 | 18Downwind | 24.1 | <0.0009 | No |
| 12/15/20 | 1Upwind | 24.1 | <0.0009 | No |
| 12/15/20 | 18Downwind | 24.0 | <0.0009 | No |
| 12/16/20 | 1Upwind | 7.6 | <0.0030 | No |
| 12/16/20 | 18Downwind | 7.7 | <0.0029 | No |
| 12/17/20 | 1Upwind | 24.3 | <0.0009 | No |
| 12/17/20 | 18Downwind | 24.2 | 0.0015 | No |
| 12/18/20 | 1Upwind | 8.7 | <0.0026 | No |
| 12/18/20 | 18Downwind | 8.7 | <0.0026 | No |
| 12/21/20 | 1Upwind | 23.6 | <0.0010 | No |
| 12/21/20 | 18Downwind | 23.6 | <0.0010 | No |
| 12/22/20 | 1Upwind | 3.6 | <0.0063 | No |
| 12/22/20 | 18Downwind | 3.6 | <0.0063 | No |
| 12/23/20 | 1Upwind | Note 3 | Note 3 | Note 3 |
| 12/23/20 | 18Downwind | Note 3 | Note 3 | Note 3 |
| 12/28/20 | 1Upwind | Note 3 | Note 3 | Note 3 |
| 12/28/20 | 18Downwind | Note 3 | Note 3 | Note 3 |
| 12/29/20 | 1Upwind | Note 3 | Note 3 | Note 3 |
| 12/29/20 | 18Downwind | Note 3 | Note 3 | Note 3 |
| 12/30/20 | 1Upwind | Note 3 | Note 3 | Note 3 |
| 12/30/20 | 18Downwind | Note 3 | Note 3 | Note 3 |
| 12/31/20 | 1Upwind | Note 3 | Note 3 | Note 3 |
| 12/31/20 | 18Downwind | Note 3 | Note 3 | Note 3 |

## Attachment 1, Table 4: Asbestos Sampling Results

| Date | Sample Location | Sampling Period | Asbestos | Asbestos Exceedance? (Yes/No) |
|---|---|---|---|---|
| Action Level | | ≤ 25 | 0.1 | |
| Units | | hours | (fibers/cm$^3$) | |
| 1/4/21 | 1Upwind | Note 1 | Note 1 | Note 1 |
| 1/4/21 | 18Downwind | Note 1 | Note 1 | Note 1 |
| 1/5/21 | 1Upwind | 24.0 | <0.0010 | No |
| 1/5/21 | 18Downwind | 23.9 | <0.0010 | No |
| 1/6/21 | 1Upwind | 4.3 | <0.0053 | No |
| 1/6/21 | 18Downwind | 4.5 | <0.0050 | No |
| 1/7/21 | 1Upwind | 23.7 | <0.0009 | No |
| 1/7/21 | 18Downwind | 23.8 | <0.0009 | No |
| 1/8/21 | 1Upwind | 2.6 | <0.0087 | No |
| 1/8/21 | 18Downwind | 2.6 | <0.0087 | No |
| 1/11/21 | 1Upwind | 23.8 | <0.0009 | No |
| 1/11/21 | 18Downwind | 24.2 | <0.0009 | No |
| 1/12/21 | 1Upwind | 24.3 | <0.0009 | No |
| 1/12/21 | 18Downwind | 23.9 | <0.0009 | No |
| 1/13/21 | 1Upwind | 24.0 | <0.0009 | No |
| 1/13/21 | 18Downwind | 24.0 | <0.0009 | No |
| 1/14/21 | 1Upwind | 23.6 | 0.0017 | No |
| 1/14/21 | 18Downwind | 24.1 | 0.0014 | No |
| 1/15/21 | 1Upwind | 7.3 | <0.0031 | No |
| 1/15/21 | 18Downwind | 7.0 | <0.0032 | No |
| 1/19/21 | 1Upwind | 23.5 | <0.0010 | No |
| 1/19/21 | 18Downwind | 23.4 | <0.0010 | No |
| 1/20/21 | 1Upwind | 24.1 | <0.0009 | No |
| 1/20/21 | 18Downwind | 24.2 | <0.0009 | No |
| 1/21/21 | 1Upwind | 9.5 | <0.0024 | No |
| 1/21/21 | 18Downwind | 9.1 | <0.0025 | No |
| 1/22/21 | 1Upwind | 3.8 | <0.0060 | No |
| 1/22/21 | 18Downwind | 3.5 | <0.0064 | No |
| 1/25/21 | 1Upwind | 23.7 | <0.0009 | No |
| 1/25/21 | 18Downwind | 23.7 | <0.0009 | No |
| 1/26/21 | 1Upwind | Note 3 | Note 3 | Note 3 |
| 1/26/21 | 18Downwind | Note 3 | Note 3 | Note 3 |
| 1/27/21 | 1Upwind | Note 3 | Note 3 | Note 3 |
| 1/27/21 | 18Downwind | Note 3 | Note 3 | Note 3 |
| 1/28/21 | 1Upwind | Note 3 | Note 3 | Note 3 |
| 1/28/21 | 18Downwind | Note 3 | Note 3 | Note 3 |
| 1/29/21 | 1Upwind | Note 3 | Note 3 | Note 3 |
| 1/29/21 | 18Downwind | Note 3 | Note 3 | Note 3 |

