

# EAST SIDE COASTAL RESILIENCY

SANDRESM2 | PROJECT AREA 2

## AIR QUALITY MONITORING REPORT

### Q1 | 2021

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NEW YORK CITY DEPARTMENT OF DESIGN & CONSTRUCTION IN PARTNERSHIP WITH  
THE CITY OF NEW YORK

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# PART 1

## I. Introduction

The East Side Coastal Resiliency (ESCR) Project is a coastal protection initiative, jointly funded by the City of New York and the federal government, aimed at reducing flood risk due to coastal storms and sea level rise on Manhattan's East Side from East 25th Street to Montgomery Street. The boundaries of this project correspond with the natural "pinch-points" in the 100-year floodplain: areas where the land is higher along the coastline, making it easier to close the system off from water entering from the north and south. The project design integrates flood protection into the community fabric, improving waterfront open spaces and access, rather than walling off the neighborhood.

The ESCR project will protect 110,000 New Yorkers from the impacts of climate change by reducing flood risk to communities, properties, businesses, critical infrastructure, and public open spaces. In addition to providing flood protection, the project will strengthen and enhance waterfront spaces on Manhattan's East Side by improving accessibility, increasing ecological diversity, and delivering improved recreational amenities to a vibrant and highly diverse community. The ESCR project is among the largest and most technically complex infrastructure projects in New York City's history.

For more information visit the project website at [www.nyc.gov/escr](http://www.nyc.gov/escr)



Fig.1 East Side Coastal rendered aerial of Project Area 1 East River Park

## II. Project Area

Construction work for the full East Side Coast Resiliency project is divided into three main **Project Areas**:

- **Project Area 1 (PA1)** is concentrated in Manhattan's Lower East Side (LES) between Montgomery St. and East 15th St., including the East River Park.
- **Project Area 2 (PA2)** encompasses work between East 15th St. and East 25th St. including Asser Levy Playground, Stuyvesant Cove Park, Murphy Brothers Playground, as well as local streets around the Con Edison facility.
- **Parallel Conveyance (PC)** work is made up of inland drainage infrastructure improvements within the overall ESCR project footprint. This work will occur on local streets between Montgomery St. and East 23rd St.

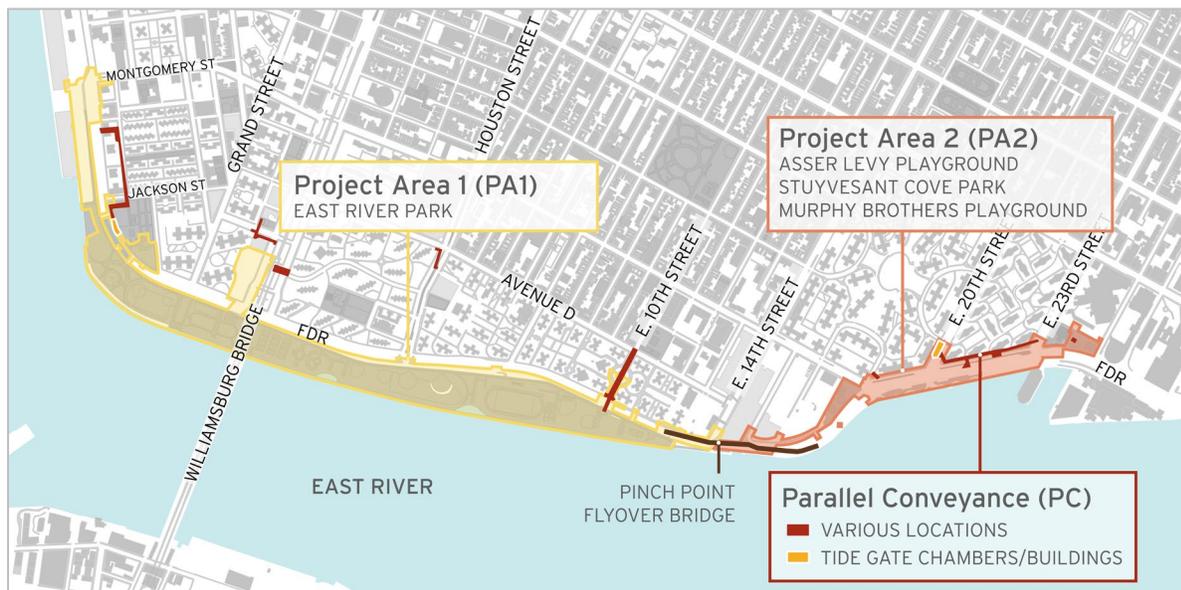


Fig.2 East Side Coastal Resiliency Project Areas

### Project Area 2

The construction in Project Area 2 will occur in three main phases from north to south and will be staggered to minimize open space impacts. The construction timeline, as shown in Fig. 3 on the next page, will be broken down as follows by area (subject to change):

- **Phase I:** Asser Levy Playground Flood Wall/Gates and Park Restoration: Early 2021 to Mid 2022
- **Phase I:** Stuyvesant Cove Park: Solar One Flood Wall and Gate: Early 2021 to Late 2021
- **Phase II & III:** Stuyvesant Cove Park Flood Wall and Restoration: Mid 2021 to Mid 2024 (work will take place in two phases)
- **Phase IV:** Murphy Brothers Playground Flood Wall and Restoration: Late 2022 to Late 2024

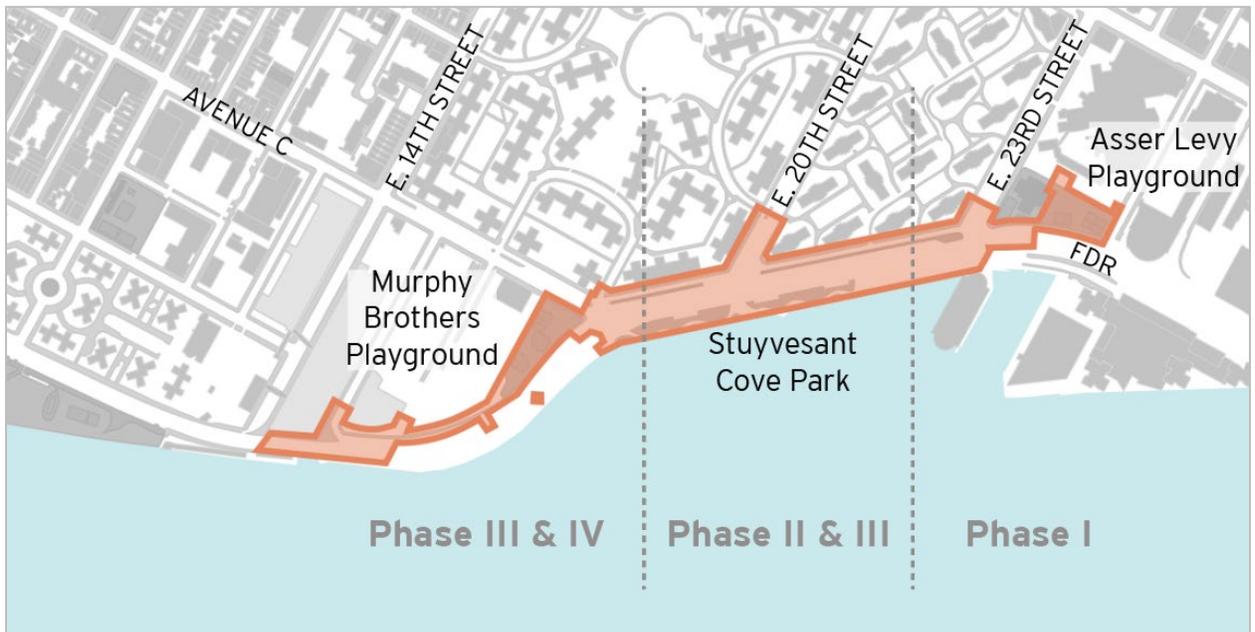


Fig.3 East Side Coastal Resiliency **Project Area 2** Proposed Phasing (subject to change)

Air Quality Monitoring began in January of 2021 and will continue throughout the life of the project.

### III. Air Quality Monitoring

The proposed project would involve the installation of a flood protection system generally located within City parkland and streets between Montgomery Street to the south and East 25th Street to the north. The proposed flood protection system would consist of a combination of floodwalls, levees, and/or closure structures that, together with other infrastructure improvements, would improve the resiliency of this area to coastal flooding while simultaneously improving access and community connectivity to the waterfront. The proposed project would require the demolition or disturbance of existing structures, excavation, and disturbance and removal of some of the existing fill and soil, with the importation of fill material to raise the ground level throughout East River Park.

As discussed in the ESCR Final Environmental Impact Assessment, Chapter 6.10 Construction Air-Quality:

Construction of the proposed project requires the use of both nonroad construction equipment and on-road vehicles. Nonroad construction equipment includes equipment operating on-site such as pile drivers, excavators, and loaders. On-road vehicles include construction trucks arriving to and departing from the project area as well as operating on-site. Emissions from nonroad construction equipment and on-road vehicles, as well as dust-generating construction activities such as truck loading and unloading operations, have the potential to affect air quality.

In general, much of the heavy equipment used in construction is powered by diesel engines that have the potential to produce relatively high levels of nitrogen oxides (NO<sub>x</sub>) and particulate matter (PM) (both PM<sub>10</sub> and PM<sub>2.5</sub>) emissions. Dust generated by construction activities is also a source of PM emissions.

Measures would be taken to reduce pollutant emissions during construction in accordance with all applicable laws, regulations, and building codes as well as New York City Local Law 77. With the implementation of these emission reduction measures, construction of the Preferred Alternative would not result in any predicted concentrations above the National Ambient Air Quality Standards (NAAQS) for NO<sub>2</sub>, CO, and PM<sub>10</sub> or the de minimis thresholds for PM<sub>2.5</sub> from nonroad and on-road sources. Therefore, no significant adverse air quality impacts are predicted from the construction of the Preferred Alternative.

This report and those moving forward summarize the Particulate Matter (PM) readings collected by Distinct Environmental Group, environmental subconsultant to the Project Area 2 contractor Perfetto Contracting Corporation (PCC).

## IV. What is Particulate Matter (PM) and How is it Measured?

As described by the [Environmental Protection Agency](#):

PM stands for particulate matter (also called particle pollution): the term for a mixture of solid particles and liquid droplets found in the air. Some particles, such as dust, dirt, soot, or smoke, are large or dark enough to be seen with the naked eye. Others are so small they can only be detected using an electron microscope. Particle pollution includes:

- PM10: inhalable particles, with diameters that are generally 10 micrometers and smaller
- PM2.5: fine inhalable particles, with diameters that are generally 2.5 micrometers and smaller

Sources of PM:

These particles come in many sizes and shapes and can be made up of hundreds of different chemicals. Some are emitted directly from a source, such as construction sites, unpaved roads, fields, smokestacks, or fires. Most particles form in the atmosphere as a result of complex reactions of chemicals such as sulfur dioxide and nitrogen oxides, which are pollutants emitted from power plants, industries, and automobiles.

The Clean Air Act requires EPA to set national air quality standards for particulate matter, as one of the six criteria pollutants considered harmful to public health and the environment. The law also requires EPA to periodically review the standards to ensure that they provide adequate health and environmental protection, and to update those standards as necessary. National Ambient Air Quality Standards (NAAQS) for PM pollution specify a maximum amount of PM to be present in outdoor air.

There are different standards for PM10 and PM2.5. Limiting PM pollution in the air protects human health and the environment. Currently, the EPA has primary (health-based) and secondary (welfare-based) standards for PM2.5 (annual average standards with levels of 12.0  $\mu\text{g}/\text{m}^3$  and 15.0  $\mu\text{g}/\text{m}^3$ , respectively; 24-hour standards with 98th percentile forms and levels of 35  $\mu\text{g}/\text{m}^3$ ) and PM10 (24-hour standards with one-expected exceedance forms and levels of 150  $\mu\text{g}/\text{m}^3$ ).

The Air Quality Monitoring program for the ESCR Project measures both PM10 and PM2.5 levels as well as atmospheric conditions. The table here illustrates the Permissible Exposure Limit (PEL) and Action Levels (AL) for net PM 2.5 and PM10 concentrations over a 24-hour Time Weighted Average (TWA):

	<b>Action Level (AL) over a 24-hour TWA</b>	<b>Permissible Exposure Limit (PEL) over a 24-hour TWA</b>
<b>PM 2.5</b>	25 $\mu\text{g}/\text{m}^3$	35 $\mu\text{g}/\text{m}^3$
<b>PM10</b>	100 $\mu\text{g}/\text{m}^3$	150 $\mu\text{g}/\text{m}^3$

**Net particulate matter (Net PM)** readings are determined as the difference between the upwind and downwind monitoring stations as determined on any day given the wind speed and wind direction. A station is considered undetermined (not upwind or downwind) if the wind speed is less than 0.5 meters per second. In these circumstances the Net PM (blue line) will be absent from the data plot. At each

construction location at least two air quality monitors are required to determine the Net PM. (See Part 2 Section I. ESCR Project Area 2 Phase 1 Construction & Air Quality Monitoring for monitoring station locations)

**Daily value** for PM refers to the 24-hour average concentration of PM calculated or measured from midnight to midnight (local time).

The **Permissible Exposure Limit (PEL)** is a regulatory limit to protect public health/welfare set by the National Ambient Air Quality Standards (NAAQS) in line with the requirements of the Clean Air Act (CAA) on the amount or concentration of a substance in the air. The Environmental Protection Agency (EPA) has set a 24-hour time weighted average (TWA) as standard for evaluating Particulate Matter (PM) levels (Daily value). \*Note: in the line graphs presented in the Appendix, readings are averaged in 15-min intervals and do not represent the standard TWA of 24-hrs. A conservative approach is being taken to closely monitor the project's air quality.

The **Action Level (AL)** is the level set by the ESCR Air Quality Monitoring Plan, lower than the Permissible Exposure Limit (PEL), by where the contractor will be made aware of an increase in particulate matter before reaching the PEL, to begin to implementing mitigation techniques. Automated alerts are dispatched to designated Perfetto and HNTB-LiRo personnel whenever the AL is exceeded.

**Exceedance** means a daily value that is above the level of the 24-hour standard after rounding to the nearest 10  $\mu\text{g}/\text{m}^3$  (i.e., values ending in 5 or greater are to be rounded up).

An **exceptional event** is an uncontrollable event caused by natural sources of particulate matter or an event that is not expected to recur at a given location. Inclusion of such a value in the computation of exceedances or averages could result in inappropriate estimates of their respective expected annual values.

An **outlier** is a data point on a graph or in a set of results that is very much bigger or smaller than the next nearest data point. For example, outliers among monitoring data can be due to instrument malfunctions, the influence of harsh environments, and the limitation of measuring methods.

The guide on the next page will help to understand the information presented in the Data Plots located in the Appendix by month.

