

# Refinery Storage Tanks emit invisible VOCs, benzene, & more

Crude oil, gasoline, diesel, jet fuel, etc. causes harmful evaporation & leaks!

- 1) **FIXED ROOF STORAGE TANKS** allow gases to be pushed out of tank vents when liquid is loaded, or when temperature increases cause higher vapor pressure. *→ Adding Vapor Recovery can capture most emissions.*
- 2) **EXTERNAL FLOATING ROOF TANK** roofs float on liquid, sliding up and down during loading and unloading, eliminating a vapor space underneath where gases would otherwise build up. *→ This structure allows VOC-coated walls to be exposed to open air.*
- 3) **INTERNAL FLOATING ROOF TANKS ARE CONSIDERED BEST** *→ Adds another roof on top of an External Floating Roof tank* - inside tank walls are no longer open to the air. (Tank has two roofs – one floating, another at the top).



EXTERNAL FLOATING ROOF

For more on tank types, see SCAQMD slides describing petroleum tank types, details on fittings, roof openings, seals, & places gases can escape – see [Mar 17, 2021 workshop](#).

## ▶ ALL TYPES CAN LEAK GASES IF NOT WELL-MAINTAINED OR CONSTRUCTED.

The [Fluxsense study](#) on LA refineries found every one had drastically underestimated VOCs and benzene, and that emission calculations don't include degradation over time (p. 5 & 95, also [CBE's decoder](#) summary).

FREQUENT AIR MONITORING is crucial to detect leaks: Hatches, fittings, guide poles, seals, can cause large leaks if not vapor tight; tanks can degrade over time.

The South Coast Air District is updating its refinery tanks [Rule 1178](#) – strengthening is needed (over).

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## [SCAQMD's proposed Rule 1178 & related Rule 463:](#)

Applies to >1,000 petroleum tanks at 29 facilities (oil refineries, tank farms, oil production). Majority of each has >1 million gallons capacity & can emit cancer causing & smog-forming gases.

### What we **LIKE** & **DON'T LIKE** about the proposed regulation:

- ✓ It requires adding VAPOR RECOVERY (for some Fixed Roof Tanks), SECONDARY SEALS around floating roofs.
- It *might* require adding DOMES (on External Floating Roof Tanks storing crude oil), which could cut a lot of pollution (but there are exemptions)!
- X “Alternative Plans” allow refineries to skip adding domes, instead setting limits on vapor pressure. This is harder to enforce than adding a roof.
- ✓ It requires Optical Sensing of Gases using infrared cameras, allowing inspectors to see leaking gases normally invisible, so they can be fixed.
- X DEADLINES ARE TOO LONG! – 1/3 get retrofitted by 2031, ½ by 2033, and all by **2038** -far too long! Refineries are even complaining about these - they want *even longer delays!*
- X Refineries are allowed cheap “COST EFFECTIVENESS” limits - reasonable controls are considered too expensive.
- Other issues: See the March [letter](#) of Earthjustice, CBE, CBD, and CCA.
- After the new Draft Regulation is published, we will have more comments.

### What you can do: Join us in testifying at public hearings

- [Fri. Jun 16th, 10:30am Stationary Source Committee of AQMD Board](#)
- Final AQMD Board adoption hearing is now expected Sept. 1<sup>st</sup>.
- We can provide top Talking Points after the new draft regulation is published.

***Bigger picture: We also need to gradually phase out Oil Refineries, while electric vehicles are ramped up, to meet smog & climate goals (with a Moratorium on new petroleum tanks & fossil fuel infrastructure.)***

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