## Attachment 1, Table 4: Asbestos Sampling Results

| Date | Sample Location | Sampling Period | Asbestos | Asbestos Exceedance? (Yes/No) |
|---|---|---|---|---|
| **Action Level** | | **≤ 25** | **0.1** | |
| **Units** | | **hours** | **(fibers/cm$^3$)** | |
| 2/1/21 | 1Upwind | Note 3 | Note 3 | Note 3 |
| 2/1/21 | 18Downwind | Note 3 | Note 3 | Note 3 |
| 2/2/21 | 1Upwind | Note 3 | Note 3 | Note 3 |
| 2/2/21 | 18Downwind | Note 3 | Note 3 | Note 3 |
| 2/3/21 | 1Upwind | Note 3 | Note 3 | Note 3 |
| 2/3/21 | 18Downwind | Note 3 | Note 3 | Note 3 |
| 2/4/21 | 1Upwind | 24.1 | 0.0013 | No |
| 2/4/21 | 18Downwind | 24.2 | <0.0009 | No |
| 2/5/21 | 1Upwind | 7.6 | <0.0029 | No |
| 2/5/21 | 18Downwind | 7.1 | <0.0032 | No |
| 2/8/21 | 1Upwind | 23.2 | <0.0010 | No |
| 2/8/21 | 18Downwind | 23.3 | <0.0010 | No |
| 2/9/21 | 1Upwind | 23.6 | <0.0010 | No |
| 2/9/21 | 18Downwind | 23.7 | <0.0009 | No |
| 2/10/21 | 1Upwind | 23.8 | <0.0009 | No |
| 2/10/21 | 18Downwind | 24.2 | <0.0009 | No |
| 2/11/21 | 1Upwind | 5.4 | <0.0041 | No |
| 2/11/21 | 18Downwind | 5.2 | <0.0043 | No |
| 2/12/21 | 1Upwind | 7.7 | <0.0029 | No |
| 2/12/21 | 18Downwind | 7.2 | <0.0031 | No |
| 2/15/21 | 1Upwind | Note 1 | Note 1 | Note 1 |
| 2/15/21 | 18Downwind | Note 1 | Note 1 | Note 1 |
| 2/16/21 | 1Upwind | 24.5 | <0.0009 | No |
| 2/16/21 | 18Downwind | 23.6 | <0.0010 | No |

Notes:
Note 1: Sample not collected due to inclement weather conditions (rain).
Note 2: Filter cartridge overloaded due to ash from forest fires.
Note 3: Sample not collected because the site was temporarily shut down and no workers were onsite.
Sample locations are shown on Figure 1.
< - less than
≤ - less than or equal to
fibers/cm$^3$ - fibers per cubic centimeter