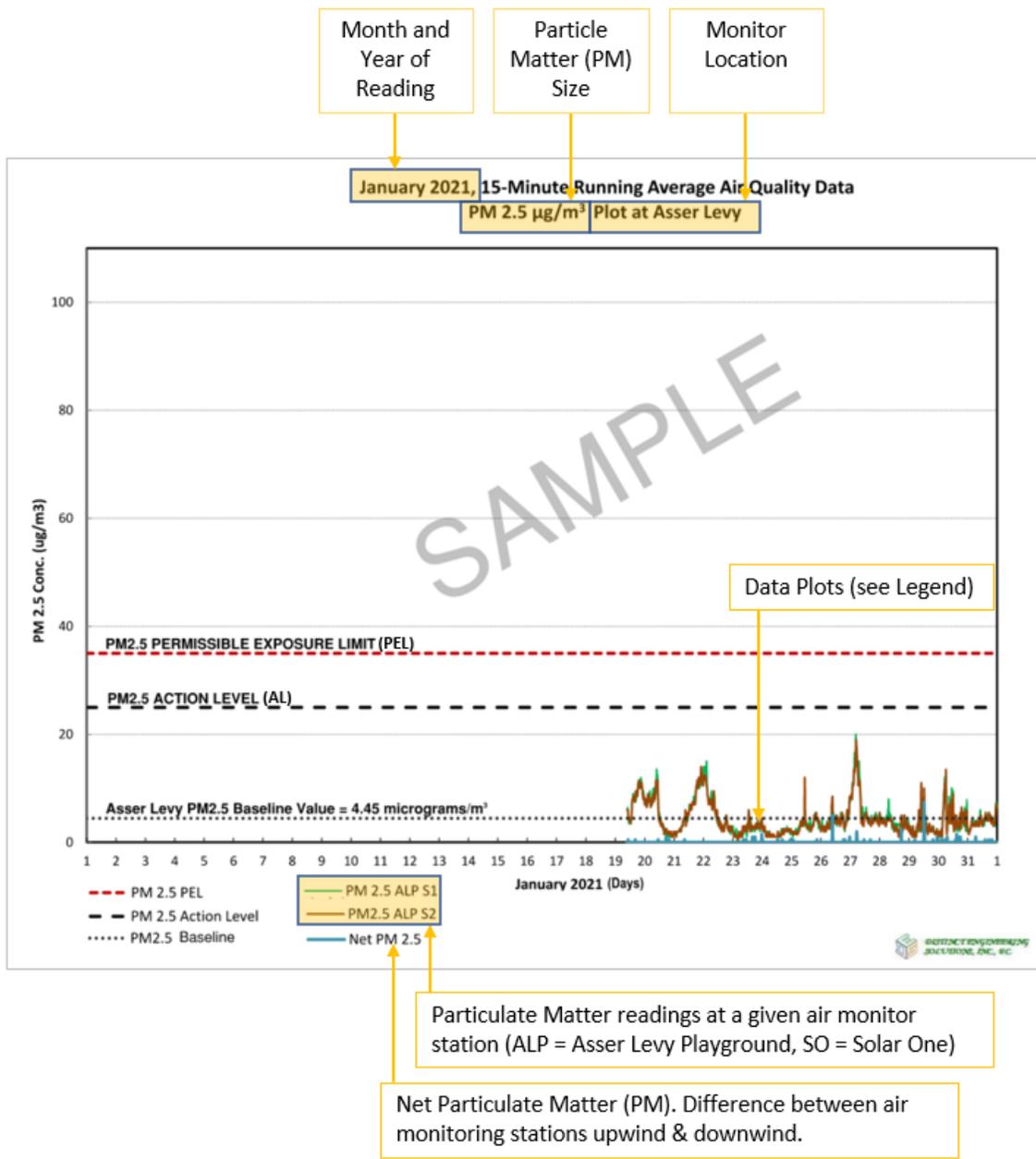


Fig.4 Sample Air Quality Data Plot

## V. ESCR Air Quality Management Program

Community health and safety is of utmost importance to the City of New York, the NYC Department of Design and Construction (DDC), and the East Side Coastal Resiliency Team. The ESCR Team is implementing a multi-level approach to Air Quality Management with includes:

- Step 1: Air Quality Management Plan
- Step 2: Daily Air Quality Mitigation Techniques
- Step 3: Daily Air Quality Monitoring
- Step 4: Air Quality oversight by environmental specialists

### **Step 1: The Air Quality Management Plan**

The AQM Plan is submitted at the start of the project to outline the management of air quality for the project. It includes contractor roles and responsibilities, mitigation techniques, and action plans. This Plan is reviewed and approved by the Program Management / Construction Management (PMCM) Team HNTB-LiRo-Joint Venture, and the DDC.

### **Step 2: Daily Air Quality Mitigation Techniques**

As mentioned in Chapter 6.6 of the EIS, Construction -Hazardous Materials Section “ Dust management during soil-disturbing work would include the following: (1) use of water spray for roads, trucks, excavation areas and stockpiles; (2) use of anchored tarps to cover stockpiles; (3) use of truck covers during soil transport within site limits and during off-site transport; (4) employment of extra care during dry and/or high-wind periods; (5) use of gravel or recycled concrete aggregate on egress and other roadways to provide a clean and dust-free road surface; and (6) use of a truck wheel wash at site access/egress points to prevent fugitive dust and off-site migration of dust and other particulates. The source(s) of any dust emissions would be identified and addressed immediately and appropriately.

### **Step 3: Daily Air Quality Monitoring**

The air quality monitoring confirms the daily mitigation techniques in place are being implemented and are effective. Action levels are set to alert the contractor when a technique is not working, and adjustments are required to maintain the levels as set by the National Ambient Air Quality Standards (NAAQS) for PM pollution as mentioned above. Step 3 is implemented daily and mitigation techniques will vary depending on work activities. The EPA Standard Time Weighted Average (TWA) for analyzing PM levels is 24hours, the ESCR project is analyzing levels more frequently at 15min TWA.

### **Step 4: Air Quality Oversight by Environmental Specialists**

The oversight for environmental monitoring for the ESCR project is multi-tiered and includes relationships between several agencies and entities. As shown in the exhibit on the following page, a series of checks and balances have been implemented to assure compliance with environmental regulations. See [Fig. 5 East Side Coastal Resiliency Air Quality Monitoring Flow Chart](#)

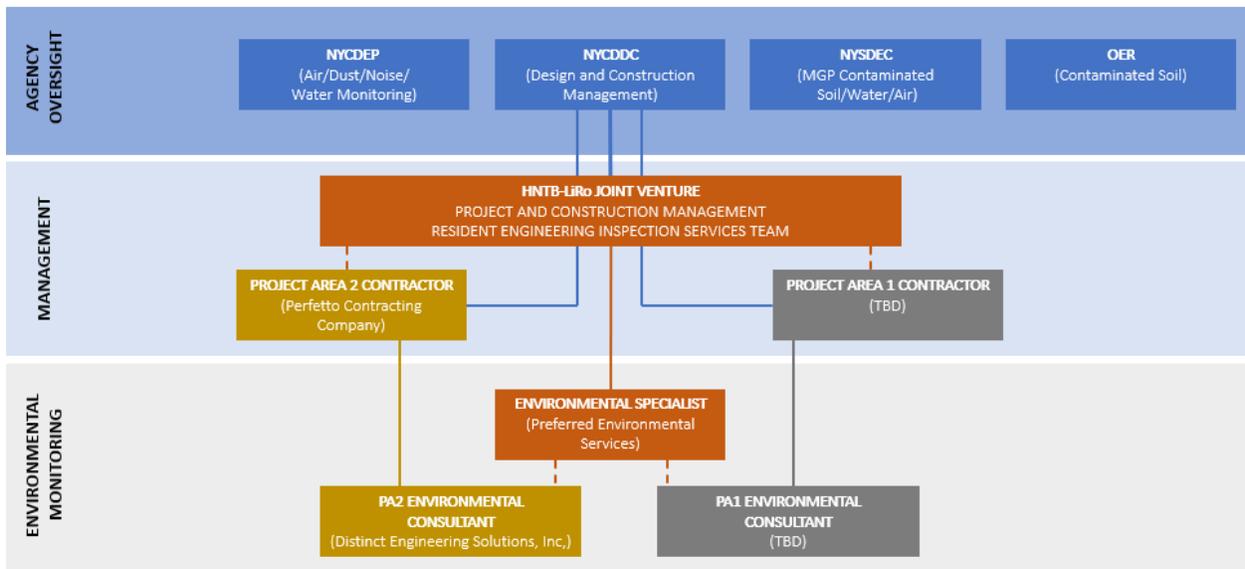


Fig.5 East Side Coastal Resiliency Air Quality Monitoring Flow Chart

# PART 2

## I. ESCR Project Area 2, Phase 1 Construction & Air Quality Monitoring

This report covers current construction within Project Area 2, Phase 1, in the area along Avenue C, north to Asser Levy Playground (ALP) at E 25<sup>th</sup> Street, and south to E 20<sup>th</sup> Street within Stuyvesant Cove Park adjacent to the Solar One (SO) Building.

Four (4) air quality monitoring stations are set up within the active construction zone as shown in the graphic below. **ALP-S1** and **ALP-S2** monitoring stations were installed in **Asser Levy Playground (ALP)** on January 8, 2021. **SO-S3** and **SO-S4** monitoring stations were installed around the **Solar One (SO)** construction site on January 11, 2021. On March 25, the SO-S4 monitoring station was relocated, because its proximity to idling buses at the M9 and M23 bus stop caused the monitors to show unusually high readings of particulate matter in the months prior. This was considered an exceptional event, an event not expected to occur at the location.

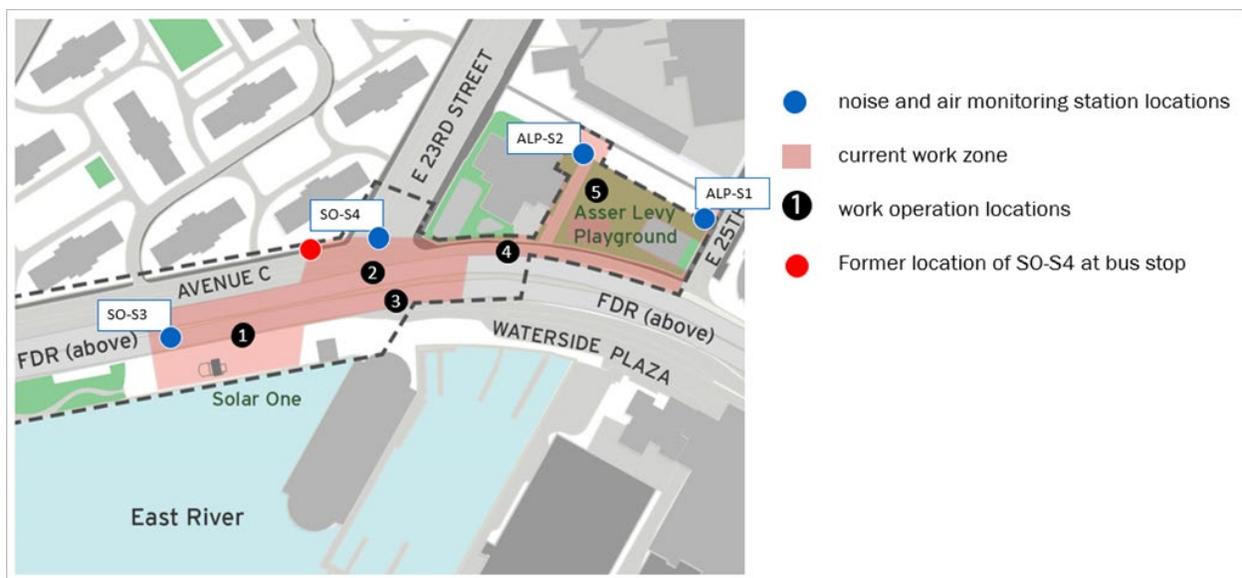


Fig.6 East Side Coastal Resiliency Project Area 2 Phase 1 Air Quality Monitoring Station Locations

The four air monitoring stations are housed in a weather-resistant enclosure and connected to a system that tracks and sends live alerts when an action level is hit, or other issue such as a low battery. When alerts are received by the general contractor (GC) and construction manager (CM) actions are taken to understand the cause of the alert and take actions necessary to remediate the condition.

Though air quality is monitored 24/7, typical work hours are as follows during the period of this report:

- Daytime: 7:00 am – 3:30 pm
- Nighttime: 9:30 pm – 5:00 am

## II. Air Quality Monitoring Summary of Data

This section describes by month the following:

- A. **Work Activities** by area, see [Fig. 6 in Section I. ESCR Project Area 2 Phase 1 Construction & Air Quality Monitoring](#)
- B. PM 2.5 and PM 10 **Data Summary & Mitigation Measures** performed by the contractor Perfetto Contractor Corporation (PCC).

As mentioned earlier, potential mitigation techniques used by the contractor include, however are not limited to:

- use of water spray for roads, trucks, excavation areas and stockpiles
- use of anchored tarps to cover stockpiles
- use of truck covers during soil transport within site limits and during off-site transport
- employment of extra care during dry and/or high-wind periods
- use of gravel or recycled concrete aggregate on egress and other roadways to provide a clean and dust-free road surface
- use of a truck wheel wash at site access/egress points to prevent fugitive dust and off-site migration of dust and other particulates

The data plots illustrate **Net Particulate Matter (Net PM)** levels (blue line on data plot) in a **15-minute Time Weighted Average (TWA)** average where the EPA standard TWA is 24-hrs. this is also known as the **Daily Value**. See [Part 1, Section IV. What is Particulate Matter \(PM\) and How is it Measured?](#) for a greater explanation of the terms in this section.

For the months of January 2021 – May 2021, construction related Particulate Matter (PM) net 2.5 or 10 levels did not surpass Daily Permissible Exposure Limits (PEL) and did not cause air quality concerns to the public or on-site workers. The contractor, PCC, in conjunction with the contractor's environmental specialist, has successfully implemented mitigation techniques at both Action Levels as well as Permissible Exposure Limits to suppress construction activity effects on air quality at Asser Levy Playground and Solar One.

## January 2021:

### A. Work Activities during this period included:

- **Area 1: North Stuyvesant Cove Park at Solar One (Daytime work)**
  - Test pits, utility relocations
- **Area 2: FDR Dr. West Service Rd. between E23rd & E25th St. (Nighttime work)**
  - Test pits, install of sewer and water main
- **Area 3: E23rd St. under the FDR Dr. (Daytime work)**
  - Test pit, site preparation work
- **Area 4: FDR Dr. East Service Rd. at E 23<sup>rd</sup> St. (Daytime work)**
  - No work
- **Area 5: Asser Levy Playground (Daytime work)**
  - Test pits, utility relocations

### B. Data Summary & Mitigation Measures

There was one occasion where readings above the PM<sub>2.5</sub> PEL during the month of January. There were no occasions where readings were above the PM<sub>10</sub> PEL and AL in the month of January.

#### **PM 2.5 µg/m<sup>3</sup>**

- **Asser Levy Playground (ALP):** PM 2.5 µg/m<sup>3</sup> levels remained under the Permissible Exposure Limit (PEL).
- **Solar One (SO):** The Net PM 2.5 µg/m<sup>3</sup> showed increased levels on January 19-20, 2021, between the hours of 10:54 pm and 1:05am outside of the daytime working hours in this location. This was a result of the SO-S4 air monitoring station being located in close proximity of the bus stop adjacent to idling buses.

#### **Mitigation Measures**

- No mitigation measures were taken, as the impact was outside of daytime working hours. (The SO-04 monitor will ultimately be relocated in March 2021, due to proximity to the bus stop.)

#### **PM 10 µg/m<sup>3</sup>**

- **Asser Levy Playground (ALP):** PM 10 µg/m<sup>3</sup> levels remained under the Permissible Exposure Limit (PEL).
- **Solar One (SO):** PM 10 µg/m<sup>3</sup> levels remained under the Permissible Exposure Limit (PEL).

## February 2021:

### A. Work Activities during this period included:

- **Area 1: North Stuyvesant Cove Park at Solar One (Daytime work)**
  - Test pits, utility relocations, preparation work for flood wall
- **Area 2: FDR Dr. West Service Rd. between E23rd & E25th St. (Nighttime work)**
  - Test pits, utility relocation
- **Area 3: E23rd St. under the FDR Dr. (Daytime work)**
  - Test pit, utility relocation work, site preparation work
- **Area 4: FDR Dr. East Service Rd. at E 23<sup>rd</sup> St. (Daytime work)**
  - Utility relocations
- **Area 5: Asser Levy Playground (Daytime work)**
  - Test pits, utility relocations, site removals

### B. Data Summary & Mitigation Measures

There were no PM10 readings recorded above the Permissible Exposure Limit and the Action Level during the month of February. There were a series of days where the PM2.5 readings were above the Action Level and Permissible Exposure Limit for the month of February.

An outlier condition occurred during the monitoring period of 02/07/21 to 02/13/21 this was due to the idling buses which caused the sensor to trip causing the gap in the readings.

#### **PM 2.5 µg/m<sup>3</sup>**

- **Asser Levy Playground (ALP):** PM 2.5 µg/m<sup>3</sup> levels remained under the Permissible Exposure Limit (PEL).
- **Solar One (SO):** The Net PM 2.5 µg/m<sup>3</sup> showed increased levels a result of the SO-S4 air monitoring station being located in close proximity of the bus stop and plow idling location. The majority of the increased levels occurred overnight, outside of the daytime working hours in this location.

