



Air Toxics Monitoring in the South Coast Air Basin

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Traditional Air Toxics Monitoring

- **Permanent, fixed sites**
- **NATTS-type methods**
- **24-hour samples**
- **Away from sources**
- **Neighborhood, urban or regional scale**

MATES III Monitoring Sites



○ Fixed

● Temporary Sites

Community-Based Air Toxics Monitoring

- **Addresses local concerns and complaints**
- **Source-specific**
- **Micro or middle scale**
- **Non-regulatory, continuous data preferred**
- **Temporary and/or mobile platforms**
- **Different approaches for different situations**
- **Enlist the help of citizens**
- **Risk communication**

Community-Based Air Toxics Monitoring

- **Most common citizen complaints**
 - **Odors**
 - **Dust**
 - **Smoke**
- **Tools**
 - **Citizen grab samples (cans, bags)**
 - **Automatic grab samples based on TNMHC**
 - **Odor event logs**
 - **Deposition plates**
 - **Monitoring Trailers**

Odor Events

Observer Name: Del Amo ES

Street Address: _____

City & Zip: _____

Area Code/Phone #: / _____

Odor Event Observation Log

INSTRUCTIONS: For each odor event, please:

- ✓ Log nature of the event, the observation type (check odor), physical effects, if any, and the name(s) of anyone affected, along with the date and time the event occurred.
- ✓ Indicate if odors were observed indoors, outdoors, or both.
- ✓ Call 1-800-CUT-SMOG to log air quality complaint with AQMD.

Date	Nature of Event	Observation	Observation period		Physical effects, if any, and name of child/adult affected	Where odor noticed	Was AQMD called?
			From	To			
1/19	<input type="checkbox"/> Intermittent	<input checked="" type="checkbox"/> Odor	7:40	8:20	Chemical 8:10 49° 70 wind	<input type="checkbox"/> Inside	<input checked="" type="checkbox"/> Yes
	<input checked="" type="checkbox"/> Continuous 8:04	<input checked="" type="checkbox"/> Odor	8:05		Sulfur wind 1mph SW	<input checked="" type="checkbox"/> Outside	<input type="checkbox"/> No
1/29	<input type="checkbox"/> Intermittent	<input checked="" type="checkbox"/> Odor	10:05		Gas Odor 1-3 miles NW	<input type="checkbox"/> Inside	<input checked="" type="checkbox"/> Yes 10:10am
	<input checked="" type="checkbox"/> Continuous	<input type="checkbox"/> Odor			57° 76% H	<input checked="" type="checkbox"/> Outside	<input type="checkbox"/> No
1/30	<input type="checkbox"/> Intermittent	<input checked="" type="checkbox"/> Odor	10:10		Sulfur 520 93H 9-6mph	<input type="checkbox"/> Inside	<input checked="" type="checkbox"/> Yes 10:10
	<input checked="" type="checkbox"/> Continuous	<input type="checkbox"/> Odor			wind 7 mile south 72° S-SE	<input checked="" type="checkbox"/> Outside	<input type="checkbox"/> No
	<input type="checkbox"/> Intermittent	<input type="checkbox"/> Odor				<input type="checkbox"/> Inside	<input type="checkbox"/> Yes
	<input type="checkbox"/> Continuous	<input type="checkbox"/> Odor				<input type="checkbox"/> Outside	<input type="checkbox"/> No
	<input type="checkbox"/> Intermittent	<input type="checkbox"/> Odor				<input type="checkbox"/> Inside	<input type="checkbox"/> Yes
	<input type="checkbox"/> Continuous	<input type="checkbox"/> Odor				<input type="checkbox"/> Outside	<input type="checkbox"/> No

Your participation makes a difference! Thank you for working with AQMD to improve the air quality in your area.

