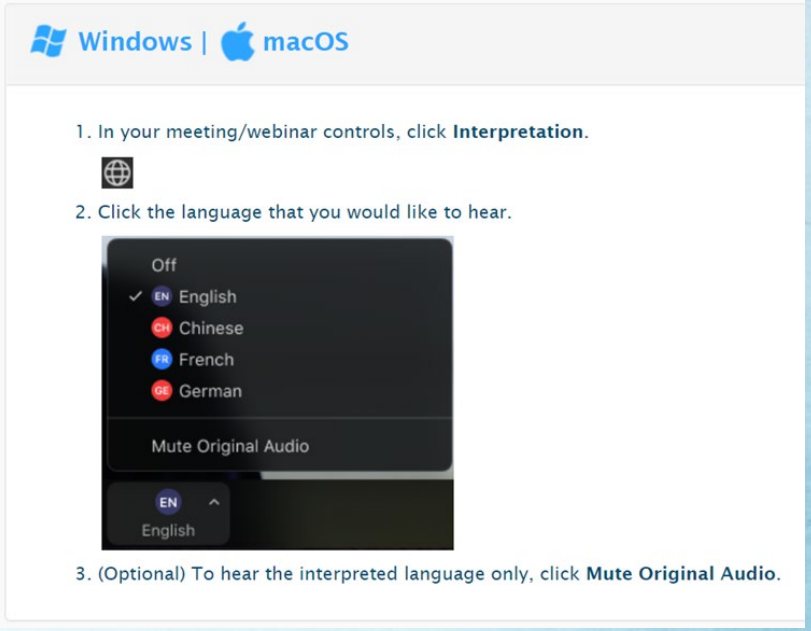
Health Risk Assessment
Capacity Building Session: Part 2

March 29, 2022

Listening to Language Interpretation

1. In your meeting/webinar controls, click **Interpretation**. (located at bottom of screen)
2. Click the language that you would like to hear. Options for this meeting are English and Spanish.
3. To only hear the interpreted language, click **Mute Original Audio**.



CARB

Listening to Language Interpretation

- Please call our Spanish Conference Line if you are unable to access the simultaneous translation.

Spanish Conference Call Number:

(866) 803-2146

Passcode:

1083550

Before We Get Started

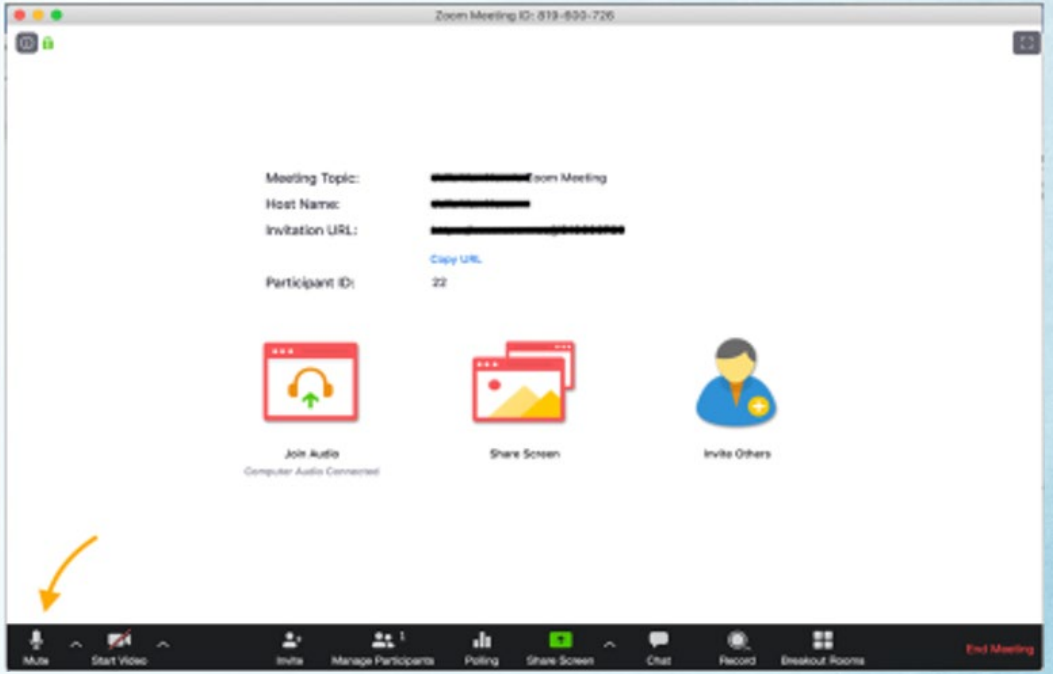
- Please **mute yourself** and make sure your name is showing as your screen name
- To **rename**, click on the top right side of your picture/video
- Use this naming convention, **First Last- Affiliation** (e.g. Jane Doe- CARB)
  - **Community Organization / Agency / Air District / Company / etc.**
- **Need help?** Use the Chat function to request assistance

Zoom Orientation

Mute/Unmute

Please remain on mute unless your name has come up in the speaking queue

- Zoom: **Mute/Unmute** button at the bottom left
- Phone: Dial ***6** to mute/unmute



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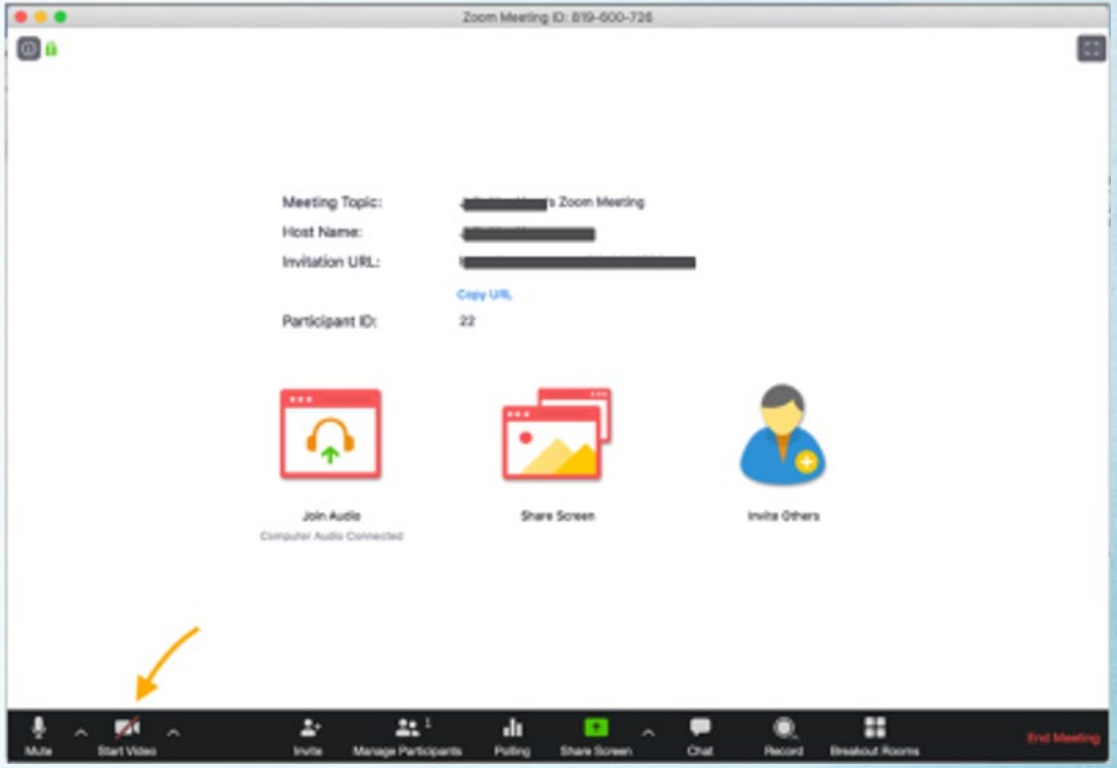
Video

Click the camera icon at the bottom left of your screen to toggle your video on and off.