#### **Mitigation Measure:**

- The levels at Solar One (SO) were monitored, and due to the consistent increased readings towards the end of the month, it was determined to move the monitor from the bus stop location to the intersection of E 23<sup>rd</sup> St. and Ave. C away from the active bus stop. PCC also determined that the monitor was faulty and required replacement. This replacement and move occurred in the month of March. This occurrence was considered an exceptional event.

#### **PM 10 µg/m<sup>3</sup>**

- **Asser Levy Playground (ALP):** PM 10 µg/m<sup>3</sup> levels remained under the Permissible Exposure Limit (PEL).
- **Solar One (SO):** PM 10 µg/m<sup>3</sup> levels remained under the Permissible Exposure Limit (PEL).

## March 2021:

### A. Work Activities during this period included:

- **Area 1: North Stuyvesant Cove Park at Solar One (Daytime work)**
  - Test pits, utility relocations, preparation work for flood wall
- **Area 2: FDR Dr. West Service Rd. between E23rd & E25th St. (Nighttime work)**
  - Test pits, utility relocation
- **Area 3: E23rd St. under the FDR Dr. (Daytime work)**
  - Test pit, utility relocation work, site preparation work
- **Area 4: FDR Dr. East Service Rd. at E 23<sup>rd</sup> St. (Daytime work)**
  - Utility relocations
- **Area 5: Asser Levy Playground (Daytime work)**
  - Test pits, utility relocations

### B. Data Summary & Mitigation Measures

There were no PM10 readings recorded above the Permissible Exposure Limit at Solar One and Asser Levy Playground.

There were a series of days where the PM2.5 readings were above the Action Level and Permissible Exposure Limit at the Solar One location for the month of March.

#### **PM 2.5 µg/m<sup>3</sup>**

- **Asser Levy Playground (ALP):** PM 2.5 µg/m<sup>3</sup> levels remained under the Permissible Exposure Limit (PEL).
- **Solar One (SO):** The Net PM 2.5 µg/m<sup>3</sup> showed increased levels a result of the SO-S4 air monitoring station being located in close proximity of the bus stop. No data is available for the SO-S4 monitor between 3/12/21 and 3/24/21 as the monitor was uninstalled, relocated, and replaced. No major construction activities were occurring at this time to justify the high readings at this location. This occurrence was considered an exceptional event.

#### **Mitigation Measure:**

- As mentioned, the situation was monitored and due to the consistent increased readings, it was determined to move the monitor from the bus stop location to the intersection of E 23<sup>rd</sup> St. and Ave. C away from the active bus stop. Perfetto also determined that the monitor was faulty and required replacement.

#### **PM 10 µg/m<sup>3</sup>**

- **Asser Levy Playground (ALP):** PM 10 µg/m<sup>3</sup> levels remained under the Permissible Exposure Limit (PEL).
- **Solar One (SO):** PM 10 µg/m<sup>3</sup> levels remained under the Permissible Exposure Limit (PEL).

## April 2021:

### A. Work Activities during this period included:

- **Area 1: North Stuyvesant Cove Park at Solar One (Daytime work)**
  - Utility relocation work, begin installation of piles
- **Area 2: FDR Dr. West Service Rd. between E23rd & E25th St. (Nighttime work)**
  - Utility relocation, install temporary pavement
- **Area 3: E23rd St. under the FDR Dr. (Daytime work)**
  - Utility relocation work, site preparation for pile installation
- **Area 4: FDR Dr. East Service Rd. at E 23<sup>rd</sup> St. (Daytime work)**
  - Utility relocations
- **Area 5: Asser Levy Playground (Daytime work)**
  - Begin installation of piles

### B. Data Summary & Mitigation Measures

**There were two occasions where the PM10 readings recorded above the Permissible Exposure Limit at Solar One and Asser Levy Playground in the month of April.**

**There were a series of days where the PM2.5 readings were above the Action Level and Permissible Exposure Limit at Asser Levy Playground location for the month of April.**

#### **PM 2.5 µg/m<sup>3</sup>**

- **Asser Levy Playground (ALP):** The Net Permissible Exposure Limit (PEL) was surpassed on three, 15-minute occurrences for PM 2.5. On no day was the 24-hour Time Weighted Average (TWA) or Daily Value in exceedance:
  1. The Net PM 2.5 µg/m<sup>3</sup> showed increased levels on Sunday 4/11/21, from 2:30am to 7:30am. PCC was neither on site nor performing any work during this time, so exceedances are not attributed to PCC construction activities. Values recorded were slightly above the PEL and downwind station was undetermined for the majority of the values - this means that wind speeds at one or both monitors was less than 0.5 meters per second resulting in the highly unlikely case that any airborne particulates might migrate off-site. There are no public or worker air quality concerns concerning this spike and the 24-hour Time Weighted Average (TWA) or Daily Value was not in exceedance.
  2. The Net PM 2.5 µg/m<sup>3</sup> showed increased levels on Thursday 4/15/21, from 10:25pm to 10:46pm. This short-term exceedance was at the Air Quality Monitor located in the park adjacent to the Asser Levy Bath House. Night shift work was occurring at this time at the West Service Road and this short-term spike is attributed to construction equipment (loader) idling adjacent to this monitor causing a very high reading. There are no public or worker air quality concerns concerning this spike and the 24-hour Time Weighted Average (TWA) or Daily Value was not in exceedance.
  3. The Net PM 2.5 µg/m<sup>3</sup> showed increased levels on Thursday 4/29/21. PM 2.5 values were measured at close to (and slightly above) the PEL for both monitors in the morning and in the afternoon. PCC monitored conditions upon receipt of the first alert. Downwind station was undetermined for the majority of these values meaning the wind speed for one or

both monitors was less than 0.5 meters per second indicating that any airborne particulates have a very low likelihood of migrating off site - also, the net value between the two monitors in Asser Levy was below the PEL threshold. These values recorded are attributed to sheet pile operations that day - major obstructions were encountered that morning and were excavated until early afternoon which are suspected to be the cause of the local and on-site spike in PM 2.5 values. There are no public or worker air quality concerns concerning this spike and the 24-hour Time Weighted Average (TWA) or Daily Value was not in exceedance.

- **Solar One (SO):** PM 2.5  $\mu\text{g}/\text{m}^3$  levels remained under the Permissible Exposure Limit (PEL).

#### **Mitigation Measures**

- No mitigation actions were needed for the first two items. For the third, PCC monitored conditions upon receipt of the first alert and implemented dust mitigation activities (spraying/wet misting). There are no public or worker air quality concerns and the 24-hour Time Weighted Average (TWA) was not in exceedance.

#### **PM 10 $\mu\text{g}/\text{m}^3$**

- **Asser Levy Playground (ALP):** High PM 10 values were recorded on 4/16/21 outside of the construction shift and therefore determined to not be caused by construction activities.
- **Solar One (SO):** PM 10  $\mu\text{g}/\text{m}^3$  levels remained under the Permissible Exposure Limit (PEL).

## Summary of Data May 2021:

- A. Work Activities during this period included:
- **Area 1: North Stuyvesant Cove Park at Solar One (Daytime work)**
    - Installation of piles, site work for flood wall footing, screening of excavated materials
  - **Area 2: FDR Dr. West Service Rd. between E23rd & E25th St. (Nighttime work)**
    - Utility relocations, installation of new utilities
  - **Area 3: E23rd St. under the FDR Dr. (Daytime work)**
    - Test pits, utility relocation work
  - **Area 4: FDR Dr. East Service Rd. at E 23<sup>rd</sup> St. (Daytime work)**
    - Utility relocations
  - **Area 5: Asser Levy Playground (Daytime work)**
    - Installation of piles and utilities
- B. Data Summary & Mitigation Measures

**There were three occasions where the PM10 readings recorded above the Permissible Exposure Limit at Asser Levy Playground in the month of May. The PM10 readings were below the Permissible Exposure Limit at Solar One.**

**There were three occasions where the PM2.5 readings were above the Action Level and Permissible Exposure Limit at Asser Levy Playground location for the month of May.**

### **PM 2.5 µg/m<sup>3</sup>**

- **Asser Levy Playground (ALP):** The Net Permissible Exposure Limit (PEL) was surpassed on three, 15-minute occurrences for PM 2.5 and quickly mitigated. On no day was the 24-hour Time Weighted Average (TWA) or Daily Value in exceedance:
  1. On 5/4/21, PM levels increased due to water main excavation activities at Asser Levy Playground.
  2. On 5/21/21, construction vehicles idling in relatively close proximity to the monitoring stations caused a spike in PM levels.
  3. On 5/26/21, construction operations in the park consisting of screening excavated material (separating large construction debris from excavated soil) caused a brief increase in PM levels.
- **Solar One (SO):** PM 2.5 µg/m<sup>3</sup> levels remained under the Permissible Exposure Limit (PEL).

### **Mitigation Action**

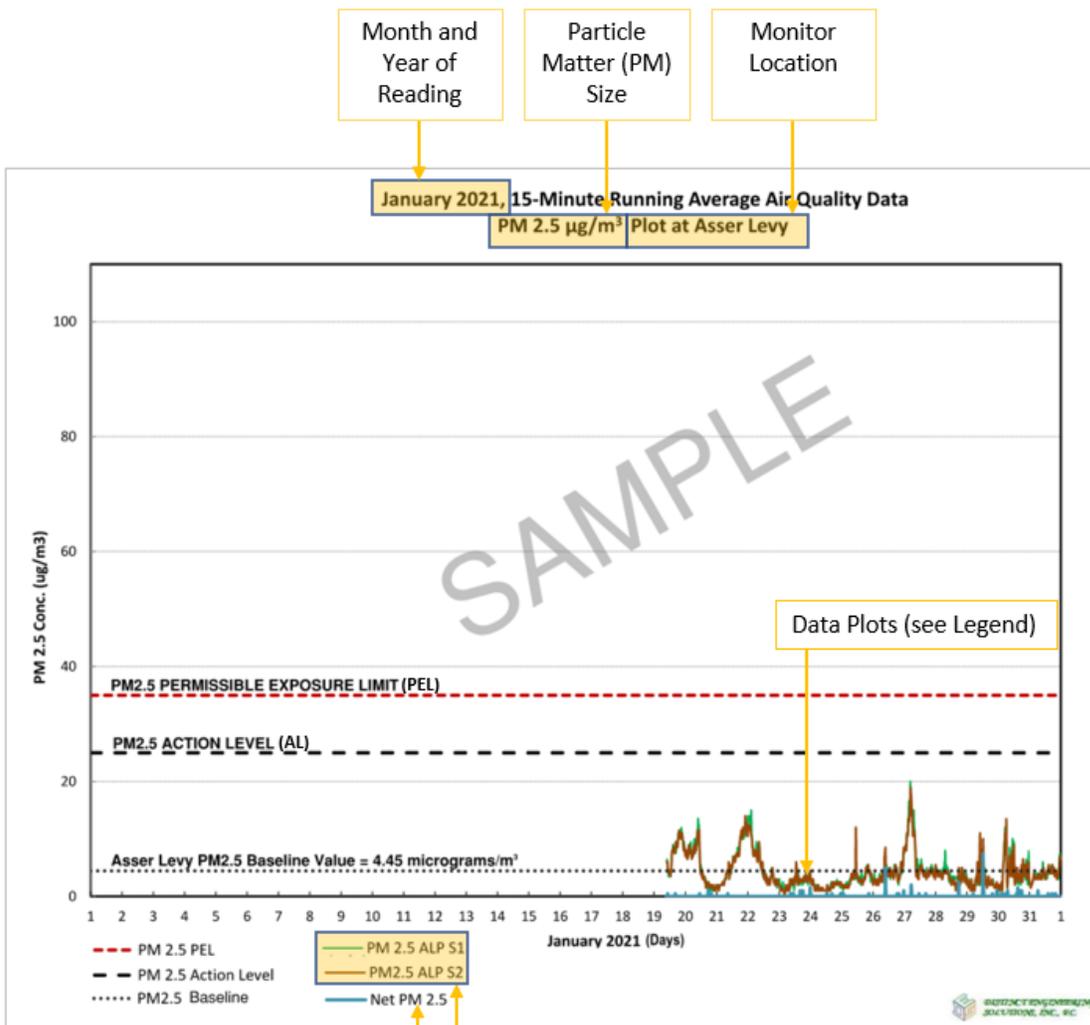
- For items 1 and 3 mentioned above PCC monitored conditions upon receipt of the first alert and implemented dust mitigation activities (spraying/wet misting). There are no public or worker air quality concerns and the 24-hour Time Weighted Average (TWA) or Daily Value was not in exceedance.
- For item 2, note that the contractor has been instructed to minimize idling time of trucks to cut down exhaustion.

### **PM 10 $\mu\text{g}/\text{m}^3$**

- **PEL Asser Levy Playground (ALP):** PM 10  $\mu\text{g}/\text{m}^3$  levels remained under the Permissible Exposure Limit (PEL).
- **Solar One (SO):** PM 10  $\mu\text{g}/\text{m}^3$  levels remained under the Permissible Exposure Limit (PEL).

# APPENDIX

See image below to help to understand the information presented in the Data Plots located in the Appendix by month. See [Part 1, Section IV. What is Particulate Matter \(PM\) and How is it Measured?](#) for a greater explanation of the terminology.

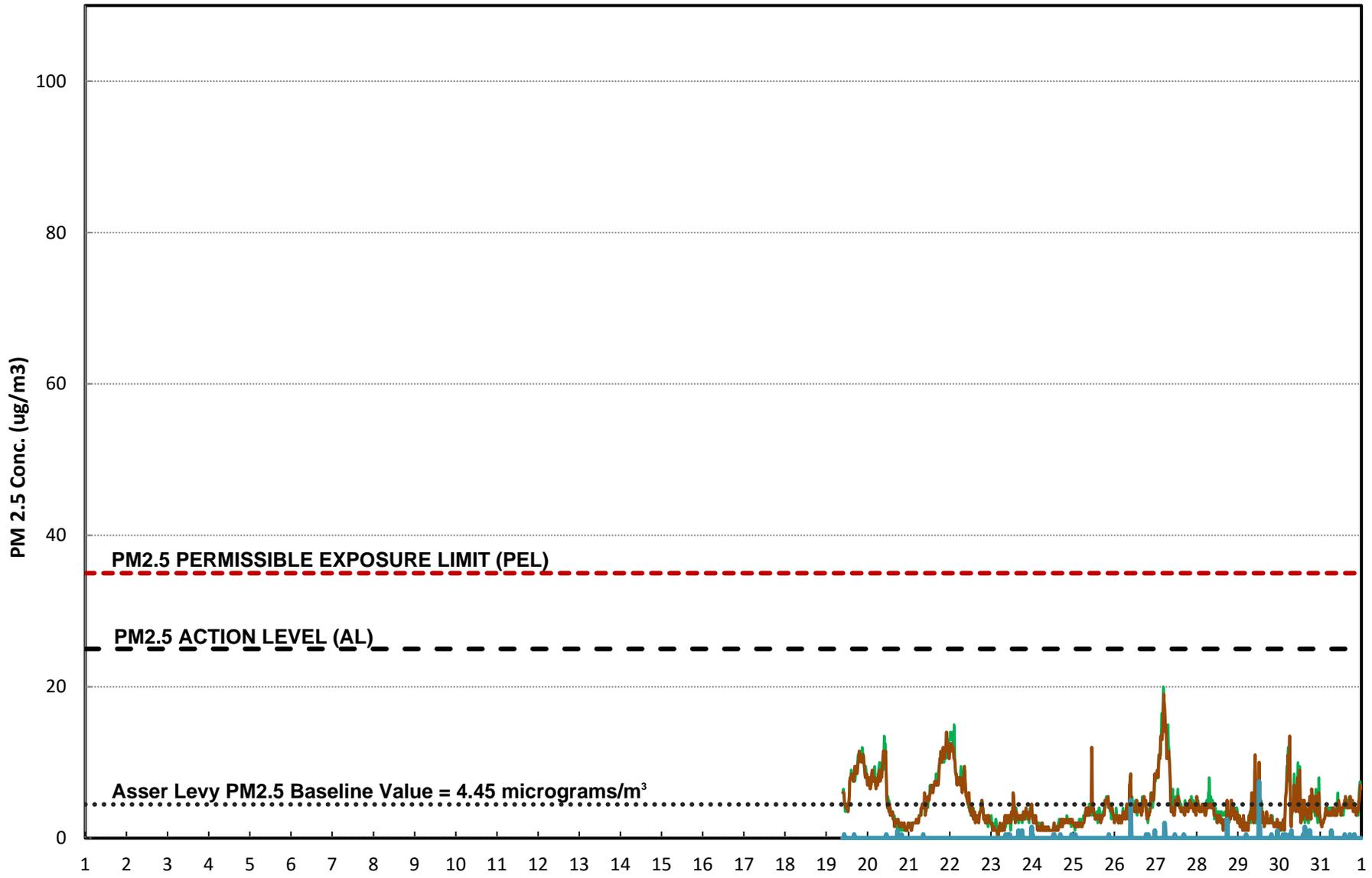


Particulate Matter readings at a given air monitor station (ALP = Asser Levy Playground, SO = Solar One)

Net Particulate Matter (PM). Difference between air monitoring stations upwind & downwind.