Grab Sampling

- Given to community members
- Evacuated Canister for VOCs
- Bag for sulfur compounds
- Full training provided
 - Open/close valve
 - Turn a key



Automatic Grab Sampler System

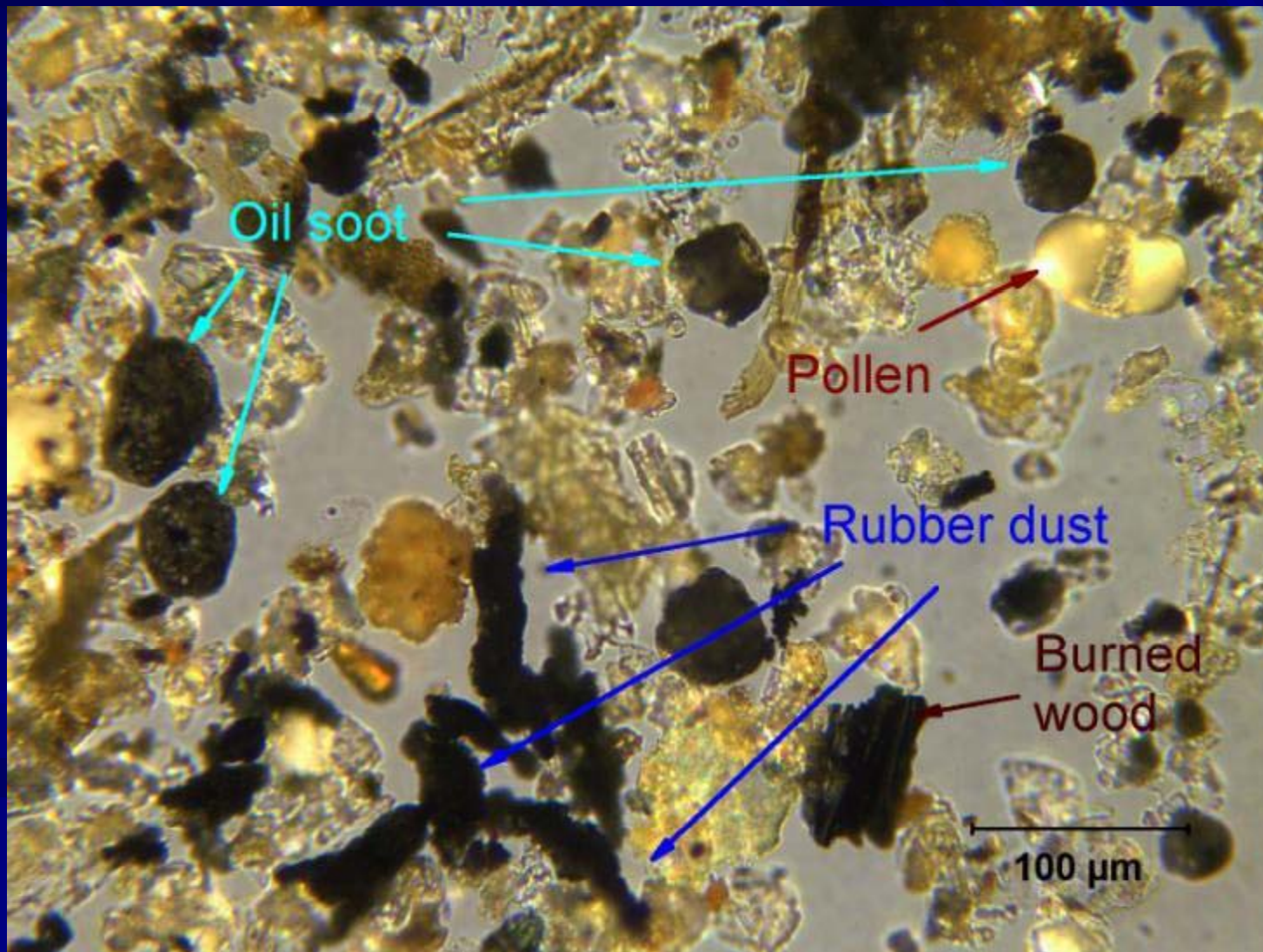
- Uses a TNMHC Analyzer
- Triggers a grab sample when TNMHC exceeds a threshold
- Combine with detailed wind direction data



