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California AB 617 Community Air Toxics Monitoring and Enforcement

Cemtek KVB-Enertec 2018 Emissions Monitoring Seminar and Training Costa Mesa, CA September 12, 2018

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Presenter



Steve Walters, P.E., C.P.P. Principal Consultant

- > 25+ years of multimedia environmental experience
- SCAQMD Certified Permitting Professional (CPP), ARB Accredited Lead Verifier, Professional Engineer
- Permitting and compliance, multimedia, CUPA, CARB, Regional Water Control Board, DTSC, review/due-diligence, and other CA agency experience



Agenda

- > California Air Toxics Regulatory History
- > AB 617 Overview
- > Community Air Toxic Regulations
- > Community Air Toxic Monitoring
- > Closing



California Air Toxics Regulatory Background



Background - California Air Toxics Regulatory Programs

Since the late 1980s, California air districts traditionally have regulated air toxics through:

> New Source Review permitting (New sources)

> Source Specific Regs - NESHAPs/ATCMs

> AB 2588 Program (Existing sources)

Since 2015, additional regulatory programs and enforcement authority are emerging:

> Community Air Toxics Initiatives



AB 2588 - Regulatory History

- In September 1987, the Air Toxics "Hot Spots" Information and Assessment Act (AB 2588) was enacted
- The goals of the Air Toxics "Hot Spots" Act are to collect emission data, to identify facilities having localized impacts, to ascertain health risks, and to notify nearby residents of significant risks.
- In September 1992, the "Hot Spots" Act was amended by Senate Bill (SB) 1731 to include <u>risk reduction</u> <u>requirements</u>. The bill requires that owners of significantrisk facilities reduce their risks below the level of significance.



Commonly Regulated / Reported Air Toxics Compounds

- > Acetaldehyde
- > Acrolein (high potency)
- > Ammonia
- > Arsenic (high potency)
- > Benzene
- > Cadmium (high potency)
- > Chromium (high potency)
- > Diesel Exhaust (high potency)
- > Ethylene Oxide
- > Formaldehyde
- > Glycol Ethers
- > Hexane

- > Lead (high potency)
- > MEK
- > Nickel (high potency)
- > Sodium Hydroxide
- > PAHs
- > Propylene
- > Styrene
- > Sulfuric Acid
- > Toluene
- > Xylene



Health Risk Standards - Cancer

Maximum Individual Cancer Risk (MICR) -Estimated probability of a potential maximally exposed individual contracting cancer as a result of exposure to toxic air contaminants over certain exposure period

- MICR = 10 in 1 million (triggers public notice)
- MICR = 25 in 1 million (pollution controls)
- MICR = 100 in 1 million (considered significant and requires immediate controls)



Health Risk Standard - Chronic

Chronic Hazard Index (HIC) - Long term noncancer health risks accumulated by all individual substance for a specific target organ due to all toxic air contaminants emitted.

- HIC = 1.0 (triggers public notice)
- HIC = 3.0 (triggers pollution controls)
- HIC = 5.0 (considered significant and requires immediate controls)



Health Risk Standards - Acute

Acute Hazard Index (HIA) – Short term noncancer health risks accumulated by all individual substance for a specific target organ due to all toxic air contaminants emitted.

- HIA = 1.0 (triggers public notice)
- HIA = 3.0 (triggers pollution controls)
- HIA = 5.0 (considered significant and requires immediate controls)



5 Key Steps in the AB 2588 Process

- > Step 1 Air Toxics Inventory Report (ATIR)
- > Step 2 Priority Scoring
- > Step 3 Health Risk Assessment (HRA)
- > Step 4 Public Notice / Community Meeting
- > Step 5 Risk Reduction Plan



AB 2588 - Facility Priority Score

Based on air toxics reporting <u>every 4 years</u>, facilities are prioritized to determine which will require preparation of an HRA:

- > High Priority → HRA will be required

> Low Priority → HRA will not be required



What's happened since 2015?

