



BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT

BOARD OF DIRECTORS' REGULAR MEETING

May 16, 2007

A meeting of the Bay Area Air Quality Management District Board of Directors will be held at 9:45 a.m. in the 7th floor Board Room at the Air District headquarters, 939 Ellis Street, San Francisco, California.

Questions About an Agenda Item

The name, telephone number and e-mail of the appropriate staff person to contact for additional information or to resolve concerns is listed for each agenda item.

Meeting Procedures

The public meeting of the Air District Board of Directors begins at 9:45 a.m. The Board of Directors generally will consider items in the order listed on the agenda. However, any item may be considered in any order.

After action on any agenda item not requiring a public hearing, the Board may reconsider or amend the item at any time during the meeting.

BOARD OF DIRECTORS' REGULAR MEETING A G E N D A

WEDNESDAY
MAY 16, 2007

BOARD ROOM
7TH FLOOR

9:45 A.M.

CALL TO ORDER

Opening Comments
Roll Call
Pledge of Allegiance

Chairperson, Mark Ross
Clerk of the Boards

PUBLIC COMMENT PERIOD

Public Comment on Non-Agenda Items, Pursuant to Government Code Section 54954.3
Members of the public are afforded the opportunity to speak on any agenda item. All agendas for regular meetings are posted at District headquarters, 939 Ellis Street, San Francisco, CA, at least 72 hours in advance of a regular meeting. At the beginning of the regular meeting agenda, an opportunity is also provided for the public to speak on any subject within the Board's subject matter jurisdiction. Speakers will be limited to three (3) minutes each.

COMMENDATION/PROCLAMATION

The Board of Directors' will receive an overview of the Green Business Award presented from the City and County of San Francisco to the Air District recognizing its contribution to the environment by becoming a green business.

CONSENT CALENDAR (ITEMS 1-5)

Staff/Phone (415) 749-

1. Minutes of May 2, 2007

V. Johnson/4941

vjohnson@baaqmd.gov

2. Communications

J. Broadbent/5052

jbroadbent@baaqmd.gov

Information only

3. Quarterly Report of Air District Activities

J. Broadbent/5052

jbroadbent@baaqmd.gov

4. District Personnel on Out of State Business Travel

J. Broadbent/5052

jbroadbent@baaqmd.gov

In accordance with Section 5.4 (b) of the District's Administrative Code, Fiscal Policies and Procedures Section, the Board is hereby notified that the attached memoranda lists District personnel who traveled on out-of-state business.

5. Consider Establishing a New Classification of Facilities Maintenance Worker with a Salary Set at Pay Range 108 Effective as of the Date of Board Approval

J. Broadbent/5052

jbroadbent@baaqmd.gov

The Board of Directors will consider establishing a new classification and salary range for a Facilities Maintenance Worker in the Finance, Administration, and Information Services Division.

COMMITTEE REPORTS AND RECOMMENDATIONS

6. Report of the **Climate Protection Committee** Meeting of May 3, 2007

CHAIR: P. TORLIATT

J. Broadbent/5052

jbroadbent@baaqmd.gov

7. Report of the **Public Outreach Committee** Meeting of May 7, 2007

CHAIR: P. KWOK

J. Broadbent/5052

jbroadbent@baaqmd.gov

PUBLIC HEARINGS

8. Public Hearing to Consider Adoption of New District Regulation 6: Rule 2: Commercial Cooking Equipment, and Adoption of a CEQA Negative Declaration

H. Hilken/4642

hhilken@baaqmd.gov

Proposed New Regulation 6: Rule 2 would regulate PM₁₀ (particulate matter of 10 microns in diameter or less) and organic compound emissions from charbroilers used in commercial restaurant operations. The proposed rule will fulfill the District's commitment to control restaurant emissions under its SB 656 Particulate Matter Implementation Schedule and to study potential controls on commercial charbroilers as proposed in further study measure FS-3 in the Bay Area 2005 Ozone Strategy.

9. Public Hearing on the Proposed District Fiscal Year 2007/2008 Budget

J. Broadbent/5052

jbroadbent@baaqmd.gov

Pursuant to California Health and Safety Code Section 40131, the Board of Directors will conduct the first of two public hearings on the proposed Air District Budget for FY 2007/2008. The second public hearing is scheduled for June 6, 2007.