Dust Complaints

- In the South Coast Basin
 - Multiple open-pit aggregate mines
 - Construction sites
 - Concrete batch plants
 - Other industrial sources
- Glass deposition plates
 - 1-week deployment
 - At citizen's residence
 - Inexpensive sampling and microscopic analysis
 - Allows for chemical analysis if warranted
 - Not quantitative, not for PM_{2.5}

Typical Deposition



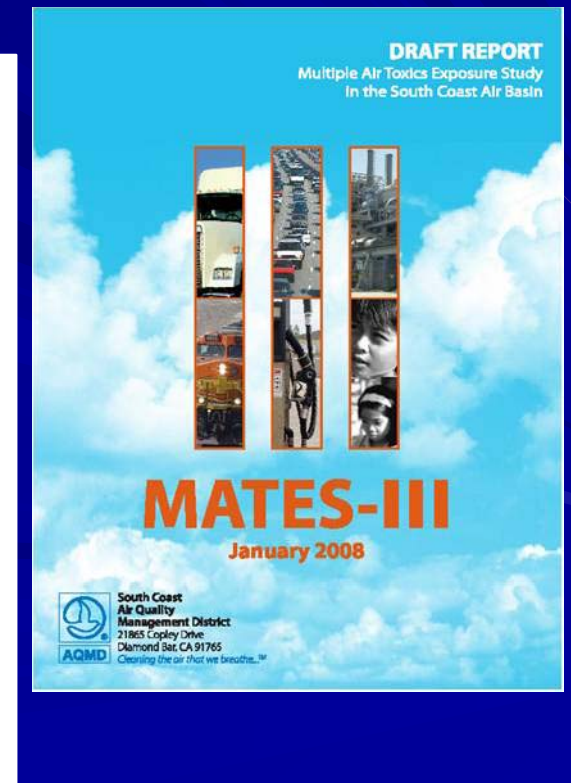
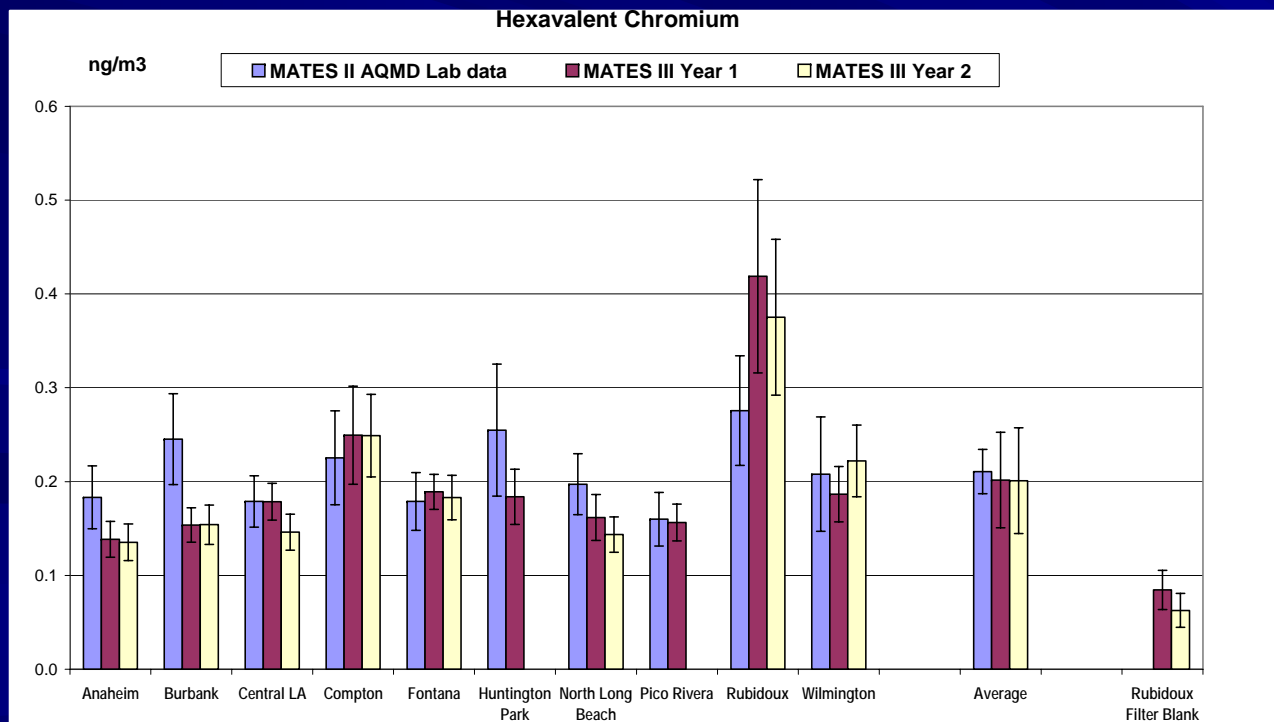
Mobile Monitoring Trailers (2)