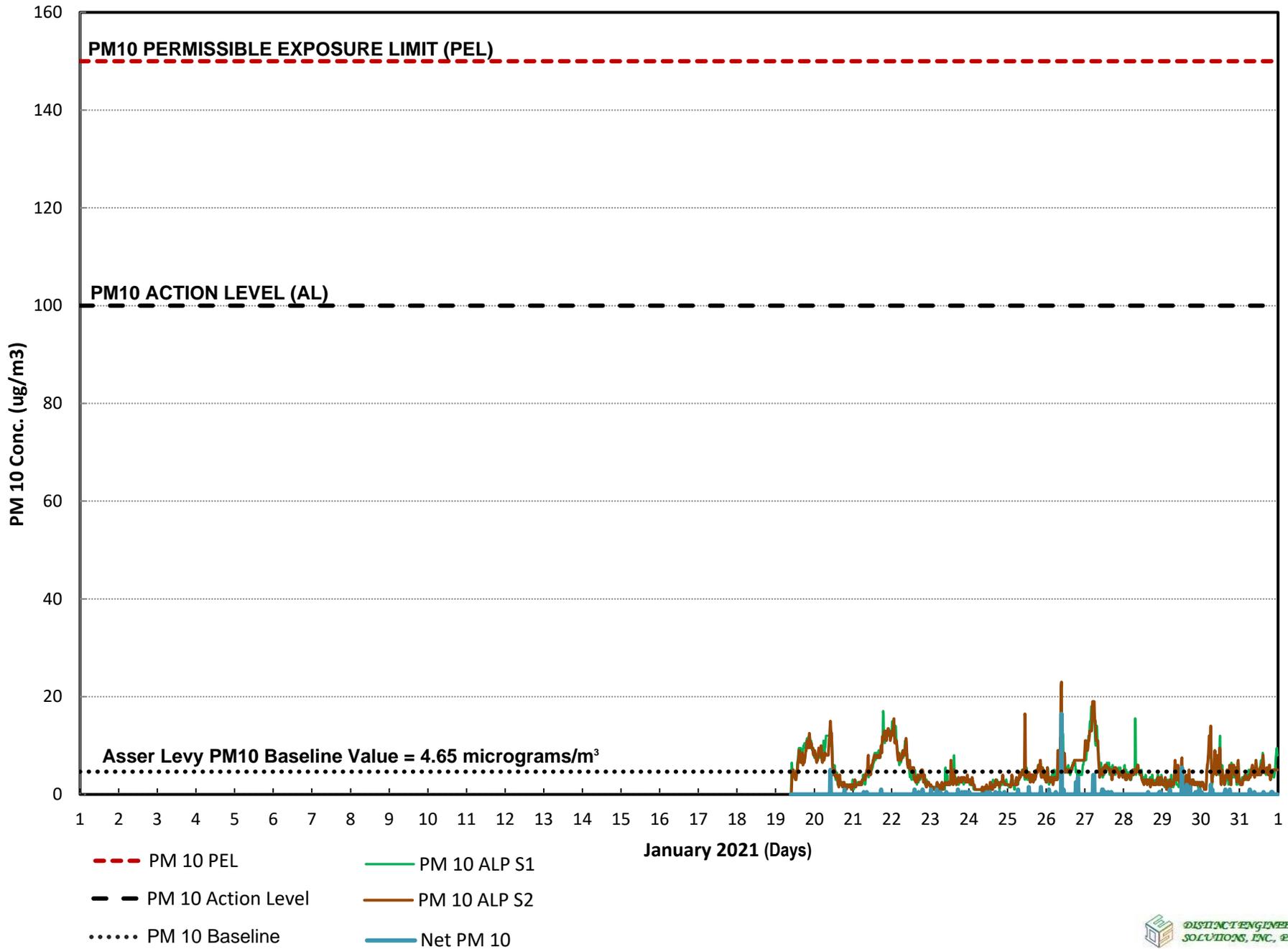
# JANUARY 2021 DATA PLOTS

# January 2021, 15-Minute Running Average Air Quality Data PM 2.5 $\mu\text{g}/\text{m}^3$ Plot at Asser Levy

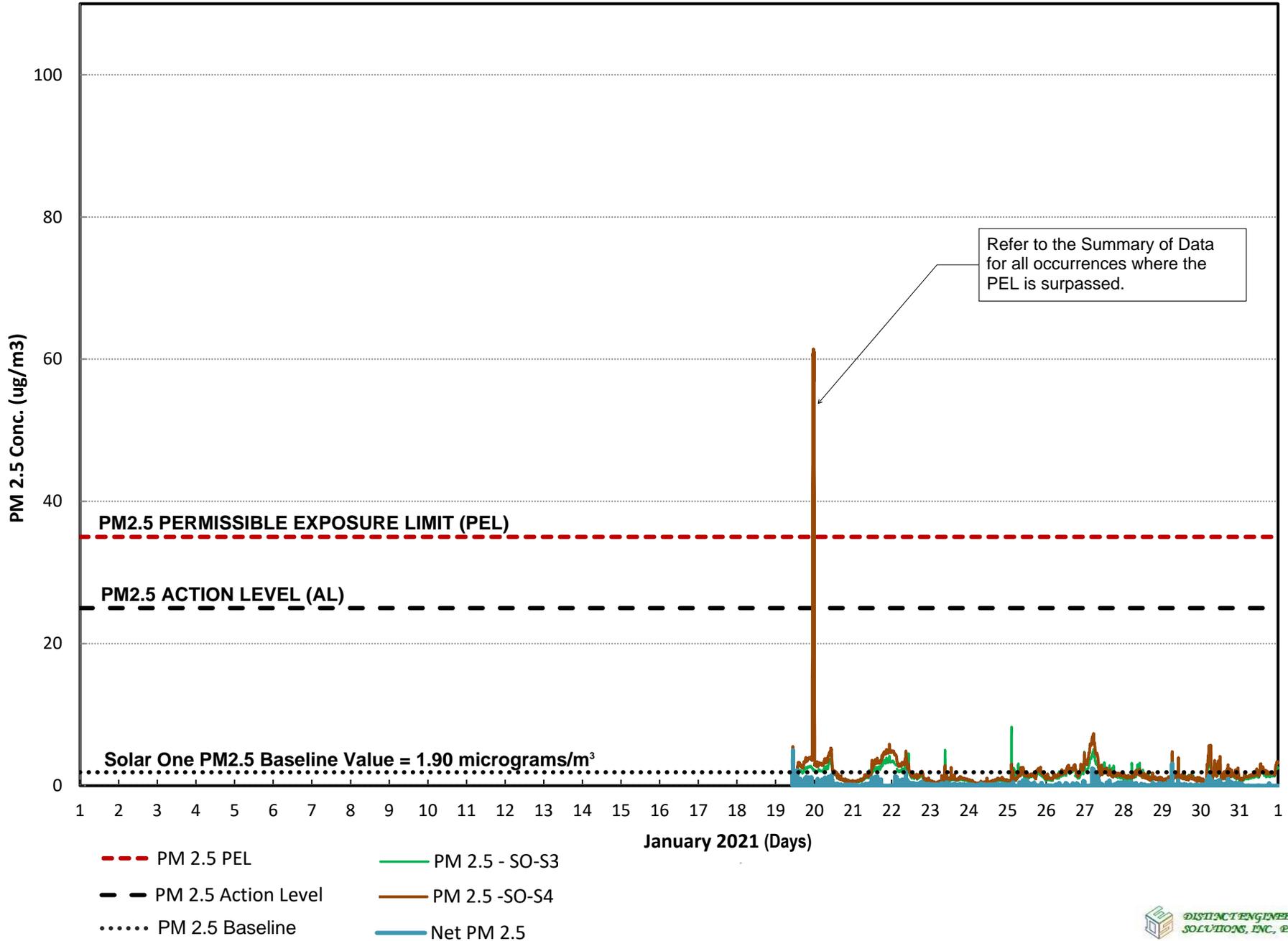


- PM 2.5 PEL
- PM 2.5 Action Level
- ..... PM 2.5 Baseline
- PM 2.5 ALP S1
- PM2.5 ALP S2
- Net PM 2.5

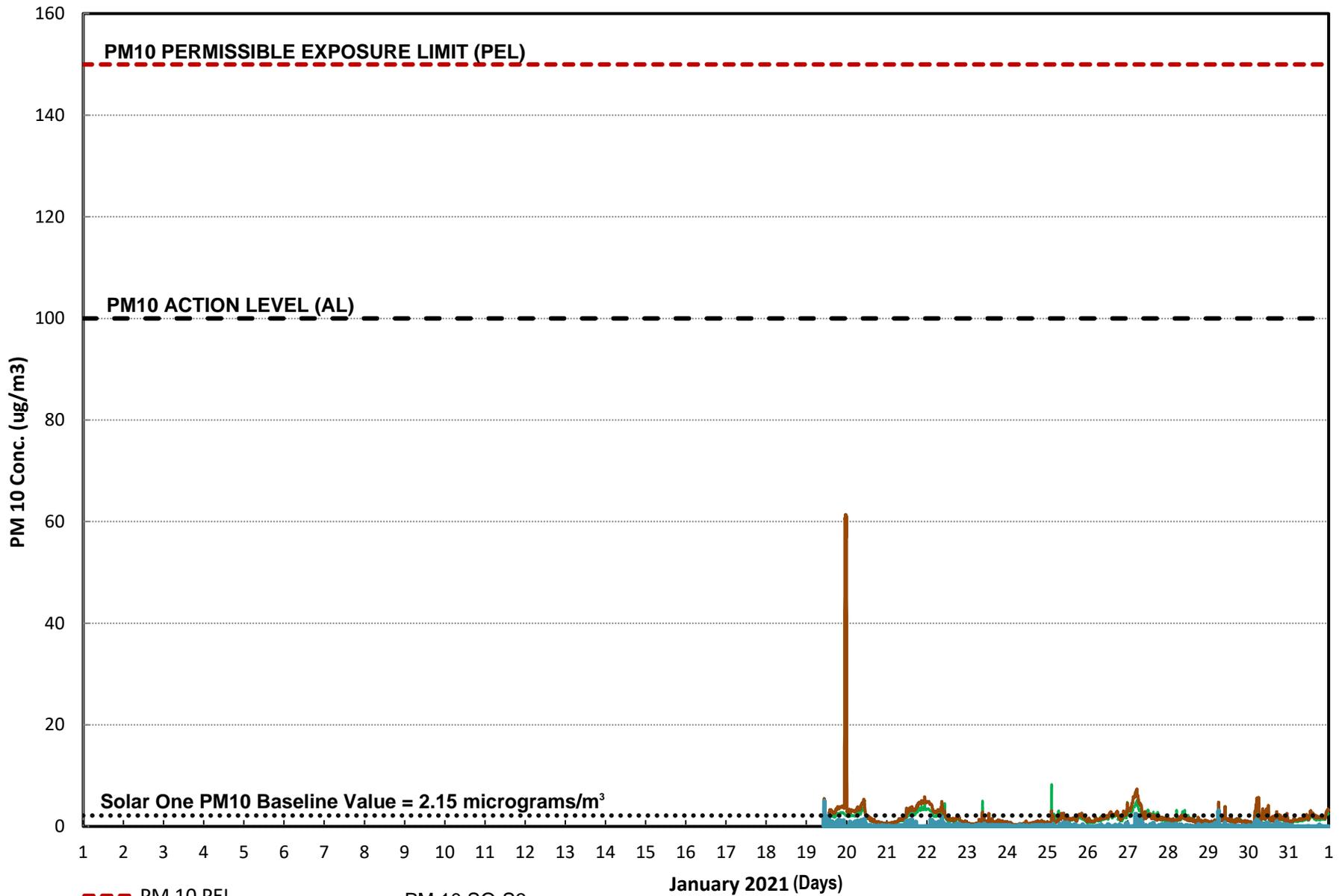
# January 2021, 15-Minute Running Average Air Quality Data PM 10 $\mu\text{g}/\text{m}^3$ Plot at Asser Levy



# January 2021, 15-Minute Running Average Air Quality Data PM 2.5 $\mu\text{g}/\text{m}^3$ Plot at Solar One



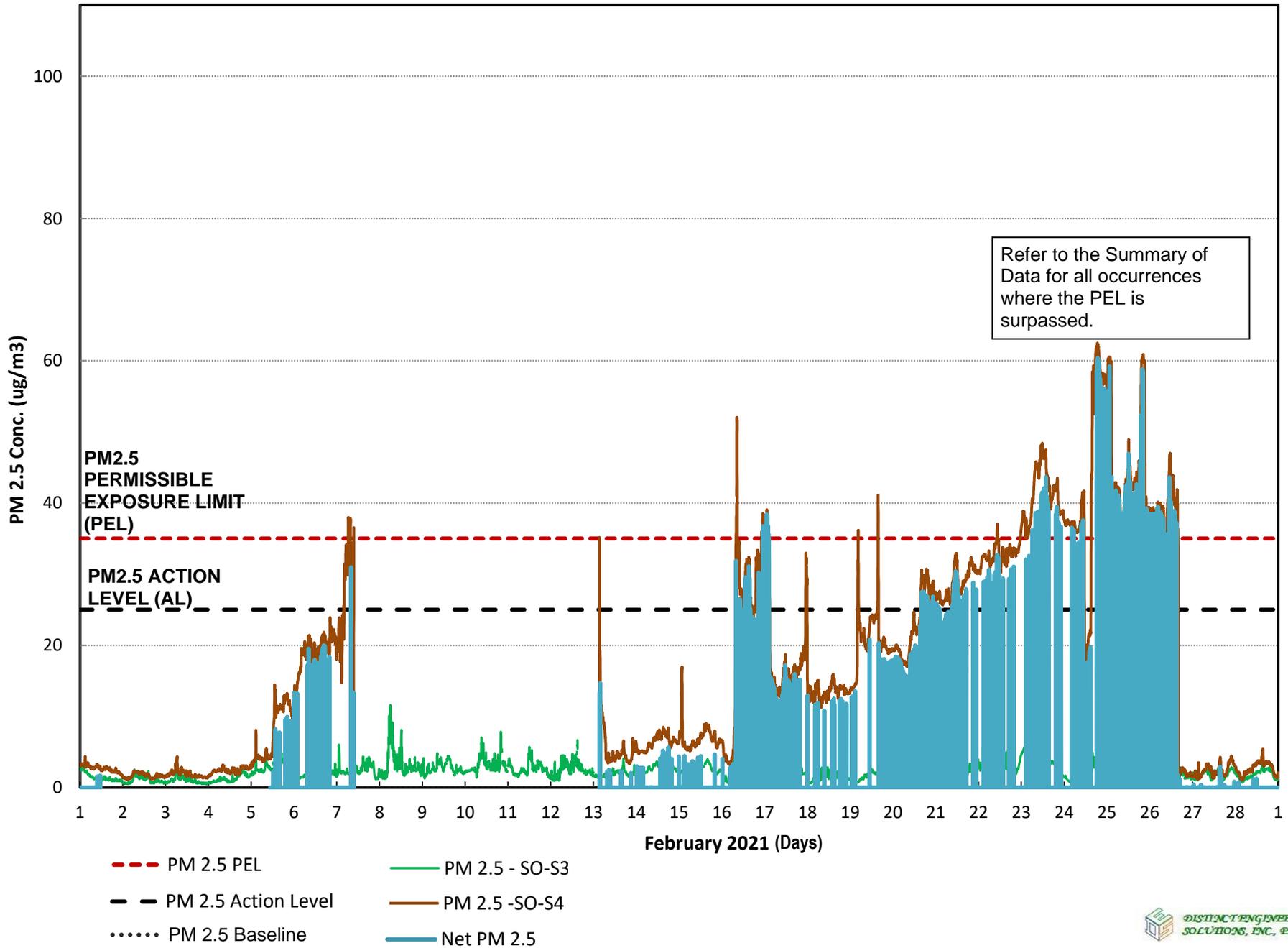
# January 2021, 15-Minute Running Average Air Quality Data PM 10 $\mu\text{g}/\text{m}^3$ Plot at Solar One



