



LOOK UP

BY RICHARD A. STEDMAN
AIR POLLUTION CONTROL OFFICER

Every month, MBARD receives a few calls from the public regarding aircraft exhaust trails in the sky. We're happy to answer these calls. Typically, the caller indicates that they are very alarmed over the presence of numerous "chemtrails" in the sky. Most callers believe that the number of these so-called chemtrails has been increasing over their lifetime of observation.

(continued on next page)



IN THIS ISSUE

Look Up

Maintaining the Ambient
Air Monitoring Network

What is a Title V Federal
Operating Air Permit?

The Dust Up Over Leaf Blowers

Zero-Emission Lawn & Garden
Equipment Incentive Program

Board of Directors

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(continued from front page of newsletter): They are interested in finding out what these trails are and who's responsible for regulating these emissions. Some folks are open to learning about the science behind the trails, while others have a fully developed conspiratorial opinion on the origin and purpose of these emissions. They believe that the government or some other type of entity is purposely spraying chemicals or biological agents from aircraft.

Aircraft leave trails in the atmosphere (called contrails) due to condensation. Combustion from a jet engine produces water vapor that condenses into a cloud depending on certain atmospheric properties. Additionally, wingtips and aircraft surfaces, while not adding water from combustion, can create clouds as their vortices expand and the air temperature in them drops and the dew point is reached. In short, there are science-based explanations as to why aircraft create visible cloud-like vapor trails.

Besides water vapor, there are other emissions associated with jet engine combustion. These pollutants include criteria oxides of nitrogen as well as carbon dioxide, a greenhouse gas. Particulate matter and volatile organic chemicals, such as all sorts of hydrocarbons, are emitted as well.

LOOK UP

It is true that contrails have been increasing. The sky is becoming increasingly crowded as more flights are continuously added. Also, routes are constantly shifting as new destinations are added and changed. This includes passenger flight and goods movement. The simple fact is that air travel has grown considerably over the past few decades.

The Environmental Protection Agency (EPA) regulates aircraft emissions. Local air districts like MBARD regulate stationary sources of emissions. The California Air Resources Board regulates mobile sources traveling in California. Contrails from aircraft are typically emitted high in the atmosphere. It is unlikely that these emissions will be detected on the ground at the locations from which they are observed.

There is no evidence to support the notion that chemicals or other materials are being sprayed purposely from aircraft as a means to control behavior, cause disease or dispose of toxic waste. Extraordinary claims usually require extraordinary proof. That doesn't mean that there are not a lot of strong feelings on the subject. A quick search of "chemtrails" on an internet search engine can take you to a number of websites that allege that known and unknown organizations and governments are purposely subjecting the public and environment to chemicals delivered by aircraft. Fortunately, one can also find a number of websites that provide science-based information regarding the subject. Here are a few that MBARD recommends:

- <https://contrailscience.com/>
- <https://keith.seas.harvard.edu/chemtrails-conspiracy-theory>
- <https://www.epa.gov/regulations-emissions-vehicles-and-engines/information-contrails-aircraft>
- https://www.faa.gov/about/office_org/headquarters_offices/apl/noise_emissions/contrails/
- <https://www.epa.gov/regulations-emissions-vehicles-and-engines/regulations-emissions-aircraft-engines>.