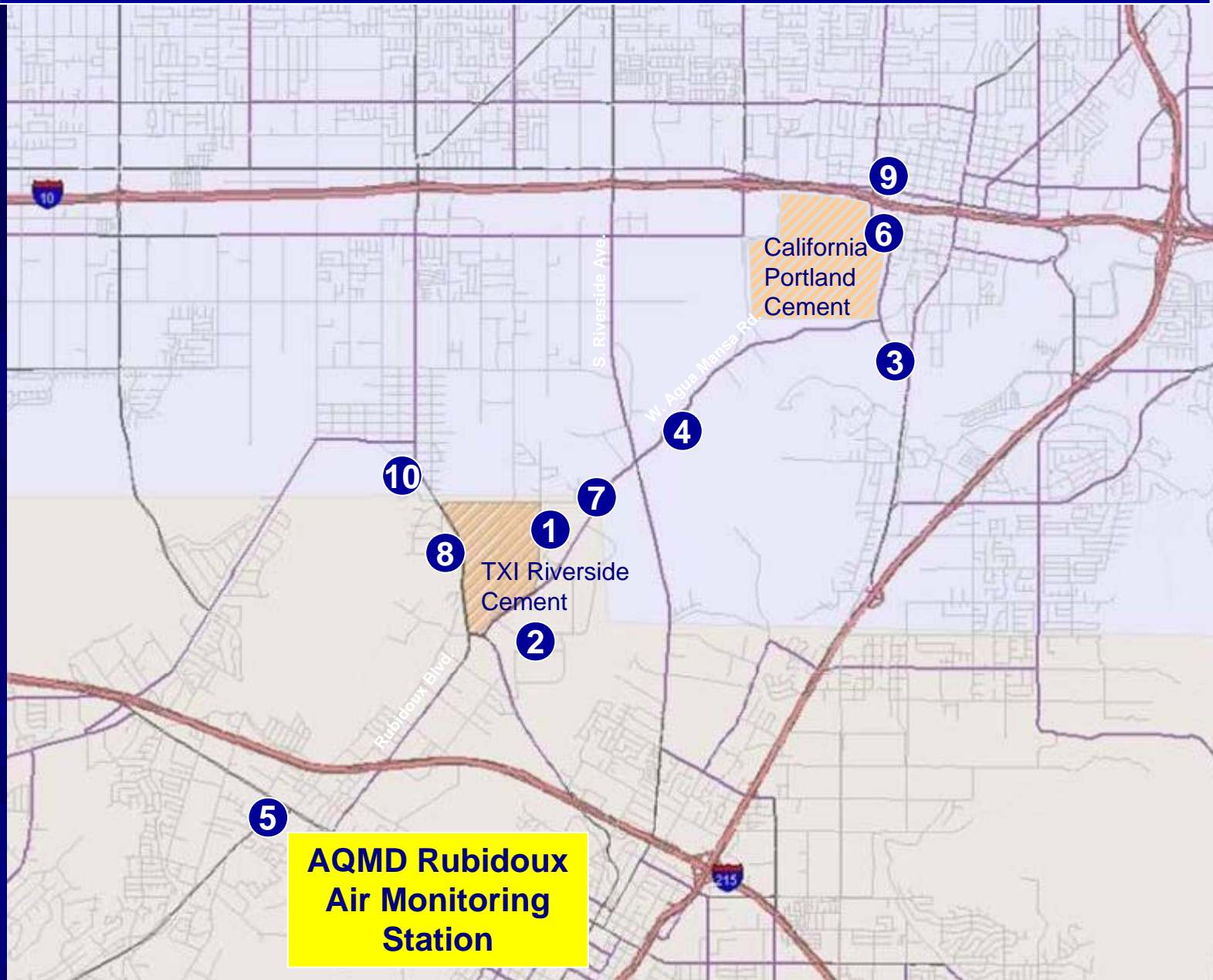
- DustTrak DRX
- TSI CPCs
- 2B NO_x
- Q-Trak CO/CO₂
- Aethalometer
- Mocon TNMHC
- Synpec GC*
- Can Sampler
- BGI OMNI frm

