

Public Scoping Meeting for Potential Amendments to

**District Rule 4460
(Petroleum Refinery Fenceline Air Monitoring)**

**District Rule 3200
(Petroleum Refinery Community Air Monitoring Fees)**

February 1, 2022

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Assembly Bill (AB) 1647

- As part of Assemblymember Al Muratsuchi's bill package, AB 1647 approved by the Governor of California on October 8, 2017
 - Created due to safety incidents at large refineries in Bay Area and South Coast
- AB 1647 requires:
 - Petroleum refineries develop, install, operate and maintain a fence-line air monitoring system at and near refineries in accordance to guidance developed by CARB and local air district
 - Air districts design, develop, install, operate and maintain a refinery-related community air monitoring system
 - Real-time data be made accessible to the public
- District adopted Rule 4460 and Rule 3200 in December 2019 through public process to implement requirements of AB 1647

Current District Rule 4460

- Requires refineries to install, operate, and maintain fence-line air monitoring systems and make data collected by these systems publicly available
- Exempts refineries not currently engaged in refining crude oil

Petroleum Refinery Capacity (barrels per day)	Equipment for Fence-line Air Monitoring System	Pollutants to be Considered in Monitoring Plan
Less than 40,000	Point monitoring or open path system	Sulfur dioxide, hydrogen sulfide, BTEX compounds (benzene, toluene, ethylbenzene and xylene)
40,000 or greater	Open path system and point monitoring, as needed	Sulfur dioxide, nitrogen oxides, total VOCs, BTEX compounds, formaldehyde, acetaldehyde, acrolein, 1,3 butadiene, styrene, hydrogen sulfide, carbonyl sulfide, ammonia, hydrogen cyanide, hydrogen fluoride, black carbon

Current District Rule 3200

- As mandated by AB 1647, recovers District costs of developing and maintaining refinery-related community air monitoring system
- Community monitoring approach and fees based on establishing community air monitoring station with variety of sensors that measure range of possible pollutants and parameters

Reasons for Proposed Amendments

- Recent Fresno County Superior Court ruling (September 2021) provides additional clarification on statutory requirements under AB 1647
- Issues that need to be addressed include:
 - Removal of exemption for affected (“petroleum”) facilities not currently engaged in refining crude oil
 - Re-evaluation and additional supporting analysis with respect to monitoring provisions for petroleum refineries with a refining capacity of less than 40,000 barrels per day (currently requires monitoring for six specific pollutants)
- In response to court order, the District is beginning a public process to develop amendments and additional technical analysis for Rule 4460 and Rule 3200

Fenceline Monitoring Guidance

- In developing guidance, AB 1647 requires the District to
 - Take into account monitoring technological capabilities
 - Incorporate input from affected parties
 - To extent feasible, shall be informed by the Refinery Emergency Air Monitoring Assessment Report (REAMAR) and the Office of Environmental Health Hazard Assessment (OEHHA) report “*Analysis of Refinery Chemical Emissions and Health Effects*”

Refinery Emergency Air Monitoring Assessment Report

- California Air Resources Board (CARB) and California Air Pollution Control Officers Association (CAPCOA) prepared California Refinery Emergency Air Monitoring Assessment Report (REAMAR) to improve air monitoring and emergency response for refineries
- 1st Report (*Objective 1: Delineation of Existing Capabilities*)
 - Provides inventory of emergency air monitoring assets and capabilities for refineries in California
- 2nd Report (*Objective 2: Evaluation of Air Monitoring Capabilities, Gaps, and Potential Enhancements*)
 - Provides recommendations to improve emergency and routine air monitoring at refineries and in surrounding communities
 - Recommendations cover air monitoring technology, modeling, and coordination

Office of Environmental Health Hazard Assessment

- As companion to REAMAR, Office of Environmental Health Hazard Assessment (OEHHA) prepared “*Analysis of Refinery Chemical Emissions and Health Effects*” report (September 2017)
- Presents list of chemicals emitted from California refineries, and identifies 16 top candidates for air monitoring, taking into account emissions levels and toxicity

- Acetaldehyde
- Ammonia
- Benzene
- 1,3-butadiene
- Cadmium
- Diethanolamine
- Formaldehyde
- Hydrogen Sulfide
- Manganese
- Naphthalene
- Nickel
- PAHs
- PM
- Sulfur Dioxide
- Sulfuric Acid
- Toluene

Air Monitoring Equipment Considerations

- Types of air monitoring equipment
 - Point monitoring
 - Open-path
- Varying Capabilities
 - Detection Limits
 - Single to multiple pollutants
- Some pollutants can only be measured through collecting samples and sending it to laboratory for analysis
- Certain pollutants may not have monitoring methodology established
- Varying maintenance requirements
- Broad range of cost

