SCAQMD Proposed Rule 1480

Air Toxic Metals Monitoring

Working Group Meeting #2

SCAQMD Headquarters, Diamond Bar, CA

June13, 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

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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

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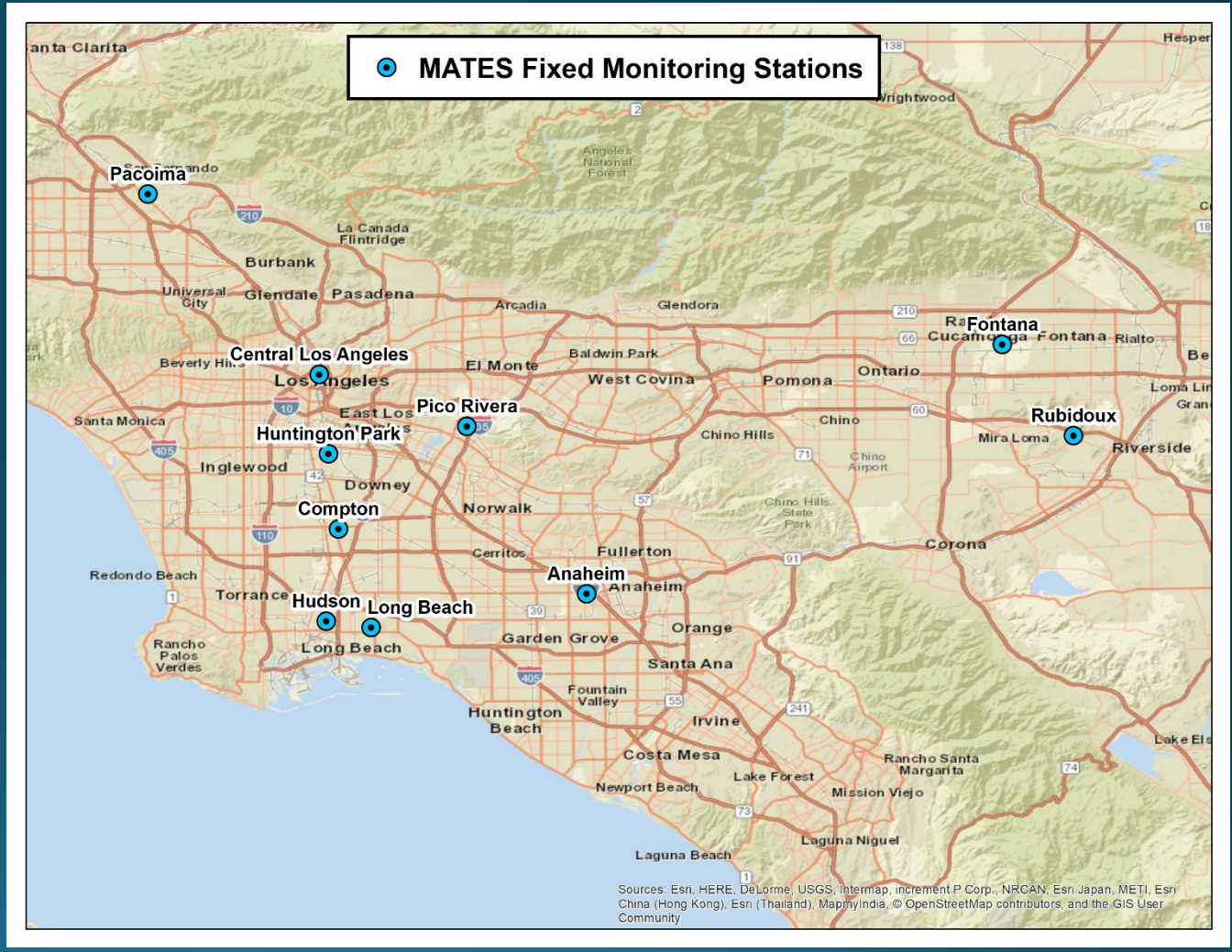
Regional Air Monitoring – MATES (Continued)