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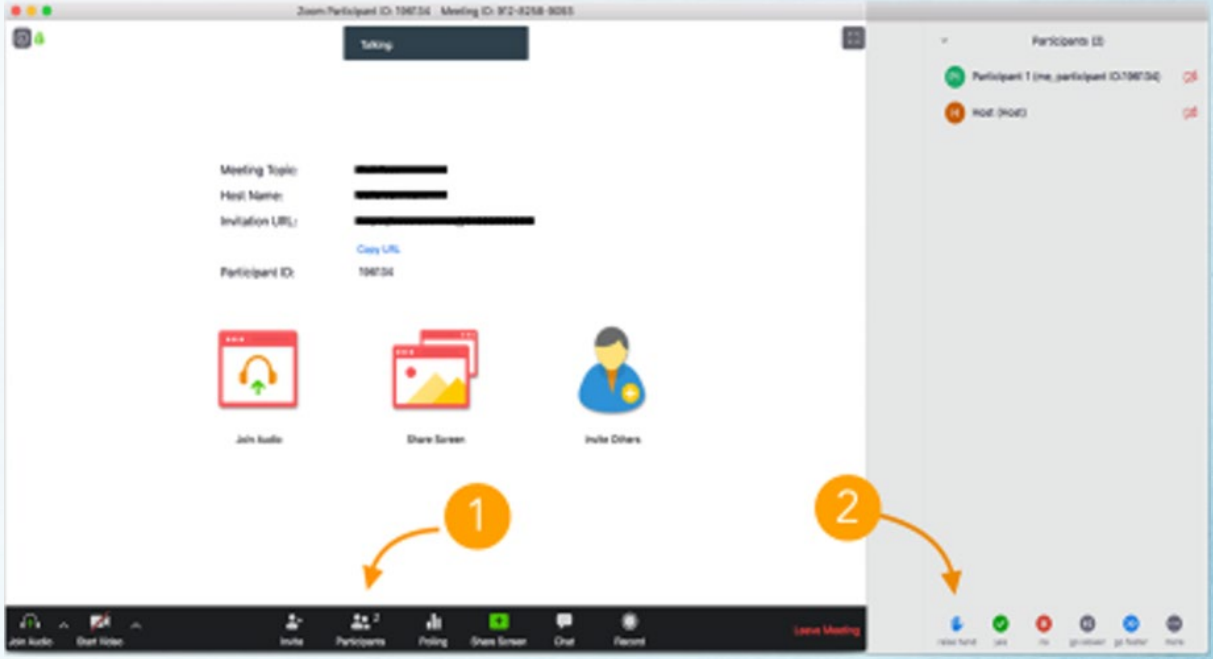
Raise Hand

To be added to the speaking queue, please use **Raise Hand**

- Zoom: Click **Participants**, then **Raise Hand**.
- Phone: dial *9 We'll check in with the phone line periodically.



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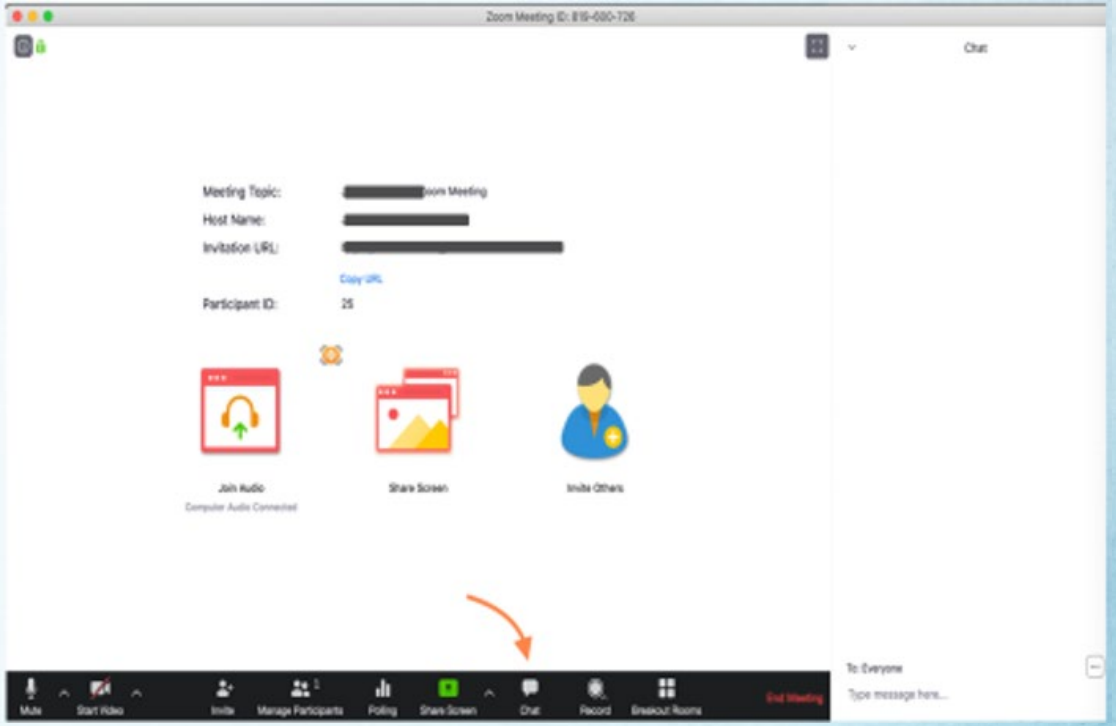
Chat

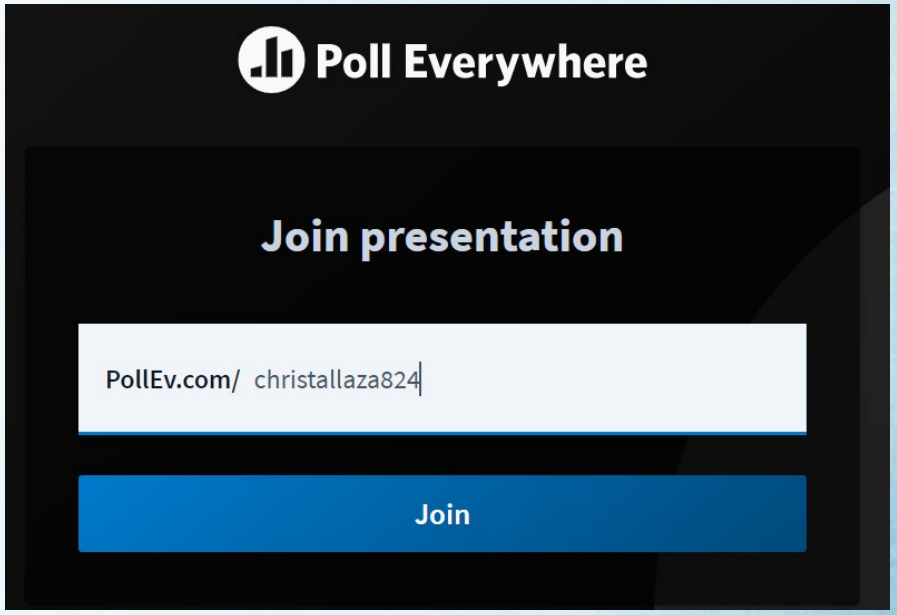
- Click on the **chat** icon near the center bottom of your screen.
- Choose “private” chat to chat with the Host or Co-host
- Private chats are archived.



Poll Everywhere

Go to PollEv.com/home and enter the username: "CHRISTALLAZA824" and select Join.

Or text "CHRISTALLAZA824" to 22333.



CARB

Introductions

- CARB
  - Matthew O'Donnell – Presenter
  - Amanda Anderson – Meeting Support
- Office of Environmental Health Hazard Assessment (OEHHA)
  - John Budroe – Chief, Air Toxicology and Risk Assessment Section

Housekeeping and Assumptions

- Assumptions
- Questions
- Agenda and Flow

Recognitions

- We would like to thank the following individuals for their feedback and input into the format and content of this meeting. Thank you for sharing your time, perspective and knowledge.