Air Monitoring Technology

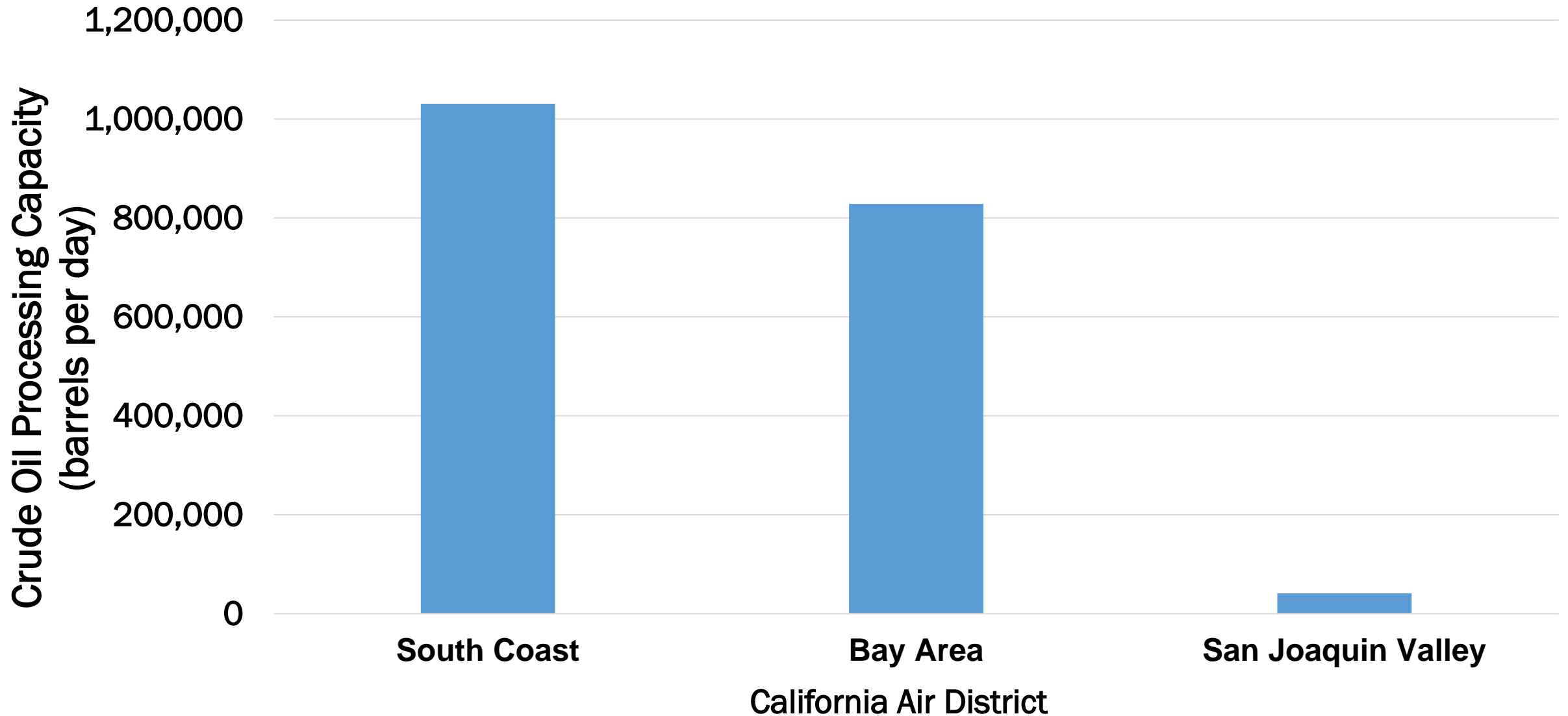
Point Monitoring Technology



Open Path Monitoring Technology



Crude Oil Refining Capacity by Air District (CEC 2021)