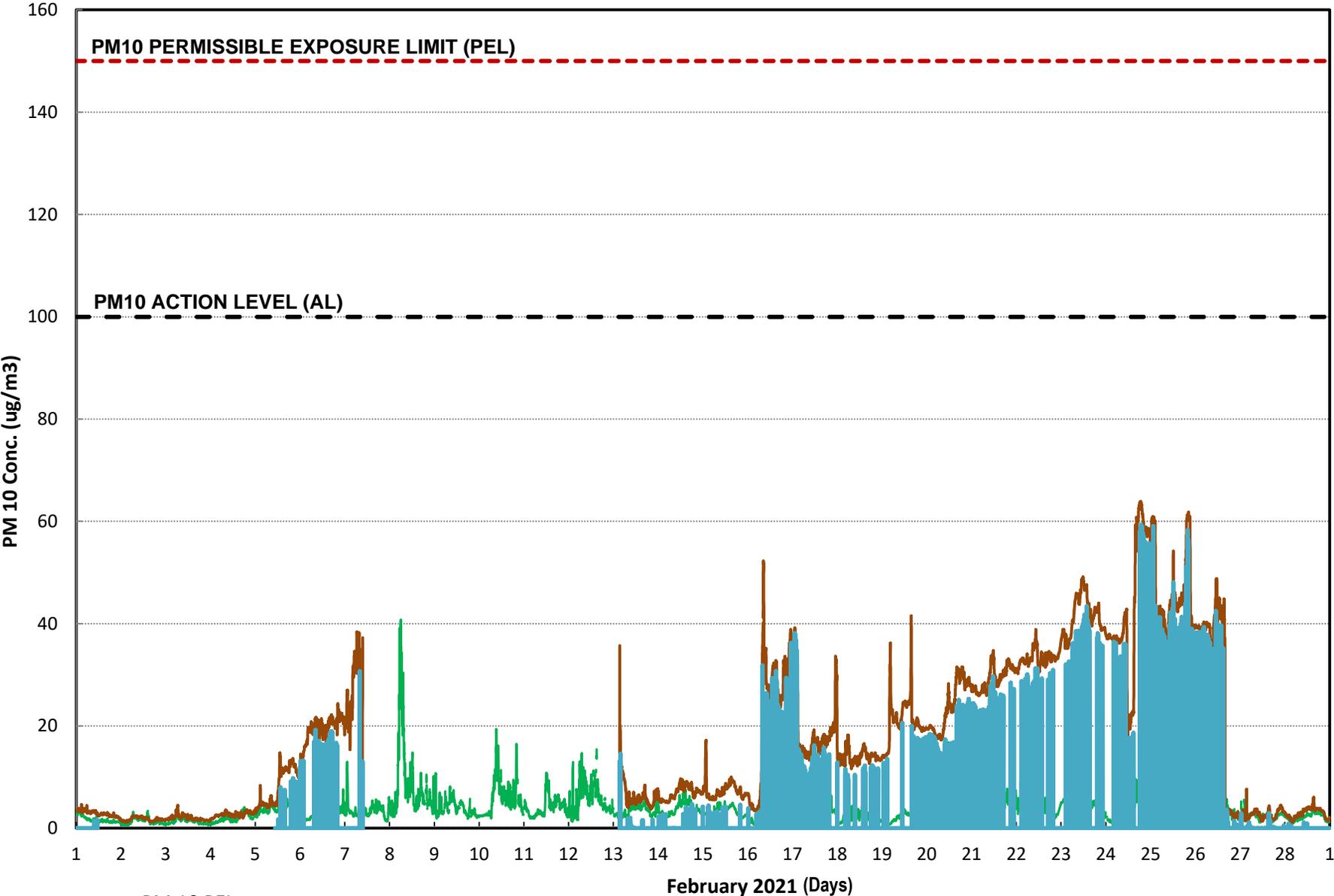
- PM 10 PEL
- PM 10 Action Level
- ..... PM 10 Baseline
- PM 10 SO-S3
- PM 10 SO-S4
- Net PM 10

# FEBRUARY 2021 DATA PLOTS

# February 2021, 15-Minute Running Average Air Quality Data PM 2.5 $\mu\text{g}/\text{m}^3$ Plot at Solar One

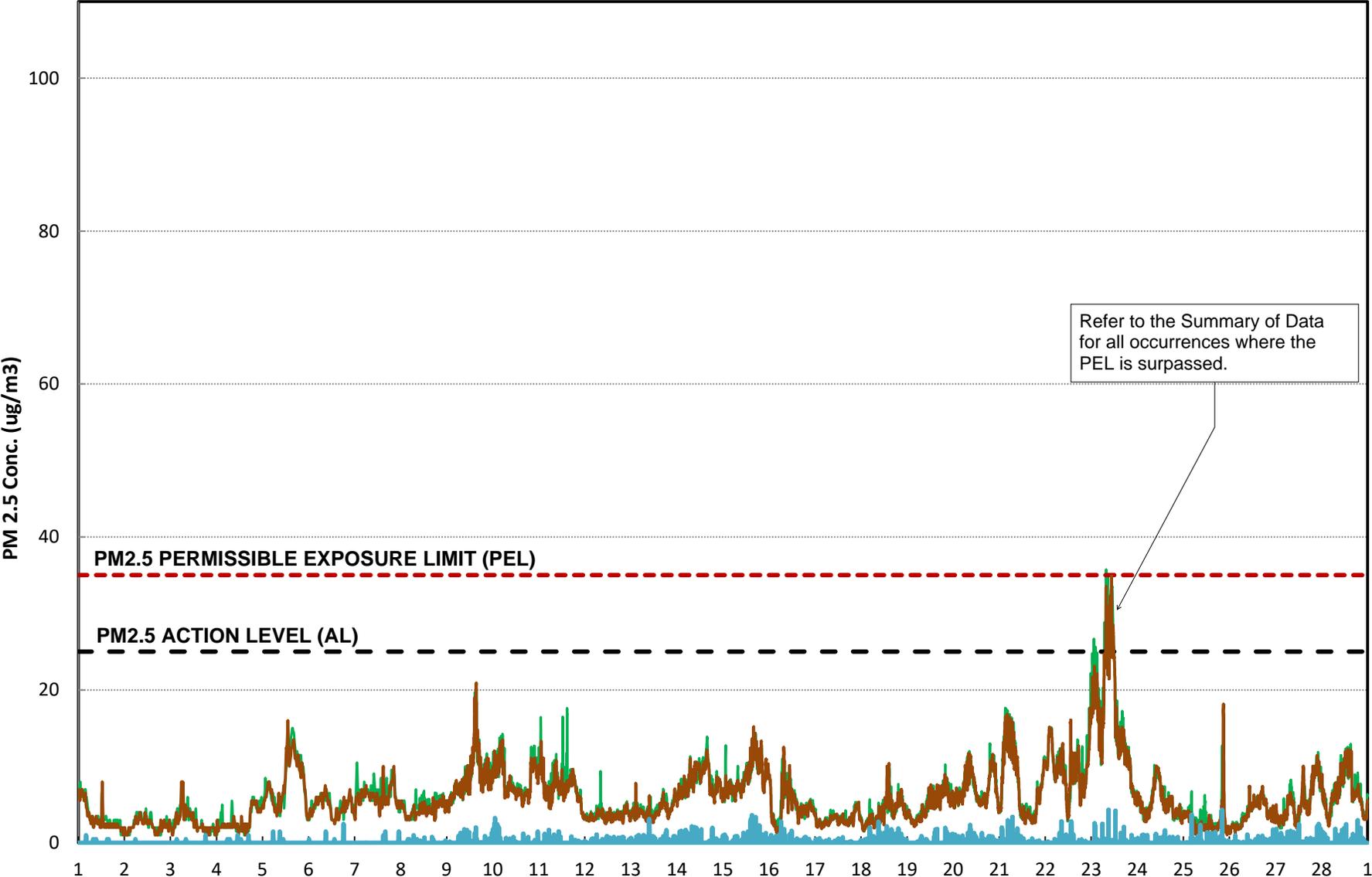


# February 2021, 15-Minute Running Average Air Quality Data PM 10 $\mu\text{g}/\text{m}^3$ Plot at Solar One



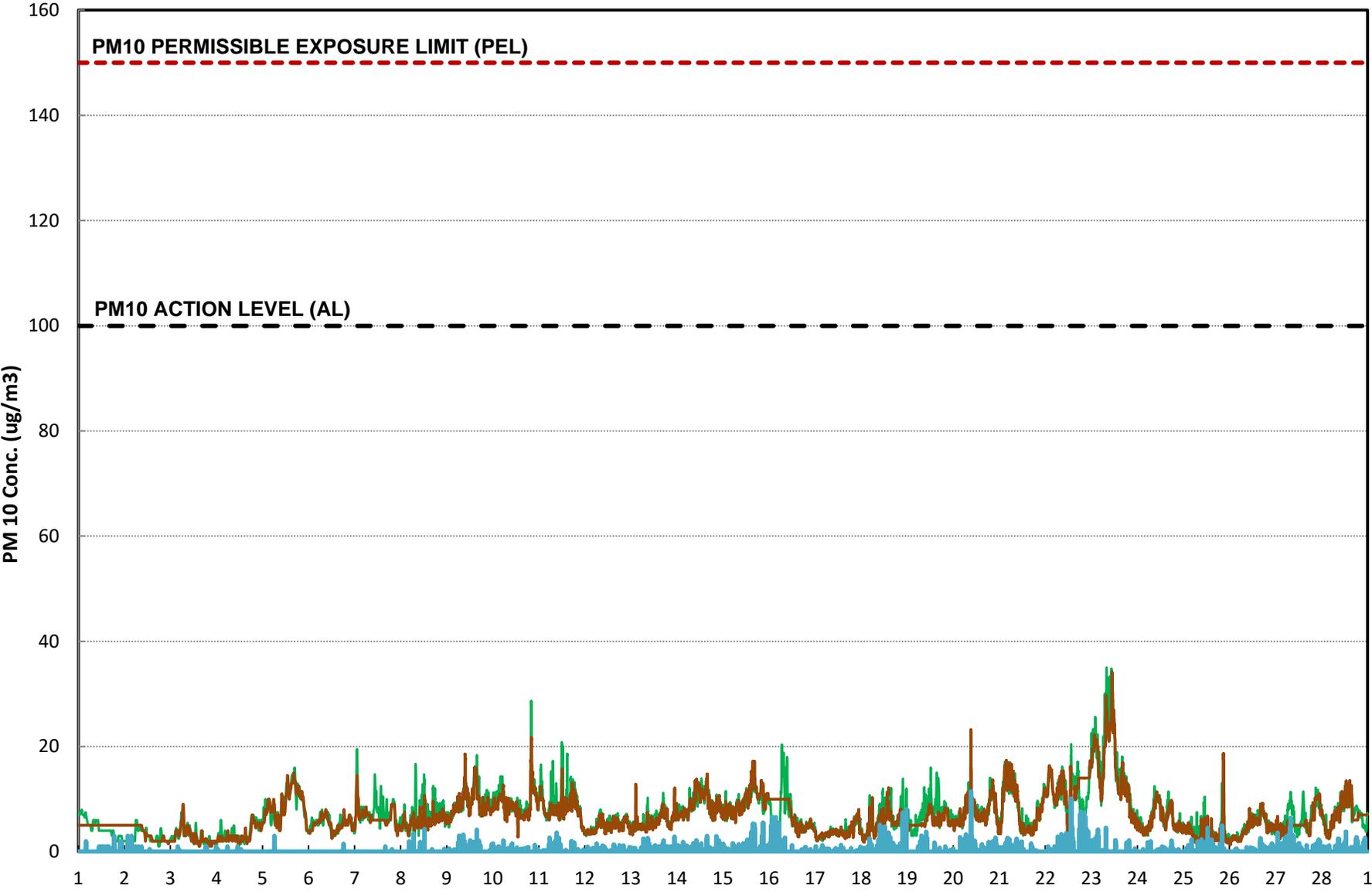
- PM 10 PEL
- PM 10 Action Level
- ..... PM 10 Baseline
- PM 10 SO-S3
- PM 10 SO-S4
- Net PM 10

# February 2021, 15-Minute Running Average Air Quality Data PM 2.5 $\mu\text{g}/\text{m}^3$ Plot at Asser Levy



- PM 2.5 PEL
- PM 2.5 Action Level
- ..... PM 2.5 Baseline
- PM 2.5 ALP S1
- PM2.5 ALP S2
- Net PM 2.5

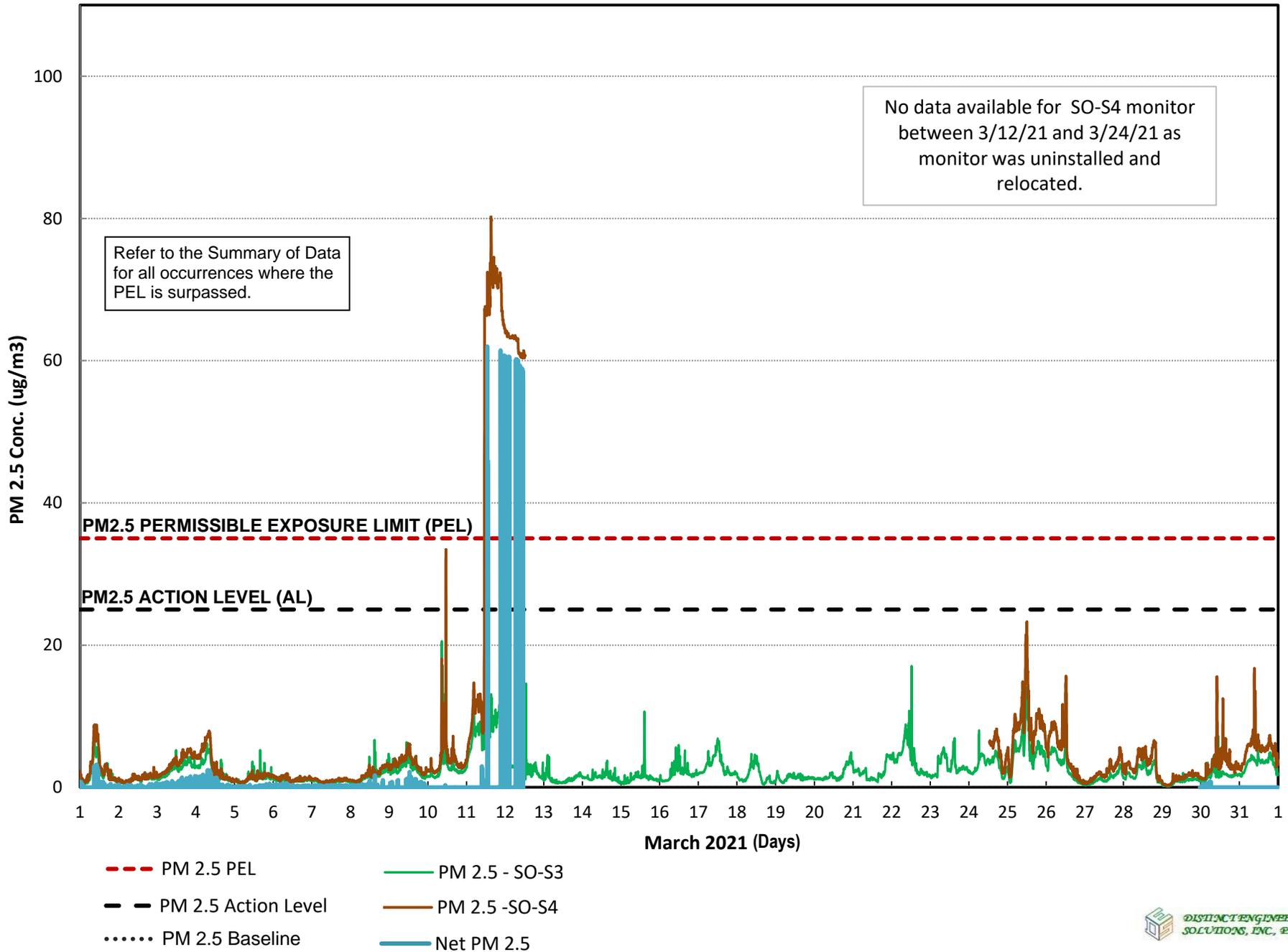
# February 2021, 15-Minute Running Average Air Quality Data PM 10 $\mu\text{g}/\text{m}^3$ Plot at Asser Levy