CLOSED SESSION

10. Conference with Legal Counsel – *Existing Litigation*

Pursuant to Government Code Section 54956.9(a), a need exists to meet in closed session with legal counsel to consider the following cases:

Thomasina Mayfield v. Bay Area AQMD, San Francisco Superior Court, Case No. CGC-06-455723

OPEN SESSION

OTHER BUSINESS

11. Report of the Executive Officer/APCO
12. Chairperson's Report
13. Board Members' Comments

Any member of the Board, or its staff, on his or her own initiative or in response to questions posed by the public, may: ask a question for clarification, make a brief announcement or report on his or her own activities, provide a reference to staff regarding factual information, request staff to report back at a subsequent meeting concerning any matter or take action to direct staff to place a matter of business on a future agenda. (Gov't Code § 54954.2)

14. Time and Place of Next Meeting - 9:45 a.m., Wednesday, June 6, 2007- 939 Ellis Street, San Francisco, CA 94109
15. Adjournment

CONTACT CLERK OF THE BOARD - 939 ELLIS STREET SF, CA 94109

(415) 749-4965
FAX: (415) 928-8560
BAAQMD homepage:
www.baaqmd.gov

- To submit written comments on an agenda item in advance of the meeting.
- To request, in advance of the meeting, to be placed on the list to testify on an agenda item.
- To request special accommodations for those persons with disabilities. Notification to the Executive Office should be given at least 3 working days prior to the date of the meeting so that arrangements can be made accordingly.

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
939 ELLIS STREET, SAN FRANCISCO, CALIFORNIA 94109
(415) 771-6000

EXECUTIVE OFFICE:
MONTHLY CALENDAR OF DISTRICT MEETINGS

MAY 2007

<u>TYPE OF MEETING</u>	<u>DAY</u>	<u>DATE</u>	<u>TIME</u>	<u>ROOM</u>
Board of Directors Regular Meeting (<i>Meets 1st & 3rd Wednesday of each Month</i>)	Wednesday	16	9:45 a.m.	Board Room
Board of Directors Ad Hoc Cme. on Port Emissions (<i>At the Call of the Chair</i>)	Thursday	17	9:30 a.m.	4th Floor Conf. Room
Joint Policy Committee	Friday	18	10:00 a.m. – 12:00 p.m.	Metro Center Auditorium 101 – 8 th Street Oakland, CA 94607
Board of Directors Public Outreach Committee (<i>1st Thursday every other Month</i>)	Monday	21	9:30 a.m.	Board Room
Board of Directors Budget & Finance Committee (<i>Meets 4th Wednesday of each Month</i>) - CANCELLED	Wednesday	23	9:30 a.m.	Board Room
Board of Directors Mobile Source Committee – (<i>Meets 4th Thursday of each Month</i>) - CANCELLED	Thursday	24	9:30 a.m.	Board Room
Board of Directors Executive Committee – (<i>At the Call of the Chair</i>)	Wednesday	30	9:30 a.m.	Board Room

JUNE 2007

<u>TYPE OF MEETING</u>	<u>DAY</u>	<u>DATE</u>	<u>TIME</u>	<u>ROOM</u>
Board of Directors Regular Meeting (<i>Meets 1st & 3rd Wednesday of each Month</i>)	Wednesday	6	9:45 a.m.	Board Room
Advisory Council Technical Committee (<i>Meets 2nd Monday of each even Month</i>)	Monday	11	9:00 a.m.	Board Room
Advisory Council Air Quality Planning Committee (<i>Meets 2nd Wednesday of each even Month</i>)	Wednesday	13	9:30 a.m.	Board Room
Advisory Council Public Health Committee (<i>Meets 2nd Wednesday of each even Month</i>)	Wednesday	13	1:30 p.m.	Board Room