- 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



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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)

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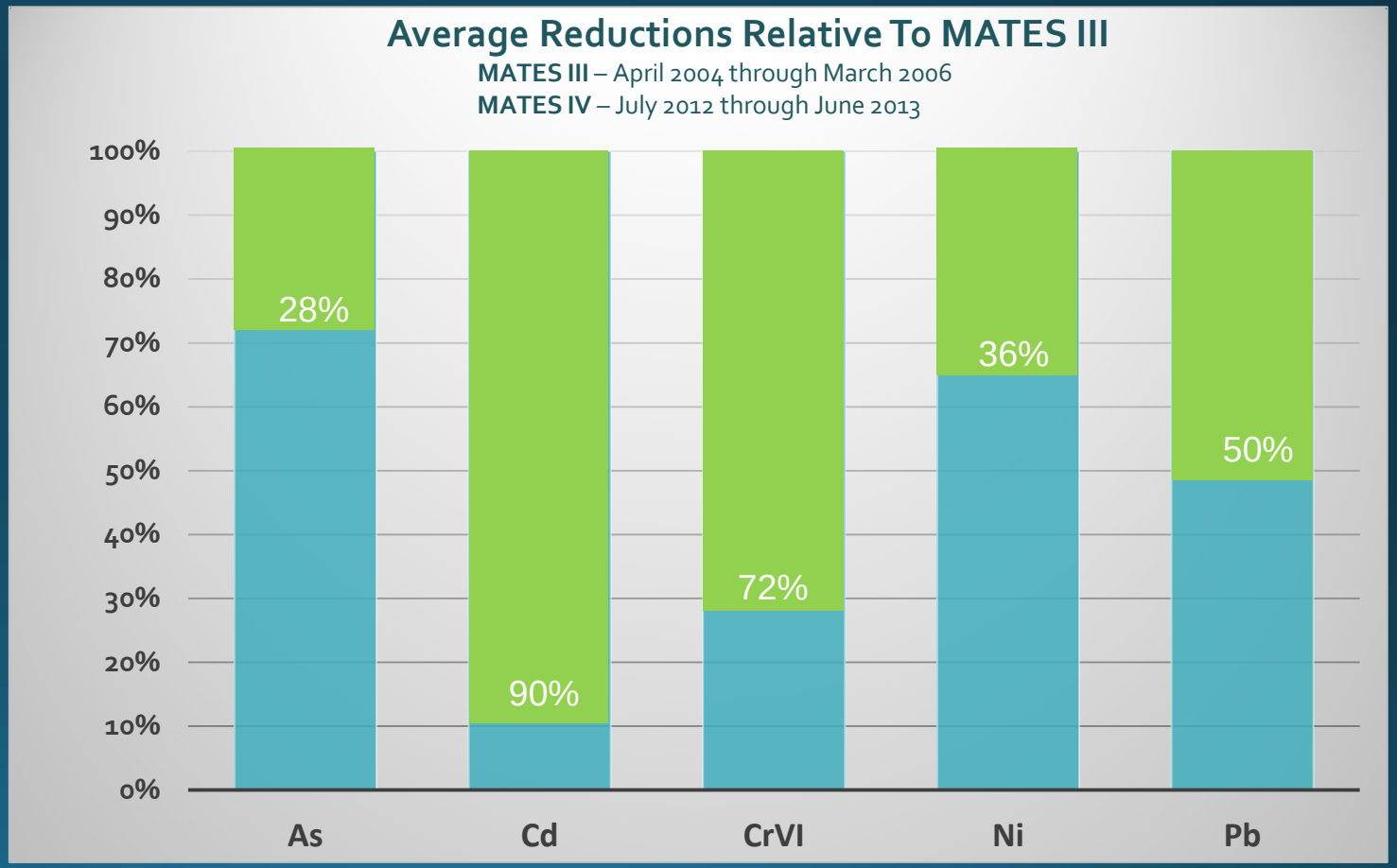
Reductions in Basin-Wide Air Toxic Metals Concentrations