- > 2015 California's Office of Environmental Health Hazard Assessment (OEHHA) changes it Health Risk Assessment Guidelines, which increased cancer risk estimates for residential and other sensitive receptors.
- > 2016 South Coast AQMD initiates major community air toxic monitoring investigations for hexavalent chromium in the Cities of Paramount (and then later, another in City of Compton).
- > 2017 Governor Brown signs Assembly Bill 617 into law, which requires the deployment of community monitoring systems and community emission reduction programs.



OEHHA - Implications From Change to Risk Guidance

- > OEHHA changes now give substantially more weight to early year exposures (up to age 16) for residential and sensitive receptors.
- The updated risk guidelines caused cancer risks from affected facilities statewide to rise up to a "factor of three or more."
- > These OEHHA changes created a belief that prior health risk assessments drastically underestimated cancer risk estimates for residential and sensitive receptors (i.e., K-12 schools, hospitals, senior centers, etc.).
- > As a result, prior Health Risk Assessments under AB 2588 and other programs were deemed outdated.



Impacts from OEHHA Changes

Increased Public Notices

- 2 to 3 times more facilities may be required to conduct public notices per local AQMD rules
- 5 to 10 times more public notices to households
- Increased Risk Management
 - Additional HRAs / Updated HRAs
 - More facilities expected to be subject to risk reduction measures
- Increased Air Toxics Regulation
 - ✤ AB 2588 facilities being re-prioritized
 - Community initiatives / AB 617
 - Air Monitoring regulations



What's Been Happening Across California Air Districts

- > Air districts are revising their local air toxic programs and rules to implement the OEHHA guidelines.
- > Air districts are re-prioritizing their AB 2588 facilities
- > Air districts requiring updates to prior Health Risk Assessments based on new OEHHA risk guidance document.
- > Additional air toxic regulation and amendment of existing local rules
- Major air toxic ambient monitoring and enforcement programs in City of Paramount and Compton.
- > Passage of California Assembly Bill 617 July 2017



California Assembly Bill 617



AB 617 - Overview

Signed into law on July 26, 2017, AB 617 is *transforming* California's air quality programs, which shifts the "facility" level regulatory approach to the "community" level:

- > Community-focused emissions reduction programs to reduce exposure to air pollution in disproportionately burdened communities;
- Accelerated installation of pollution controls on industrial sources (i.e, BARCT);
- > Expanded air quality monitoring within communities;
- Increased penalties for violations of emissions control standards; and
- Improved public access to air quality and emissions data through enhanced online web tools



AB 617 - Overview

AB 617 ELEMENTS • Focus on Community Action







Community emissions reduction programs

Accelerated C retrofit of pollution controls on industrial facilities

Community-level air quality monitoring



reporting



Increased penalty provisions

Grants to local community groups



AB 617 - Key Elements

- > Annual Reporting Uniform statewide system of annual reporting of emissions of criteria air pollutants and toxic air contaminants;
- Emission Reductions- Establishes clearing house and accelerates implementation of BARCT (criteria pollutants and toxic air contaminants); and
- > Community Air Monitoring On annual basis, requires the identification of <u>high priority locations</u> for the deployment of community air monitoring systems throughout the state.



AB 617 - Statewide Annual Reporting

Beginning 2019, AB 617 requires annual reporting of criteria air pollutants and toxic air contaminants for the following proposed categories of sources:

- > (1) Facilities currently subject to AB 32 GHG Mandatory Reporting Regulation (MRR) (stationary sources only)
- > (2) Facilities authorized to emit > 250 tons per year of nonattainment criteria pollutant or its precursors
- > (3) Receives an "elevated" (or high priority) AB 2588 Air Toxics Hot Spots prioritization score based on cancer or noncancer health impacts
- > (4) All permitted sources within selected AB 617 communities subject to air monitoring



Public Access - Neighborhood Emission Data

CA.gov



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Sunday, September 9, 2018

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Air Quality (AQ) & Emissions
Emission Inventory

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RESOURCES

- Contact Us
- Join Any ARB Email List(s)

Emission Inventory Air Pollution in My Neighborhood

This page last reviewed August 11, 2010

Of special interest to most people is information about the air quality where they and their family live, work, or play. The ARB has information available that allows individuals to create and view maps that can focus on air pollution sources and impacts in various areas of the state. The ARB has a Community Health Program that focuses on the impacts of air pollution at the community level.

