

SCAQMD Proposed Rule 1480

Air Toxic Metals Monitoring

Working Group Meeting #2

SCAQMD Headquarters, Diamond Bar, CA

June 13, 2018



Review of Air Monitoring

- Regional and localized air monitoring are effective tools to identify unknown sources of toxic metal emissions
- Regional air monitoring captures concentrations from a variety of sources in the vicinity of the monitor
- Localized air monitoring is designed to capture contributions from a potential source



Meeting Agenda

- Approaches to identifying sources
 - Regional air monitoring
 - Localized air monitoring
 - Other approaches (e.g. glass plate and bulk samples)
- Summary of ambient air monitoring



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Examples of Regional and Localized Air Monitoring Efforts for Toxic Air Contaminants

- Regional air monitoring
 - Multiple Air Toxics Exposure Study (MATES)
 - Conducted four MATES
 - Initiated work on fifth MATES
- Localized air monitoring near
 - Large lead-acid battery recycling facilities
 - Cement manufacturing facility
 - Chromic anodizing facilities
 - Metal forging and grinding facilities
 - Heat treating facility



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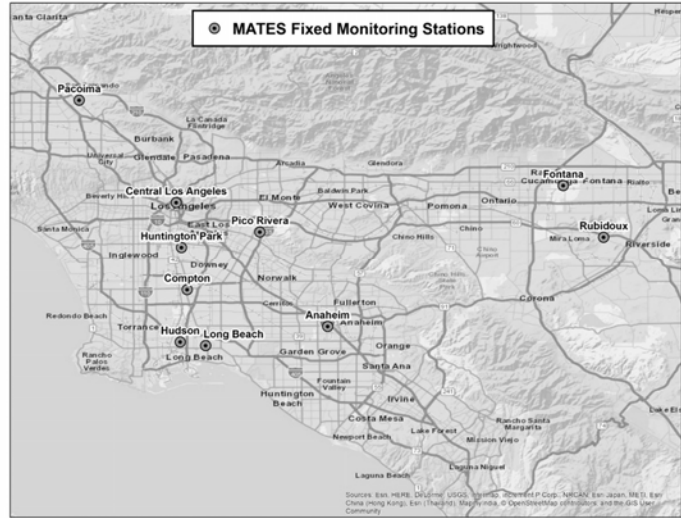
Regional Air Monitoring

Regional Air Monitoring - Multiple Air Toxics Exposure Study (MATES)

- MATES is a regional monitoring and evaluation study conducted in the Basin
- Includes:
 - Ambient monitoring (e.g. Carbonyls, Metals, PAH, VOC)
 - Emissions inventory of Toxic Air Contaminants (TACs)
 - Regional modeling estimates of health risks across the Basin

Regional Air Monitoring – MATES (Continued)

- Network of 10 fixed sites in commercial and light industrial areas to monitor over 30 TACs for one year
- Focused on regional levels of air toxics
 - Localized areas of increased exposure may not be identified



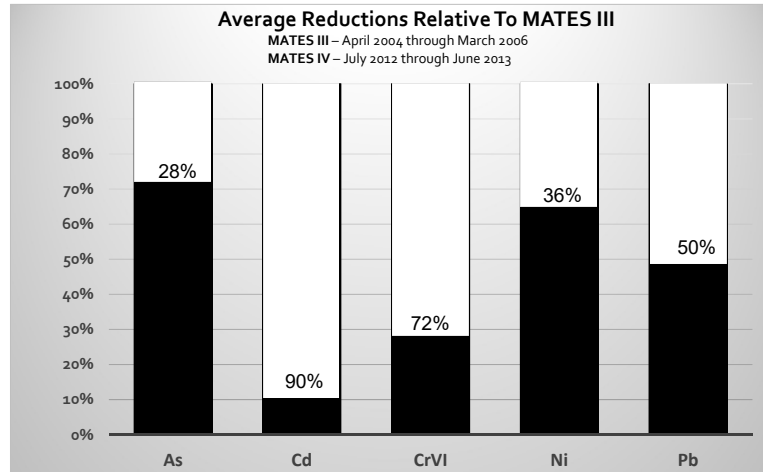
Ambient Air Toxic Metals of Concern in the South Coast Air Basin