  - Genevieve Amsalem
  - Tim Tyner
  - Taylor Thomas
  - LaDonna Williams
  - Jonathan Pruitt
  - Melissa Vargas
  - Joe Lyou
  - Jane Williams
  - Mark Abramowitz

December Session Recap

- Began with presentations from community advocates
  - Expressed concerns about current HRA methodology
  - Expressed desire to discuss additional approaches
- Started explanation of HRA process, unable to cover everything
- May 10th – Session to discuss the concerns expressed in the December session

Session Objectives

- Provide you with useful information to aid in your advocacy
- A high-level overview of the Health Risk Assessment (HRA) process
- Provide background on Air Districts' responsibilities vs. CARB's responsibilities

Session Objectives

- How CARB, Local Air Districts, and Other Agencies use HRAs:
  - Assembly Bill (AB) 2588 (Hot Spots)
  - New Source Review
  - The California Environmental Quality Act (CEQA)
  - Rule Development
  - Assess community risks

Session Objectives

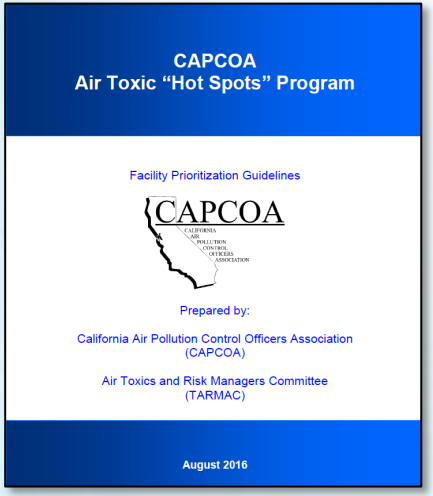
- How HRA's can be used by community members and advocates
- Starting with community advocates
- Help us to understand community concerns and tailor and improve sessions

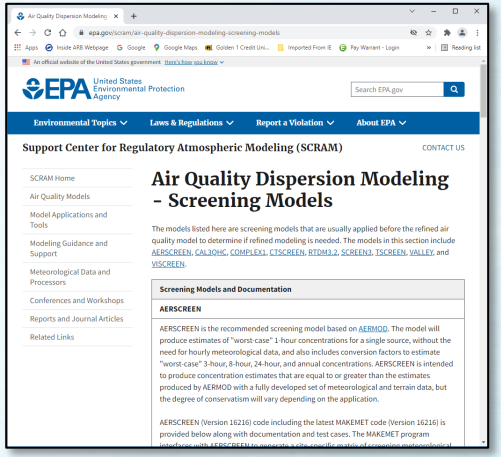
Health Risk Assessments

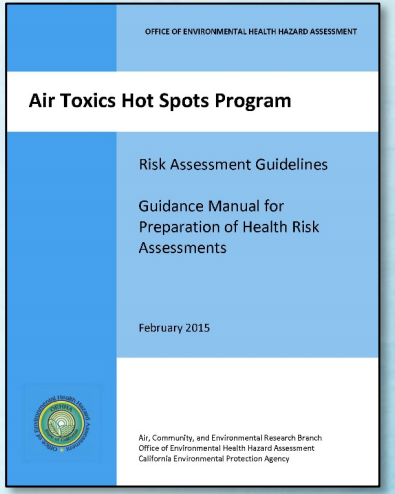
- What/When/How of Health Risk Assessment
  - Evaluation done using the OEHHA guidelines
  - Tool to estimate risk from toxic air contaminants
  - Conducted when one or more toxic air contaminant is emitted
  - Provides a score for cancer and non-cancer risk
  - Provides a number that is compared to a standard
  - Only as good as the information used

Health Risk Assessments

- Steps in the HRA Process
  - Prioritization Score
  - Screening Risk Assessment
  - Refined Health Risk Assessment







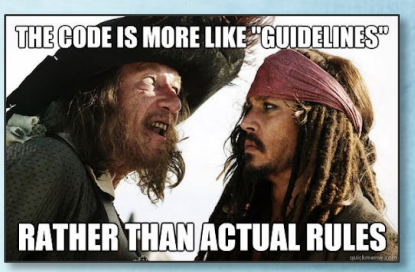
Prioritization

Prioritization Score

- §44360 Prioritization and Categorization
  - If categorized as high priority:
    - Facility is required to submit a Health Risk Assessment (HRA) to the district.
    - HRA prepared in accordance with the Risk Assessment Guideline prepared by the Office of Environmental Health Hazard Assessment (OEHHA)

Prioritization Score

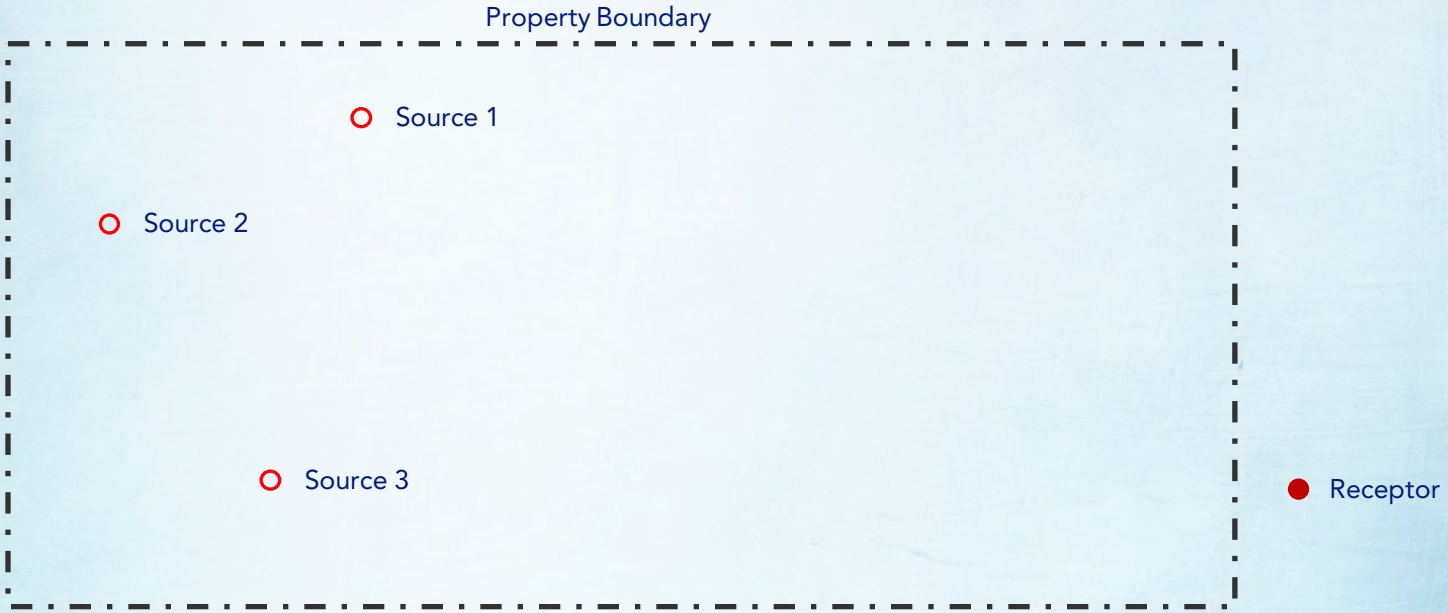
- California Air Pollution Control Officers Association (CAPCOA) - Air Toxics "Hot Spots" Facility Prioritization Guideline
  - Published in August 2016
  - Assist district with prioritization calculations
  - Districts aren't required to use it
  - Separate scores for cancer, non-cancer chronic and non-cancer acute



Prioritization Score

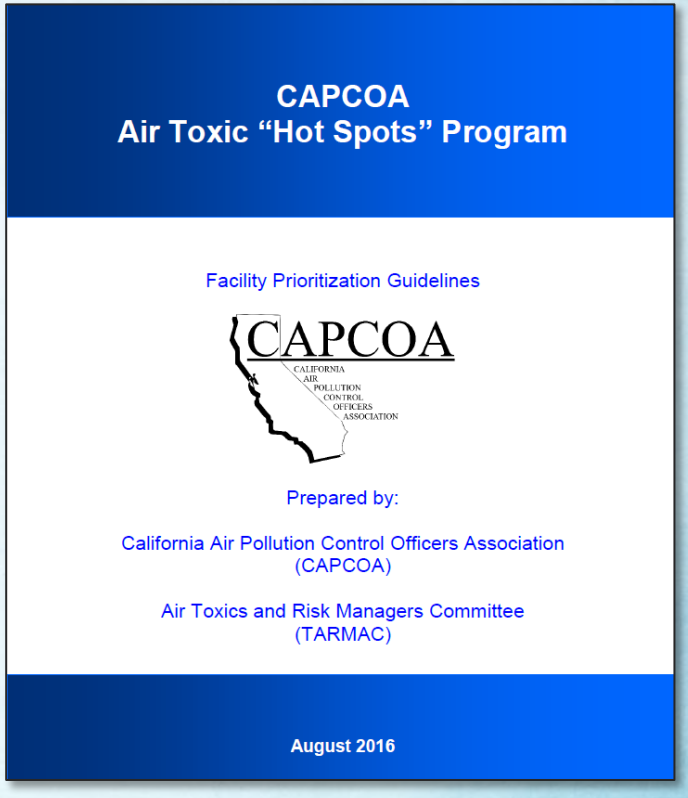
- Calculates a unitless score for the whole facility
  - Each emission source and air toxin is scored separately and then added up
- Based on:
  - Emissions rate
  - Unit risk (cancer)
  - Reference exposure level (non-cancer acute and chronic)
  - Distance to the receptor

