

# DATA 6 - Making Data at the Air District

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8/5/24



# What's today for?

- Framing - Exploring the Air District
- Part 1 - The Data
  - What do **you** want to do with the Public Data Center?
  - “Making” the data
  - Representing the world
- Part 2 - The Context
  - Why the Air District
  - Representing people
- Part 3 - The Work
  - Working at the Air District

# Air Quality Forecast Map

## AIR QUALITY FORECAST

### Daily Forecast

Last Updated: Friday, 8/2/2024 at 10:49 AM

08/02 08/03 08/04 **08/05** 08/06

### Air Quality Index

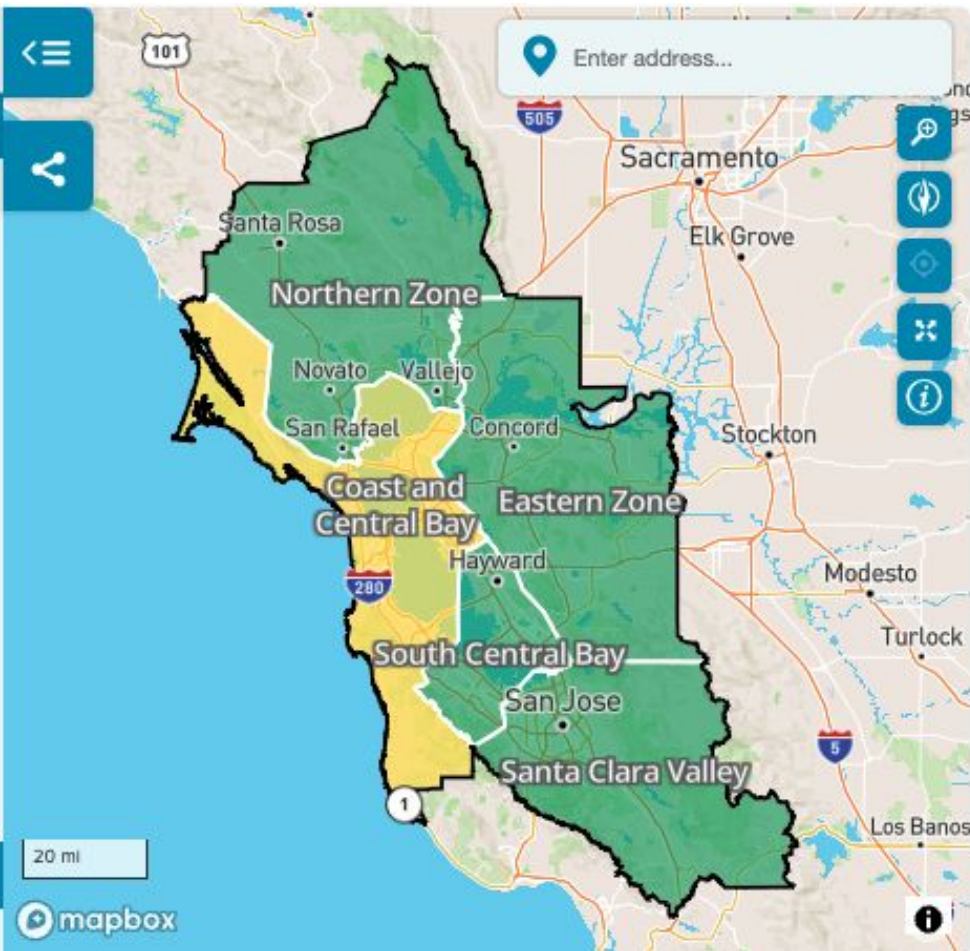
(0-50) Good	(51-100) Moderate	(101-150) Unhealthy for Sensitive Groups
(151-200) Unhealthy	(201-300) Very Unhealthy	(301-500) Hazardous