JUNE 2007

<u>TYPE OF MEETING</u>	<u>DAY</u>	<u>DATE</u>	<u>TIME</u>	<u>ROOM</u>
Board of Directors Stationary Source Committee – (Meets 3rd Monday quarterly) - TO BE RESCHEDULED	Thursday	14	9:30 a.m.	4 th Floor Conf. Room
Board of Directors Stationary Source Committee – (Meets 3rd Monday quarterly)	Friday	15	9:30 a.m.	4 th Floor Conf. Room
Board of Directors Regular Meeting (Meets 1 st & 3 rd Wednesday of each Month)	Wednesday	20	9:45 a.m.	Board Room
Board of Directors Ad Hoc Cme. on Port Emissions (At the Call of the Chair)	Thursday	21	9:30 a.m.	4th Floor Conf. Room
Board of Directors Legislative Committee (Meets 4 th Monday of every Month)	Monday	25	9:30 a.m.	4 th Floor Conf. Room
Board of Directors Budget & Finance Committee (Meets 4 th Wednesday of each Month) - TO BE RESCHEDULED	Wednesday	27	9:30.m.	4 th Floor Conf. Room
Board of Directors Mobile Source Committee – (Meets 4 th Thursday of each Month)	Thursday	28	9:30 a.m.	4 th Floor Conf. Room

JULY 2007

<u>TYPE OF MEETING</u>	<u>DAY</u>	<u>DATE</u>	<u>TIME</u>	<u>ROOM</u>
Board of Directors Regular Meeting (Meets 1 st & 3 rd Wednesday of each Month)	Wednesday	4	9:45 a.m.	Board Room
Advisory Council Executive Committee	Wednesday	11	9:00 a.m.	Room 716
Advisory Council Regular Meeting	Wednesday	11	10:00 a.m.	Board Room
Board of Directors Regular Meeting (Meets 1 st & 3 rd Wednesday of each Month)	Wednesday	18	9:45 a.m.	Board Room
Board of Directors Climate Protection Committee (Meets 3 rd Thursday every other Month)	Thursday	19	9:30 a.m.	4 th Floor Conf. Room
Joint Policy Committee	Friday	20	10:00 a.m. – 12:00 p.m.	Metro Center Auditorium 101 – 8 th Street Oakland, CA 94607
Board of Directors Legislative Committee (Meets 4 th Monday of every Month)	Monday	23	9:30 a.m.	4 th Floor Conf. Room
Board of Directors Budget & Finance Committee (Meets 4 th Wednesday of each Month)	Wednesday	25	9:30 a.m.	4 th Floor Conf. Room
Board of Directors Mobile Source Committee – (Meets 4 th Thursday of each Month)	Thursday	26	9:30 a.m.	4 th Floor Conf. Room

hl

5/9/07 (4:25 p.m.)

P/Library/Forms/Calendar/Calendar/Moncal

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Memorandum

To: Chairperson, Mark Ross and Members
of the Board of Directors

From: Jack P. Broadbent
Executive Officer/APCO

Date: May 7, 2007

Re: Board of Directors' Draft Meeting Minutes

RECOMMENDED ACTION:

Approve attached draft minutes of the Board of Directors' meeting of May 2, 2007.

DISCUSSION

Attached for your review and approval are the draft minutes of the May 2, 2007 Board of Directors' meeting.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
939 ELLIS STREET – SAN FRANCISCO, CA 94109

Draft Minutes: Board of Directors' Regular Meeting – May 2, 2007

Call To Order

Opening Comments: Chair Mark Ross called the meeting to order at 9:46 a.m.

Roll Call: Present: Mark Ross, Chair, Tom Bates (10:00 a.m.), Chris Daly, Erin Garner (10:02 a.m.), John Gioia, Scott Haggerty, Jerry Hill, Yoriko Kishimoto, Carol Klatt, Liz Kniss (9:50 a.m.), Patrick Kwok, Janet Lockhart, Nate Miley, Michael Shimansky, John Silva, Tim Smith, Pamela Torliatt (10:02 a.m.), Gayle B. Uilkema, Brad Wagenknecht.

Absent: Harold Brown, Dan Dunnigan, Patrick Kwok, Jake McGoldrick.

Pledge of Allegiance: The Board of Directors recited the Pledge of Allegiance.

Public Comment: There were none.

Commendations/Proclamation: There were none.

Director Liz Kniss arrived at 9:50 a.m.

Consent Calendar (Items 1 – 7)

1. Minutes of May 2, 2007

Director Tom Bates arrived at 10:00 a.m.

2. Communications. Correspondence addressed to the Board of Directors. For information only.

Directors Erin Garner and Director Torliatt both arrived at 10:02 a.m.