Prioritization Score



Prioritization Score

- High Priority
  Facility Score ≥ 10
- Intermediate Priority
  10 > Facility Score ≥ 1
- Low Priority
  Facility Score < 1



The Role of OEHHA

"Hot Spots" Air Toxics Risk Assessment

John Budroe, Ph.D.
Office of Environmental Health Hazard Assessment

December 14, 2021

CARB

CalEPA

- Office of Environmental Health Hazard Assessment
- Air Resources Board
- CalRecycle
- Department of Pesticide Regulation
- Department of Toxic Substances Control
- State Water Resources Control Board

CARB

Air Toxics Hot Spots Program

- The Office of Environmental Health Hazard Assessment (OEHHA) is mandated to develop risk assessment guidelines for facility health risk assessments
- Guidelines are used in evaluating potential health impacts from stationary sources of air pollution to people nearby
- These risk assessments include estimating cancer risk and noncancer health hazards from exposure to chemicals emitted by facilities
- OEHHA also reviews facility health risk assessments for the Air Districts

Technical Support/Guidelines Documents

After consultation with CARB and CAPCOA, public review and peer review by the Scientific Review Panel, OEHHA adopted:

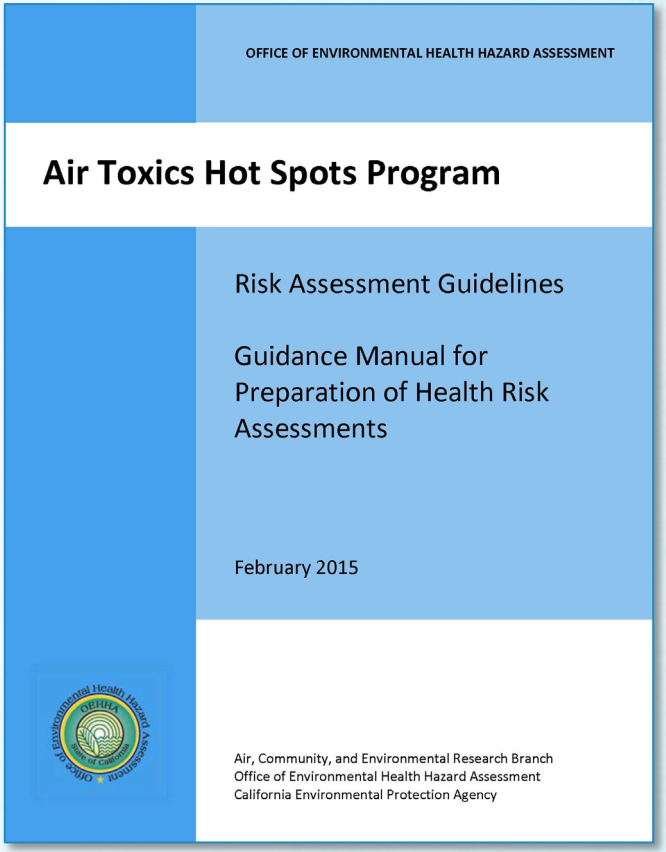
- 2008: Derivation of Noncancer Reference Exposure Levels Technical Support Document (TSD): noncancer risk assessment methods and chemical health values (Reference Exposure Levels – RELs)
- 2009: Cancer Potency Factors TSD: cancer risk assessment methods and cancer potency factors
- 2012: Exposure Assessment and Stochastic Analysis TSD: methods for determining resident/off-site worker exposure

Risk Assessment Guidance Manual

- 2015: Guidance Manual for the Preparation of Health Risk Assessments. Includes Age Sensitivity Factors (ASFs) – cancer risk adjustments for infants/children
- The Guidance Manual combines the information from the three Technical Support Documents into a user manual for conducting health risk assessments.