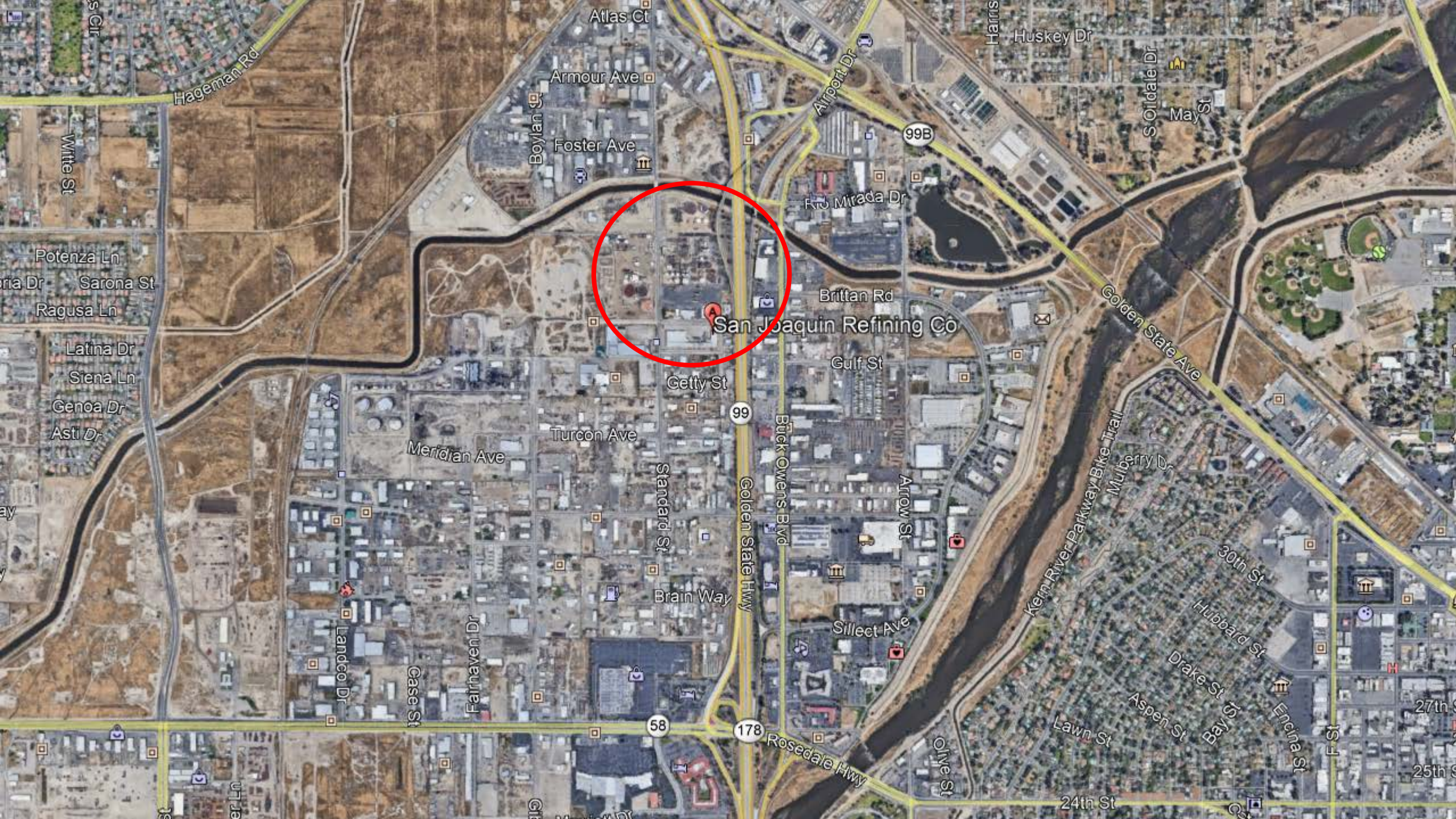
San Joaquin Valley Petroleum Refining Operations

Facility Name	Location	Processing Capacity (barrels/day)	Status of Refining (2021 CEC Report)
Bakersfield Renewable Fuels (Alon)	Rosedale Highway, Bakersfield, CA	66,000	Non-Refining
San Joaquin Refining Company	Shell Street, Bakersfield, CA	15,000	Operational
Kern Oil & Refining Co.	Panama Lane, Bakersfield, CA	26,000	Operational
Tricor Refining, LLC	Manor Street, Bakersfield, CA	12,500	Non-Refining

San Joaquin Refining Co.

- Independent oil refining company located in Bakersfield, CA
- One of smallest refineries in state
- Distribution network ships products for a variety of industries through the Port of Los Angeles
- Majority of product used in asphalt production
- Also serves industries with applications for diesel fuel, drilling fluids, fuel additives, hydraulic fluids, lubricants, tires, etc.





San Joaquin Refining Co

Kern Oil & Refining Co.