**Attachment 1, Table 5: Radionuclides of Concern Air Sampling Results**

| Date | Sample Location | Sampling Period | Cesium-137 | | Plutonium-239/240 | | Radium-226 | | Strontium-90 | | Thorium-232 | | Uranium-235/236 | | Exceedance? (Yes/No) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Action Level | | | 4.00E-11 | | 4.00E-15 | | 1.80E-13 | | 1.20E-12 | | 1.20E-15 | | 6.00E-13 | | |
| Units | | hours | µCi/mL | | µCi/mL | | µCi/mL | | µCi/mL | | µCi/mL | | µCi/mL | | |
| 8/24/20 - 8/28/20 | 1Upwind | 104 | 1.04E-14 | U | 4.08E-17 | U | 1.63E-16 | U | 1.22E-16 | U | 1.98E-16 | JB | 1.27E-16 | U | No |
| 8/24/20 - 8/28/20 | 17Downwind | 104 | -1.67E-14 | U | 8.38E-17 | JB | 1.87E-15 | JB | -6.81E-16 | U | 3.19E-16 | JB | 8.04E-17 | U | No |
| 8/31/20 - 9/4/20 | 1Upwind | 104 | 7.00E-15 | U | 0.00E+0 | U | 1.87E-15 | JB | 3.33E-15 | JB | 4.93E-16 | JB | 1.03E-16 | | No |
| 8/31/20 - 9/4/20 | 17Downwind | 104 | -5.00E-15 | U | 1.01E-16 | JB | 1.39E-15 | JB | 1.06E-15 | U | 5.20E-16 | JB | 1.98E-16 | J | No |
| 9/08/20 - 9/11/20 | 1Upwind | 80 | -3.90E-14 | U | 1.24E-16 | JB | 1.17E-15 | JB | 2.00E-15 | U | 3.90E-16 | JB, J | 1.96E-16 | JB | No |
| 9/08/20 - 9/11/20 | 17ADownwind | 79 | -1.20E-14 | U | 0.00E+0 | U | 1.96E-15 | JB | 6.82E-16 | U | 2.86E-16 | JB | -6.97E-17 | U | No |
| 9/14/20 - 9/18/20 | 1Upwind | 103 | -6.70E-13 | U | 1.01E-16 | J | -2.42E-16 | U | 2.00E-15 | JB | 3.29E-16 | JB | 5.12E-17 | U | No |
| 9/14/20 - 9/18/20 | 17ADownwind | 103 | -5.48E-12 | U | 0.00E+0 | UJ | 9.40E-17 | U | -2.00E-15 | U | 4.76E-16 | JB | 5.13E-17 | U | No |
| 9/21/20 - 9/25/20 | 1Upwind | 99 | -8.13E-15 | U | -1.25E-16 | UJ | 3.65E-15 | JB | 4.00E-15 | JB | 1.51E-16 | JB | 1.59E-16 | JB | No |
| 9/21/20 - 9/25/20 | 17ADownwind | 103 | -3.48E-16 | U | -4.11E-17 | UJ | 1.73E-15 | JB | -2.00E-15 | U | 1.80E-16 | JB | 1.29E-16 | U | No |
| 9/28/20 - 10/2/20 | 1Upwind | 104 | 1.00E-15 | U | -3.96E-17 | U | -5.63E-16 | U | -7.64E-15 | U | 2.37E-16 | JB | 1.99E-16 | JB | No |
| 9/28/20 - 10/2/20 | 17ADownwind | 104 | -2.50E-14 | U | 1.98E-17 | U | 1.50E-15 | U | 2.23E-15 | | 2.43E-16 | JB | -2.65E-17 | U | No |
| 10/5/20 - 10/9/20 | 1Upwind | 104 | -1.39E-15 | U | -1.44E-16 | U | 3.14E-16 | U | 1.84E-15 | | 2.54E-16 | JB | 1.07E-16 | U | No |
| 10/5/20 - 10/9/20 | 17ADownwind | 104 | -6.25E-15 | U | 2.03E-17 | U | 1.36E-15 | U | 0.00E+00 | U | 1.61E-16 | JB | 2.63E-17 | U | No |
| 10/12/20 - 10/16/20 | 1Upwind | 104 | -8.68E-15 | U | 4.07E-17 | U | -2.83E-16 | U | 1.05E-15 | U | -6.07E-17 | U | 9.42E-17 | | No |
| 10/12/20 - 10/16/20 | 17ADownwind | 102 | 9.87E-15 | U | 8.38E-17 | | -3.80E-16 | U | 2.06E-15 | JB | 6.22E-17 | JB | 1.03E-16 | | No |
| 10/19/20 - 10/24/20 | 1Upwind | 128 | -6.00E-15 | U | -2.07E-16 | U | -1.66E-16 | U | -5.08E-16 | U | -6.35E-16 | U | 4.29E-17 | U | No |
| 10/19/20 - 10/24/20 | 17ADownwind | 128 | 7.00E-15 | U | -1.31E-16 | U | 5.01E-16 | U | -2.20E-16 | U | 1.32E-16 | | 0.00E+0 | U | No |