- 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

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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

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Localized Air Monitoring - Paramount

Beginning 2012, SCAQMD began receiving a series of burnt metallic odor complaints - a number of complaints focused on Carlton Forge Works (CFW)

May 2013 - Glass plate sampling at and near CFW confirmed fugitive metal particulate emissions

August 2013 - SCAQMD began ambient air monitoring near CFW

September 2013 - CFW began voluntarily implementing measures to reduce fugitive emissions from their grinding operations

January 2014 - SCAQMD hosted a town hall meeting to report initial monitoring results

Post 2015 - Expanded monitoring activities and additional emission reduction measures

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Glass Plate Sampling at CFW

1	Rooftop of the Grinding Room
2	Rooftop of the Saw Building - westside
3	Rooftop of the Saw Building - eastside
4	Roof of Residence across street from facility
5	Roof of Residence across street from facility
6	Residential area one block to the east
7	Residential area 4 blocks to the east

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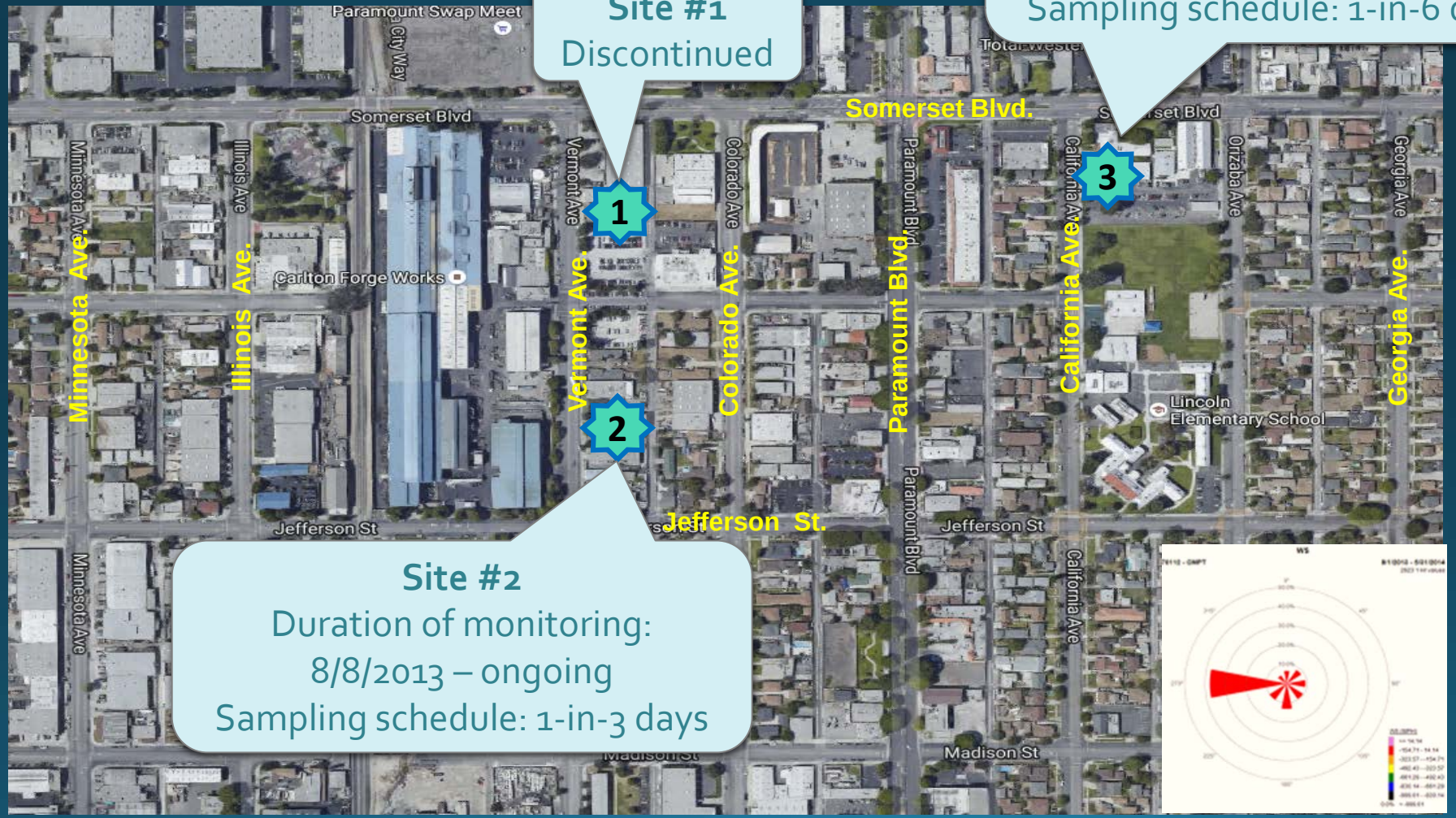
Ambient Air Monitoring Sampling Locations