Air Pollution Maps

Community Health Air Pollution Information System (CHAPIS) ~ Locate your neighborhood on the air pollution map.

Regional Emission Summaries

If you would like to view an annual summary of statewide and air basin-wide air quality and emissions data, please view the The California Almanac of Emissions and Air Quality. Information from the Central California Ozone Study (CCOS) and Southern California Ozone Study (SCOS) State Implementation Plans (SIPs) are also available. If you would like to have an emission summary from a larger region, please view our County, District and Air Basin Maps.

Air Quality Monitoring Information (AQMIS)

View today's measured ozone concentrations, as well as ozone concentrations for the year so far.





AB 617 - Community Air Monitoring Systems

Assembly Bill 617 amended Health & Safety Code 42705.5 to read as follows:

"Community air monitoring system" means advanced sensing monitoring equipment that measures and records air pollutant concentrations in the <u>ambient air at or</u> <u>near sensitive receptor locations and in disadvantaged</u> <u>communities</u> and that may be useful for estimating associated pollutant exposures and health risks, determining trends in air pollutant levels over time, and in supporting enforcement efforts.



AB 617 - Community Monitoring Provisions

- > By Oct 1, 2018 Develop a monitoring plan regarding the availability and effectiveness of advanced sensing monitoring technologies and existing community air monitoring systems.
- Oct 1, 2018 Identify the highest priority locations in the state for the deployment of community air monitoring systems near disadvantaged communities and sensitive receptors.
- > By Oct 1, 2019, applicable air districts with a designated high priority location(s) are required to deploy a community air monitoring system.

Air districts are authorized to require a stationary sources to deploy a fence-line monitoring system or other real-time, on-site monitoring.

> By January 1, 2020, and every year thereafter, the state must identify additional high priority locations for the deployment of community air monitoring systems.



AB 617 - Community Emission Reduction Provisions

- By Oct 1, 2018 Develop a statewide strategy to reduce emissions of toxic air contaminants and criteria air pollutants in communities affected by a high cumulative exposure burden, including, criteria for the development of community emission reduction programs.
- > The statewide assessment shall prioritize disadvantaged communities and sensitive receptor locations based on best available modeling information, existing air quality monitoring information, existing public health data
- > Must include a methodology for identifying the contributing sources or categories of sources, including, stationary and mobile sources.
- Shall select locations around the state for preparation of community emissions reduction programs. The state board shall select additional locations annually thereafter.



AB 617 - Community Emission Reduction Provisions (cont'd)

- > Within 1 year of being identified, air districts are required to develop and submit a community emissions reduction program to achieve emissions reductions for high priority locations within their jurisdiction.
- > Emission reduction programs shall result in emissions reductions in the community, based on monitoring or other data.
- > Air district shall prepare an annual report summarizing the results and actions taken to further reduce emissions pursuant to the community emissions reduction program.
- Compliance with the community emissions reduction program prepared pursuant to this section, including its implementation, shall be enforceable by the district and state board, as applicable



List of Nominated AB 617 Communities for CY 2019

- > CARB staff developed a broad list of communities for inclusion in the AB 617 Community Air Protection Program (Program).
- > Nominee communities based on recommendations from air districts, community member nominations, consultation with the Office of Environmental Health Hazard Assessment (OEHHA), and CARB's internal air pollution data.
- > On July 31, 2018, CARB published its list of 146 nominations reflecting 120 communities throughout California.
- > AB 617 require that CARB select at least ten (10) communities for the first year of implementation



Selected AB 617 Communities

Community	Air District	Air Monitoring	Emission Reduction	
Richmond	Bay Area	Х		P,
West Oakland	Bay Area		Х	
Calexico, El Centro	Imperial County	Х	Х	2
South Sacramento	Sacramento	Х		
Barrio Logan, West National City, Logan Heights, Sherman Heights	San Diego County	Х		
Shafter	San Joaquin Valley	Х	Х	
South Central Fresno	San Joaquin Valley	Х	Х	
East Los Angeles, Boyle Heights	SCAQMD	Х	Х	
Muscoy, San Bernardino	SCAQMD	Х	Х	
Wilmington, West Long Beach, Carson	SCAQMD	Х	X	nit

