

AIR CURRENTS

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Bay Area Meets One-Hour Standard Air District Continues Ozone Planning

In April 2004, the U.S. Environmental Protection Agency determined that the Bay Area has attained the national one-hour ozone standard, based on air quality monitoring data from the years 2001, 2002, and 2003. At the same time, the EPA approved portions of the *2001 Ozone Attainment Plan*, the region's plan to attain this standard. (As long as the region continues to meet the one-hour standard, no further elements of the 2001 Plan need approval.)

The Bay Area continues to make progress in improving its air quality, thanks to regional, State, and national programs to reduce emissions. The Air District has adopted all of the stationary

source measures in the *2001 Ozone Attainment Plan*, and the Metropolitan Transportation Commission (MTC) has made considerable progress in implementing the Plan's transportation control measures. The Bay Area also benefits from emission reductions from the Enhanced Smog Check program. And thanks to California's strict motor vehicle standards, each year brings a cleaner vehicle fleet to the region's roadways, as newer vehicles replace older ones.

The EPA's attainment finding, however, does not mean that the Bay Area has been formally redesignated as an attainment area. The region must submit a redesignation request and a maintenance

plan in order to receive this designation. The Air District is currently developing this maintenance plan.

In April, the EPA also designated the Bay Area as a nonattainment area for the national eight-hour ozone standard. The nine Bay Area counties are among 474 throughout the U.S. that fail to meet this standard. The EPA first issued the eight-hour ozone standard in 1997, considering it more health-protective than the one-hour standard. Legal challenges delayed implementation of the newer standard until 2000, when the U.S. Supreme Court upheld EPA's authority to implement it, leading ultimately to this year's designations.

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Air District Helps Port of Oakland Test Cleaner Diesel Blend

Ships arrive at the Port of Oakland from all over the world, carrying everything from auto parts to meat, computers to beer. The Port is the fourth largest container seaport in the country, and each year 1,900 ships dock in the harbor waiting to unload their cargo. Every workday, an army of trucks makes 10,000 trips to the Port's 11 terminals to collect these goods.

Unfortunately, these vehicles also deliver an undesirable freight: air pollution. Port activities generate a substantial amount of diesel exhaust. Diesel particulate matter has been identified by the state of California as a toxic air contaminant, and in the Bay

Area, it has been estimated to represent up to 70 percent of the overall cancer risk from toxic air pollution.

This year, as part of a larger effort to mitigate the impact of pollution on the local community, the Port has undertaken a special demonstration project. With assistance from the Air District, the Port will be testing a cleaner blend of diesel fuel in a fleet of 12 trucks that haul shipping containers to and from the Port's terminals. Some of the trucks will additionally be outfitted with an exhaust control device called a diesel oxidation catalyst. Together, the blended fuel and catalysts are expected to reduce emissions of particulate matter (PM) by at least 50

percent, and emissions of oxides of nitrogen (NOx) by at least 20 percent.

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COMPLAINT LINE	1-800-334-ODOR
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Port of Oakland

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This year-long demonstration project is one aspect of the Port's Vision 2000 Air Quality Mitigation Program. The Vision 2000 Program grew out of the Port's maritime development expansion program, which was initiated in 1999, and is the outcome of a partnership between the Port and the West Oakland Community. Under its auspices, the Port has allocated almost \$9 million for projects designed to reduce air emissions from numerous sources, including local buses, trucks, tugboats, and marine terminal equipment.

For the cleaner diesel fuel demonstration project, the Port has apportioned \$90,000, and the California Air Resources Board (CARB), through the Air District, has awarded the Port an additional \$57,600 grant from CARB's Alternative Diesel Fuel Program.

The fuel to be studied in this project is an emulsified diesel fuel known as PuriNOx™. Developed by Lubrizol Corporation, and locally blended and distributed by Ramos Oil Company, it blends standard California diesel with

purified water and an additive package. This blending lowers the peak combustion temperature, thereby reducing NOx emissions, and delays the initiation of combustion, leading to lower PM emissions, as well as virtually eliminating any visible black smoke. Emulsified

diesel is interchangeable with California diesel fuel, so it requires no modification of truck engines, either old or new.

The diesel oxidation catalysts used in the study, AZ Purimufflers™, are manufactured by a subsidiary of Lubrizol. These devices are made with a coated ceramic substrate that, as exhaust passes through them, converts harmful compounds into safe elements. They mitigate diesel smoke and odor, and will typically reduce PM emissions 20-50 percent,



Air District Executive Officer Jack Broadbent fills a demonstration project Horizon Lines truck with emulsified diesel fuel.

hydrocarbons by 60 percent, and carbon monoxide by 70 percent.