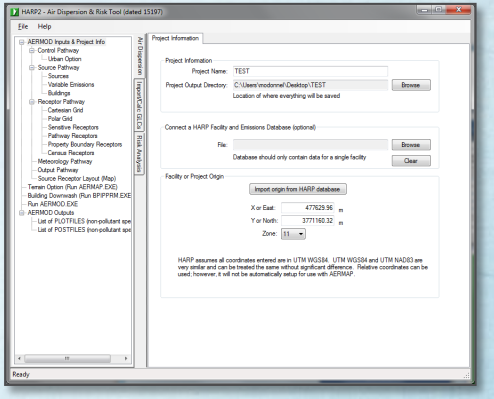
Refined Health Risk Assessment

Refined Health Risk Assessment

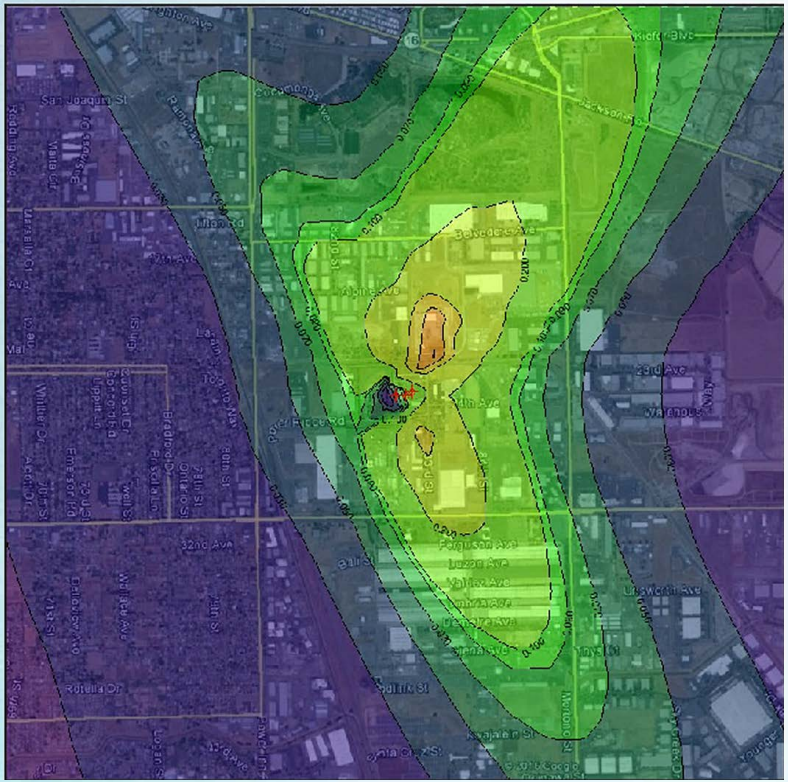


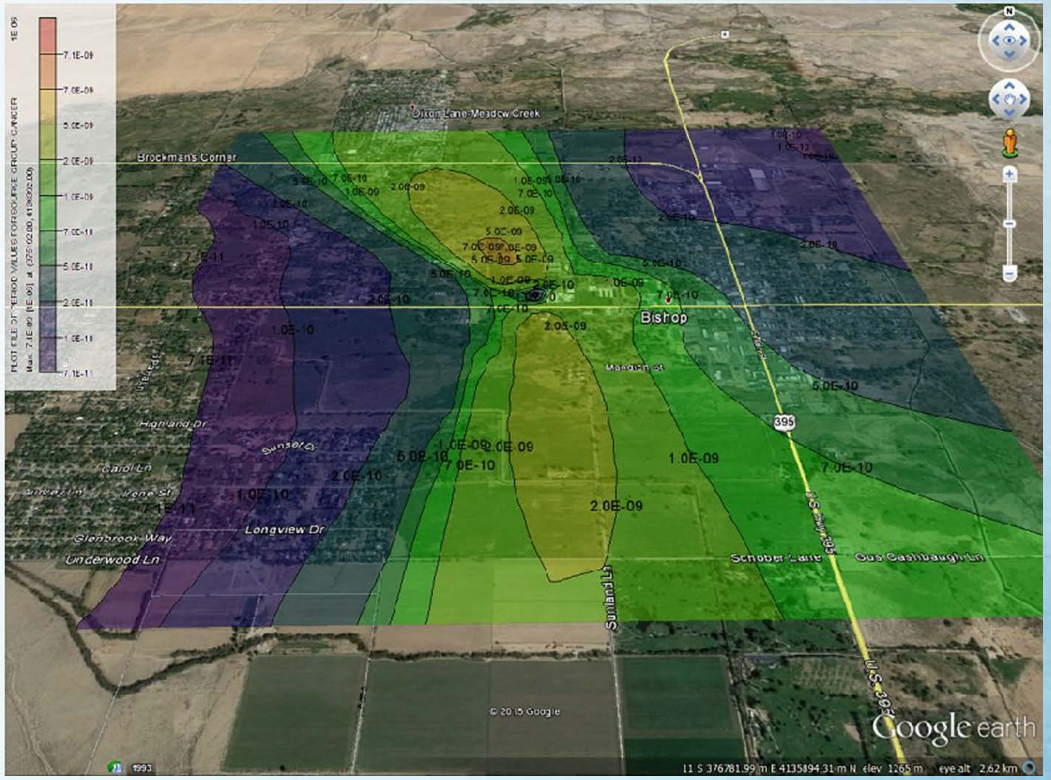
Refined Health Risk Assessment

- Refined HRA
  - Consists of Three Parts
    - Air Dispersion Modeling (AERMOD)
    - Calculating Pollutant Specific Ground Level Concentrations (GLCs)
    - Risk Analysis

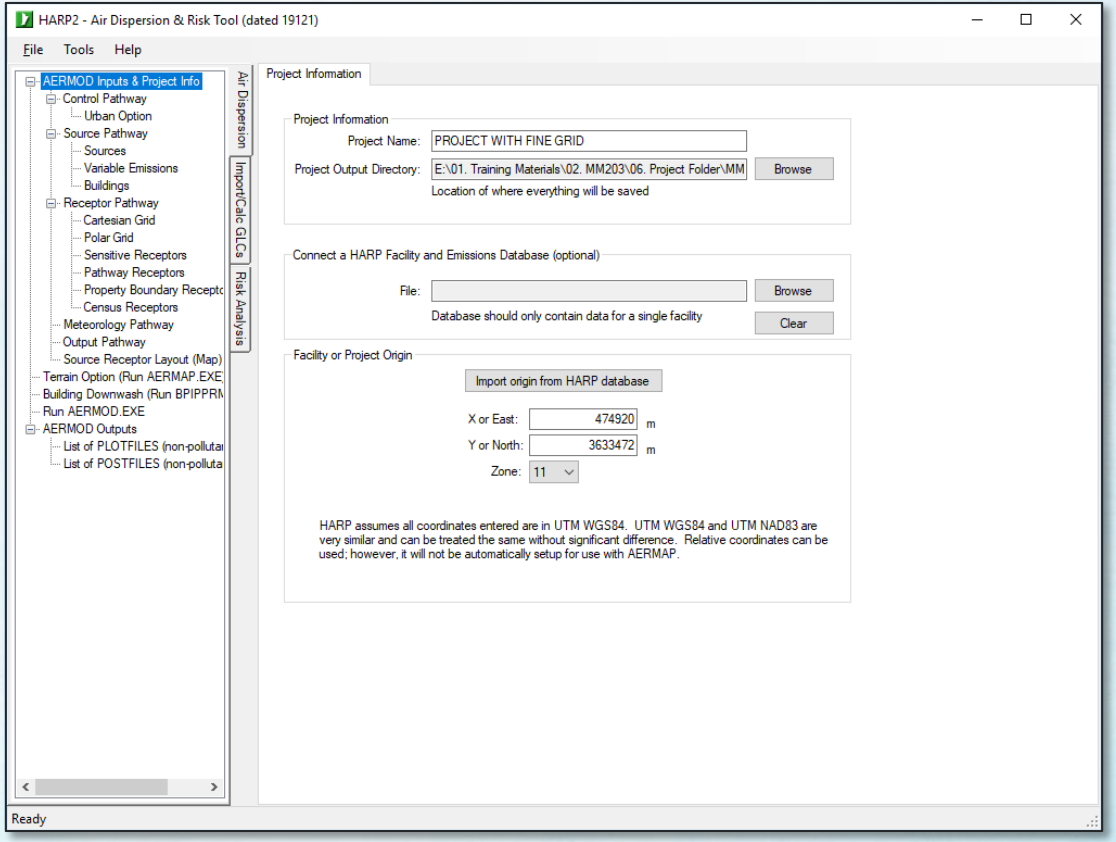


Dispersion Modeling





Risk Analysis Using HARP2



HARP2 – Cancer Risk

- OEHHA Cancer Calculation

$$Dose_{air} = C_{air} \times \{BR/BW\} \times A \times EF \times 10^{-6}$$

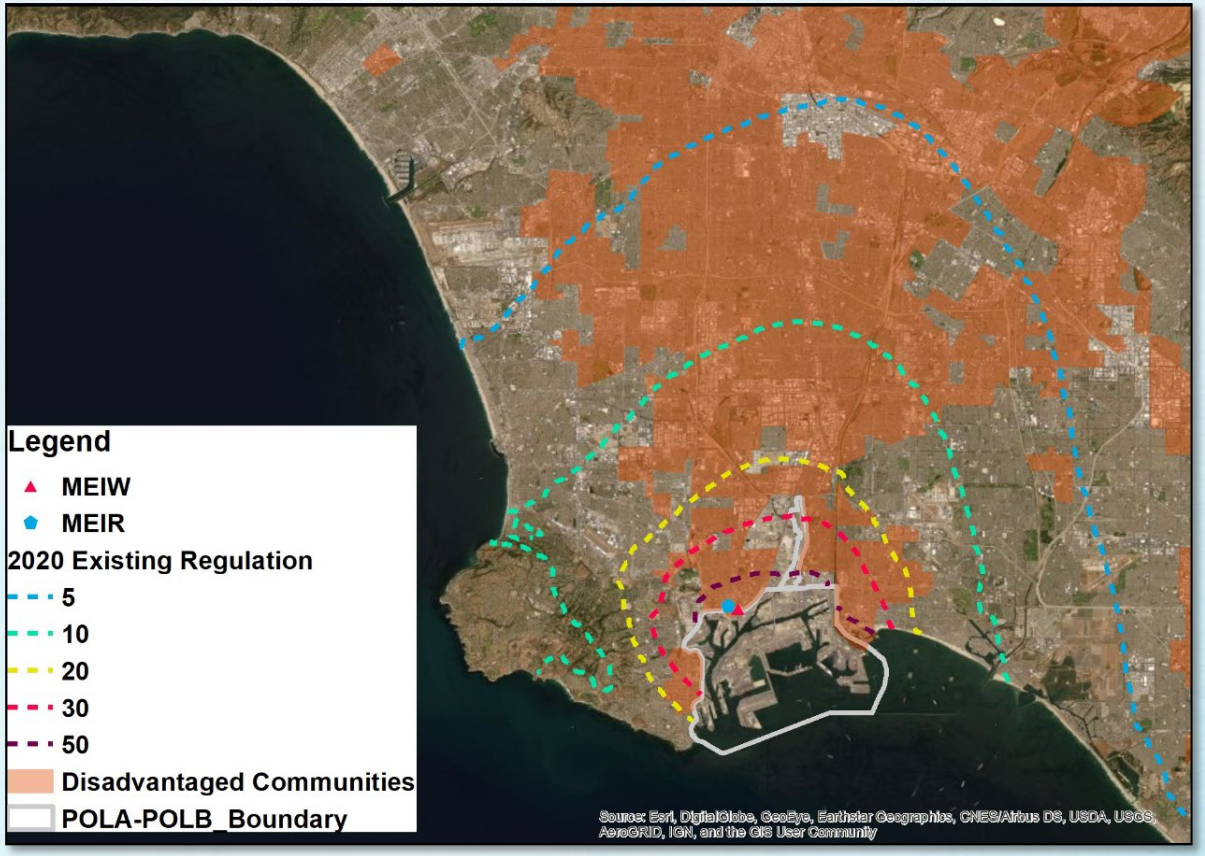
$$RISK_{inh\text{-}res} = DOSE_{air} \times CPF \times ASF \times ED/AT \times FAH$$