Hexavalent Chromium from Cement Plants

- Slightly elevated hexavalent chromium levels found 4 km from cement plants in regional air toxics study (2004-2006)



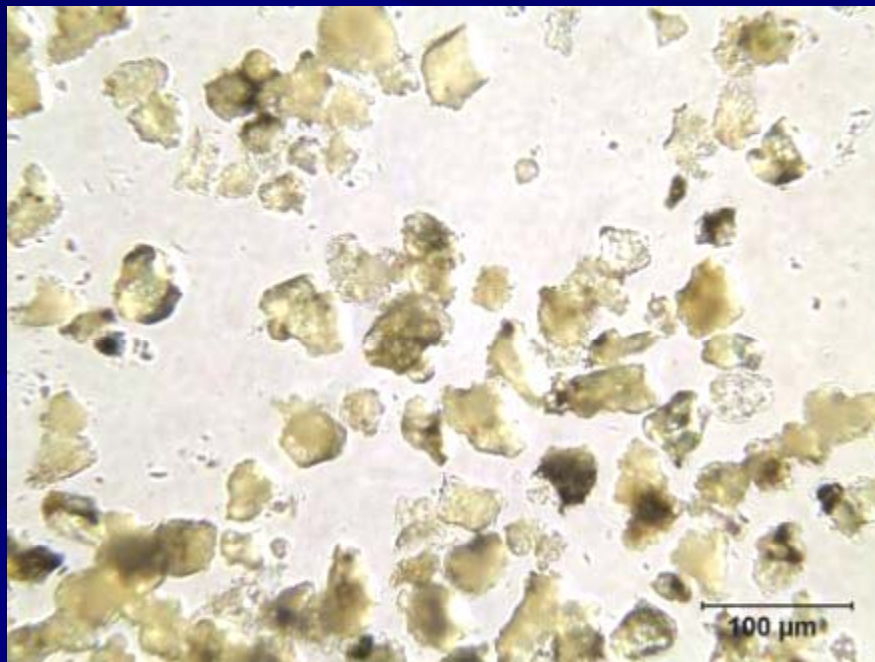
Sampling Locations for Hexavalent Chromium