- Existing monitoring can detect a large list of metals including these:
 - Arsenic (As)
 - Cadmium (Cd)
 - Copper (Cu)
 - Hexavalent Chromium (CrVI)
 - Lead (Pb)
 - Manganese (Mn)
 - Nickel (Ni)
 - Selenium (Se)



Reductions in Basin-Wide Air Toxic Metals Concentrations

- Significant reductions in basin-wide air toxic metals concentrations between MATES III and MATES IV
- Decreases due to ongoing emissions reduction efforts



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Cement Manufacturing Facilities

- MATES III identified high levels of hexavalent chromium at one of the monitoring sites
- Further investigation identified cement manufacturing facilities as a potential source (e.g., soil and ambient air samples)
- Confirmed with additional monitoring
- Led to the amendments to Rule 1156 that requires a compliance plan or fenceline monitoring



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Localized Air Monitoring

What is Localized Air Monitoring?

- Localized air monitoring refers to ambient air monitoring that is designed to capture concentrations from a potential source
- Upon confirmation of a potential source, localized air monitoring is deployed
- SCAQMD has conducted localized air monitoring near a variety of different sources throughout the air basin




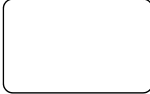
SCAQMD Localized Air Monitoring Efforts


Sources	Pollutants	Cities
Large-lead acid battery recycling	Lead	Vernon and Industry
Lead battery manufacturing	Lead	Santa Fe Springs
Cement manufacturing	Hexavalent chromium	Riverside
Steel mini mill	Lead and multi-metals	San Bernardino
Chromic acid anodizing	Hexavalent chromium	Newport Beach, Paramount, Long Beach, Compton
Heat treating	Hexavalent chromium	Paramount
Metal forging and grinding	Nickel, hexavalent chromium	Paramount