Five Day Forecast

More AQI Information

## BOUNDARIES

AQI Reporting Zones



# Part 1 - The Data

## What you breathe

*Air Quality in the Bay Area*

[Current Air Quality](#) →

[Air Quality Forecast Map](#) →

[Open Burn Map](#) →

[Air Quality Summaries](#) →

## Who we regulate

*Permits, Facility, and Rules information*

[Permit Applications Received](#) →

[Public Notices on Facility Risk Reduction](#) →

[Public Notices on Permit Applications](#) →

[Facilities Maps](#) →

[Synthetic Minor Facilities](#) →

[Current Rules](#) →

[Title V Permits](#) →

## What we measure

*Emissions, Standards, and other Data*

[Emission Reduction Credit Bank Status](#) →

[Flare Data](#) →

[CARE Data](#) →

[Data on Emissions Inventories](#) →

[Air Monitoring Maps](#) →

[Air Quality Standards and Attainment Status](#) →

[GHG Data](#) →

## How to get involved

*Interact with the Air District*

[Make an Air Quality Complaint](#) →

[Subscriptions and Notifications](#) →

[Board Meetings](#) →

[Annual Budget](#) →

# What data do *you* want to explore?

*At each table*, discuss what data in the Public Data Center is interesting to you.

Then pick one kind or area of data to explore.

How did you settle on this?

What questions would you want to ask with the data?

(Handout)

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Ozone (O3)



Fine Particulate Matter (PM2.5)



Black Carbon (BC)



Carbon Monoxide (CO)



Hydrogen Sulfide (H2S)



Nitric Oxide (NO)



Nitrogen Dioxide (NO2)




Oxides of Nitrogen (NOx)



Sulfur Dioxide (SO2)

**NO<sub>x</sub>** Oxides of Nitrogen (NO<sub>x</sub>)  
Measurement Units: parts per billion (ppb) [learn more](#)

Location:

[All Zones](#) 

Start Date:

9/6/2007

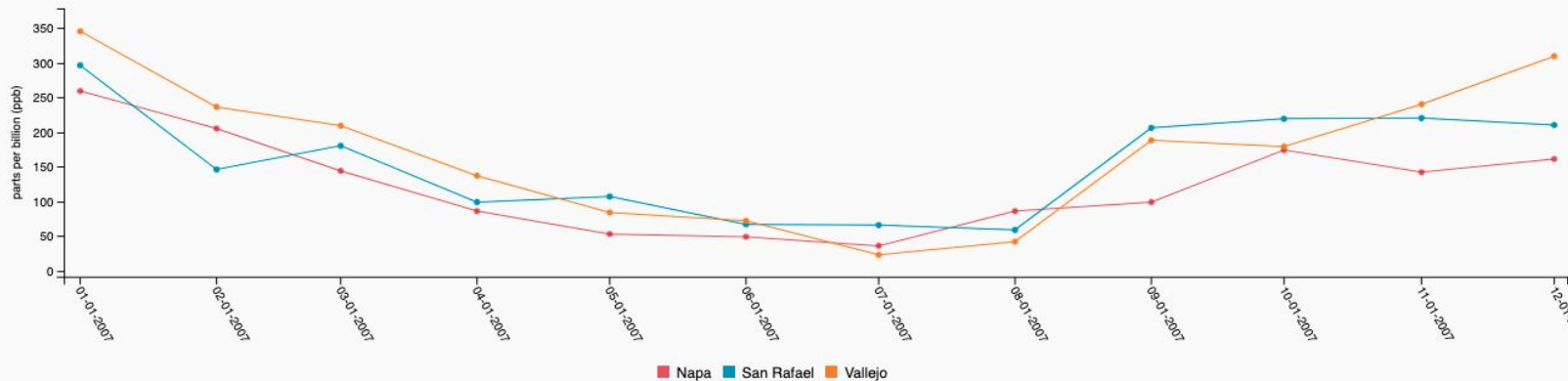
Interval:

[Monthly](#) [Weekly](#) [Daily](#) [Hourly](#)

Northern Zone

Monthly

< 2007 >



YEARLY	Napa		San Rafael		Vallejo	
	High	Avg	High	Avg	High	Avg
	259	20	296	27	345	24

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AIR QUALITY FORECAST


INCIDENTS AND ADVISORIES 

SPARE THE AIR 

WHAT YOU CAN DO 

GLOSSARY 

WILDFIRE AIR QUALITY RESPONSE PROGRAM 

WOOD SMOKE 

LAB & SOURCE TEST 

SPECIAL AIR MONITORING PROJECTS 

## Flare Refinery Archives

Year: **2022** 2021 2020 2019 2018 2017 2016 2015

### — Chevron Richmond

Report by Month - 2022

Alky-Poly	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
D&R	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Fluidized Catcracker	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Hydrogen H2	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Low Sulfur Fuel Oil	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
North Isomax	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Richmond Lube Oil Project	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
South Isomax	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC