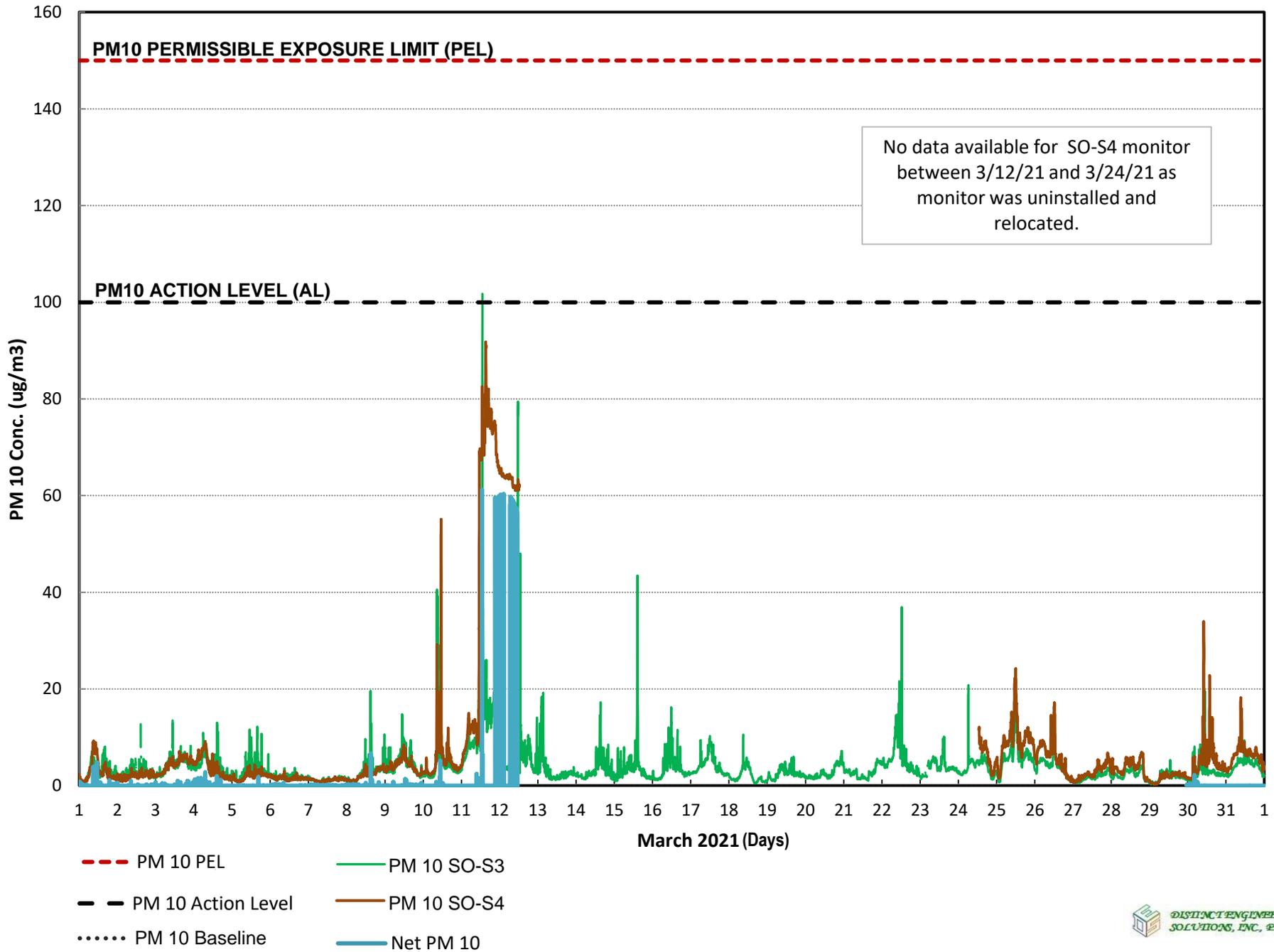
- PM 10 PEL
- PM 10 Action Level
- ..... PM 10 Baseline
- PM 10 ALP S1
- PM 10 ALP S2
- Net PM 10

# MARCH 2021 DATA PLOTS

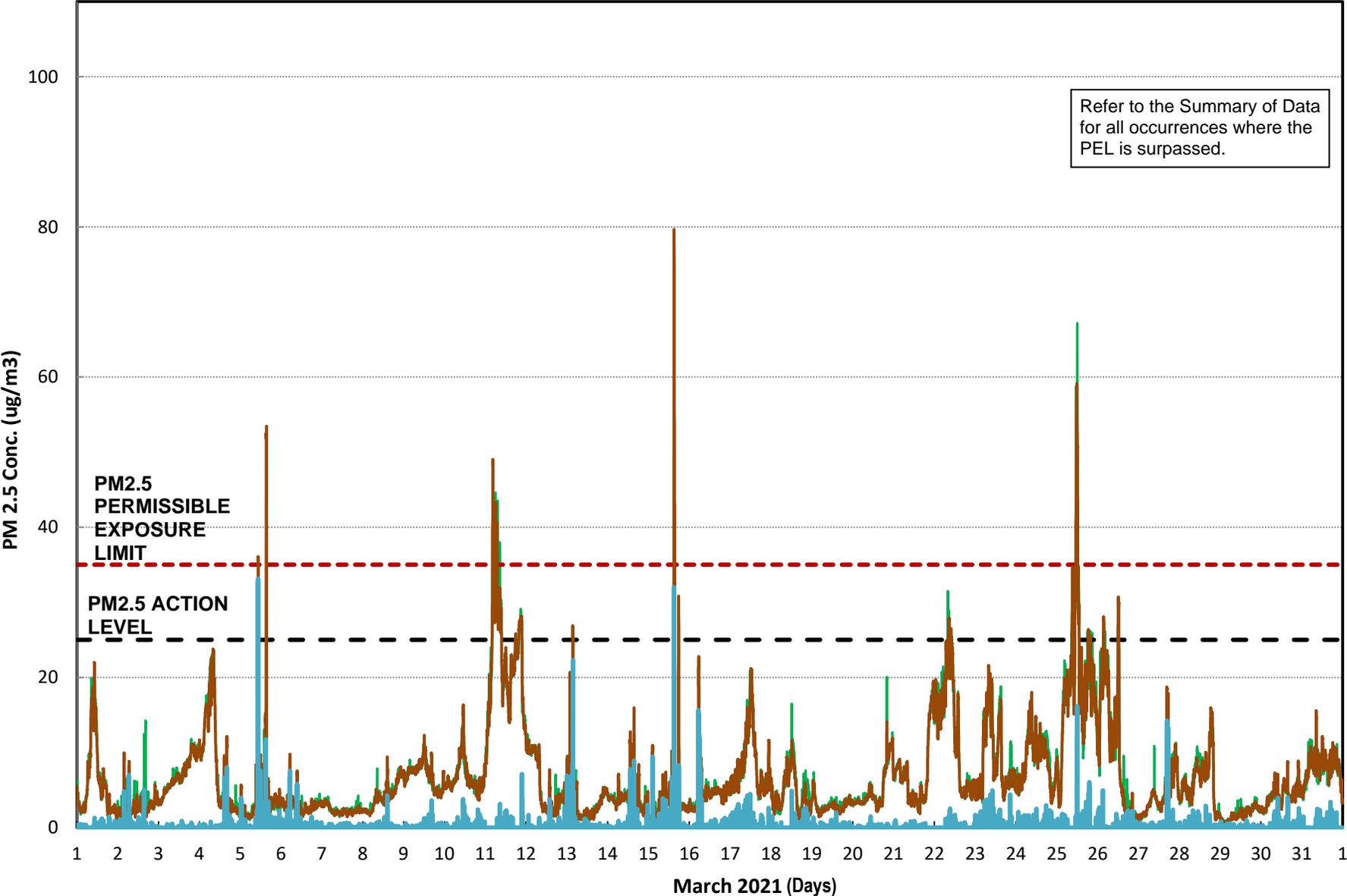
# March 2021, 15-Minute Running Average Air Quality Data PM 2.5 $\mu\text{g}/\text{m}^3$ Plot at Solar One



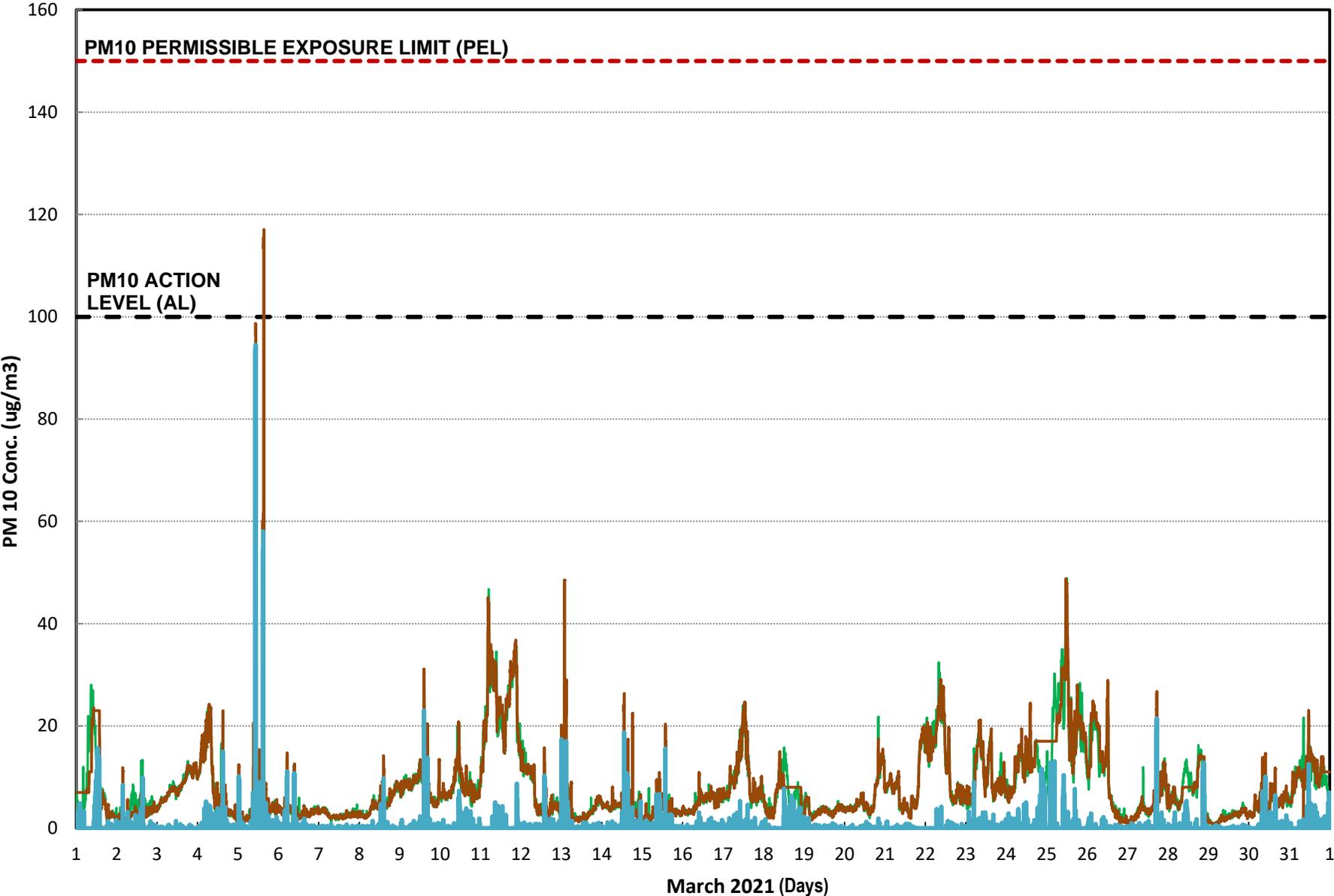
# March 2021, 15-Minute Running Average Air Quality Data PM 10 $\mu\text{g}/\text{m}^3$ Plot at Solar One



# March 2021, 15-Minute Running Average Air Quality Data PM 2.5 $\mu\text{g}/\text{m}^3$ Plot at Asser Levy



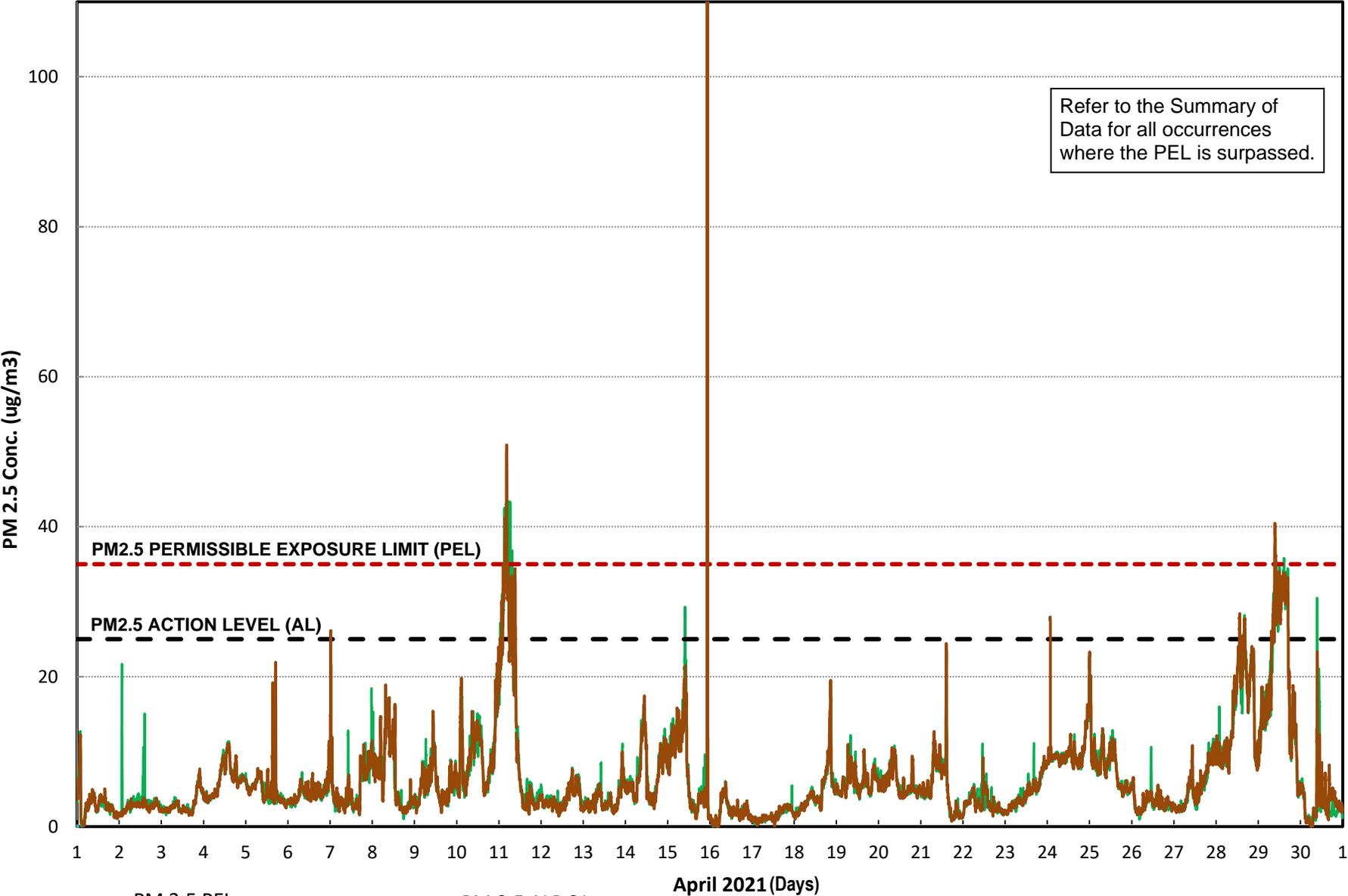
# March 2021, 15-Minute Running Average Air Quality Data PM 10 $\mu\text{g}/\text{m}^3$ Plot at Asser Levy