Localized Air Monitoring - Paramount


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Beginning 2012, SCAQMD began receiving a series of burnt metallic odor complaints - a number of complaints focused on Carlton Forge Works (CFW)
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May 2013 - Glass plate sampling at and near CFW confirmed fugitive metal particulate emissions
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August 2013 - SCAQMD began ambient air monitoring near CFW
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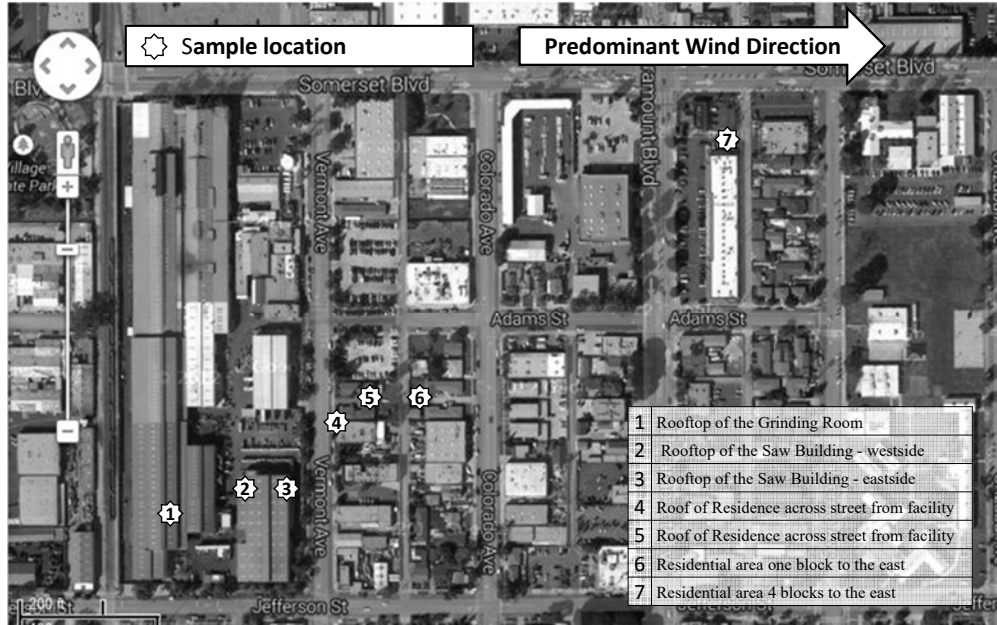
September 2013 - CFW began voluntarily implementing measures to reduce fugitive emissions from their grinding operations
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January 2014 - SCAQMD hosted a town hall meeting to report initial monitoring results
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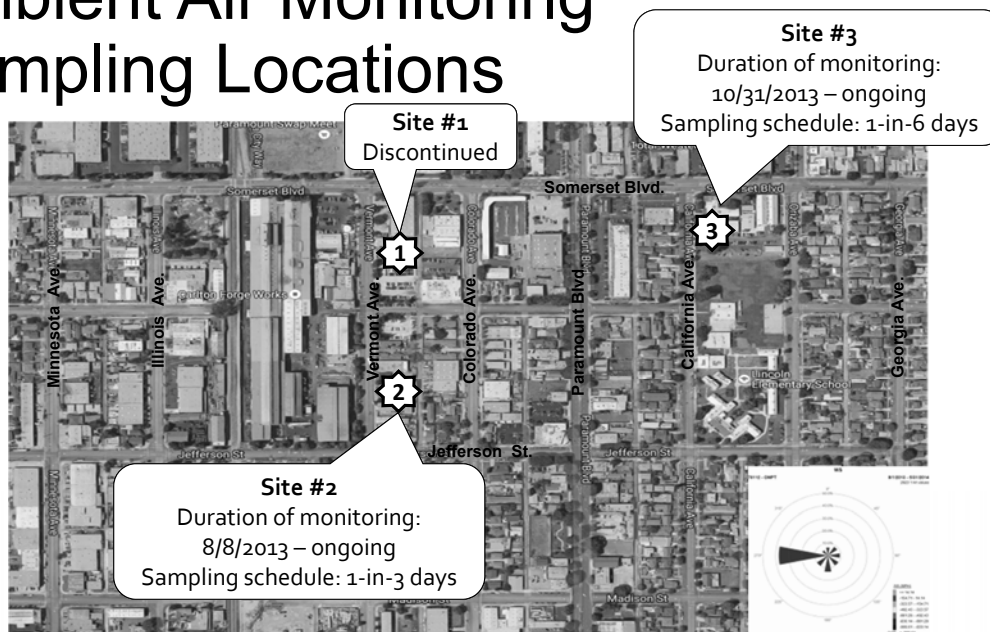
Post 2015 - Expanded monitoring activities and additional emission reduction measures