Proposed First Group of AB 617 Communities (2019)



- Richmond
- West Oakland
- South Sacramento
- Calexico, El Centro
- Shafter
- South Central Fresno
- East Los Angeles, Boyle Heights
- Muscoy, San Bernardino
- Wilmington, West Long Beach, Carson
- Barrio Logan, West National City, Logan Heights, Sherman Heights



Examples of Community Air Toxics Regulation



SCAQMD Rule 1180 (adopted December 2017) REFINERY FENCELINE AND COMMUNITY AIR MONITORING

- Soal: To require real-time fenceline air monitoring systems and to provide air quality information to the public at or near the property boundaries.
- > Applicability: Petroleum refineries with maximum capacity greater than 40,000 barrels per day crude oil
- > Key Requirements
 - By August 1, 2018, submit a Fenceline Monitoring Plan
 - The plan must identify siting, equipment, record wind speed/direction, maintenance and other
 - Recorded data must be disseminated to public, local response agencies and SCAQMD
 - Real-time monitoring of all pollutants on Table 1
 - Pay a community air monitoring fee



SCAQMD Rule 1180 (adopted December 2017) REFINERY FENCELINE AND COMMUNITY AIR MONITORING

Table 1– Air Pollutants to be Addressed by Fenceline Air Monitoring Plans

Air Pollutants

Criteria Air Pollutants

Sulfur Dioxide

Nitrogen Oxides

Volatile Organic Compounds

Total VOCs (Non-Methane Hydrocarbons)

Formaldehvde

Acetaldehvde

Acrolein

1.3 Butadiene

Styrene

BTEX Compounds (Benzene, Toluene, Ethylbenzene, Xylenes)

Other Compounds

Hydrogen Sulfide

Carbonyl Sulfide

Ammonia

Black Carbon

Hydrogen Cyanide

Hydrogen Fluoride+

If the facility uses hydrogen fluoride.

	Effective Dates and Fee Requirements					
Facility Name* and Location	No later than July 1, 2018, petroleum refineries shall make the following initial minimum payment required by paragraph (j)(2)	No later than January 30, 2019, petroleum refineries shall make the following final payment required by paragraph (j)(3)				
Andeavor Corporation (Carson)	\$429,078	\$1,001,181				
Andeavor Corporation (Wilmington)	\$214,539	\$500,591				
Chevron U.S.A, Inc. (El Segundo)	\$429,078	\$1,001,181				
Delek U.S. Holdings, Inc. (Paramount)	\$107,269	\$250,295				
Phillips 66 Company (Carson)	\$214,539	\$500,591				
Phillips 66 Company (Wilmington)	\$214,539	\$500,591				
PBF Energy, Torrance Refining Company (Torrance)	\$429,078	\$1,001,181				
Valero Energy (Wilmington)	\$214,539	\$500,591				

*Based on the current facility names. Any subsequent owner(s) or operator(s) of the above listed facilities



Table 2 - Refinery-Related Community Air Monitoring System Fees

Proposed SCAQMD Rule 1480 AIR TOXICS METALS MONITORING

- Soal: To require "localized" air monitoring systems at or near the property boundaries of air toxic sources.
- > Applicability: To be determined Anticipated to apply to cement, steel mills, metal finishing, heat treatment and similar operations
- Key Requirements: To be determined Expected to follow similar regulatory structure as Rule 1180 which combined fenceline and community air monitoring systems for petroleum refineries.



