

Benicia Refinery  
Benicia, California



# Community Advisory Panel Meeting

June 13, 2023

# Valero Benicia Refinery Air Quality Monitoring Map & Devices



# Air Quality Monitoring

## Refinery Monitors (Blue Lines)

- Routine operations monitored by analyzers
  - Continuous Emissions Monitors (CEMs) for Nitrogen Oxides (NO<sub>x</sub>), Carbon Monoxide (CO), Sulfur Dioxide (SO<sub>2</sub>), Hydrogen Sulfide (H<sub>2</sub>S), Total Reduced Sulfur (TRS), etc.
  - Over 100 devices requiring daily calibration and data historization
  - Stack testing for non-CEMs constituents (eg: Particulate Matter (PM))
- Monthly flare information is available on BAAQMD's website:  
<http://www.baaqmd.gov/about-air-quality/research-and-data/flare-data>

## Ground Level Monitors (Yellow Dots)

- Before Valero acquired the Benicia Refinery, three ground level monitors (GLMs) were installed and are currently in continuous operation in the community
- GLMs measure H<sub>2</sub>S and SO<sub>2</sub> in the ambient air from all sources, including mobile sources (e.g. cars and trucks) and stationary sources (e.g. refinery, homes and other businesses)
- Data is available on the Valero Benicia Refinery Fenceline monitoring website:  
<http://www.beniciarefineryairmonitors.org/>

# Air Quality Monitoring

## Fenceline – Open Path Monitors (Orange Dots/Pink Lines)

- Fenceline monitors measure specific pollutants that cross the facility's fenceline in real time. This system has the ability to monitor, record and report air pollutant levels of multiple compounds (SO<sub>2</sub>, H<sub>2</sub>S, Benzene, Toluene, Ethylbenzene, Xylene (BTEX))
- The Bay Area Air Quality Management District's (BAAQMD) Regulation 12-15 required refinery fenceline monitoring by June of 2019 with H<sub>2</sub>S open-path monitoring extended to January 1, 2023. Valero's H<sub>2</sub>S open-path monitor has been operational since December 2022 and continuous data is available at the link below. Valero is currently pending feedback on recent Air Monitoring Plan (AMP) and Quality Assurance Project Plan (QAPP) submittal
- Data is available on the Valero Benicia Refinery Fenceline monitoring website: <http://www.beniciarefineryairmonitors.org/>

## Fenceline – Benzene Passive Monitors (Green Dots)

- United States Environmental Protection Agency (EPA) Petroleum Refinery Sector Rule requires refineries to monitor concentrations of benzene at their fenceline. Emissions monitoring data must be continuously collected at locations around the perimeter of the facility using passive sorbent tubes. The specific methods and equipment required to conduct monitoring are prescribed by EPA
- Every 2 weeks passive monitors are gathered and sent to labs accredited in EPA's designated test method for processing and analysis. The EPA uploads lab results for refineries across the country to their website.
- Valero Benicia Refinery is below the EPA action levels
- Data is available on EPA's website: [https://awsedap.epa.gov/public/extensions/Fenceline\\_Monitoring/Fenceline\\_Monitoring.html?sheet=MonitoringDashboard](https://awsedap.epa.gov/public/extensions/Fenceline_Monitoring/Fenceline_Monitoring.html?sheet=MonitoringDashboard)

# Air Quality Monitoring

## Routine Community Monitoring

- Daily Perimeter Checks
- Observations by Plant Personnel and Contractors
- Ground Level Monitors and Fenceline Monitors
- Metrological Stations (Red Dots)

## Non-Routine Community Monitoring

- Community phone inquiries
- Instrument monitoring for community complaints and/or abnormal conditions observed during perimeter checks to monitor the location of where odors are reported and other downwind locations that may be impacted
- Incident monitoring

# Permits and Agencies

- The Valero Benicia Refinery operates with permits from many agencies including, but not limited to:

Permits	Agencies
Title V	Bay Area Air Quality Management District, Environmental Protection Agency
Permit to Operate (PTO)	Bay Area Air Quality Management District
National Pollutant Discharge Elimination System (NPDES)	Regional Water Quality Control Board
Groundwater Orders	Regional Water Quality Control Board
Dredging	Regional Water Quality Control Board, Environmental Protection Agency, Bay Conservation Development Commission, Fish and Wildlife, California State Lands, Army Corps of Engineers
Waste generation	Environmental Protection Agency, Department of Toxic Substances Control, Department of Transportation
Cogen	California Energy Commission
Use Permit	City of Benicia

- Additional oversight by agencies including Solano County, Benicia Fire Department, California Air Resources Board, State Water Resources Control Board