3. Quarterly Report of the Air Resources Board

4. Consider Approval of Side Letter of Agreement to the Memorandum of Understanding (MOU) between the Air District and the Employees' Association to Provide for Maintenance of Classification Specifications.

The Board of Directors' will consider approval of a Side Letter of Agreement to the MOU to provide for maintenance of the Air District's classification specifications.

5. Consider Approval of Amendments to the Memorandum of Understanding, Section 12.07: Paid Holidays Falling on an Un-Scheduled Work Day

The Board of Directors will consider approval of a side letter of agreement to the MOU to Section 12.07: Paid Holidays Falling on an Un-Scheduled Work Day.

6. Ratify Executive Officer/APCO Acceptance of Carl Moyer Program Funds for Fiscal Years 1998/1999 to 2004/2005

The Board of Directors will consider ratifying the Executive Officer/APCO acceptance of Carl Moyer Program Funds for FY 1998/1999 to 2004/2005.

7. Consider Approval of Resolution Allocating Interest Earned on Carl Moyer Program Funds to the Carl Moyer Program Fund and Interest Earned on Low Emission School Bus Funds to the Low Emission School Bus Program Fund

The Board of Directors will consider approval of a resolution allocating interest earned on Carl Moyer Program Funds.

Board Action: Director Silva moved approval of Consent Calendar Items 1 through 7; seconded by Director Kishimoto; carried unanimously without objection.

Committee Reports and Recommendations

8. Report of the Stationary Source Committee Meeting of April 16, 2007

Director Haggerty presented the report and stated that the Committee met on Monday, April 16, 2007. Staff provided a status report and presentation on the Flare Minimization Plans required under Regulation 12, Rule 12: Flares at Petroleum Refineries. The Committee provided direction to staff during this presentation. The Committee will receive an update on the comments received from the FMP's Public Meeting at its next meeting. The discussion of proposed amendments to Regulation 9, Rule 6: Nitrogen Oxides from Natural Gas-Fired Water Heaters, and Regulation 9, Rule 7: Nitrogen Oxides and Carbon Monoxide Emissions from Industrial, Institutional and Commercial Boilers, Steam Generators and Process Heaters were deferred to the next meeting of the Committee.

The next meeting of the Committee is scheduled for 9:30 a.m., Friday, June 15, 2007.

Board Action: Director Haggerty moved that the Board of Directors' approve the recommendations and report of the Stationary Source Committee; seconded by Director Wagenknecht; carried unanimously without objection.

9. Report of the Legislative Committee Meeting of April 23, 2007

Director Wagenknecht presented the report and stated that the Committee met on Monday, April 23, 2007. AB 619 – Authored by Assembly member, Bill Emmerson, establishes an amnesty program for vehicles that have fraudulently reported the elements that determine a vehicles registration fees and sales taxes. The Committee recommended an Oppose position on this bill. SB 509 – Authored by Joe Simitian; addresses formaldehyde emissions from composite wood products. The Committee recommended a Support position on this bill. Staff also updated the Committee on the status of bills on which the Air District has taken positions.

The next meeting of the Committee will be at the Call of the Chair.

Board Action: Director Wagenknecht moved that the Board of Directors’ approve the recommendations and report of the Legislative Committee; seconded by Director Daly; carried unanimously without objection.

10. Report of the Budget and Finance Committee Meeting of April 25, 2007

Director Daly presented the report and stated that the Committee met on Wednesday, April 25, 2007. The Committee received the Third Quarter Financial Report for Fiscal Year 2006/2007. The Committee continued discussions on the proposed Fiscal Year 2007/2008 budget.

The Committee recommends that the Board of Directors adopt the proposed Fiscal Year 2007/2008 budget upon completion of public hearings

The next meeting of the Committee is scheduled for 9:30 a.m., Wednesday, June 27, 2007.

Board Action: Director Daly moved that the Board of Directors’ approve the recommendations and the report of the Budget and Finance Committee; seconded by Director Wagenknecht.

11. Report of the Mobile Source Committee Meeting of April 25, 2007

Director Smith presented the report and stated that the Committee met on Wednesday, April 25, 2007. The Committee received a report from staff for a proposed Transportation Fund for Clean Air Grant to fund a Zero-Emission Bus Advanced Demonstration Project. The Committee provided direction to staff with regard to scrapping of buses and establishing criteria for advanced technology vehicle demonstration project funds.