### + Phillips 66 Rodeo

Report by Month - 2022

### + Shell Martinez

Report by Month - 2022

### + Tesoro Martinez

Report by Month - 2022

### + Valero Benicia

Report by Month - 2022

## Refinery Stakeholders

# BAAQMD Refinery Flare Emission Report

Chevron Richmond - North Isomax

October - 2021

[Download CSV](#)

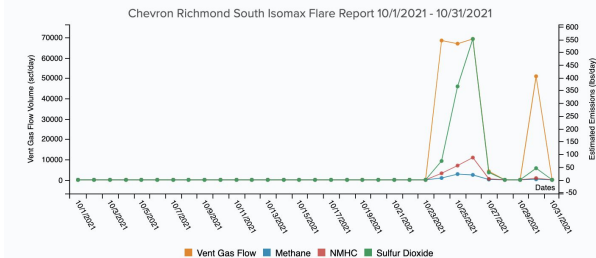
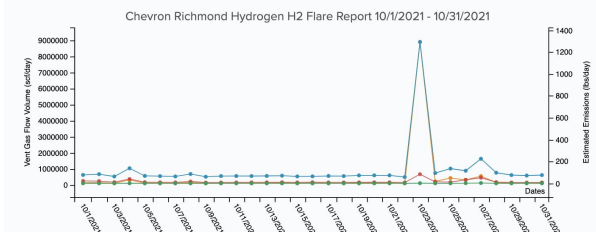
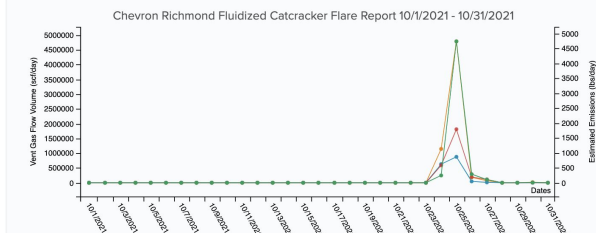
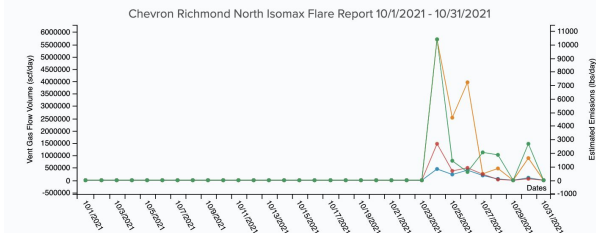
Date (mo/day/yr)	Vent Gas Flow (volume in scf) See notes 6,7	Methane (lbs)	NMHC (lbs)	Sulfur Dioxide (lbs)
10/1/2021	0.00	0.00	0.00	0.00
10/2/2021	0.00	0.00	0.00	0.00
10/3/2021	0.00	0.00	0.00	0.00
10/4/2021	0.00	0.00	0.00	0.00
10/5/2021	0.00	0.00	0.00	0.00
10/6/2021	0.00	0.00	0.00	0.00
10/7/2021	0.00	0.00	0.00	0.00
10/8/2021	0.00	0.00	0.00	0.00
10/9/2021	0.00	0.00	0.00	0.00
10/10/2021	0.00	0.00	0.00	0.00
10/11/2021	0.00	0.00	0.00	0.00
10/12/2021	0.00	0.00	0.00	0.00
10/13/2021	0.00	0.00	0.00	0.00
10/14/2021	0.00	0.00	0.00	0.00
10/15/2021	0.00	0.00	0.00	0.00
10/16/2021	0.00	0.00	0.00	0.00
10/17/2021	0.00	0.00	0.00	0.00
10/18/2021	0.00	0.00	0.00	0.00
10/19/2021	0.00	0.00	0.00	0.00
10/20/2021	0.00	0.00	0.00	0.00
10/21/2021	0.00	0.00	0.00	0.00
10/22/2021	0.00	0.00	0.00	0.00
10/23/2021	0.00	0.00	0.00	0.00
10/24/2021	5,701,643.79	827.73	2,683.92	10,379.10
10/25/2021	2,531,180.70	424.37	684.98	1,434.49
10/26/2021	3,962,224.05	740.40	911.15	609.12
10/27/2021	256,686.00	351.93	441.84	2,051.86
10/28/2021	476,387.27	96.49	52.16	1,868.24
10/29/2021	0.00	0.00	0.00	0.00
10/30/2021	895,142.38	181.40	105.44	2,681.75
10/31/2021	0.00	0.00	0.00	0.00
<b>October Totals</b>	<b>13,823,264.19</b>	<b>2,622.32</b>	<b>4,879.49</b>	<b>19,024.56</b>

# Flare Causal Reports

[Air District](#) / [About Air Quality](#) / [Research & Data](#) / [Refinery Flare Monitoring](#) / [Flare Causal Reports](#)



View Flare Causal Analysis Reports for flaring activity at Bay Area refineries.