California Proposition 65 Safe Drinking Water and Toxic Enforcement Act

- In 1986, California voters passed Proposition 65 entitled the Safe Drinking Water and Toxic Enforcement Act (aka Prop 65)
- Prop 65 protects the California's drinking water sources from being contaminated with certain chemicals, and requires businesses to provide "clear and reasonable warning" about exposures to such chemicals.
- > California also published a list of chemicals known to the state to cause cancer or reproductive toxicity (aka Prop 65 List of Chemicals - 27 CCR §27001)
- > Prop 65 is enforced by the California Attorney General, however administered by the Office of Environmental Heath Hazard Assessment (OEHHA)



California Proposition 65 Types of Exposures Requiring Prior Notice

- > Workplace / Occupational Exposures Exposures from the handling, storage, processing or other management of Prop 65 chemicals by employees, visitors or other persons at California workplaces.
- Environmental Exposures Exposures from the discharge of Prop 65 chemicals into the ambient air, drinking water, soil, vegetation or other environmental media.
- Consumer Product Exposures Exposures from the distribution, sale and use of consumer products inside of California.



Examples of Community Air Toxics Monitoring / Enforcement



SCAQMD - Ambient Monitoring and Community Enforcement Initiatives

- SCAQMD initiated community ambient monitoring programs for City of Paramount (Fall 2016) and City of Compton (Summer 2017)
- > Fence line and regional ambient monitoring of air toxics (specifically hexavalent chrome)
- In addition, AQMD has dramatically increased inspections for air toxic sources
- > Using local enforcement authority under Rule 1402 to enforce air toxics and health risk reductions
- Several local companies currently subject to air toxics litigation, mostly metal finishing operations



SCAQMD Air Toxics Enforcement Program - General Approach



Note: Image taken from SCAQMD presentation for City of Paramount



SCAQMD Air Toxics Enforcement Program - City of Paramount

- > Due to community concerns over potential air toxics, ambient monitoring since October 2016 for hexavalent chrome
- > Primary focused on metal finishing and forging ops
- > Rigorous and detailed site inspections
- Several specific facilities targeted with upwind and downwind monitors
- Enforcement actions taken on facilities which exceed 1 ng/m3
- Notices of Violation (NOVs), Orders for Abatement and other actions taken



SCAQMD Air Toxics Monitoring Program - City of 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



Note: Image taken from SCAQMD presentation for Proposed Rule 1480.



SCAQMD Air Toxics Enforcement Program - City of Paramount

- Installed 38 ambient air monitors in various public locations, including, fence lines near specific companies
- > Conducted 56 door-to-door inspections
- > Conducted 399 facility inspections of all types of sites
- > Issued 144 Notices to Comply
- > Issued 51 Notices of Violation



SCAQMD Air Toxics Enforcement Program - City of Compton

- In June 2017, ambient monitoring stations were deployed in City of Compton
- > Eight (8) metal finishing facilities were identified as suspected hot spots for hexavalent chromium
- > Local Rule 1402 enforcement actions will be taken if nearby ambient monitors > 1 ng/m3



City of Compton - Current Network of Ambient Monitors





City of Compton - Hex Chrome Monitoring Data (ng/m3)