Action(s): The Committee recommended Board of Directors’ approval of the following:

- 1) Allocation of \$2,000,000 in TFCA Regional funds to the Zero-Emission Bus Advanced Technology Demonstration project, including: \$1,500,000 from general TFCA Regional funds and \$500,000 from the \$1,000,000 in TFCA Regional Fund previously set aside for clean air vehicle advanced technology demonstration projects;

- 2) Exceptions to fiscal year 2007/2008 TFCA Regional Fund policies #1, #2, and #10 necessary for such a grant award; and
- 3) Authorize the Executive Officer to enter into a funding agreement with the Metropolitan Transportation Commission for the Zero-Emission Bus Advanced Demonstration.

The Committee considered requests for the reallocation of Diesel Back-Up Generator Mitigation Funds to Fund Advanced Demonstration projects.

The Committee recommends Board of Directors' approval of the reallocation of Back-Up Generator funding to:

- 1) A Shore-Side Power project in the amount of \$250,000 to be implemented by Wittmar Engineering & Construction, Inc. at the Port of Oakland;
- 2) \$100,000 for a Hybrid-Electric Bus project to be implemented by the Napa Unified School District; and
- 3) Authorize the Executive Officer to enter into funding agreements with Wittmar Engineering & Construction, Inc. and the Napa Unified School District.

Lastly, the Committee received the Transportation Fund for Clean Air County Program Manager Audit Report.

Following the Committee meeting on Wednesday, April 25, 2007, the auditors Macias Gini & O'Connell contacted the Air District noting an error in the report regarding annual report submittal by the City/County Association of Governments of San Mateo.

The language in the staff report of agenda item 6 to the Mobile Source Committee included in your packets under item 11 and found in the Audit Summary Report is corrected as stated in the Erratum.

The Committee recommends Board of Directors' approval of the results of the Transportation Fund for Clean Air County Program Manager Audit Report.

The next meeting of the Committee is scheduled for 9:30 a.m., Thursday, May 24, 2007.

Board Action: Director Smith moved that the Board of Directors' approve the recommendations and the report of the Mobile Source Committee; seconded by Director Hill.

Public Hearings

12. Public Hearing to Consider Proposed Amendments to District Regulation 3: Fees, and Approval of a Notice of Exemption from CEQA

Proposed amendments to District Regulation 3: Fees, will help the Air District recover a greater share of the costs incurred to implement and enforce regulatory programs for stationary sources.

Mr. Bateman reviewed the details of the proposed fee amendments, presented examples of permit renewal fee increases, and summarized the rule development process. Mr. Bateman stated that these amendments would be effective July 1, 2006. Staff recommends that the

Board adopt the proposed amendments to Regulation 3: Fees; and approve the filing of a California Environmental Quality Act (CEQA) Notice of Exemption.

Director Daly moved staff's recommendation, seconded by Director Kwok.

Director Shimansky questioned whether the Air District anticipated receiving less county revenue in the future? Mr. Bateman responded that it is hard to say definitively from one year to the next. The current fiscal year to the next year, we are projecting an increase in county revenue. Mr. Broadbent, Executive Officer/APCO noted that the counties are expecting that the upward trend will start to flatten out, but not go down.

Opening Public Hearing

There being no public speakers, Director Haggerty moved that the Board of Directors' close the public hearing; seconded by Director Hill.

Board Action: Director Daly moved the Board of Directors' continue the second public hearing on June 6, 2007, to consider any further testimony regarding proposed amendments; seconded by Director Hill.

Director Silva questioned the communication, and how is it disseminated with regard to the information reaching the planning departments and the cities and counties? Mr. Bateman responded by informing Director Silva, that the mailing list did include a rather extensive listing of city and county agencies. Also, there is outreach to the cities and counties, the planning departments, and building departments regarding the regulations so that they know, as this has been done in the past so that they know what the Air District's requirements are, and where a permit might be required.

Director Gioia commented on the complexity of the Air District's fee schedules, and directed staff to ensure that all the different planning entities around the Bay Area including cities and counties be advised to contact the Air District to find out any relevant fees relative to permits.

Mr. Broadbent will take as direction to staff that the Air District re-implement the effort to all the cities and counties and planning commissions in providing the continued outreach, which will start this summer.