Site #1
Discontinued

Site #3
Duration of monitoring:
10/31/2013 – ongoing
Sampling schedule: 1-in-6 days



Site #2
Duration of monitoring:
8/8/2013 – ongoing
Sampling schedule: 1-in-3 days

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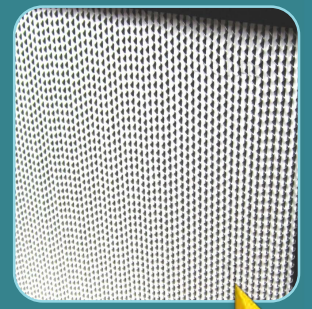
Voluntary Emission Reduction Measures at CFW







Voluntary Emission Reduction Measures

September 2013

Increased baghouse airflow by 35% for improved collection efficiency

October 2013

Installed plastic strip curtains on all building overhead doors

October 2013

Placed grind shop work tables closer to baghouse exhaust intakes

November 2013

Sealed grind shop roof to provide a Permanent Total Enclosure

December 2013

Enhanced house-keeping measures such as routine sweeping

Spring 2015

Installed HEPA filters on baghouse

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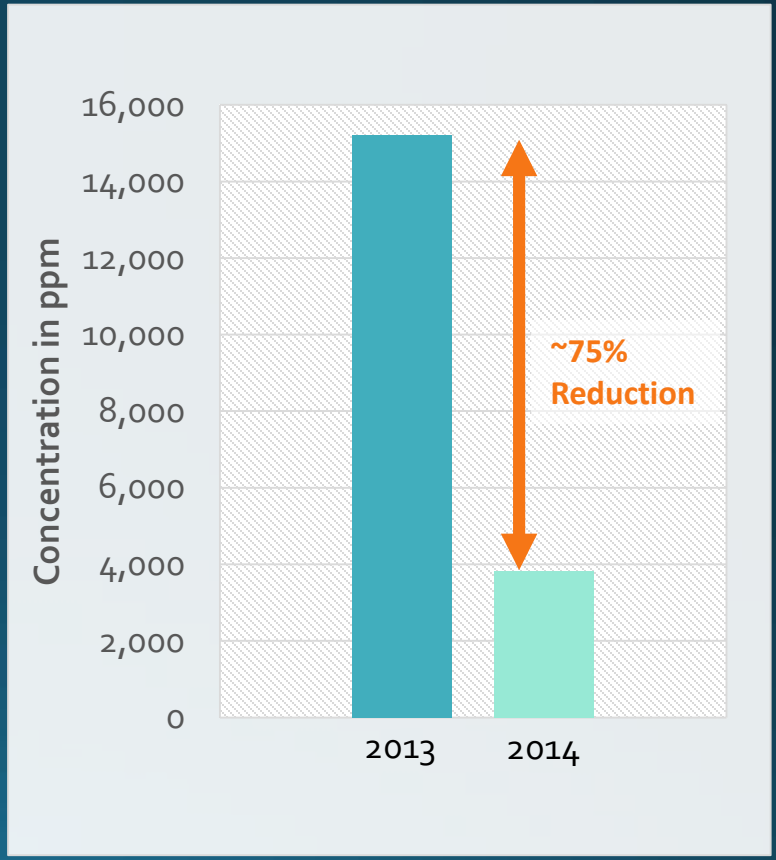
Glass Plate Sampling Results at CFW