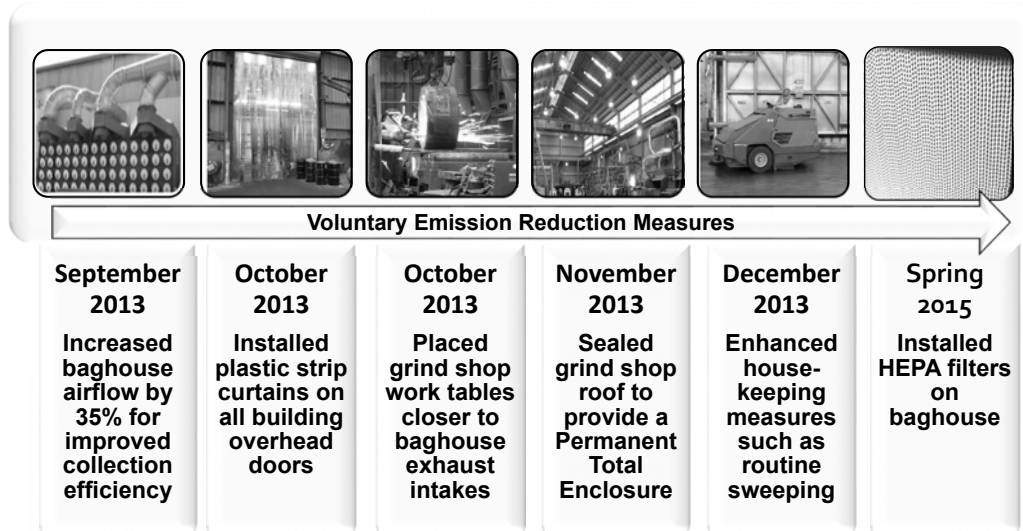
Glass Plate Sampling at CFW



Ambient Air Monitoring Sampling Locations

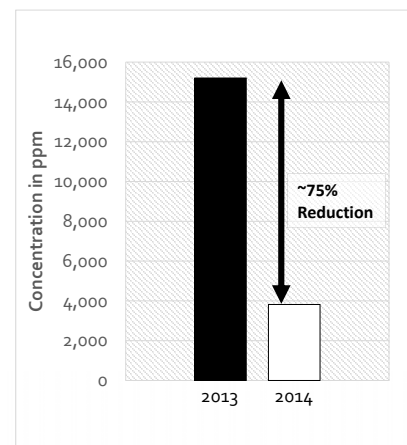


Voluntary Emission Reduction Measures at CFW

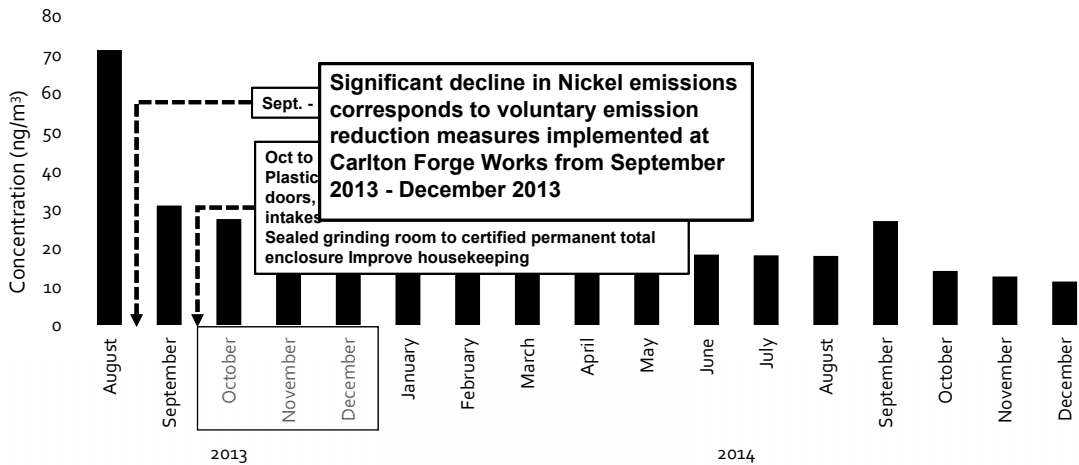


Glass Plate Sampling Results at CFW

- 2013/2014 deployed glass plate samples :
 - Found elevated levels of metals near grinding operations
- Comparison of 2013 and 2014 glass plate samples showed a decrease in metal particulates
- Demonstrates effectiveness of voluntary emission reduction measures for grinding operation

