Port of Los Angeles

Air Quality Monitoring Program
Update #3

Presented by: Joel Torcolini, Air Quality Program Manager

October 24, 2023
Air Quality Monitoring Program – 2023 Upgrade Complete!

Criteria Pollutants

- Continuous PM$_{2.5}$: Met One BAM 1020 Installed - 4 Stations
- Continuous PM$_{10}$: Met One BAM 1020 Installed - 4 Stations
- Ozone (O$_3$): Thermo Model 49iQ Installed - 4 Stations
- Nitrogen Dioxide (NO$_2$): T-API Model N500 Installed - 4 Stations
- Carbon Monoxide (CO): Thermo Model 48iQ Installed - 4 Stations
- Sulfur Dioxide (SO$_2$): Thermo Model 43iQ-TL Installed - 4 Stations

Supplemental PM

- UFP Counters: TSI, Inc. Model 3783 Installed - 4 Stations
- BC Aethalometers: Magee Scientific Model AE-33 Installed - 4 Stations
## Current Status of Stations

### Status of Air Monitoring Stations (as of 10/24/2023)

<table>
<thead>
<tr>
<th>Instruments/Equipment</th>
<th>Monitoring Station</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Wilmington Community Station</td>
<td>Coastal Boundary Station</td>
<td>San Pedro Community Station</td>
<td>Source-Dominated Station</td>
</tr>
<tr>
<td>PM$_{2.5}$ Sequential Filter Sampler</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>PM$_{2.5}$ Federal Reference Method Filter Monitor</td>
<td>X</td>
<td></td>
<td>Not Applicable</td>
<td></td>
</tr>
<tr>
<td>PM$_{10}$ Federal Reference Method Filter Monitor</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PM$_{2.5}$ Continuous Monitor</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>PM$_{10}$ Continuous Monitor</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Ultrafine Particle Counter</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Aethalometer – Black Carbon</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>O$_3$ Analyzer</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>CO Analyzer</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>NO$_2$ Analyzer</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>SO$_2$ Analyzer</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

*PM FRM monitors are a QA measurement for Sequential Filter Samplers*

**COMPLETE!**
### Backup Instruments by Parameter

<table>
<thead>
<tr>
<th>Air Quality Parameter</th>
<th>Backup Instrument?</th>
<th>Backup Instrument Manufacturer / Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM$_{2.5}$ Sequential Filter Sampler</td>
<td>Yes</td>
<td>DRI SFS instrument</td>
</tr>
<tr>
<td>PM$_{2.5}$ Continuous Monitor</td>
<td>Yes</td>
<td>Met One BAM - 1020 (PM$_{2.5}$)</td>
</tr>
<tr>
<td>PM$_{10}$ Continuous Monitor</td>
<td>Yes</td>
<td>Met One BAM - 1020 (PM$_{10}$)</td>
</tr>
<tr>
<td>Ultrafine Particle Counter</td>
<td>Yes</td>
<td>TSI, Inc. Model 3783</td>
</tr>
<tr>
<td>Aethalometer - Black Carbon</td>
<td>On Order</td>
<td>Magee Scientific AE-33</td>
</tr>
<tr>
<td>O$_3$ Analyzer</td>
<td>Yes</td>
<td>Teledyne API - Model 400</td>
</tr>
<tr>
<td>CO Analyzer</td>
<td>Yes</td>
<td>Thermo 48i CO instrument</td>
</tr>
<tr>
<td>NO$_2$ Analyzer</td>
<td>Yes</td>
<td>Thermo 42i NO$_2$ instrument</td>
</tr>
<tr>
<td>SO$_2$ Analyzer</td>
<td>Yes</td>
<td>Thermo 43i SO$_2$ instrument</td>
</tr>
</tbody>
</table>
2023 Q1-Q3 Overview of Results
Monthly Average BC Concentrations (2022 vs 2023)

- 2022 Average (Jan - Sep) = 0.78 µg/m³
- 2023 Average (Jan - Sep) = 0.46 µg/m³ (- 41%)
SCAQMD Monthly Average BC Concentrations (2022 vs 2023)