- 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



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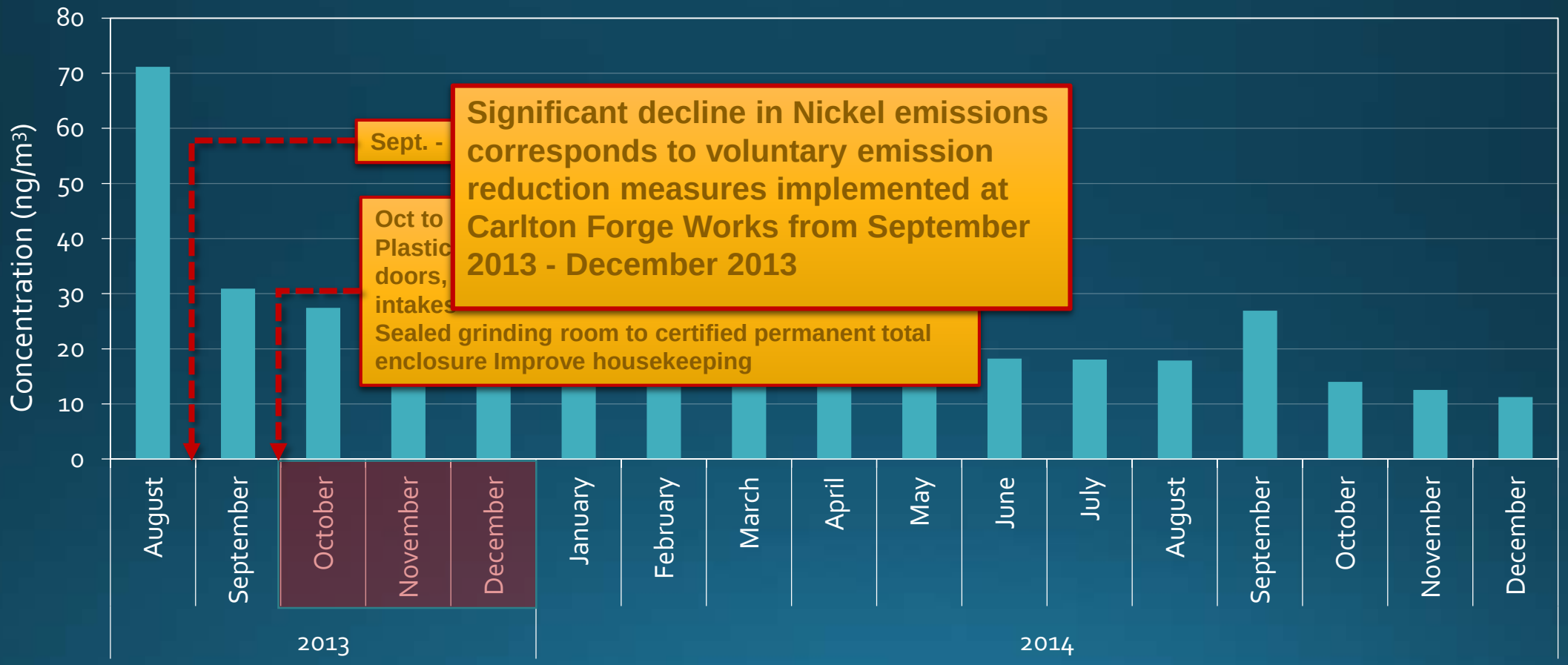
Nickel Ambient Air Monitoring Results



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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