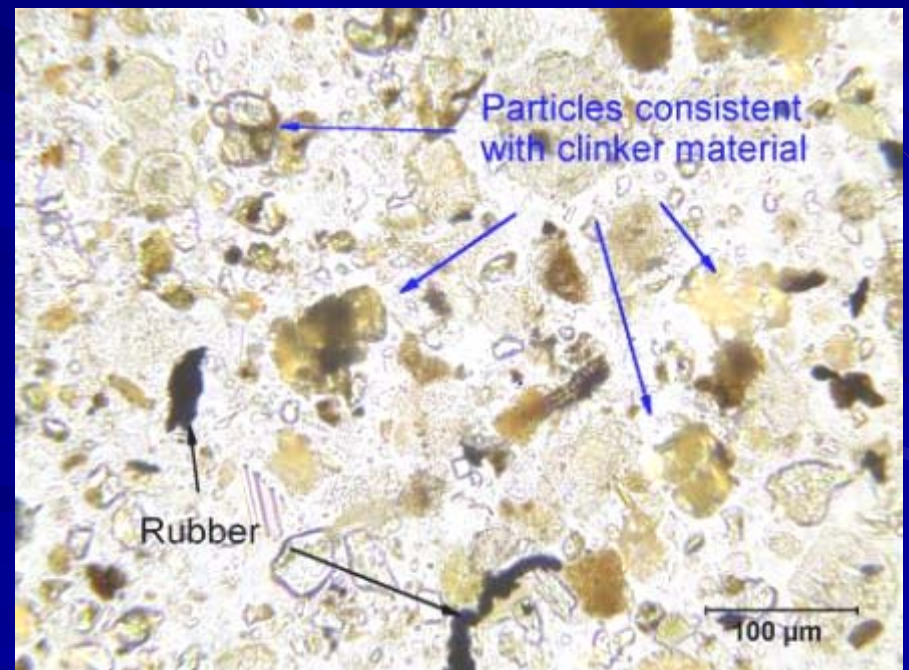
Fingerprinting

- Microscopically examined gray clinker fine dust and particles on the deposition plates

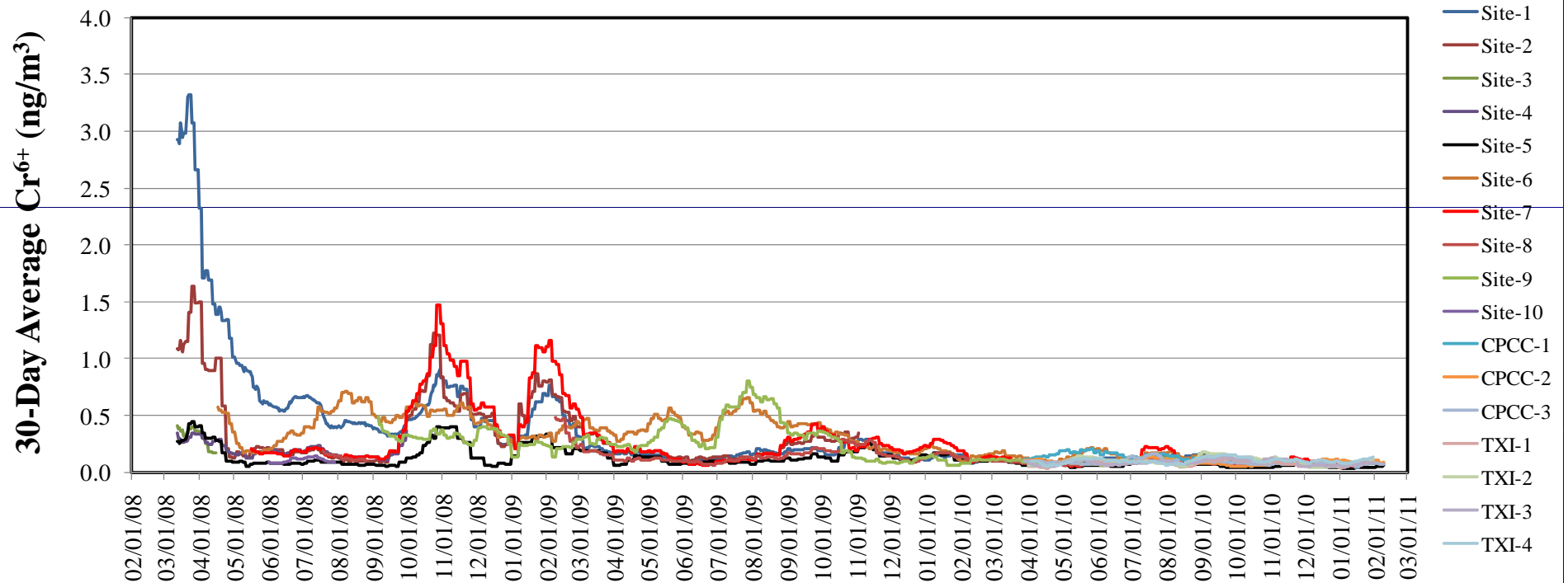
Gray Clinker Fine Dust



Deposition Plate Adjacent to Riverside Cement



Hexavalent Chromium Results



- Rule amendment requires facilities to monitor for Cr⁶⁺