- PM 10 PEL
- PM 10 Action Level
- ..... PM 10 Baseline
- PM 10 ALP S1
- PM 10 ALP S2
- Net PM 10

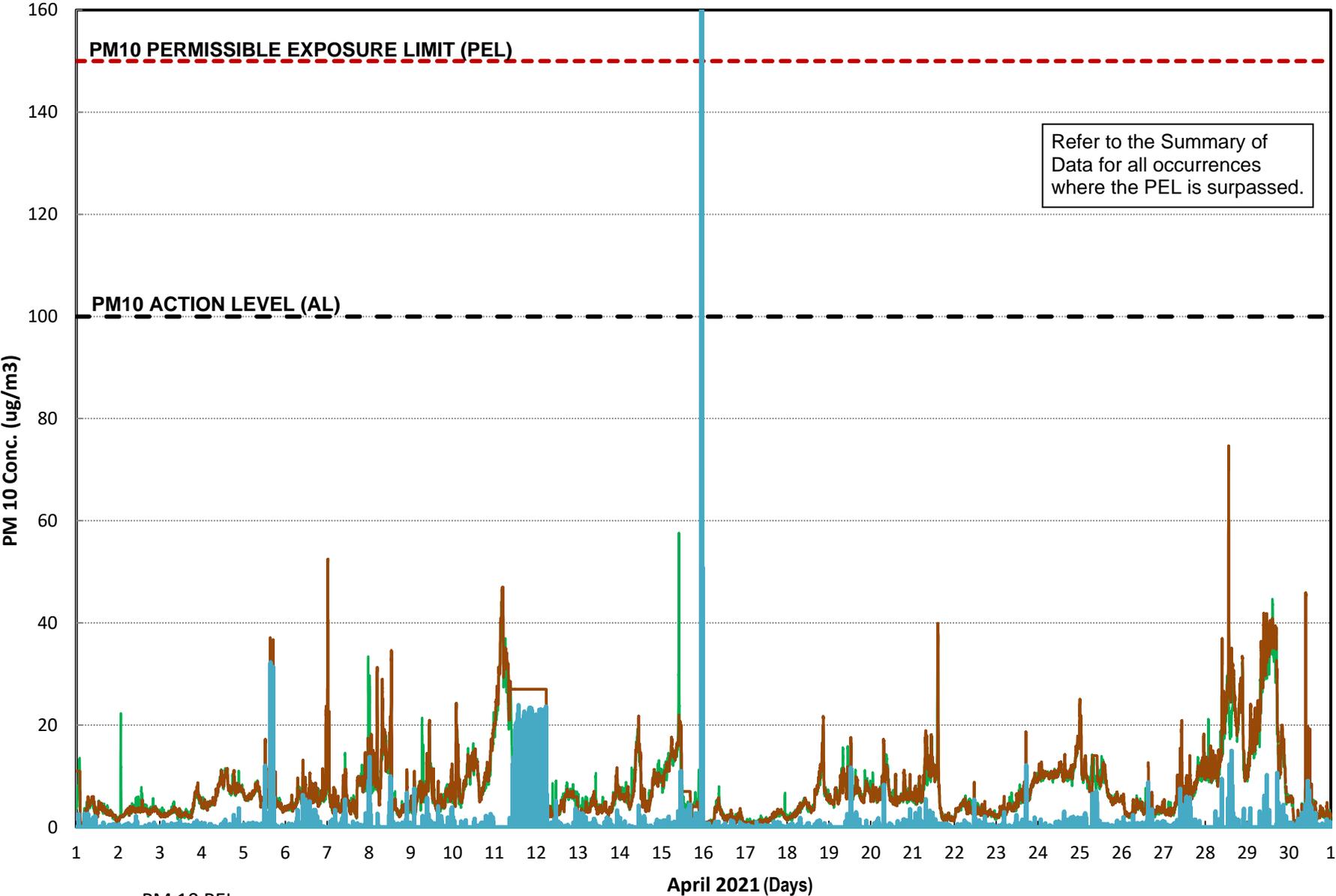
# APRIL 2021 DATA PLOTS

# April 2021, 15-Minute Running Average Air Quality Data PM 2.5 $\mu\text{g}/\text{m}^3$ Plot at Asser Levy



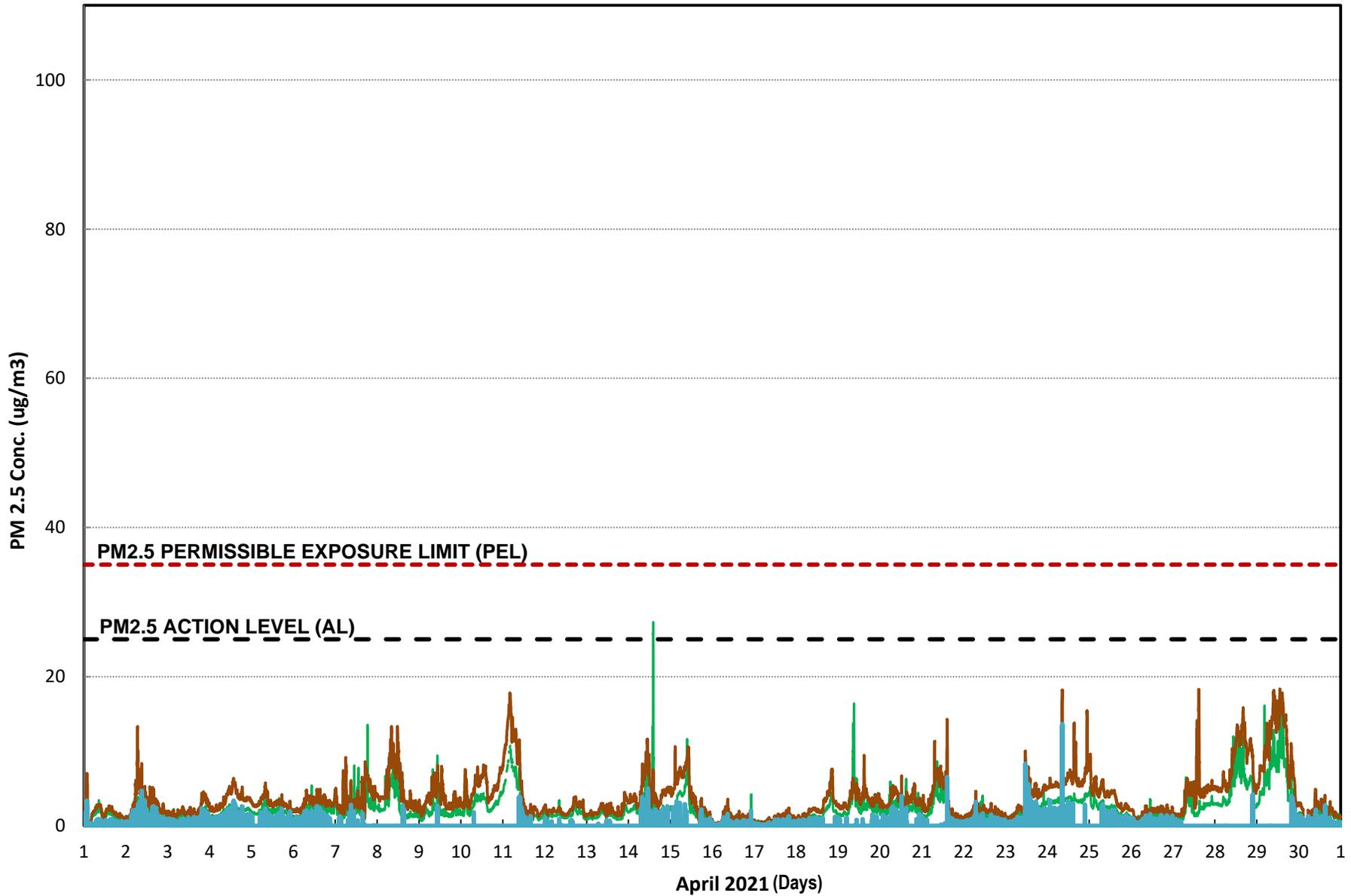
- PM 2.5 PEL
- PM 2.5 Action Level
- ..... PM 2.5 Baseline
- PM 2.5 ALP S1
- PM2.5 ALP S2
- Net PM 2.5

# April 2021, 15-Minute Running Average Air Quality Data PM 10 $\mu\text{g}/\text{m}^3$ Plot at Asser Levy



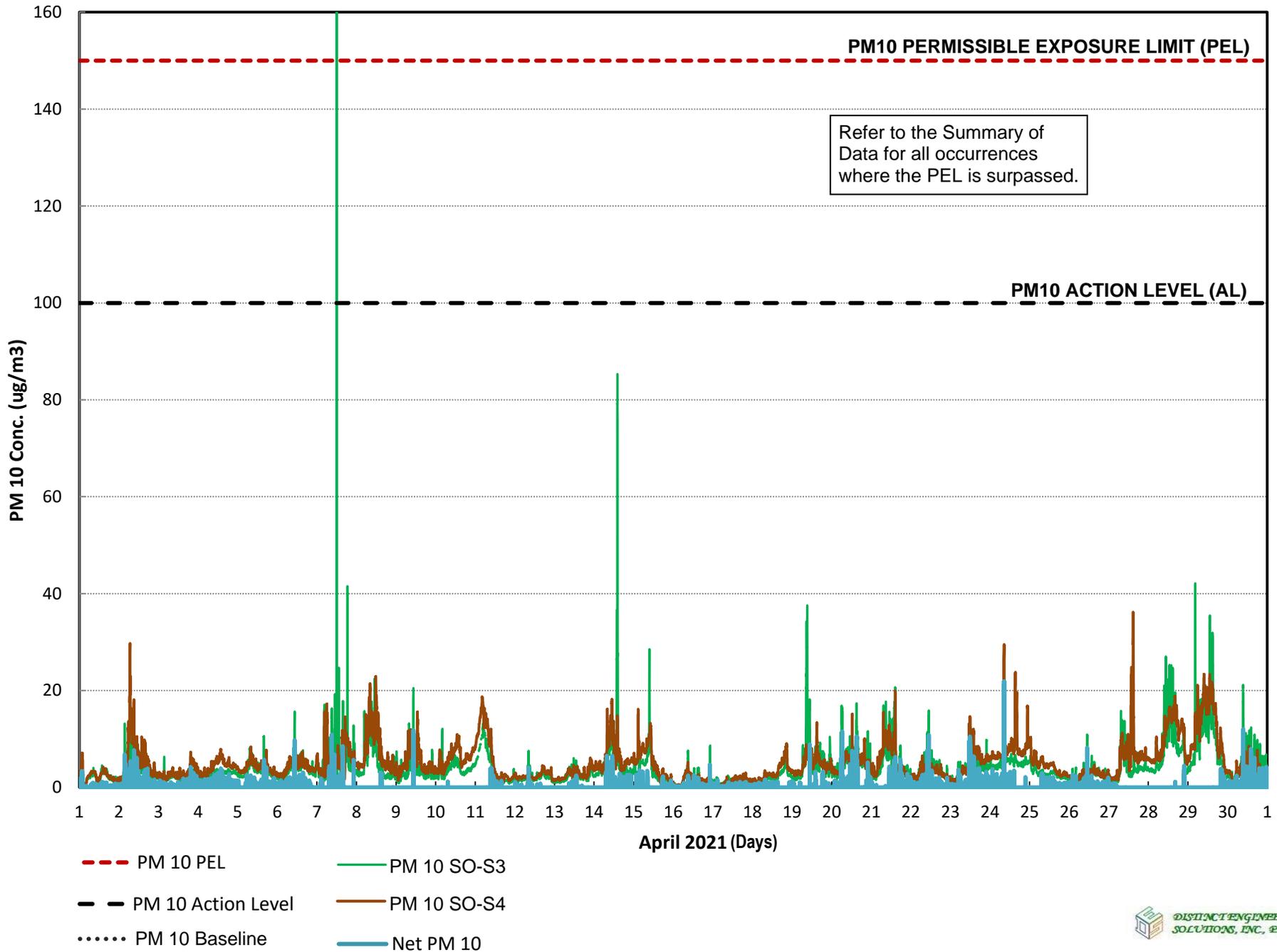
- PM 10 PEL
- PM 10 Action Level
- ..... PM 10 Baseline
- PM 10 ALP S1
- PM 10 ALP S2
- Net PM 10