  - Probability of developing cancer (all cancers combined)
  - Presented as the number of people out of 1 million
  - Based on conservative health-protective assumptions
  - Inherent uncertainty
  - Gives us something to compare to a threshold

HARP2 – Chronic and Acute Risk

- The Hazard Quotient is calculated for each substance for both Acute and Chronic health effects
- The Hazard Index is the sum of all the hazard quotients for a specific organ group
- Values less than one are not considered to have any adverse health effects
- Values of one or greater may have adverse health effects

HARP2 – Data Isopleths



CARB

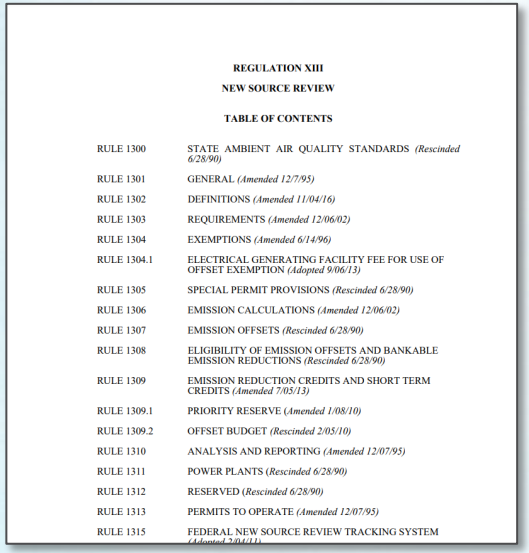
The Role of Air Districts

Air District Responsibilities

- Stationary Sources of Criteria Pollutants
  - Create rules
  - Issue permits
  - Role in AB 2588 (Hot Spots)
    - Prioritize facilities
    - Review HRAs
    - Collect emission inventory data
  - Review and Comment on CEQA documents

Air District Responsibilities

- Creating Rules
  - New Source Review
  - Prohibitory Rules



REGULATION XIII

NEW SOURCE REVIEW

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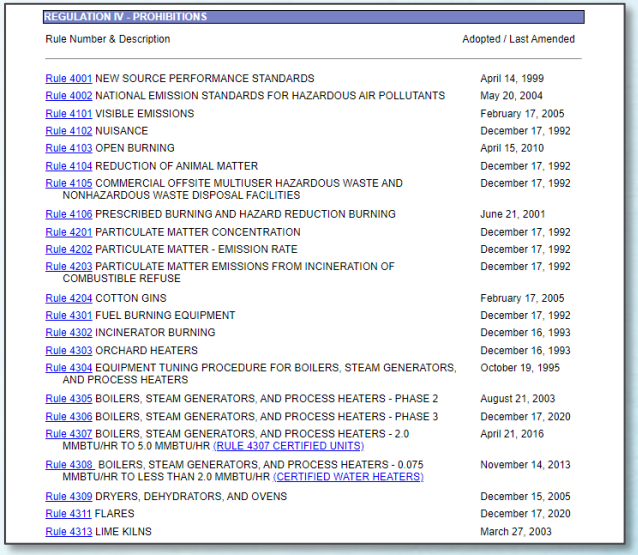
RULE 1300	STATE AMBIENT AIR QUALITY STANDARDS *(Rescinded 6/28/90)*
RULE 1301	GENERAL *(Amended 12/7/95)*
RULE 1302	DEFINITIONS *(Amended 11/04/16)*
RULE 1303	REQUIREMENTS *(Amended 12/06/02)*
RULE 1304	EXEMPTIONS *(Amended 6/14/96)*
RULE 1304.1	ELECTRICAL GENERATING FACILITY FEE FOR USE OF OFFSET EXEMPTION *(Adopted 9/06/13)*
RULE 1305	SPECIAL PERMIT PROVISIONS *(Rescinded 6/28/90)*
RULE 1306	EMISSION CALCULATIONS *(Amended 12/06/02)*
RULE 1307	EMISSION OFFSETS *(Rescinded 6/28/90)*
RULE 1308	ELIGIBILITY OF EMISSION OFFSETS AND BANKABLE EMISSION REDUCTIONS *(Rescinded 6/28/90)*
RULE 1309	EMISSION REDUCTION CREDITS AND SHORT TERM CREDITS *(Amended 7/05/13)*
RULE 1309.1	PRIORITY RESERVE *(Amended 1/08/10)*
RULE 1309.2	OFFSET BUDGET *(Rescinded 2/05/10)*
RULE 1310	ANALYSIS AND REPORTING *(Amended 12/07/95)*
RULE 1311	POWER PLANTS *(Rescinded 6/28/90)*
RULE 1312	RESERVED *(Rescinded 6/28/90)*
RULE 1313	PERMITS TO OPERATE *(Amended 12/07/95)*
RULE 1315	FEDERAL NEW SOURCE REVIEW TRACKING SYSTEM *(Adopted 2/04/11)*

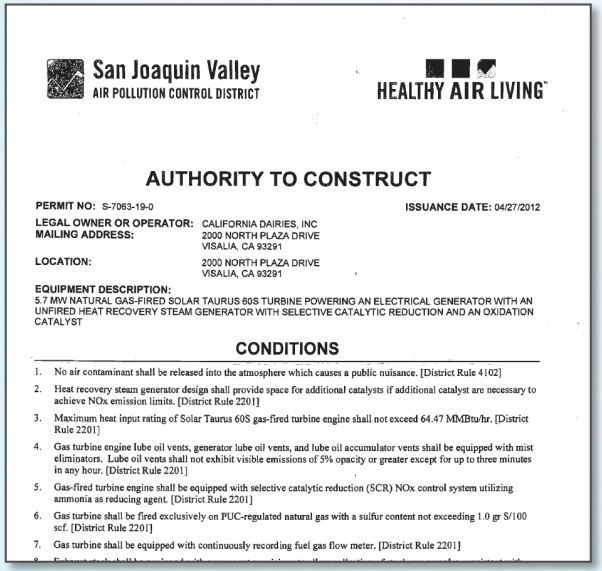


REGULATION IV - PROHIBITIONS

Rule Number & Description	Adopted / Last Amended
Rule 4001 NEW SOURCE PERFORMANCE STANDARDS	April 14, 1999
Rule 4002 NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS	May 20, 2004
Rule 4101 VISIBLE EMISSIONS	February 17, 2005
Rule 4102 NUISANCE	December 17, 1992
Rule 4103 OPEN BURNING	April 15, 2010
Rule 4104 REDUCTION OF ANIMAL MATTER	December 17, 1992
Rule 4105 COMMERCIAL OFFSITE MULTIUSER HAZARDOUS WASTE AND NONHAZARDOUS WASTE DISPOSAL FACILITIES	December 17, 1992
Rule 4106 PRESCRIBED BURNING AND HAZARD REDUCTION BURNING	June 21, 2001
Rule 4201 PARTICULATE MATTER CONCENTRATION	December 17, 1992
Rule 4202 PARTICULATE MATTER - EMISSION RATE	December 17, 1992
Rule 4203 PARTICULATE MATTER EMISSIONS FROM INCINERATION OF COMBUSTIBLE REFUSE	December 17, 1992
Rule 4204 COTTON GINS	February 17, 2005
Rule 4301 FUEL BURNING EQUIPMENT	December 17, 1992
Rule 4302 INCINERATOR BURNING	December 16, 1993
Rule 4303 ORCHARD HEATERS	December 16, 1993
Rule 4304 EQUIPMENT TUNING PROCEDURE FOR BOILERS, STEAM GENERATORS, AND PROCESS HEATERS	October 19, 1995
Rule 4305 BOILERS, STEAM GENERATORS, AND PROCESS HEATERS - PHASE 2	August 21, 2003
Rule 4306 BOILERS, STEAM GENERATORS, AND PROCESS HEATERS - PHASE 3	December 17, 2020
Rule 4307 BOILERS, STEAM GENERATORS, AND PROCESS HEATERS - 2.0 MMBTU/HR TO 5.0 MMBTU/HR (RULE 4307 CERTIFIED UNITS)	April 21, 2016
Rule 4308 BOILERS, STEAM GENERATORS, AND PROCESS HEATERS - 0.075 MMBTU/HR TO LESS THAN 2.0 MMBTU/HR (CERTIFIED WATER HEATERS)	November 14, 2013
Rule 4309 DRYERS, DEHYDRATORS, AND OVENS	December 15, 2005
Rule 4311 FLARES	December 17, 2020
Rule 4313 LIME KILNS	March 27, 2003