Sample Date	Site #1C	Site #2C	Site #3C	Site #4C	Site #5C	Site #6C	Site #7C	Site #8C	Site #9C	Site #10C	Site #11C	Site #12C
Mon, Apr 2, 2018	0.47	0.30	N/A	N/A	0.21	N/A	0.07	0.17	0.14	N/A	0.16	0.14
Thu, Apr 5, 2018	0.20	0.37	N/A	N/A	0.69	N/A	0.09	0.16	0.17	N/A	0.14	0.14
Sun, Apr 8, 2018	0.08	0.19	N/A	N/A	0.13	N/A	0.09	0.08	Invalid	N/A	0.10	0.09
Wed, Apr 11, 2018	0.83	0.60	N/A	N/A	0.37	N/A	0.14	0.27	0.25	N/A	0.20	0.15
Sat, Apr 14, 2018	0.20	0.26	N/A	N/A	0.30	N/A	0.14	0.24	0.33	N/A	0.36	0.22
Tue, Apr 17, 2018	0.31	0.21	N/A	N/A	1.22	N/A	0.14	0.14	4.42	N/A	2.31	3.34
Fri, Apr 20, 2018	0.31	0.23	N/A	N/A	0.28	N/A	0.10	0.32	1.09	N/A	0.21	0.49
Mon, Apr 23, 2018	0.82	0.46	N/A	N/A	0.23	N/A	0.10	0.16	0.12	N/A	0.13	0.23
Thu, Apr 26, 2018	0.06	0.29	N/A	N/A	0.31	N/A	0.19	0.10	0.11	N/A	0.06	0.15
Sun, Apr 29, 2018	0.05	0.16	N/A	N/A	N/A	N/A	0.19	0.13	0.16	N/A	0.08	0.06
Mon, Apr 30, 2018	N/A	N/A	N/A	N/A	0.18	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Wed, May 2, 2018	0.61	0.75	N/A	N/A	0.18	N/A	0.12	0.43	0.13	N/A	0.20	0.28
Fri, May 4, 2018	N/A	N/A	N/A	N/A	0.81	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sat, May 5, 2018	0.10	0.20	N/A	N/A	N/A	N/A	Invalid	0.11	0.12	N/A	0.11	0.19
Tue, May 8, 2018	0.64	0.58	N/A	N/A	0.27	N/A	0.12	3.35	0.16	N/A	0.15	0.16
Thu, May 10, 2018	N/A	N/A	N/A	N/A	0.27	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Fri, May 11, 2018	0.14	0.52	N/A	N/A	N/A	N/A	0.15	0.34	0.12	N/A	0.23	0.12
Sat, May 12, 2018	N/A	N/A	N/A	N/A	0.16	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Mon, May 14, 2018	0.60	0.82	N/A	N/A	0.27	N/A	0.13	0.21	0.43	N/A	0.25	0.25
Wed, May 16, 2018	N/A	N/A	N/A	N/A	1.14	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Thu, May 17, 2018	0.13	0.65	N/A	N/A	N/A	N/A	0.10	0.47	0.14	N/A	0.14	0.13
Fri, May 18, 2018	N/A	N/A	N/A	N/A	0.25	N/A	N/A	N/A	N/A	N/A	N/A	N/A



Ambient Monitor - PQ 100 Sampler



PQ 100 Sampler - Sampling for Cr(VI) typically involves collecting a sample on a filter and having this filter analyzed at a qualified lab. The filter and cassette are obtained from the lab and a small sample pump is used to pull air over the filter for a specified amount of time at a controlled rate. SCAQMD collect filter media every 3 days for lab analysis.

Monitoring Costs = \$6,000 per week for each facility for 2 samplers (upwind and downwind), which equates to \$24,000 per month. Enforcement monitoring costs are absorbed by SCAQMD. However, a facility required to install onsite monitors could incur these costs.

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Ambient Monitor - BGI Omni



- BGI Omni Air Sampler
- Can be pole mounted, or fixed to a tripod
- Battery operated
- 24 hour sampling events
- SCAQMD collects air samples every 3 days



What's the purpose of collecting ambient monitoring data?

To identify and collect evidence of high risk facilities which triggers Risk Reduction Plans under local Rule 1402, and/or possibly force settlement of NOVs and Orders for Abatement.



Additional Evidence Collection Tactics and Enforcement

- > Letter request for Onsite Air Monitoring / Testing
- > If you don't cooperate, they agency may seek "Inspection Warrant" to test your facility
- > Frequent air quality inspections
- Multi-agency inspections (city, fire, OSHA, county health and others)
- > Issue Notices to Comply / Notices of Violation
- Swipe testing (rooftops, equipment, work surfaces, floors and other)
- > Orders for Abatement



Closing Remarks

- > AB 617 greatly expands existing authorities of state and local air pollution agencies in areas of emissions reporting, reduction programs and air monitoring.
- In the years ahead, we anticipate many more California communities will be subject to air monitoring, emission reductions and enforcement activities as similar to Compton and Paramount.
- > The costs of air monitoring and regulatory programs will be borne largely by facilities located within those AB 617 communities.
- > Given the amount of publicly available data due to increased air toxics reporting, it is possible that 3rd party litigation will also increase in future years.



Presenters

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