RICHARD A. STEDMAN
AIR POLLUTION CONTROL OFFICER



MAINTAINING THE AMBIENT AIR MONITORING NETWORK

The Monterey Bay Air Resources District (MBARD) operates and maintains a regulatory network of air monitoring sites in the counties of Monterey, Santa Cruz, and San Benito. The pollutants monitored include dust (PM₁₀), smoke (PM_{2.5}), ozone (O₃), carbon monoxide (CO), and oxides of nitrogen (NO_x). The instruments used to monitor these pollutants and meet regulatory requirements need to be precise, accurate, and reliable. Decisions which impact both community health and our daily lives are made using data collected by these monitors and this data needs to be of very high quality. For these reasons, all air districts, including MBARD, continuously test, calibrate, and maintain them. When necessary, these instruments get replaced, typically when they reach the end of their operational life cycle. With good instruments, the life cycle can reach 15 to 25 years. Typically, an instrument has reached the end of its operational life cycle when replacement parts become very hard to procure and it is no longer supported by its manufacturer. This is usually years after the manufacturer has started producing its next model. It becomes evident when parts manufacturers and parts repair companies for the old model have also started to transition to parts for newer model instruments. Instrument replacement may become advantageous when a newer model instrument can rapidly pay for itself by reducing costs through operating efficiency and reduced man-hours needed for operation, maintenance, or data collection. Instrument replacement serves two purposes in maintaining the air monitoring network. It maintains air monitoring capabilities as older instruments are replaced, and it advances the sophistication, communications capabilities, and computing power of the network, as electronic capabilities advance with time.

MBARD is currently in the process of upgrading its ozone monitors from our old Thermo-Electron Corporation 49Cs to new Thermo-Fisher 49iQs, which are two generations newer. The monitors have been extremely reliable but need to be replaced. We look forward to putting the new instruments into service. This year, the EPA has awarded MBARD with a grant to purchase two new replacement instruments for two of our older Met-One BAM-1020 PM_{2.5} (smoke) monitors. These new monitors will very likely be new models of the Met-One BAM-1020 as well. We have generally been happy with the operation of these monitors, but the upgraded electronics will make maintenance and data collection a smoother process. With these purchases, MBARD hopes to have a stable but improved network for years to come.

WHAT IS A TITLE V FEDERAL OPERATING AIR PERMIT?

Congress established the Title V Operating Permit program as part of the 1990 Clean Air Act Amendments. The Title V program is implemented through state and local authorities with oversight from the United States Environmental Protection Agency (US EPA). In California, air districts, such as the Monterey Bay Air Resources District (MBARD), are authorized to issue permits to stationary sources subject to the program.

Title V permits are legally enforceable documents designed to improve compliance by clarifying what facilities must do to control air pollution. At MBARD, Title V is a standalone permit program. This means subject sources retain their local MBARD permit(s) and are also required to have a single Title V permit for their entire facility.

Title V permit requirements are outlined in MBARD [Rule 218](#) and typically apply to larger emitting sources such as power plants, cogeneration plants, landfills, or oil and gas facilities.

Currently, MBARD has 14 active Title V permits and one new Title V permit under review. A Title V permit is required for the following sources:

- any acid rain source, as defined by Title IV of the Federal Clean Air Act; or
- any solid waste incinerator that must comply with Section 129(e); or
- any other stationary source or category of sources deemed to require a Federal Operating Permit (FOP) by US EPA (e.g., New Source Performance Standard (NSPS) for Municipal Solid Waste Landfills); or
- any facility that is a major source, as defined by the following thresholds:
 - 100 tons per year of a criteria pollutant;
 - 10 tons per year of a hazardous air pollutant (HAP); or
 - 25 tons per year of any combination of HAPs.

More information about the Title V program can be found on our website:

<https://www.mbard.org/title-v>.

WHAT IS A TITLE V FEDERAL OPERATING AIR PERMIT?



Oil and Gas Facility



Cogeneration Plant

THE DUST UP OVER LEAF BLOWERS

Gasoline-powered leaf blowers produce emissions of carbon monoxide, nitrogen oxides and hydrocarbons which are involved in the formation of ground-level ozone. They also emit airborne toxics because of partial combustion, greenhouse gases, and particulate matter that can stay in the air for hours. Use of leaf blowers is particularly problematic after wildfire events since the blower can force ash particles that have settled on the ground back up into the air.

MBARD Inspector Trevor Benites regularly deals with complaints from residents concerned about the effects of leaf blowers on the air they breathe. He remarks, "Some people may not realize the impact a leaf blower used by a gardener is having on the health of their neighbors because they are not home when their landscapers are working."

Mr. Benites offers the following tips for residents of Monterey, San Benito, and Santa Cruz Counties about the use of leaf blowers.