Air District Responsibilities

- Issuing Permits
  - Authority to Construct
  - Permit to Operate



San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING

AUTHORITY TO CONSTRUCT

PERMIT NO: S-7063-19-0 **ISSUANCE DATE:** 04/27/2012

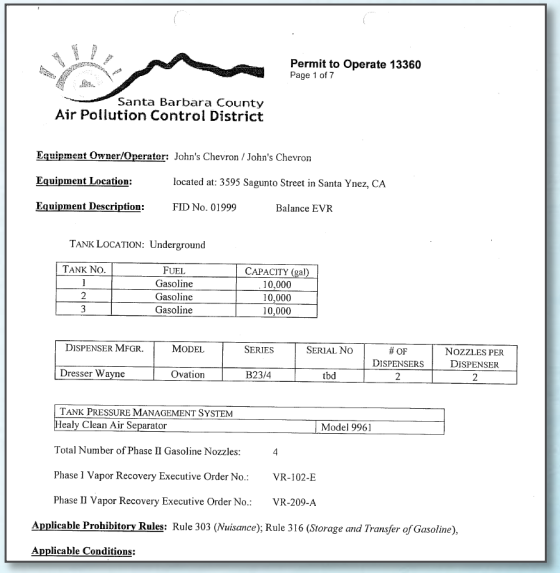
LEGAL OWNER OR OPERATOR: CALIFORNIA DAIRIES, INC
MAILING ADDRESS: 2000 NORTH PLAZA DRIVE
VISALIA, CA 93291

LOCATION: 2000 NORTH PLAZA DRIVE
VISALIA, CA 93291

EQUIPMENT DESCRIPTION:
5.7 MW NATURAL GAS-FIRED SOLAR TAURUS 60S TURBINE POWERING AN ELECTRICAL GENERATOR WITH AN UNFIRED HEAT RECOVERY STEAM GENERATOR WITH SELECTIVE CATALYTIC REDUCTION AND AN OXIDATION CATALYST

CONDITIONS

1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. Heat recovery steam generator design shall provide space for additional catalysts if additional catalyst are necessary to achieve NOx emission limits. [District Rule 2201]
3. Maximum heat input rating of Solar Taurus 60S gas-fired turbine engine shall not exceed 64.47 MMBtu/hr. [District Rule 2201]
4. Gas turbine engine lube oil vents, generator lube oil vents, and lube oil accumulator vents shall be equipped with mist eliminators. Lube oil vents shall not exhibit visible emissions of 5% opacity or greater except for up to three minutes in any hour. [District Rule 2201]
5. Gas-fired turbine engine shall be equipped with selective catalytic reduction (SCR) NOx control system utilizing ammonia as reducing agent. [District Rule 2201]
6. Gas turbine shall be fired exclusively on PUC-regulated natural gas with a sulfur content not exceeding 1.0 gr S/100 scf. [District Rule 2201]
7. Gas turbine shall be equipped with continuously recording fuel gas flow meter. [District Rule 2201]



Santa Barbara County
Air Pollution Control District

Permit to Operate 13360
Page 1 of 7

Equipment Owner/Operator: John's Chevron / John's Chevron

Equipment Location: located at: 3595 Sagunto Street in Santa Ynez, CA

Equipment Description: FID No. 01999 Balance EVR

TANK LOCATION: Underground

TANK NO.	FUEL	CAPACITY (gal)
1	Gasoline	10,000
2	Gasoline	10,000
3	Gasoline	10,000

DISPENSER MFGR.	MODEL	SERIES	SERIAL NO	# OF DISPENSERS	NOZZLES PER DISPENSER
Dresser Wayne	Ovation	B23/4	tbd	2	2

TANK PRESSURE MANAGEMENT SYSTEM	
Healy Clean Air Separator	Model 9961

Total Number of Phase II Gasoline Nozzles: 4

Phase I Vapor Recovery Executive Order No.: VR-102-E

Phase II Vapor Recovery Executive Order No.: VR-209-A

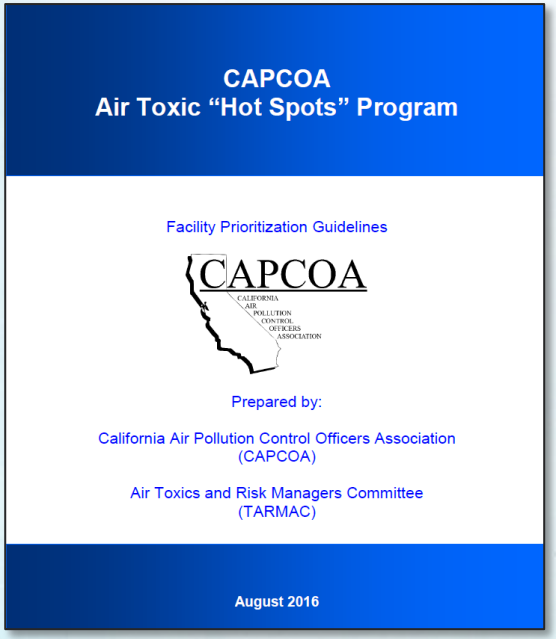
Applicable Prohibitory Rules: Rule 303 (*Nuisance*); Rule 316 (*Storage and Transfer of Gasoline*),

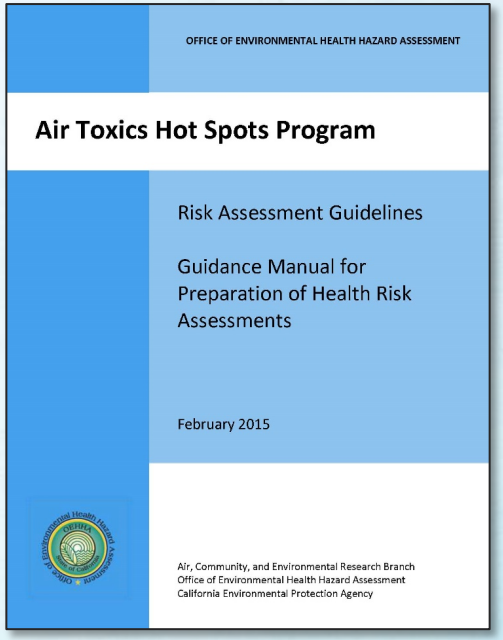
Applicable Conditions:

CARB

Air District Responsibilities

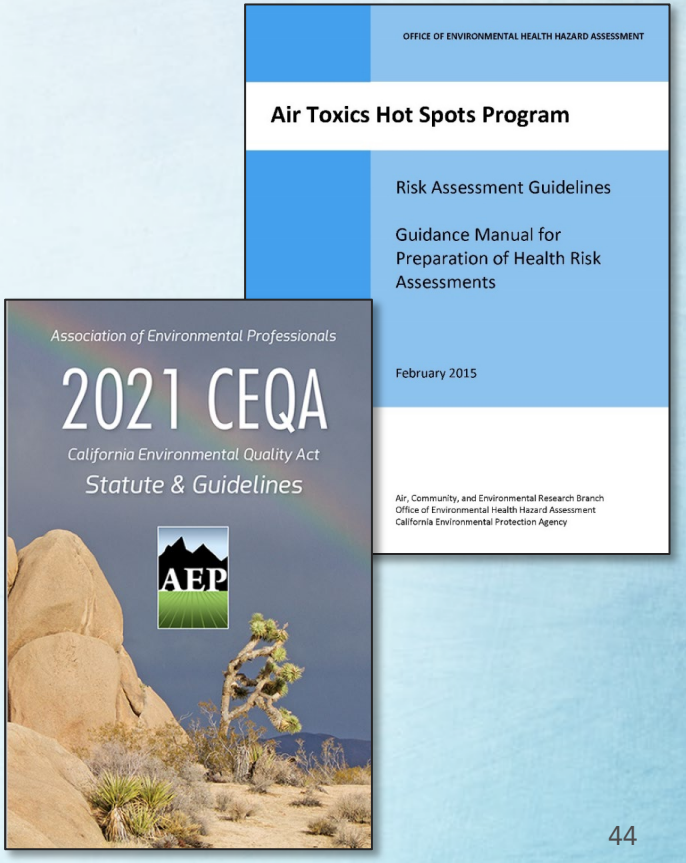
- AB 2588 (Hot Spots)
  - Prioritize facilities
  - Review Health Risk Assessments