- Independent oil refining company located in Bakersfield, CA
- Produces gasoline and diesel (key supplier for Southern San Joaquin Valley)
- Co-processes and blends various biofuels with fossil fuel production process





Kern Oil & Refining Co

Fuller Acres

Enterprise St

Reynolds St

Kam Ave

Cameo Rd

E Panama Ln

Fuller Dr

Brooks Rd

Hilltop Dr

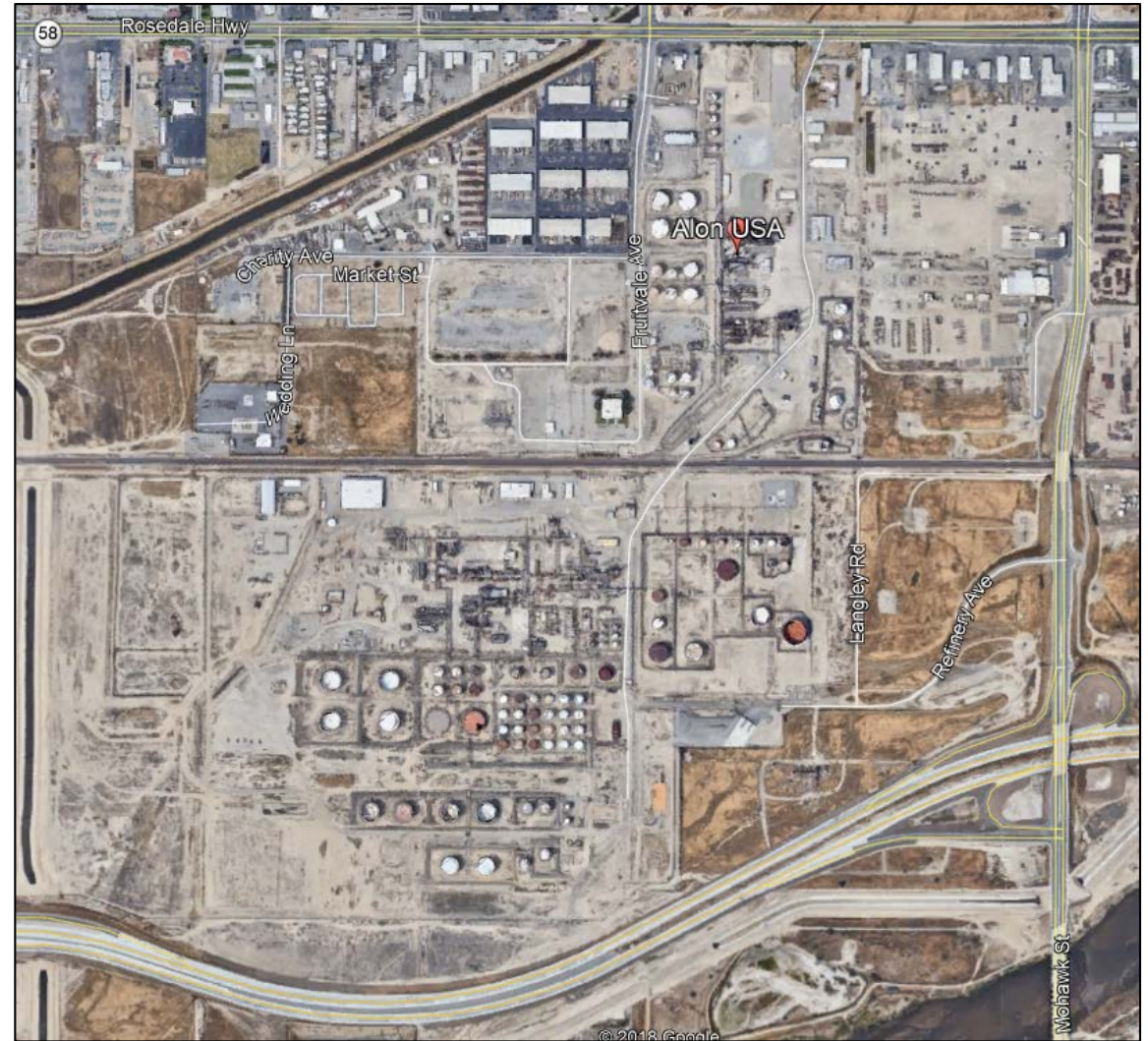
Farmers Ln

Sh

Rd

Bakersfield Renewable Fuels (Alon)

- Currently not refining petroleum
- Facility currently being modified into renewable fuel production
 - Feedstocks will include vegetable oil and animal fats
 - Currently conducting fenceline monitoring of weather conditions, NH₃, and H₂S





Fruitvale Ave

Alon USA

Landco

Langley Rd
Retirey Ave

Mohawk St

Truxton Ave

Commerce Dr

Eason Dr

Office Park Dr

Empire Dr

Buck Owens Blvd

Coffee Rd

Golden St

24th St

21st St

19th St

58th St

178

99

204

Tricor Refining LLC

- Currently not refining petroleum
- Only receiving, storing, and shipping of various petroleum products, and production of air-blown asphalt