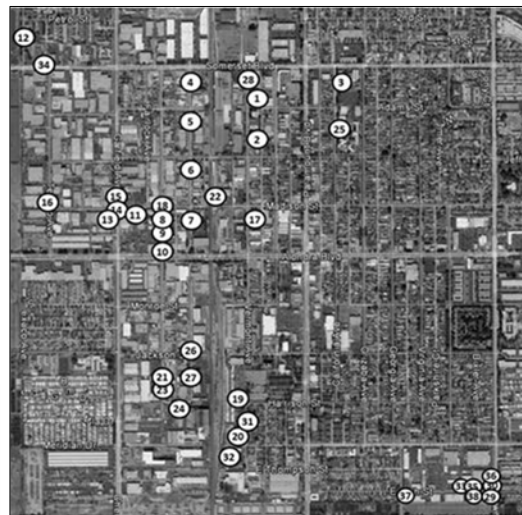


Nickel Ambient Air Monitoring Results



Expanded Monitoring Efforts in Paramount

- Monitoring has occurred at 38 community locations
- Analyzed over 2,700 samples
- Significant progress in identifying facilities and operations that can emit high levels of hexavalent chromium
- Overall reduction in average hexavalent chromium levels
- A range of improvements have been made by facilities, some voluntary, some through regulatory changes and enforcement actions



Identifying Sources of Hexavalent Chromium

- When elevated levels of hexavalent chromium are observed SCAQMD staff evaluates potential sources
 - Review permitting database
 - Conduct multi-agency inspections of all surrounding sources, both permitted and unpermitted
 - Utilize a variety of tools to verify the presence of hexavalent chromium
 - Analysis of bulk samples of materials
 - Source tests of specific sources/equipment
- Additional ambient air monitors may be added to better “pinpoint” source(s)



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Initial Measures to Reduce Monitored Levels

- In November 2016, SCAQMD staff determined that Anaplex and Aircraft were sources of elevated levels of hexavalent chromium emissions
- Source tests were performed on various pieces of equipment
- SCAQMD staff observed that open doors negatively impacted the collection efficiency of add-on air pollution control devices
- Implementation of measures such as closing doors to prevent cross-draft and performing operations in enclosures resulted in reductions of monitored hexavalent chromium emissions

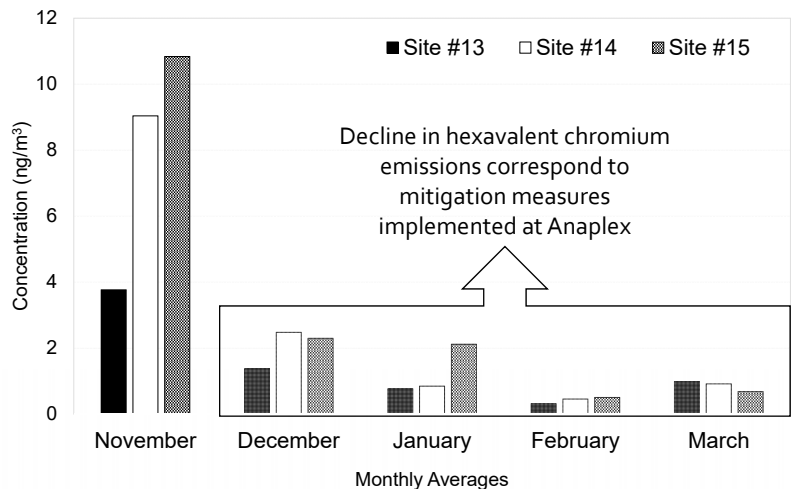


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Effectiveness of Measures at Anaplex

- Anaplex's interim measures demonstrated immediate results in reducing monitored concentrations of hexavalent chromium when:

- Closing doors to minimize cross-draft
- Using temporary tank covers
- Performing daily cleanup activities in tank process areas



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Additional Steps to Address Elevated Levels – Anaplex and Aircraft

- Staff pursued an Order for Abatement through the SCAQMD Hearing Board
- Designated as Potentially High Risk Level Facilities under Rule 1402
- Proposed amendments to Rule 1469
- Proposed Rule 1435



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Summary of Ambient Air Monitoring

- Regional air monitoring and other investigation methods have assisted with the placement of localized air monitors
- Can assist with the identification of previously unknown sources of air toxic metals
- Have shown that the contribution of fugitive emissions from facility operations can be substantial
- Are effective at identifying areas with elevated levels of air toxic metals
- Can be used to confirm the effectiveness of measures undertaken by facility to reduce emissions



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PR 1480: Next Steps

- Working Group Meeting #3 in Summer 2018
- Governing Board Hearing – December 2018

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