Air District Responsibilities

- CEQA
  - Review and Comment on:
    - Air Quality Impact Analysis
    - Health Risk Assessment
    - Mitigation Measures



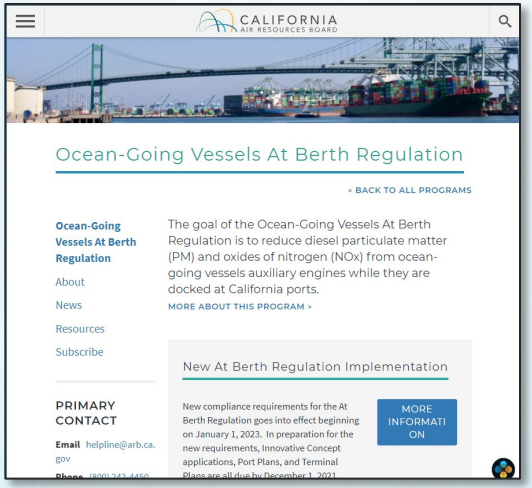
The Role of CARB

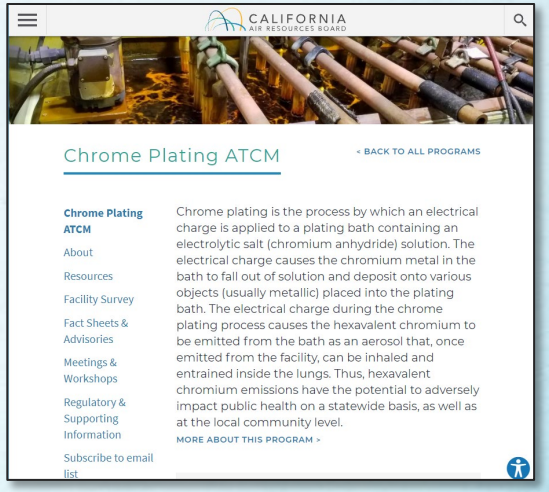
CARB's Responsibilities

- Sources not regulated by districts
  - Mobile Sources
  - Portable Sources
  - Consumer Products
- Create Rules
- Role in AB 2588
  - Review HRAs
  - Collect emission inventory data
- Review and comment on CEQA

CARB's Responsibilities

- Mobile Sources & Toxic Air Contaminants
  - Creating Rules
    - Emission standards for mobile sources
    - Airborne Toxic Control Measures for both mobile and stationary sources





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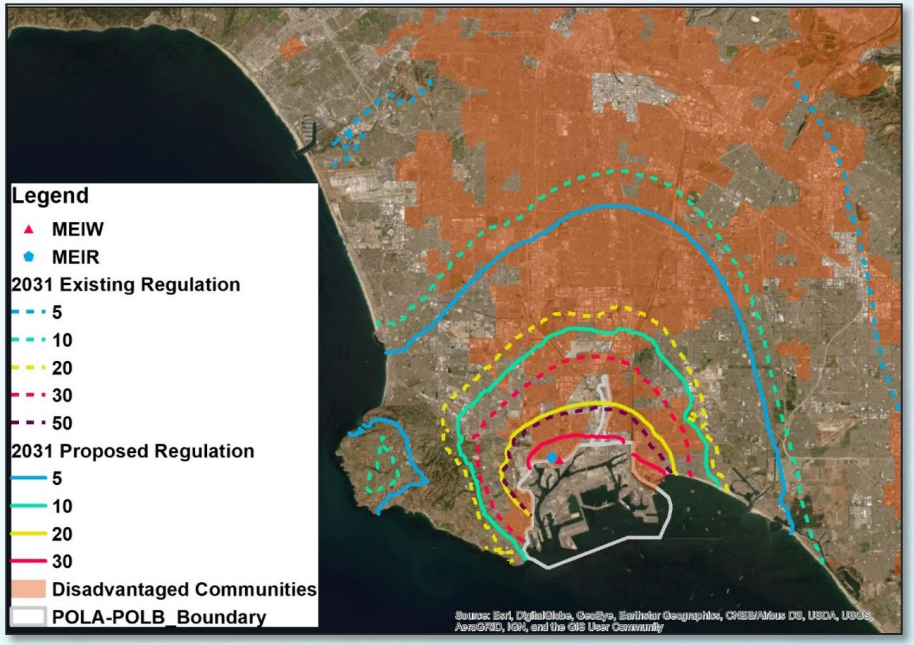
CARB's Responsibilities

- Creating Rules
  - Calculate cancer risks both under current conditions and the proposed rule.



CARB's Responsibilities

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  - Review and Comment on:
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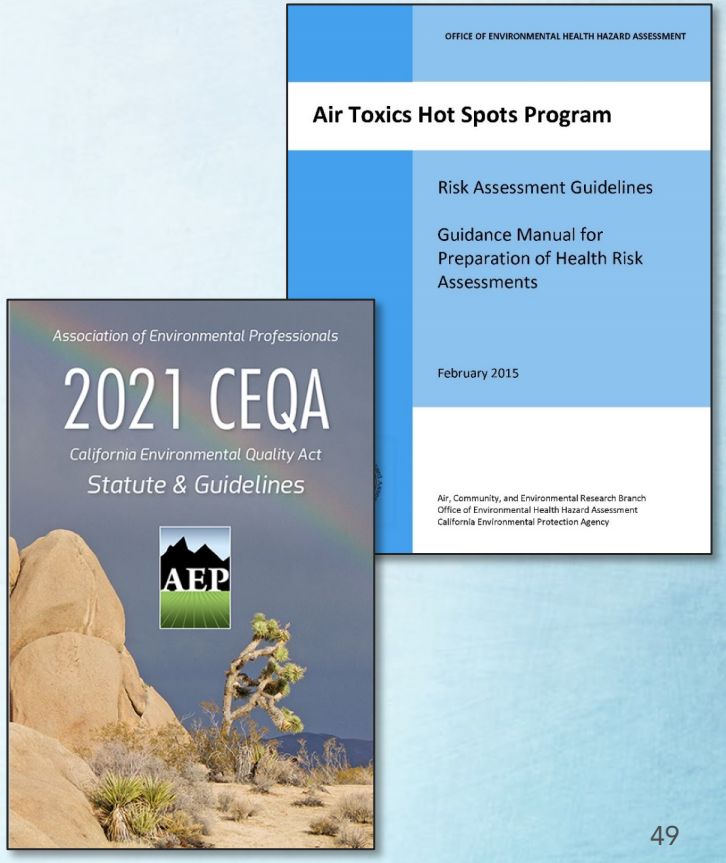

AB 617

- Cumulative Impacts Analysis
  - Multiple sources of air pollution
  - CARB working to develop policies and procedures
  - Will include CAPCOA in development process
  - Will work directly with the public throughout the process
  - Will ensure that public concerns and aspirations are reflected

Suggestions for Advocates

Community Advocates

- CEQA
  - Check to see if there are hazardous chemicals coming from the facility? (Consolidated Table)
  - Check to see if an HRA was included?
  - Determine if all sources are accounted for?
  - Check to see if the inputs and assumptions used for the HRA are consistent with those used for the AQIA?
  - Check to see if the risk values are close to the district significance thresholds?

Community Advocates

- CARB Regulations and ATCMs
  - Provide input during regulation development regarding HRA inputs and model designs
  - Share and explain HRA results with community members
  - Comment on CARB regulations in public meetings
  - Advocate for and support valuation of health effects

Community Advocates

- AB 617
  - Continue to advocate for cumulative impacts HRAs.
  - Participate in public meetings during development of policies.
  - Provide examples of real-world situations with multiple sources.

Thank You for Participating

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