The demonstration testing will involve a dozen heavy-duty diesel trucks (1990 Volvos with Cummins NTC-315 engines) owned by Horizon Lines. Eight of the trucks will be fueled with PuriNOx, while four of these will also be retrofitted with AZ Purimufflers. Two trucks will only be retrofitted with the AZ Purimufflers, and two trucks will operate with no changes, serving as controls.

"This project offers great promise to further protect health in the West Oakland community," says Jack Broadbent, the Air District's Executive Officer. "And the possibility that similar diesel reductions could be duplicated throughout the Bay Area and beyond is extremely encouraging."

So, as you sit down to dinner tonight, you might consider that your table, and the chair underneath you—and even some of the food you eat—may have arrived in the Bay Area for the first time at the Port of Oakland. In the past, these goods might not have come without a certain environmental cost to the neighboring community. But thanks to the Port's new air quality programs—and the Air District's collaboration on projects like the emulsified diesel fuel study—this cost will be substantially less burdensome in years to come.

—Aaron Richardson

Besides assisting with the emulsified fuel demonstration project, the Air District interacts with the Port in the following ways to control air pollution:

- Air District staff participate in the Technical Advisory Committee to the Port, which recommends how to allocate the funds earmarked for Vision 2000 programs.
- The Air District has awarded the Port \$1.5 million in Carl Moyer funds to reduce diesel emissions from trucks.
- The Air District requires the Port and several of its tenants to obtain permits to operate their stationary diesel engines and boilers.
- Ships at the Port are subject to visible emission standards, and the Air District can issue notices of violation when these standards are violated.
- Air District inspectors enforce AB 2650, passed in 2002 to limit idling by trucks waiting to enter California ports to no more than 30 minutes. Air District inspectors monitor trucks and can issue violation notices to the Port for excess truck idling.
- At the request of the Air District, the Port has installed two monitors in West Oakland to measure PM-10. One is located at the Port and the second at a downwind residential area. The residential station also monitors for PM-2.5 and toxics.

Ozone Plan

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Though the Bay Area is out of attainment of this eight-hour standard, the EPA has classified the region as a marginal nonattainment area, the “cleanest” of all the nonattainment classifications. The deadline for coming into attainment is June 2007. In the meantime, as a marginal area, the Bay Area will need to submit to the EPA an emission inventory and a demonstration that our permitting program meets applicable federal requirements.

With the implementation of the eight-hour standard, the national one-hour ozone standard is scheduled to be revoked by the EPA as of June 2005.

The Bay Area also continues to exceed the more stringent State of California one-hour ozone standard, and further progress is needed to assure that we breathe clean air throughout the summer months. To meet this standard, the Air District, in cooperation with MTC and the Association of Bay Area Governments (ABAG), is preparing the *Bay Area 2004 Ozone Strategy*. The *2004 Ozone Strategy* will include a variety of measures to further reduce emissions of ozone precursors, nitrogen oxides and volatile organic compounds, including: (a) stationary source measures to reduce emissions from industrial and commercial facilities, (b) mobile source measures to encourage conversion to low emission fuels, and (c) transportation control measures to promote transit, carpooling, walking and cycling. The Bay Area will also benefit greatly from mobile source measures adopted by CARB to reduce emissions from vehicles. The *2004 Ozone Strategy* is intended both to reduce ozone levels in the Bay Area and to reduce transport of ozone to neighboring regions.

The *Draft 2004 Ozone Strategy* will be available for public comment in the summer of 2004. The Air District will hold community meetings and work-

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Air District Accepts TFCA Grant Applications

The Air District has issued application materials for Transportation Fund for Clean Air (TFCA) Regional Fund grants for fiscal year 2004/05. Approximately \$10 million will be available for distribution by the Air District during this funding cycle.

The TFCA program awards grants for transportation projects that reduce motor vehicle emissions, consistent with the 1988 California Clean Air Act and the *Bay Area Clean Air Plan*. Only public agencies are eligible to apply for TFCA grants. These include cities, counties, school districts, transit districts, and regional and state agencies.

Eligible project types include purchase of low emission, alternative fuel vehicles, including school buses and transit buses; repowers and retrofits of existing heavy-duty diesel engines; shuttle and feeder bus service to train stations; ridesharing programs; bicycle facility improvements; arterial management projects that improve the flow of traffic on major roadways; transit information projects; and “smart growth” projects.