- 2022 Average (Jan - Sep) = 1.06 µg/m³
- 2023 Average (Jan - Sep) = 0.70 µg/m³  (- 34%)
Monthly Average NO₂ Concentrations (2022 vs 2023)

- 2022 Average (Jan - Sep) = 0.0124 ppm
- 2023 Average (Jan - Sep) = 0.0091 ppm (- 27%)
SCAQMD Monthly Average NO\textsubscript{2} Concentrations (2022 vs 2023)

- 2022 Average (Jan - Sep) = 0.0117 ppm
- 2023 Average (Jan - Sep) = 0.0090 ppm  (- 24%)
Year 18 Annual Report Overview
Year 18 Annual Monitoring Report

> Located at: https://monitoring.cleanairactionplan.org/reports/

> Annual report presents a summary of monitoring data for a twelve (12) month period from May 2022 to April 2023.

> Draw comparisons to applicable National and California Ambient Air Quality Standards.

  > Year 18 reporting period: No exceedances of NAAQS
  
  Few exceedances of CAAQS for PM$_{10}$
  
  Max 24-hour average recorded on July 4$^{th}$

> Presents trend analysis for:

  > Filter-based PM / EC measurements: 18-year period of monitoring record
  
  > Real-time gaseous & PM measurements: 15-year period of monitoring record
  
  > Real-time black carbon measurements: 10-year period of monitoring record
Monthly Average EC Concentrations at Port Stations

Note:
Filter-based PM$_{2.5}$ sampling at Coastal Boundary station suspended May 2020 - April 2022.
Filter-based PM$_{2.5}$ sampling at Source-Dominated station suspended May 2021 - April 2022.
Monthly Average PM$_{2.5}$ Concentrations at Port Stations

Note: Filter-based PM$_{2.5}$ sampling at Coastal Boundary station suspended May 2020 - April 2022. Filter-based PM$_{2.5}$ sampling at Source-Dominated station suspended May 2021 - April 2022.
Monthly Average PM$_{10}$ Concentrations at Port Stations

Notes: Filter-based PM$_{10}$ monitoring at Coastal Boundary station commenced August 2008, suspended May 2020 - April 2023. Filter-based PM$_{10}$ monitoring at Wilmington Community station suspended May 2021 - June 2022.
Year 18 - Monthly Average BC Concentrations at Port Stations
Year 18 - Monthly Average PM$_{2.5}$ Concentrations at Port Stations

Note: Coastal Boundary station PM$_{2.5}$ BAM offline from May 1, 2021 to August 12, 2023.
Year 18 - Monthly Average PM$_{10}$ Concentrations at Port Stations

Note: Coastal Boundary station PM$_{10}$ BAM offline from May 1, 2021 to August 12, 2023.
Year 18 - Monthly Average CO Concentrations at Port Stations

Note: Coastal Boundary CO measurements suspended May 2020 - April 2023. Source-Dominated CO measurements suspended May 2021 - April 2023.
Year 18 - Monthly Average NO\textsubscript{2} Concentrations at Port Stations

Note: Coastal Boundary NO\textsubscript{2} measurements suspended May 2020 - April 2023. Source-Dominated NO\textsubscript{2} measurements suspended May 2021 - April 2023.
Year 18 - Monthly Average O₃ Concentrations at Port Stations

Note: Coastal Boundary O₃ measurements suspended May 2020 - October 2022. Source-Dominated O₃ measurements suspended May 2021 - October 2022.
Year 18 - Monthly Average SO₂ Concentrations at Port Stations

Note: Coastal Boundary station was suspended May 2020 - April 2023. Source-Dominated station was suspended May 2021 - April 2023.
Year 18 - Average Ultrafine Particle Counts by Hour of Day
Field Trip to Coastal Boundary Station

> Located at: Berth 46, 2400 Miner St, San Pedro, CA 90731

> Q1 2024
Leidos - Point of Contact

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