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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 Aerocraft 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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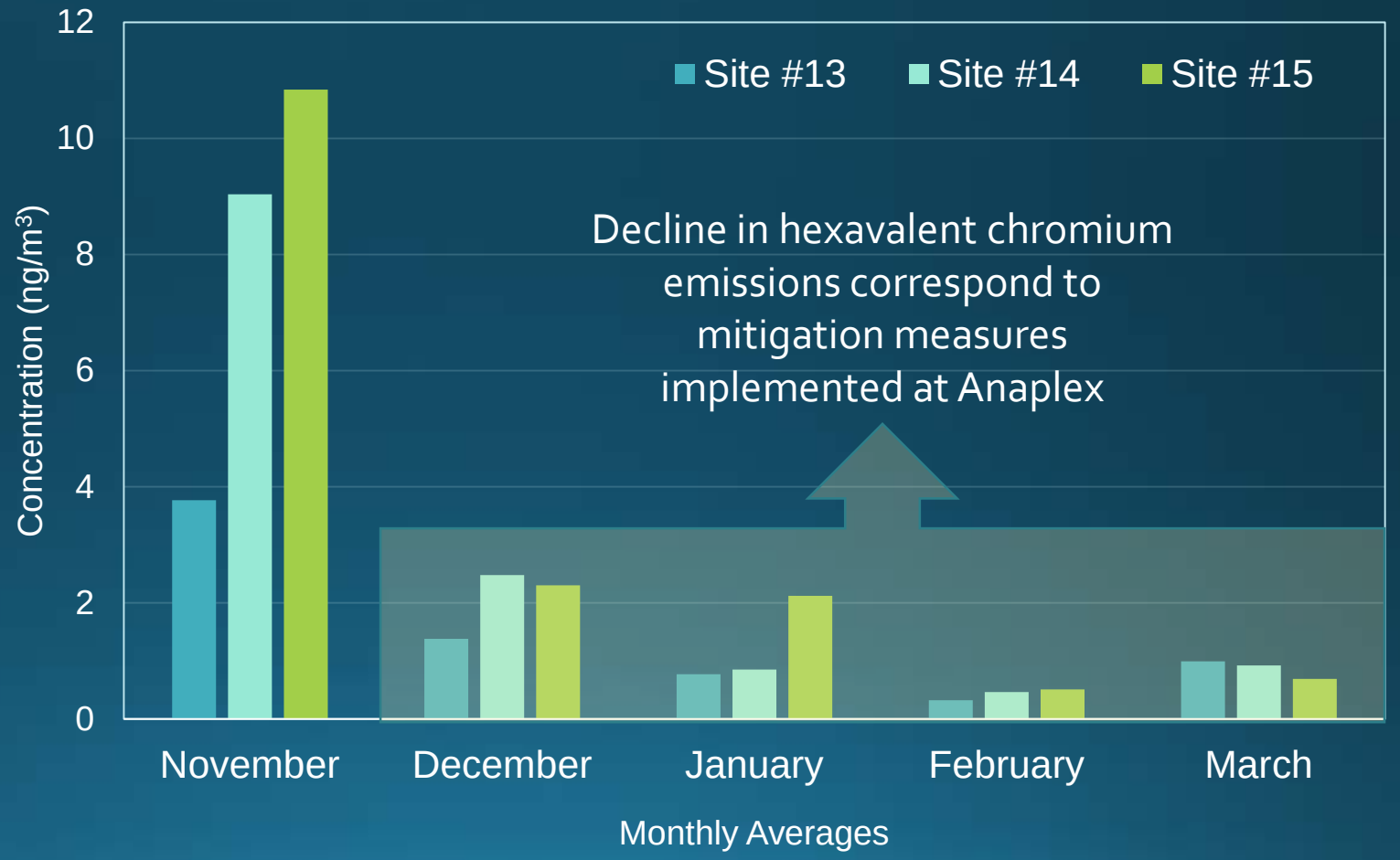
Effectiveness of Measures at Anaplex

- 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 Aerocraft

- 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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