Applications are evaluated and funded based upon evaluation criteria approved by the Air District’s Board of Directors. The TFCA Regional Fund application guidance and application form are available on the *Grants & Incentives* page of the District’s website at www.baaqmd.gov. You can also call (415) 749-4994 or send e-mail to tfca@baaqmd.gov to request the application form and guidance.

Air District staff hosted a workshop for applicants on May 18 at the Air District offices in San Francisco. **The application deadline is 4:00 PM Wednesday, June 30, 2004.**

In addition, please note that the Air District is still accepting applications from public agencies for the **Vehicle Incentive Program (VIP)** through June 2004. The VIP program provides incentives to help public agencies acquire low emission, alternative fuel vehicles weighing 10,000 pounds or less. VIP grants are awarded on a first-come, first-served basis. VIP application guidelines and forms are available on the *Grants & Incentives* page of the District’s website.

—David Burch



Baseball mascots Stomper and Lou Seal race to “mow down pollution” in San Francisco’s Golden Gate Park to advertise the **2004 Lawn Mower Buyback Campaign**. This year, in seven counties, 1,588 old gas mowers were exchanged for rebates on new electric ones.

A Day in “Smoke School”: CalEPA Certifies Air Quality Inspectors

About four-dozen men and women gathered on the grass of the Alameda County Fairgrounds on March 10. Wearing sunscreen and big hats, they positioned themselves with their backs to the sun. Expectation, anticipation, and some anxiety filled the air.

No, these were not spectators at a sporting event. These were air quality inspectors, mostly from the Air District, and a few industry representatives getting their six-month re-certification for visible emission evaluation (VEE).

The focus of their attention is a small blue trailer featuring a generator, a smokestack, and a loudspeaker. Two technicians from the California Environmental Protection Agency (CalEPA) operate the California Air Resources Board’s (CARB’s) smoke generator, traveling up and down the state, running about 60 re-certification courses per year. One of them describes the testing procedures to the crowd, as the other sits in the van calibrating the equipment, which alternately spews streams of black and white smoke.

“The Bay Area and Los Angeles both get two days every six months because your districts are so large,” says CARB’s Air Quality Instrument Techni-



Simon Winer, Air District Air Quality Inspector II, evaluates the density of smoke from the calibrated generator.



Sample Ringelmann smoke scale. Held at arm’s length, at right angles to the direction of smoke travel, and not less than 100 feet nor more than a quarter mile from a source, an observer should be able to choose a shade in the chart most nearly corresponding to the shade of the smoke, indicating its density.

cian Albert Anone. With the addition of four new hires, the Bay Area District has about 60 inspectors covering a nine-county area. All are trained to “read plumes,” that is, to observe and evaluate the density of visible emissions using a standard scale. The Ringelmann Method quantifies emissions according to the density of the smoke on a scale of one to five.

The Ringelmann method for opacity evaluation was developed by Maximillian Ringelmann of France in the late 1800s. Ringelmann realized that darker smoke from coal-fired boilers was due to poorer combustion efficiency. To measure the

darkness of the smoke, he made a chart with five black grids of different calibrations against a white background. When he looked at the chart from 50 feet away, the grids appeared to be different shades of grey. Ringelmann then compared the shade of the smoke with the apparent shades of the grids on the chart, and used this information to adjust the fuel/air ratio of the furnace to decrease the density of the smoke, thus increasing the efficiency of the boiler.

Since it addressed the combustion of coal, the US Bureau of Mines adopted the Ringelmann Chart in the early 1900s. Since then, the method has been used extensively in efforts to assess and control emissions.

The California Health and Safety Code references the Ringelmann Chart in Section 41701: “No person shall discharge into the atmosphere from any source whatsoever any air contaminant, other than uncombined water vapor, for a period or periods aggregating more than three minutes in any one hour which is: (a) As dark or darker in shade than that designated as No. 2 on the Ringelmann Chart, as published by the United States Bureau of Mines, or (b) Of such opacity as to obscure an observer’s view to a degree equal to or greater than does smoke described in subdivision (a).”

The Air District’s Regulation 6, Particulate Matter and Visible Emissions, uses similar language to limit the quantity of particulate matter in the atmosphere by controlling emission rates, concentration, visible emissions, and opacity. In this case, as in others, the Air District’s regulation is more stringent than the state’s.

Inspectors at the semi-annual VEE re-certification are required to take a set of 25 readings for both black and white smoke. All readings must be within three points of the correct density, as determined by CARB’s calibrated smoke generator. The



Joie Alvarado, Air District Air Quality Inspector II, evaluates density of smoke from the generator.

tolerance for error is a deviation of 7.4 or less. And the correct evaluations for white and black smoke must be completed back-to-back, according to the long-standing EPA Method 9.

