Minneapolis Air Quality

Using data to focus our inspections, maintain compliance, and engage the community

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Air Pollution Point Sources in MN

3,729 Permitted Facilities

Estimated exposure to air pollutants by facilities with permits

Less risk-----More risk
Air Quality Point Source Inspection Strategy

New, risk-based approach based on data
Air Quality Monitoring Sites in Metro Area
Environmental Justice Areas in Minneapolis
Minneapolis Community Air Monitoring Project

- Minneapolis: Harrison - Oct-Dec 2014
- Minneapolis: Little Earth - Oct-Dec 2013
- Minneapolis: Lyndale - Jan-Mar 2015
- Minneapolis: Midtown Greenway - Jul-Aug 2014
- St. Paul: Thomas-Dale - Jan-Mar 2014
- St. Paul: East Side - Apr-Jun 2015
- St. Paul: West Side - Apr-Jun 2014
North Minneapolis Air Monitoring Project

Multi-year monitoring study for fine particle pollution
North Minneapolis Air Monitoring Project

## Background on the TSP standards

In Minnesota, TSP levels in the air are regulated through the Minnesota Ambient Air Quality Standards (MAAQS), which are defined in Minnesota Administrative Rules 7009.0080. The MAAQS includes four distinct standards for TSP. These standards include:

### Minnesota Ambient Air Quality Standards for TSP

<table>
<thead>
<tr>
<th>Standard Type</th>
<th>Time Interval</th>
<th>Level of Standard</th>
<th>A monitoring site meets the standard if...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary ¹</td>
<td>Daily (24-hour)</td>
<td>260 micrograms per cubic meter</td>
<td>...the annual 2nd highest daily TSP concentration is less than or equal to 260 µg/m³</td>
</tr>
<tr>
<td></td>
<td>Annual</td>
<td>75 micrograms per cubic meter</td>
<td>...the annual geometric mean is less than or equal to 75 µg/m³</td>
</tr>
<tr>
<td>Secondary ²</td>
<td>Daily (24-hour)</td>
<td>150 micrograms per cubic meter</td>
<td>...the annual 2nd highest daily TSP concentration is less than or equal to 150 µg/m³</td>
</tr>
<tr>
<td></td>
<td>Annual</td>
<td>60 micrograms per cubic meter</td>
<td>...the annual geometric mean is less than or equal to 60 µg/m³</td>
</tr>
</tbody>
</table>

¹ A primary standard is set to protect against human health effects associated with exposure to an air pollutant.

² A secondary standard is set to protect against environmental or public welfare effects associated with exposure to an air pollutant.
Violation of the Secondary Daily TSP Standard

![Graph showing TSP Concentration (µg/m³) from 10/2/2014 to 11/19/2014 with a secondary daily standard of 150 µg/m³. The graph includes data points for each date, with the highest value on 11/1/2014 at 278 µg/m³. The other values are: 35, 53, 74, 49, 152, 149, 21, and 28 µg/m³ respectively.]
Violation of the Primary Daily TSP Standard

Primary daily standard, 260 µg/m³

- 10/2/2014: 35
- 10/8/2014: 53
- 10/14/2014: 74
- 10/20/2014: 49
- 10/26/2014: 152
- 11/1/2014: 278
- 11/7/2014: 149
- 11/13/2014: 21
- 11/19/2014: 28
Exceedance Report for October 26, 2014
Exceedance Report for November 1, 2014

- Zinc (TSP)
- Selenium (TSP)
- Nickel (TSP)
- Manganese (TSP)
- Lead (TSP)
- Iron (TSP)
- Copper (TSP)
- Cobalt (TSP)
- Chromium (TSP)
- Cadmium (TSP)
- Beryllium (TSP)
- Barium (TSP)
- Arsenic (TSP)
- Antimony (TSP)
- Aluminum (TSP)

Concentration (micrograms per cubic meter)

Map showing North Minneapolis Site 909 with wind rose and data for November 1, 2014.
MPCA Investigation

• Identify cause or contributors

• Coordinate with city

• RFI
PM$_{10}$ Monitoring

Hourly PM$_{10}$ concentrations at the Lowry Ave monitor: January 30, 2015

Hourly monitoring results are useful for identifying periods of the day when air pollution levels are elevated. Hourly results are not available for TSP, but are available for PM$_{10}$. On January 30, 2015, PM$_{10}$ concentrations were elevated at the Lowry Avenue monitoring site between 9:00 am and 6:00 pm.
$PM_{10}$ Pollution Roses

Lowry Ave Hourly $PM_{10}$ Pollution Rose
January 6, 2015 - March 3, 2015

Lowry Ave Hourly $PM_{10}$ Pollution Rose ($\geq 150 \mu g m^{-3}$)
January 6, 2015 - March 3, 2015

Frequency of counts by wind direction (%)

Count by wind direction
Communication & Transparency

- News release
- Gov delivery
- Emails to interested community parties
- AirMail
Disclosure Challenge

- Minn. Stat. § 13.39 CIVIL INVESTIGATION

- "pending civil legal action" includes but is not limited to judicial, administrative or arbitration proceedings.

- ...data collected by a government entity as part of an active investigation undertaken for the purpose of the commencement or defense of a pending civil legal action... are classified as protected nonpublic data...
Media Coverage

Monitor finds particle violation on upper riverfront

MPCA narrows search for firms adding to Mpls riverfront particles

MPCA narrows riverfront particle search

Air quality violation found in North Minneapolis
Current Status

• Additional exceedances
• Questions and communication continue
• Investigation continues
  – Both broadens and narrows

• Monitoring will continue indefinitely...
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