FILTERS ▾ Expand to show search or filter options

Navigation controls: back, forward, page 1 (selected), 2, 3, 4, 5, ..., back, forward.

Items per Page:

120 items in 12 pages

Start Date	End Date	Causal Report	Flare	Refinery
11/11/2021	11/11/2021	<a href="#">Report</a> (639 Kb PDF, 3 pgs, posted 1/5/2022)	Main	Phillips 66 Rodeo
10/30/2021	10/30/2021	<a href="#">Report</a> (182 Kb PDF, 5 pgs, posted 1/5/2022)	North Isomax	Chevron Richmond
10/27/2021	10/27/2021	<a href="#">Report</a> (162 Kb PDF, 4 pgs, posted 1/5/2022)	Hydrogen H2	Chevron Richmond
10/27/2021	10/28/2021	<a href="#">Report</a> (186 Kb PDF, 5 pgs, posted 1/5/2022)	North Isomax	Chevron Richmond
10/25/2021	10/25/2021	<a href="#">Report</a> (2 Mb PDF, 3 pgs, posted 1/5/2022)	Light Oil Products	Martinez Refining





# Frequent flares at Chevron Richmond Refinery concern residents, experts

Ratul Mangal is a senior staffer at The Daily Californian. Mar 13, 2024 Comments



Richmond is being affected by flares from a local Chevron refinery that releases fine particulate matter and poses health risks to the community.

Scott Hess | Creative Commons



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00:00 05:15

To many Bay Area residents, clouds of black smoke rising into the sky can seem like an omen reserved for wildfire season. But for the residents of Richmond, who live near the century-old Chevron oil refinery, it is a year-round concern.

Plumes of black smoke were seen rising from the refinery Nov. 27, 2023, drawing concern from local residents and receiving significant media attention. This event was caused by safety flares used to stabilize equipment following a partial power outage, according to Chevron spokesperson Ross Allen. Data from the Bay Area Air Quality Management District, or BAAQMD, shows that this is not an isolated incident, as the refinery has flared almost daily since it added a hydrogen plant in November 2018.



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Bay Area Air Quality

@AirDistrict

The Air District is closely monitoring the current incident at the #Chevron Refinery in Richmond. Air District inspectors are on scene investigating and we are working to find the root cause of the smoke in addition to any potential air quality violations.



3:21 PM · Aug 10, 2021 · Twitter Web App

## Flaring activity at Chevron Richmond Refinery sends off huge plume of black smoke



Tuesday, August 10, 2021



# What's in the data?

- Overall air quality measurements
  - Time series of air quality indices and “criteria pollutants”
  - At particular, specifically selected locations
- Information about refinery flares
  - Time series for particular pollutants at individual refineries
  - Time series of estimated emissions/pounds per day
  - Causal Analysis Reports for incidents
- Complaint data
- And more



# Making data at the Air District

- What's "the phenomenon" in the world?
- What work goes into making the data?
- Why is it getting made?
- Who gets to define it?
- Who participates? How?
- Why ask these particular questions? Who cares?

Making data, not just collecting ...



# Data takes work. It does work.

Data is *made*. By *people*. To *do work* in the world. In *contexts* that shape what they do.

Data *travels* with hidden effects of how it was made - the *work* that went into making it - the *choices* that were made about how to have it *represent* the world.

# Data **represents** the world

Making data begins with an act of seeing and recording -- seeing and recording something that was previously, hidden, nameless, even unseen.

Arbitrary observations are not data. A dataset is not just an arbitrary jumble.

Data, as data, must have meaning as *standing for* a phenomenon in the world.

# Representation is selective

When people make data, they make choices about

- What phenomena to know about
- What data to try to capture it with
- What aspects to feature
- By what means, with what instruments
- How to present the data to make it actionable

Selection is often better thought of as *perspective* than as *bias*.