| 10/26/20 - 10/31/20 | 1Upwind | 121 | 1.59E-15 | U | -3.46E-17 | U | 6.93E-16 | U | 1.26E-15 | | 1.31E-16 | JB | 2.11E-17 | U | No |
| 10/26/20 - 10/31/20 | 17ADownwind | 120 | 2.65E-14 | U | -1.96E-16 | U | 4.70E-16 | U | 5.29E-17 | U | 1.36E-16 | JB | -2.29E-17 | U | No |
| 10/31/20 - 11/7/20 | 1Upwind | 174 | 2.78E-14 | U | -7.06E-17 | U | 6.07E-16 | | 1.01E-14 | JB | 8.80E-17 | JB | 8.82E-17 | JB | No |
| 10/31/20 - 11/7/20 | 18Downwind | 174 | 1.78E-14 | U | 4.67E-17 | U | 5.06E-16 | U | 6.50E-15 | JB | 9.67E-17 | JB | -4.39E-17 | U | No |
| 11/9/20 - 11/14/20 | 1Upwind | 119 | 4.88E-15 | U | -2.11E-16 | UJ | 5.17E-17 | U | -2.14E-16 | U | 1.27E-16 | JB | 8.75E-17 | | No |
| 11/9/20 - 11/14/20 | 18Downwind | 120 | 1.29E-14 | U | -6.77E-17 | U | 2.70E-16 | U | 1.03E-15 | U | 1.58E-16 | JB | 4.31E-17 | U | No |
| 11/16/20 - 11/21/20 | 1Upwind | 127 | 1.49E-15 | U | 1.59E-17 | U | 6.94E-18 | U | 2.43E-16 | U | 1.12E-16 | JB | 0.00E+0 | U | No |
| 11/16/20 - 11/21/20 | 18Downwind | 127 | -2.08E-14 | U | -3.35E-17 | U | 2.03E-16 | U | -9.92E-16 | U | 1.27E-16 | JB | 1.93E-17 | U | No |
| 11/23/20 - 11/25/20 | 1Upwind | 57 | 1.78E-14 | U | 0.00E+0 | U | 8.96E-16 | U | -2.89E-15 | U | 4.63E-16 | JB | 4.59E-17 | U | No |
| 11/23/20 - 11/25/20 | 18Downwind | 57 | -1.39E-14 | U | 0.00E+0 | U | 1.38E-15 | | 2.06E-15 | U | 1.44E-16 | JB | 4.89E-17 | U | No |
| 11/30/20 - 12/5/20 | 1Upwind | 125 | -5.18E-15 | U | -1.64E-17 | UJ | -5.00E-16 | U | 4.08E-16 | U | 2.00E-16 | | 4.34E-17 | U | No |
| 11/30/20 - 12/5/20 | 18Downwind | 127 | 6.08E-15 | U | 0.00E+0 | UJ | -1.62E-16 | U | 7.92E-16 | U | 2.27E-16 | | 2.11E-17 | U | No |
| 12/7/20 - 12/12/2020 | 1Upwind | 127 | 6.48E-15 | U | 1.69E-17 | U | 3.45E-16 | U | -6.38E-16 | U | 3.65E-16 | JB | 3.55E-17 | U | No |
| 12/7/20 - 12/12/2020 | 18Downwind | 127 | -3.16E-15 | U | -3.43E-17 | U | 4.59E-16 | U | 8.37E-16 | U | 1.31E-16 | JB | 3.59E-17 | U | No |
| 12/14/20 - 12/18/20 | 1Upwind | 105 | 1.08E-14 | U | 0.00E+0 | U | -1.34E-16 | U | -9.87E-16 | U | 7.79E-16 | JB | 4.73E-17 | U | No |
| 12/14/20 - 12/18/20 | 18Downwind | 105 | -5.16E-16 | U | -2.14E-16 | U | -7.81E-16 | U | -1.55E-17 | U | 7.92E-16 | JB | 4.91E-17 | U | No |
| 12/21/20 - 12/22/20 | 1Upwind | 27 | 0.00E+0 | U | 0.00E+0 | U | 8.76E-16 | U | 3.73E-16 | U | 1.97E-15 | JB | -9.40E-17 | U | Yes (Note 3) |
| 12/21/20 - 12/22/20 | 18Downwind | 27 | -6.34E-15 | U | 0.00E+0 | U | 1.93E-15 | JB | -3.46E-15 | U | 1.29E-15 | JB | 3.81E-16 | | Yes (Note 3) |
| 12/28/20 - 12/31/20 | 1Upwind | Note 1 | Note 1 | | Note 1 | | Note 1 | | Note 1 | | Note 1 | | Note 1 | | Note 1 |
| 12/28/20 - 12/31/20 | 18Downwind | Note 1 | Note 1 | | Note 1 | | Note 1 | | Note 1 | | Note 1 | | Note 1 | | Note 1 |
| 1/5/21 - 1/8/21 | 1Upwind | 74 | 9.91E-15 | U | 5.83E-17 | U | -1.63E-16 | U | -1.38E-15 | U | 6.05E-16 | JB | 6.85E-17 | U | No |