It can take a long time," said Anone, referring to the generator's temperamental nature. "Weather, humidity, altitude and barometric pressure all affect how the generator works. And, depending on the wind, we may have a number of holds."

(The operator will "hold" an emission when the readers need to change their positions because the smoke is either folding onto itself, or coming directly toward or away from the inspectors.)

All Air District inspectors must be prepared at any time to observe, evaluate, and report a visible emission that could be a

violation of Air District, state, or federal regulations.

So, no one here at the Alameda County Fairgrounds is just standing around blowing smoke. The VEE recertification is a critical facet of each inspector's training regimen, and a test that each must pass to do their part to protect air quality in the Bay Area.

—Emily Hopkins



CARB's calibrated smoke generator in action.



Register now for AirAlerts, the Air District's Spare the Air e-mail notification service. As in past years, we will send you an e-mail advisory the day before air quality is expected to be unhealthy, so that you can take action to protect your health and limit pollution.

This year we offer two new options. You can sign up to receive AirAlerts as a text message in your cell phone or pager, and you can also choose to receive air quality forecasts every day.

Spare the Air season runs from June 1 to October 15, 2004. You can register for AirAlerts on our website at www.sparetheair.org, or go directly to <http://airalert.sparetheair.org/>.

Ozone Plan

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shops to describe the *Strategy* and invite public discussion. In addition, the Air District, MTC, and ABAG host bimonthly Ozone Working Group meetings to review all aspects of the ozone planning process. Materials from all previous Ozone Working Group meetings provide considerable background information and are available on the District website at: http://www.baaqmd.gov/pln/plans/ozone/2003_workgroup/index.asp

For further information on the 2004 *Ozone Strategy* contact Henry Hilken at hhilken@baaqmd.gov or check the District's 2003/04 Ozone Planning webpage at: http://www.baaqmd.gov/pln/plans/ozone/2003_04.asp.

—Henry Hilken

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Board Actions

January 21, 2004

RESOLUTION NO. 2004-01

A Resolution Approving the Negative Declaration for Proposed Amended Regulation 8: Organic Compounds, Rule 10: Process Vessel Depressurization. A Resolution Amending this Regulation.

These amendments implement Control Measure SS-17 from the 2001 San Francisco Bay Area Ozone Attainment Plan by prohibiting venting to the atmosphere unless the total organic compounds are reduced to a concentration of less than 10,000 parts per million (ppm), expressed as methane (C₁). This regulation is intended to control the emissions of organic compounds from process vessel depressurization during major turnarounds (major maintenance activities). The amended rule will prevent the potential emissions of approximately one ton per day and the added monitoring requirements will allow the collection of emission data that will be useful for future planning. This is one of the last two rules that would complete the stationary source control measures discussed in the 2001 Ozone Attainment Plan.

RESOLUTION NO. 2004-02

A Resolution Approving the Negative Declaration for Proposed Amended Regulation 8: Organic Compounds, Rule 18: Equipment Leaks at Petroleum Refineries, Chemical Plants, Bulk Plants and Bulk Terminals. A Resolution Amending this Regulation.

These amendments implement SS-16 (low-Emission Refinery Valves) from the 2001 San Francisco Bay Area Ozone Attainment Plan and will clarify specific provisions of the rule to ensure consistency. This rule-making process was initiated by a commitment in the District's 2001 Ozone Attainment Plan to include Best Available Control Technology (BACT) replacement for valves. This is the final measure to fulfill the District's 2001 Ozone Attainment Plan commitments. Adoption of these amendments implements Control Measure SS-16 and would reduce organic emissions by 0.2 tons per day.

February 18, 2004

RESOLUTION NO. 2004-03

A Resolution Authorizing District Participation in the Congestion Mitigation and Air Quality Improvement Program ("CMAQ") for the San Francisco Bay Area.

March 3, 2004

RESOLUTION NO. 2004-04

The subject of this resolution was an issue relating to the terms and conditions of employment for employees of the Air District.

RESOLUTION NO. 2004-05

The subject of this resolution was an issue relating to the terms and conditions of employment for employees of the Air District.

April 7, 2004

RESOLUTION NO. 2004-06

A Resolution to Increase the Approved Transportation Fund for Clean Air Budget Program 612 (Vehicle Buy-Back and Scrapping) and Approved Planning and Research Division Budget Program 603 (Central California Ozone Studies) for Fiscal Year 2003-2004