

Benicia Refinery
Benicia, California



City of Benicia - Air Monitoring Presentation

October 22nd Workshop



Valero Benicia Refinery

Air Quality Monitoring Program for the Community

Refinery Monitors (Blue Arrows)

- Routine operations monitored by analyzers
 - Continuous Emissions Monitors or CEMs for NO_x, CO, SO₂, H₂S, TRS, etc.
 - Over 100 devices requiring daily calibration and data historization
 - Stack testing for non-CEM constituents (eg: PM, SAM)
- Monthly flare information is available on BAAQMD's website: <http://www.baaqmd.gov/about-air-quality/research-and-data/flare-data>

Ground Level Monitors (Orange Dots)

- Three ground level monitors (GLMs) were installed and are in continuous operation in the community
- Ground level monitors (GLMs) measure hydrogen sulfide (H₂S) and sulfur dioxide (SO₂) 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)
- This data is also available on the Valero Benicia Refinery Fenceline monitoring website:
<http://www.beniciarefineryairmonitors.org/>

Fenceline – Open Path Monitors (Pink Dots)

- 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 (SO₂, H₂S, BTEX)
- The Bay Area Air Quality Management District's (BAAQMD) Regulation 12-15 required refinery fenceline monitoring by June of 2019, however, H₂S open-path monitoring has been extended to March 17, 2021 by the BAAQMD
- This map does not depict the additional "Path 4" monitors that are being added to the northwest



Fenceline – Open Path ‘4’ Monitor

- We are committed to moving ahead with the extension of our fenceline monitoring program to include the Path 4 stations along the northwest boundary
- Currently we are troubleshooting some technology issues with the monitors that have already been installed as part of the BAAQMD program and we plan to proceed with Program 4 installation once the appropriate resolution to those issues has been determined.

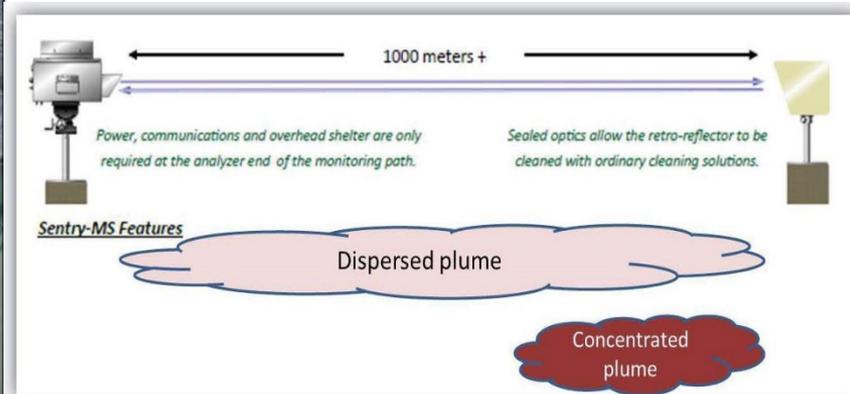


Figure 16. Basic premise for open-path instrument operation. Image from CEREX Sentry-MS monitoring brochure.

Federal RSR Rule – Passive Monitoring for Benzene

BTEX Passive Fenceline Monitors

(Green Dots)

- Under United States Environmental Protection Agency (USEPA) Petroleum Refinery Sector Rule, refineries across the United States are required to monitor concentrations of benzene at their property boundary, or 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 USEPA.
- Sorbent tubes are typically made of glass or stainless steel and contain various types of solid adsorbent material such as carbon or activated charcoal. The tubes trap and retain compounds such as benzene and are easily extracted for lab analysis.
- Every 2 weeks the tubes are gathered and sent to labs accredited in USEPA's designated test method for processing and analysis. The USEPA uploads lab results for refineries across the country to their website.
- Valero Benicia Refinery is below the EPA action levels