# Part 2 - The Context



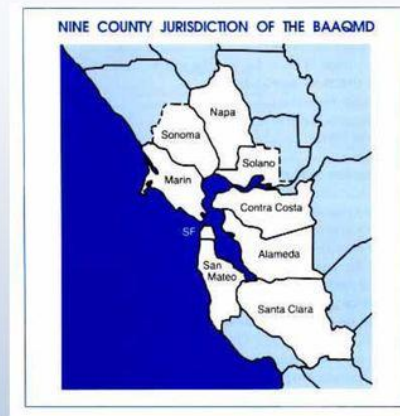
# BAAQMD Background

## The Air District

- Established in 1955
- Serves the nine Bay Area Counties
- Seven million residents
- 5,340 square miles

## Mission

To protect and improve public health, air quality, and the global climate



check out <https://www.baaqmd.gov/about-the-air-district/history-of-air-district>

- ABOUT AIR QUALITY
- AIR QUALITY SUMMARIES
- CURRENT AIR QUALITY
- AIR QUALITY MEASUREMENT
- INTERACTIVE DATA MAPS
- RESEARCH & DATA**
  - Air Quality Standards & Attainment Status
  - Emissions Inventories
    - Criteria Air Pollutants
    - Production-Based GHG Emissions Inventory
    - Consumption-Based GHG Emissions Inventory
    - Toxic Air Contaminants
    - Local Studies
    - Maps Data and Documents
  - Research & Modeling
    - Forecasting & Data Analysis
    - Refinery Flare Monitoring
    - Community Air Risk Evaluation (CARE) Program
- OPEN BURN STATUS
- AIR QUALITY FORECAST
- INCIDENTS AND ADVISORIES
- SPARE THE AIR
- WHAT YOU CAN DO
- GLOSSARY
- WILDFIRE AIR QUALITY RESPONSE PROGRAM

# Representation, legitimacy, and authority go together



PEOPLE POWER "Collaboration is where power is," said the Sierra Club's Jacob Klein. "Without the network, the refineries would have won," seconded Steve Rosenbaum, 350 Bay Area member and a volunteer for the BAAQMD Network.

## People Power: How networking won a vital air pollution fight

By Janis Hashe Aug 18, 2021

# Representation

= The way in which one thing is made to “stand for” something else.

**Who** is represented in data? **Whose experience** is represented?

Representation is two-sided. It deals with both **knowledge** and **power** (authority, legitimacy, “what counts”).

Data is all about representation. It creates representations of social and natural phenomena, and representations of people.

Representations do work in the world. They take on lives of their own.



# How do we know what to count? What “counts”?

For the Air District:

- What count as pollutants to measure?
- What's not included? What “doesn't count”?
- What counts as a site to be monitored?
- What counts as a flare?



# What's not in the data?



## THE HISTORY

West Berkeley Alliance for Clean Air and Safe Jobs

**This is a history of Pacific Steel Casting Company, the industry's local and regional regulators, and the East Bay community their actions impact.**

Pacific Steel Casting Company (PSC), the City of Berkeley, and the Bay Area Air Quality Management District (BAAQMD) have been at odds with neighbors for years. This is partially because of PSC's uncooperativeness and foul emissions, partly because of the City of Berkeley's lack of meaningful action, and partly because of BAAQMD's impenetrable regulatory bureaucracy and nearly unusable complaints policy.

Neighbors have long known that PSC's burning pot handle/burning brake odor is attributed to phenol and formaldehyde, as well as various other particulates and gases. These substances include recognized and suspected carcinogens, suspected cardiovascular or blood toxicants, developmental toxicants, immunotoxicants, kidney toxicants, gastrointestinal or liver toxicants, neurotoxicants, reproductive toxicants, respiratory toxicants, and skin or sense organ toxicants. Although they have complained and organized to have the emissions filtered out of the air, the odors are a recurring nightmare for residents in El Cerrito, Albany, Berkeley, and Kensington for the past 25 or more years. Neighbors won some partial victories, with PSC installing a carbon adsorption system on Plant #2 in 1985, and on Plant #1 in 1991. A carbon adsorption system in Plant #3 became operational in October of 2006. However, the problems were not fully addressed and the odor nuisance continues.

# Part 3 - The Work

# Working at the Air District

Go back to the Air District website:

1. Who's in charge at the Air District?
2. What kinds of educational backgrounds are needed at the Air District?

Wrap-up

What were your key takeaways today?

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