**Attachment 1, Table 5: Radionuclides of Concern Air Sampling Results**

| Date | Sample Location | Sampling Period | Cesium-137 | | Plutonium-239/240 | | Radium-226 | | Strontium-90 | | Thorium-232 | | Uranium-235/236 | | Exceedance? (Yes/No) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Action Level | | | 4.00E-11 | | 4.00E-15 | | 1.80E-13 | | 1.20E-12 | | 1.20E-15 | | 6.00E-13 | | |
| Units | | hours | µCi/mL | | µCi/mL | | µCi/mL | | µCi/mL | | µCi/mL | | µCi/mL | | |
| 1/5/21 - 1/8/21 | 18Downwind | 74 | -2.93E-14 | U | -3.16E-16 | U | 1.31E-15 | JB | -2.55E-15 | U | 1.05E-15 | JB | 7.09E-17 | U | No |
| 1/11/21 - 1/15/21 | 1Upwind | 103 | -1.43E-14 | U | 2.10E-17 | U | 7.74E-17 | U | -3.69E-16 | U | 6.11E-16 | JB | 2.56E-17 | U | No |
| 1/11/21 - 1/15/21 | 18Downwind | 103 | -6.16E-15 | U | 2.05E-17 | U | 2.40E-16 | U | -1.03E-15 | U | 3.73E-16 | JB | 1.05E-16 | | No |
| 1/20/21 - 1/22/21 | 1Upwind | 55 | 5.36E-16 | U | -3.81E-17 | U | 1.46E-15 | | 6.74E-16 | U | 1.12E-15 | JB | 7.79E-17 | U | No |
| 1/20/21 - 1/22/21 | 18Downwind | 55 | 7.09E-15 | U | 0.00E+0 | U | 9.23E-16 | | 1.21E-15 | U | 8.49E-16 | JB | -2.07E-16 | U | No |
| 1/25/21 - 1/29/21 | 1Upwind | Note 1, 2 | Note 1, 2 | | Note 1, 2 | | Note 1, 2 | | Note 1, 2 | | Note 1, 2 | | Note 1, 2 | | Note 1, 2 |
| 1/25/21 - 1/29/21 | 18Downwind | Note 1, 2 | Note 1, 2 | | Note 1, 2 | | Note 1, 2 | | Note 1, 2 | | Note 1, 2 | | Note 1, 2 | | Note 1, 2 |
| 2/1/21 - 2/5/21 | 1Upwind | Note 1, 4 | Note 1, 4 | | Note 1, 4 | | Note 1, 4 | | Note 1, 4 | | Note 1, 4 | | Note 1, 4 | | Note 1, 4 |
| 2/1/21 - 2/5/21 | 18Downwind | Note 1, 4 | Note 1, 4 | | Note 1, 4 | | Note 1, 4 | | Note 1, 4 | | Note 1, 4 | | Note 1, 4 | | Note 1, 4 |
| 2/8/21 - 2/12/21 | 1Upwind | 102 | -1.07E-14 | U | -3.90E-17 | U | -4.36E-16 | U | 9.51E-16 | U | 2.27E-16 | JB | -2.46E-17 | UJ | No |
| 2/8/21 - 2/12/21 | 18Downwind | 102 | -1.43E-16 | U | -1.02E-16 | U | 6.14E-16 | | -1.08E-15 | U | 5.48E-16 | JB | 0.00E+0 | U | No |
| 2/15/21 - 2/19/21 | 1Upwind | 101 | 7.99E-15 | U | -1.89E-16 | U | 5.08E-16 | JB | 4.72E-15 | JB | 6.54E-16 | JB | 5.12E-17 | U | No |
| 2/15/21 - 2/19/21 | 18Downwind | 100 | 9.37E-15 | U | -3.83E-17 | U | 9.06E-16 | JB | 8.64E-16 | U | 5.40E-16 | JB | 1.06E-16 | | No |