# April 2021, 15-Minute Running Average Air Quality Data PM 2.5 $\mu\text{g}/\text{m}^3$ Plot at Solar One



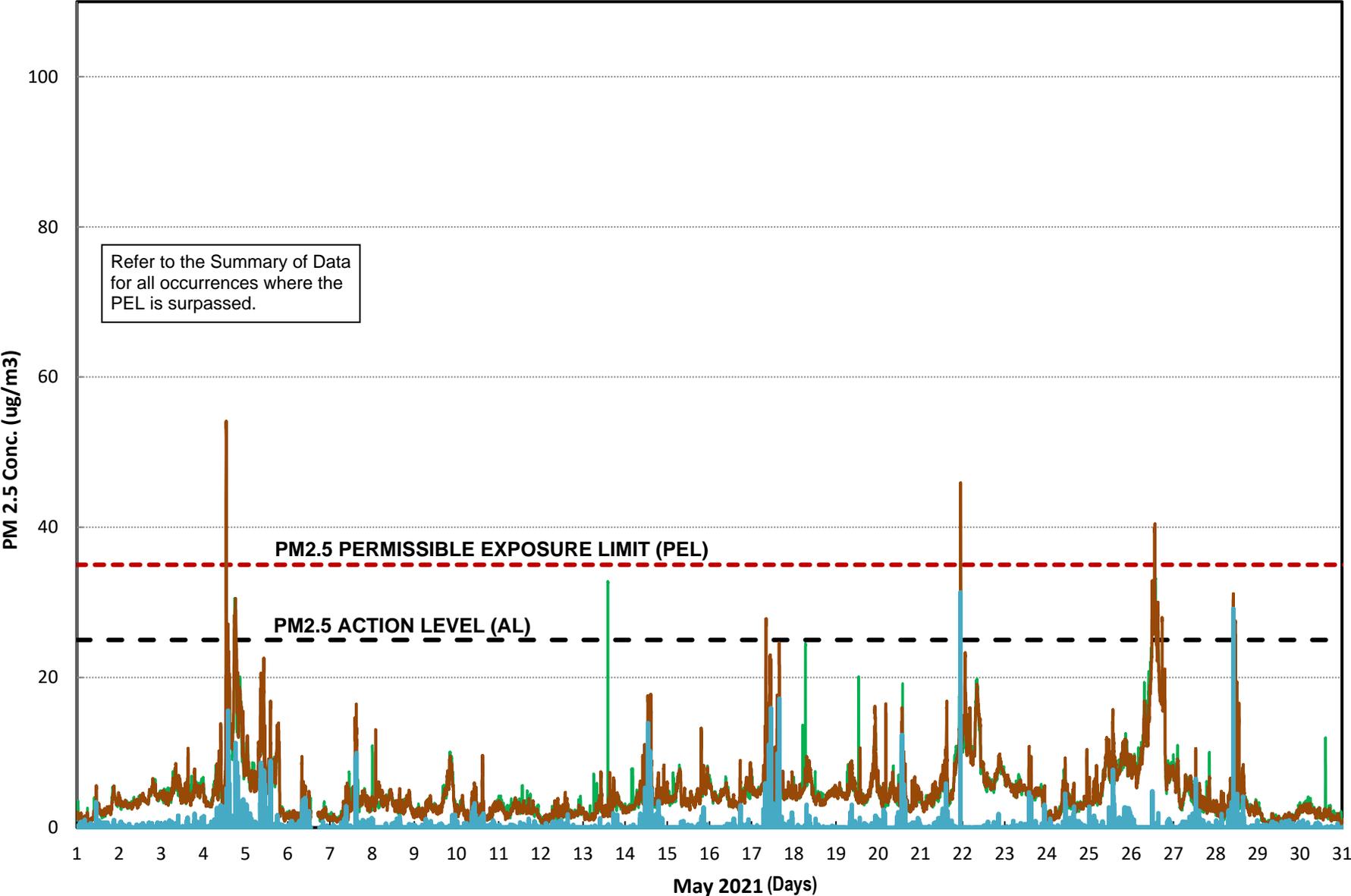
- PM 2.5 PEL
- PM 2.5 Action Level
- ..... PM 2.5 Baseline
- PM 2.5 - SO-S3
- PM 2.5 -SO-S4
- Net PM 2.5

# April 2021, 15-Minute Running Average Air Quality Data PM 10 $\mu\text{g}/\text{m}^3$ Plot at Solar One



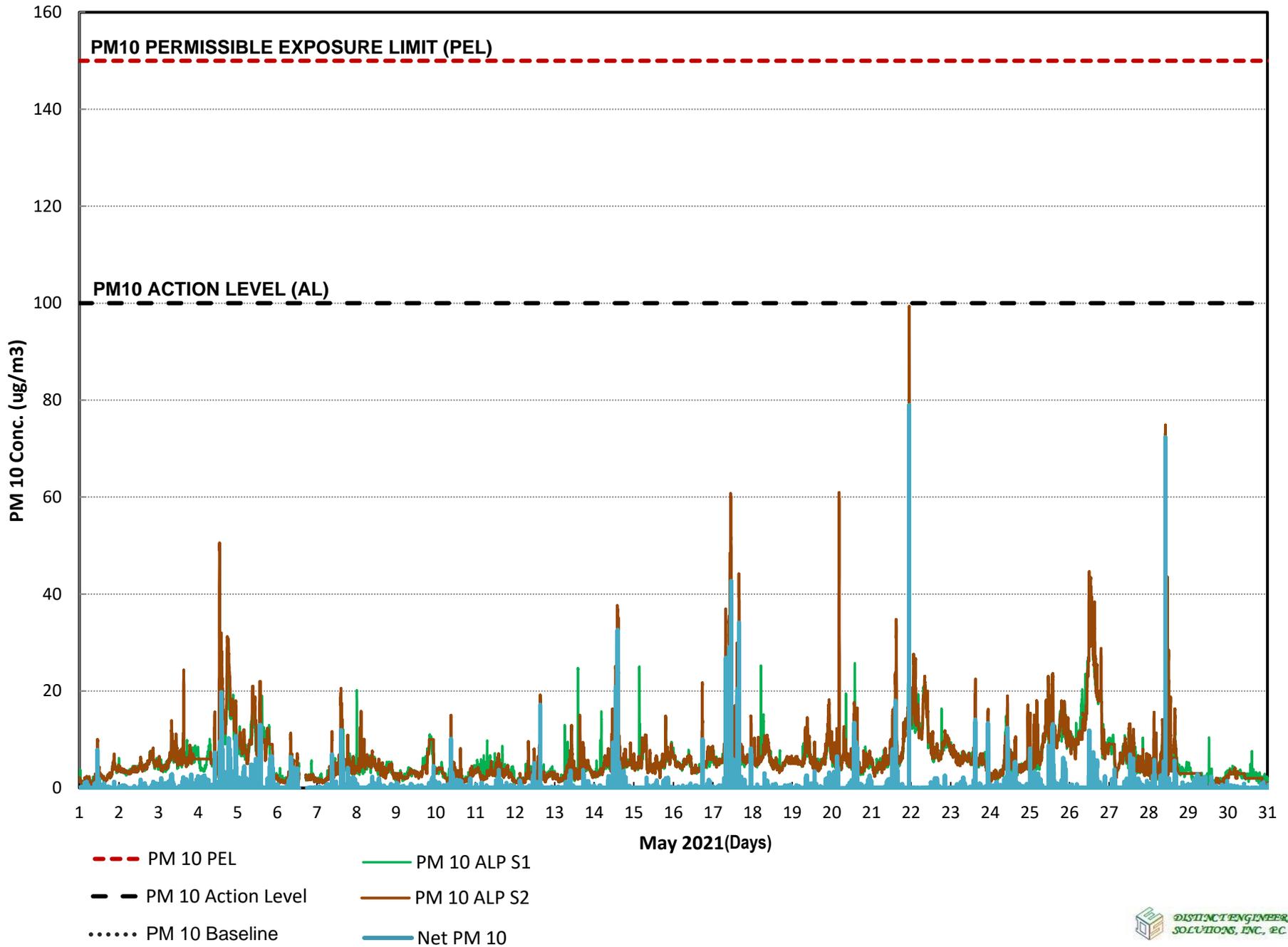
# MAY 2021 DATA PLOTS

# May 2021, 15-Minute Running Average Air Quality Data PM 2.5 $\mu\text{g}/\text{m}^3$ Plot at Asser Levy

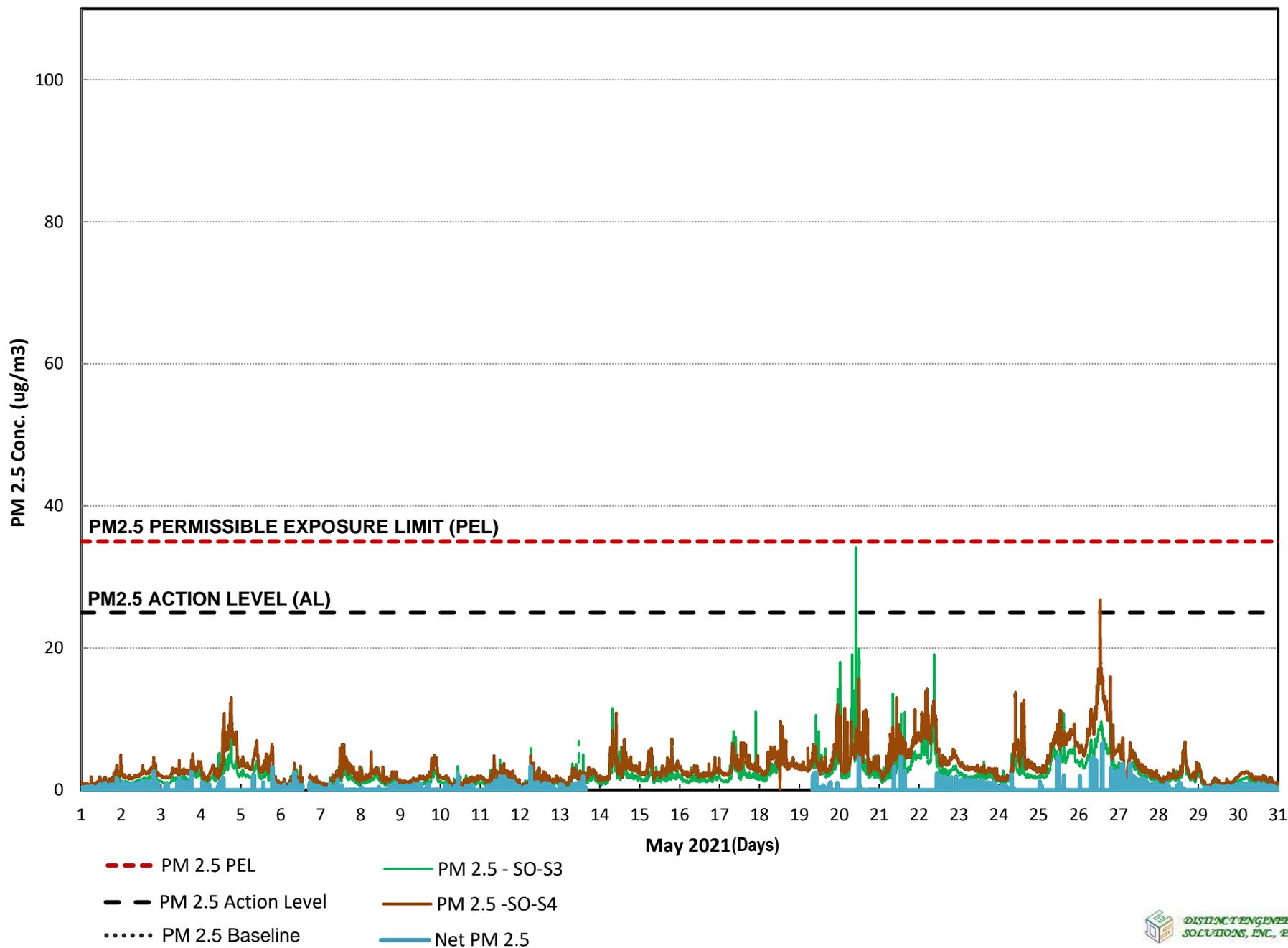


- PM 2.5 PEL
- PM 2.5 Action Level
- ..... PM 2.5 Baseline
- PM 2.5 ALP S1
- PM2.5 ALP S2
- Net PM 2.5

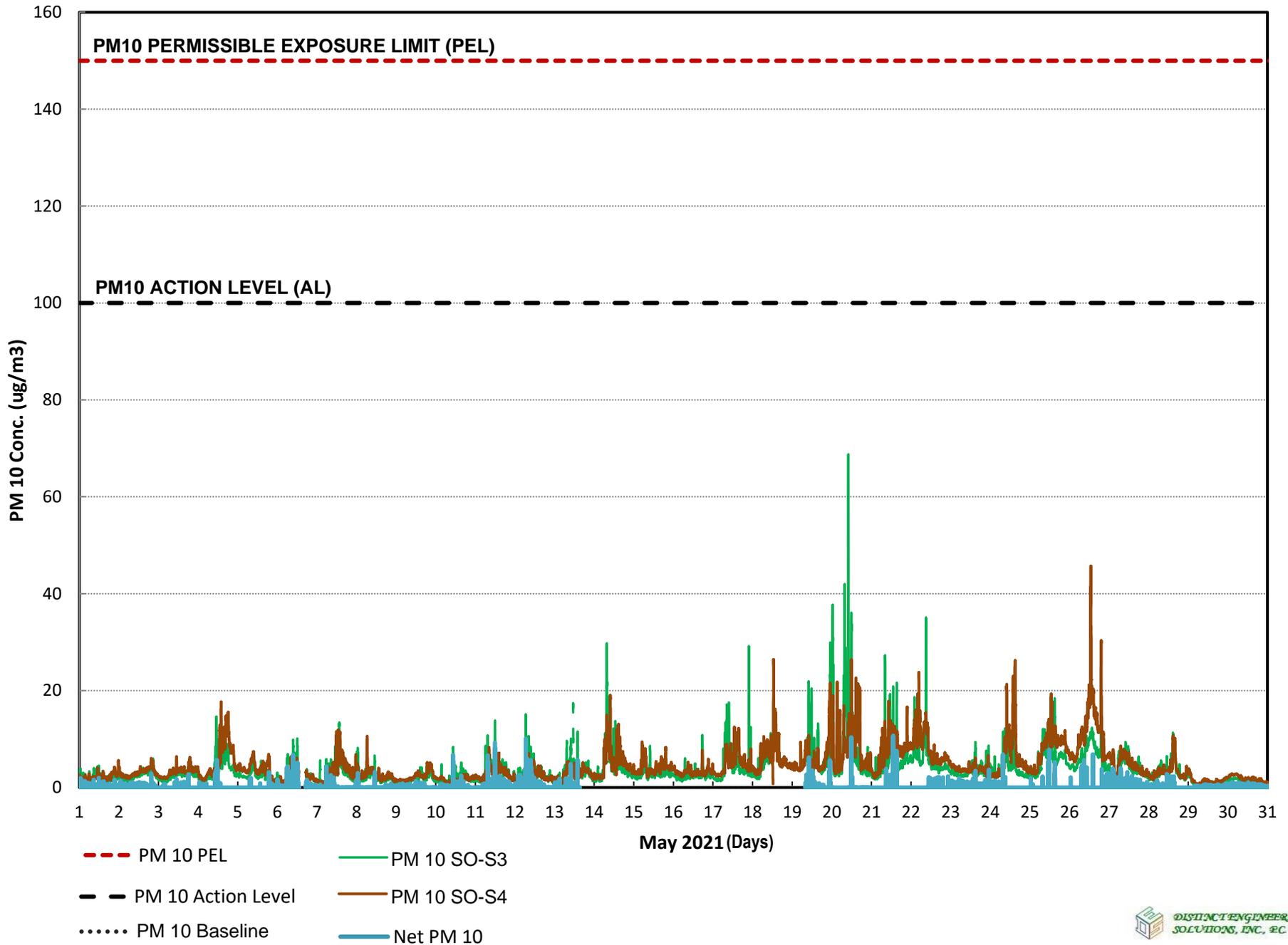
# May 2021, 15-Minute Running Average Air Quality Data PM 10 $\mu\text{g}/\text{m}^3$ Plot at Asser Levy



# May 2021, 15-Minute Running Average Air Quality Data PM 2.5 $\mu\text{g}/\text{m}^3$ Plot at Solar One



# May 2021, 15-Minute Running Average Air Quality Data PM 10 $\mu\text{g}/\text{m}^3$ Plot at Solar One



## RESOURCES

- ESCR Website: <https://www1.nyc.gov/site/escr/index.page>
- ESCR Environmental Review Process web page: <https://www1.nyc.gov/site/escr/about/environmental-review.page>
- FEIS Chapter 5.7 Hazardous Materials: <https://www1.nyc.gov/assets/escr/downloads/pdf/FEIS/ESCR-EIS-Chapter-5.7-Hazardous-Materials.pdf>
- FEIS Chapter 6.6 Construction Hazardous Materials: <https://www1.nyc.gov/assets/escr/downloads/pdf/FEIS/ESCR-EIS-Chapter-6.6-Construction-Hazardous-Materials.pdf>
- EPA Particulate Matter (PM) Pollution - Particulate Matter (PM) Basics: <https://www.epa.gov/pm-pollution/particulate-matter-pm-basics#PM>
- EPA Particulate Matter (PM) Pollution - Setting and Reviewing Standards to Control Particulate Matter (PM) Pollution: <https://www.epa.gov/pm-pollution/setting-and-reviewing-standards-control-particulate-matter-pm-pollution>
- EPA Particulate Matter (PM) Pollution - National Ambient Air Quality Standards (NAAQS) for PM: <https://www.epa.gov/pm-pollution/national-ambient-air-quality-standards-naaqs-pm>
- EPA Particulate Matter (PM) Pollution - Applying or Implementing Particulate Matter (PM) Standards: <https://www.epa.gov/pm-pollution/applying-or-implementing-particulate-matter-pm-standards>