- First, be a considerate neighbor with warm weather upon us, many people like to leave their windows open, and dust may be blown directly into their homes. If you have a regular landscape service day, tell your neighbors when to expect it so they can close doors and windows beforehand. Consider service schedule changes if your neighbors are impacted.
- Ask your landscaping service to use an alternative to leaf blowers, such as gentle sweeping with a push broom or use of a high-quality shop-vacuum equipped with a high-efficiency particulate filter and a disposable filter bag.
- Ask your landscaping service to be aware of wind direction when using blowers. It is not a good idea to use leaf blowers on windy days when dust might blow onto nearby properties.
- Consider leaving leaves in your yard! Leaf mulch helps create healthy soils for landscapes.
- Consider switching to a landscape service that uses battery-operated tools.

THE DUST UP OVER LEAF BLOWERS

Under Monterey City Code Ordinance 22-18.1, it is illegal to use gasoline-powered leaf blowers in the City of Monterey on residential lots. Individuals affected by the use of gasoline-powered leaf blowers on residential lots in the City of Monterey may contact the City of Monterey Code Enforcement at 831-646-3750.

The City of Capitola also limits leaf blower use. Leaf blowers may not exceed 65 decibels while in operation and hours of operation are limited to 8 AM – 5 PM Monday through Friday and 10 AM to 4 PM on weekends. Residents of the City of Capitola may call City Code Enforcement at 831-475-7300. Anonymous complaints not accepted.

Outside the City of Monterey, gasoline-powered leaf blowers are allowed to be used. MBARD encourages the use of electric or battery-operated leaf blowers to reduce exhaust emissions.



A NEW ZERO-EMISSION LAWN & GARDEN EQUIPMENT INCENTIVE PROGRAM

The California Air Resources Board (CARB) has recently announced funding to replace gasoline-powered lawn and garden equipment with zero-emission equipment. A total of \$30 million is available statewide, with \$360,000 allocated to the Monterey Bay Air Resources District (MBARD). An incentive program is currently being developed to incentivize sole proprietors and other small landscaping businesses to purchase zero-emission small off-road equipment.

Despite their small size, small off-road engines are highly polluting. Since CARB first adopted emissions standards in 1990, the first agency in the world to do so, the volume of smog-forming emissions from this type of equipment has already surpassed emissions from light-duty passenger cars and is projected to be nearly twice those of passenger cars by 2031. Today, a commercial operator using one backpack leaf blower for one hour generates the same smog-forming emissions as a car driving 1,100 miles.

Most newly manufactured small off-road engines such as those found in leaf blowers, lawn mowers and other equipment will need to be zero emission beginning in 2024. Portable generators, including those in recreational vehicles, will be required to meet more stringent standards in 2024 and meet zero-emission standards starting in 2028. Currently CARB-compliant gasoline-powered equipment may continue to be used: There will be no “ban” on using older models or purchasing used equipment. Older models on store shelves can also be purchased, even if they are gasoline powered. CARB’s new regulations will help reduce emissions of smog-forming emissions by 72 tons per day.

The forthcoming incentive program will help MBARD support Governor Gavin Newsom’s Executive Order signed in September 2020 that moves the state closer to a zero-emission future. It will also provide significant emissions reductions of smog-forming pollution needed for California to achieve stringent state and federal air quality standards moving forward.



VISIT OUR WEBSITE FOR GRANTS & INCENTIVES:

[HTTPS://WWW.MBARD.ORG/GRANTS-INCENTIVES](https://www.mbard.org/grants-incentives)

- SERVING MONTEREY, SAN BENITO & SANTA CRUZ COUNTIES
24580 SILVER CLOUD CT. | MONTEREY, CA 93940 | 831.647.9411

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<p>Sandy Brown Councilmember, City of Santa Cruz</p>	Santa Cruz County Cities
<p>Mike LeBarre Mayor, City of King City</p>	South Monterey County Cities
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<p>John Phillips Supervisor, District 2 - Monterey County</p>	Monterey County
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Richard A. Stedman, Air Pollution Control Officer