Notes:
Note 1: Sample not collected because the site was temporarily shut down and no workers were on site.
Note 2: Sample not collected or not analyzed due to inclement weather conditions (rain).
Note 3: Sample exceeded the thorium-232 action limit; field blank sample also exceeded the thorium-232 action limit. Results may be due to naturally occurring radioactive material (NORM) contained in the glass fiber filters.
Note 4: Sample not collected because the site was temporarily shut down and workers were performing storm damage repairs only.
Sampling period for week 9/08/20 - 9/11/20 is less than 104 hours due to the Labor Day holiday.
Sampling period for the upwind air sampling station week 9/21/20 - 9/25/20 is less than 104 hours due to a generator malfunction.
Sampling period for the downwind air sampling station week 10/12/20 - 10/16/20 is less than 104 hours due to relocating the station outside the radiologically controlled area.
Sampling period for week 11/23/20 - 11/25/20 is less than 104 hours due to company holidays (Thanksgiving and the day after Thanskgiving).
Sampling period for week 12/21/20 - 12/22/20 is less than 104 hours due to weather conditions (rain)
Sampling period for week 1/5/21 - 1/8/21 is less than 104 hours due to weather conditions (rain)
Sampling period for week 1/20/21 - 1/22/21 is less than 104 hours due to weather conditions (wind and rain)
Sampling period for week 2/8/21 - 2/12/21 is less than 104 hours due to weather conditions (rain)
Sampling period for week 2/15/21 - 2/19/21 is less than 104 hours due to weather conditions (rain)
Sample locations are shown on Figure 1.
µCi/mL - microcurie per milliliter
J - the concentration is an approximate value
JB - indicates the detected concentrations is estimated due to blank/background detections
U - not detected at specified reporting limit
UJ - not detected at specified reporting limit; the concentration is an approximate value

# ATTACHMENT 2
# AIR MONITORING RESULTS SUBTRACTION CRITERIA

## Parcel G Air Monitoring Results Subtraction Criteria

| Predominant Wind Direction | | Air Monitoring Results Analysis [a, b] |
|---|---|---|
| N | Wind blows from N to S | Deduct upwind station results from downwind station results |
| NNE | Wind blows from NNE to SSW | No deduction but may compare site results, location of site activities, and off-site activities potentially generating particulates to determine site-related impacts |
| NE | Wind blows from NE to SW | No deduction but may compare site results, location of site activities, and off-site activities potentially generating particulates to determine site-related impacts |
| ENE | Wind blows from ENE to WSW | No deduction but may compare site results, location of site activities, and off-site activities potentially generating particulates to determine site-related impacts |
| E | Wind blows from E to W | No deduction but may compare site results, location of site activities, and off-site activities potentially generating particulates to determine site-related impacts |
| ESE | Wind blows from ESE to WNW | Deduct downwind station results from upwind station results (i.e., switch downwind/upwind when predominant wind blowing in this direction) |
| SE | Wind blows from SE to NW | Deduct downwind station results from upwind station results (i.e., switch downwind/upwind when predominant wind blowing in this direction) |
| SSE | Wind blows from SSE to NNW | Deduct downwind station results from upwind station results (i.e., switch downwind/upwind when predominant wind blowing in this direction) |
| S | Wind blows from S to N | Deduct downwind station results from upwind station results (i.e., switch downwind/upwind when predominant wind blowing in this direction) |
| SSW | Wind blows from SSW to NNE | No deduction but may compare site results, location of site activities, and off-site activities potentially generating particulates to determine site-related impacts |
| SW | Wind blows from SW to NE | No deduction but may compare site results, location of site activities, and off-site activities potentially generating particulates to determine site-related impacts |

| Predominant Wind Direction | | Air Monitoring Results Analysis [a, b] |
|---|---|---|
| WSW | Wind blows from WSW to ENE | No deduction but may compare site results, location of site activities, and off-site activities potentially generating particulates to determine site-related impacts |
| W | Wind blows from W to E | No deduction but may compare site results, location of site activities, and off-site activities potentially generating particulates to determine site-related impacts |
| WNW | Wind blows from WNW to ESE | Deduct upwind station results from downwind station results |
| NW | Wind blows from NW to SE | Deduct upwind station results from downwind station results |
| NNW | Wind blows from NNW to SSE | Deduct upwind station results from downwind station results |

Notes:

[a] Air monitoring includes filter-based air sampling and real-time dust monitoring.

[b] Air monitoring results will be subtracted based on predominant wind direction when wind speeds are greater than 5 miles per hour.