W China Grade Loop

China Grade Loop

China Grade Loop

Round Mo

Oildale

Tricor Refining LLC

Oildale Dr

Kern River

Roberts Ln

E Roberts Ln

Panorama Dr

Bakersfield College

Kern River

Market St

Panorama Dr

University Ave

Kern River

River Dr

Air Quality Regulations – Petroleum Refineries

- Valley petroleum refineries subject to multiple District rules, shown to be most stringent rules feasible for implementation
- Refineries subject to variety of performance standards under local, state, and federal regulations to reduce emissions of air pollutants
 - Refineries required to continuously monitor for leaks
 - Ongoing reporting required
 - Regular District inspections to ensure compliance
- Various federal New Source Performance Standards apply to new and modified equipment at refineries
 - Subparts J and Ja Standards of Performance for Petroleum Refineries
 - Subparts K, Ka, Kb Volatile Organic Liquid Storage Vessels
 - Subpart XX Bulk Gasoline Terminals
 - Subpart GGG and GGGa Equipment Leaks of VOC at Petroleum refineries
 - Subpart QQQ VOC Emissions from Refinery Wastewater Systems

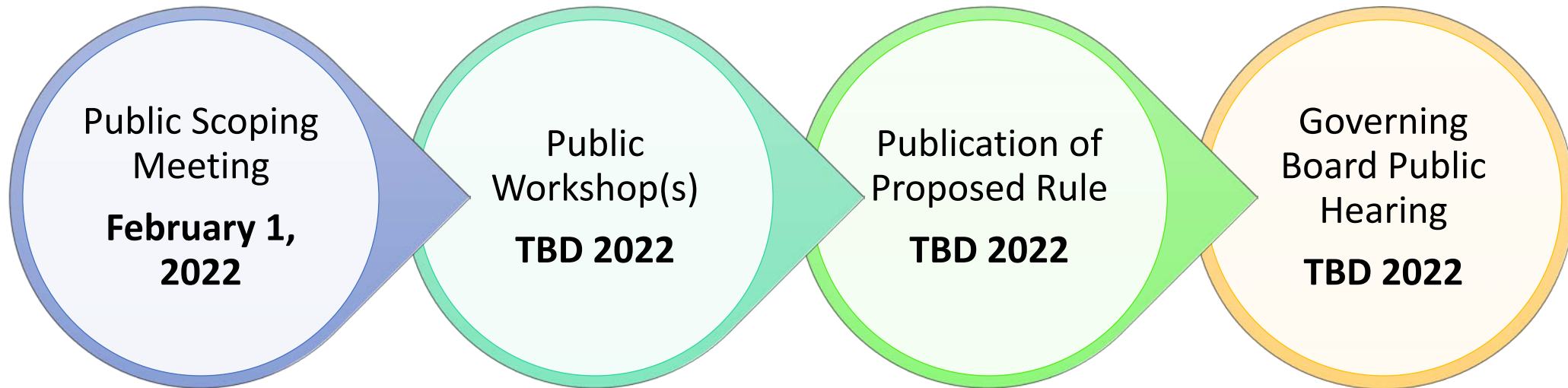
Air Quality Regulations – Petroleum Refineries (cont'd)

- Valley petroleum refineries subject to stringent District regulations, including:
 - Rule 2201 – New and Modified Stationary Source Review Rule
 - Rule 4101 – Visible Emissions
 - Rule 4012 – Nuisance
 - Rule 4311 – Flares
 - Rules 4305 – 4307, 4320, 4351 – Boilers, Steam Generators, and Process Heaters
 - Rule 4453 – Refinery Vacuum Producing Devices or Systems
 - Rule 4454 – Refinery Process Unit Turnaround
 - Rule 4454 – Components at Refineries, Gas Liquids Processing Facilities, and Chemical Plants
 - Rule 4623 – Storage of Organic Liquids
 - Rule 4624 – Transfer of Organic Liquid
 - Rule 4651 – Soil Decontamination Operations
 - Rules 4701 and 4702 – Internal Combustion Engines
 - Rule 4703 – Stationary Gas Turbines

Key Issues for Consideration

- What approach and type of equipment should be used for refinery fenceline air monitoring?
- What pollutants should be monitored?
- Other questions or input?

Next Steps: Public Engagement Process for Refinery Fenceline and Community Air Monitoring Rule Development



Public Participation and Comment Invited throughout Process

Contact

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Visit <https://ww2.valleyair.org/about/sign-up/> to sign up for the District's Petroleum Refineries Listserv for updates

Comments/Questions

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