Director Haggerty noted that the Chamber of Commerce should be placed on the list as well, so that they can also get the information out to businesses.

Board Action: Director Haggerty moved that the Board of Directors' approve the recommended action as outlined in the staff report; seconded by Director Torliatt.

Mr. Bunger clarified that there are four schedules in two sections of the proposed fee rule that require a second hearing under State law and those are Schedules L: Asbestos Operations, Schedule Q: Excavation of Contaminated Soil, Schedule R: the proposed charbroiler fee and Schedule S which is asbestos dust mitigation plans and then Sections 3-331 which provides for registration fee and 3-332, which covers naturally occurring asbestos fees. Those require a second public hearing at least 30 days after the first one, which will be held on June 6, 2007.

Director Haggerty restated his motion, seconded by Director Hill with no opposition to the motion, the motion passed and the public hearing was continued to the June 6, 2007 Board of Directors' Meeting.

Board Action: Director Haggerty moved approval of Resolution Items #4, #5, #6, #7, and #12; seconded by Director Wagenknecht; carried unanimously without objection.

Closed Session – The Board convened to Closed Session at 10:20 a.m.

13. Conference with Legal Counsel-

Existing Litigation Government Code Section 54956.9(a)

Pursuant to Government Code Section 54956.9(a) a need existed to meet in closed session with legal counsel to consider the following case:

Patricia Howell v. Bay Area AOMD et al. (Superior Court of California, County of San Francisco No. CCC07-0461887)

Open Session – The Board reconvened to open session at 10:30 a.m.

Upon entering the Open Session, the Board of Directors' discussed the American Lung Association's (ALA) Report Card. Director Hill requested that copies be e-mailed to the Board of Directors. In addition, Director Uilkema has requested a copy of South Coast's report card.

Brian Bunger, Counsel, reported that the Board met in Closed Session on item 13 and received a report on the items. The Board provided general direction to staff on each item.

Other Business

14. Report of the Executive Officer/APCO – Mr. Broadbent reviewed the following:

Mr. Broadbent noted a calendar change to the Public Outreach Committee meeting. This meeting will be held Monday, May 7, 2007 at 9:30 a.m.; to provide the Committee with enough time to see information being developed for the 2007 Spare the Air Campaign.

Chair Ross requested a briefing on the success of the Flare Minimization hearings. Mr. Broadbent noted that 4 of the 5 public meetings on the Flare Minimization Plans required under Regulation 12: Rule 12 have been conducted. The Air District is in the process of seeking public input and community meetings have been scheduled for each of the refineries. The 1 remaining meeting is for the FMP on the Valero Refinery. The meetings have been successful and the Air District has been able to inform the public and receive input on what is contained in the plans. Mr. Broadbent noted that the meeting on the Chevron Refinery FMP, lasted about 2 ½ hours, there were over 100 attendees and there was some informative input.

Mr. Broadbent also noted that a good indication of success is that Chevron indeed hears a lot and that they are seeking to be able to upgrade or amend their FMP to potentially commit to

some additional compressor capacity as part of their FMP. Mr. Broadbent included that staff will bring back to the Stationary Source Committee a review of all the comments that have been heard on the FMP's and some of the more technical information on each of the FMP's as well as the commitments being made by the refineries. This meeting will be scheduled after the close of the comment period, which is May 31, 2007. Lastly, the Air District has 45 days to review and decide whether to approve or disapprove the plans which should be around July 15, 2007.

15. Chairperson's Report – Chair Ross stated that he had no report.
16. Board Members' Comments – There were none.
17. Time and Place of Next Meeting –The next Regular Board meeting is scheduled for 9:45 a.m., Wednesday, May 16, 2007 – 939 Ellis Street, San Francisco, CA 94109
18. Adjournment – The meeting adjourned at 10:38 a.m.

Vanessa Johnson
Acting Clerk of the Boards

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Memorandum

To: Chairperson, Mark Ross and Members
of the Board of Directors

From: Jack P. Broadbent
Executive Officer/APCO

Date: May 8, 2007

Re: Board Communications Received from May 2 through May 15, 2007

RECOMMENDED ACTION:

Receive and file.

DISCUSSION

A list of Communications received by the Air District from May 2, 2007 through May 15, 2007, if any, will be at each Board member's place at the May 16, 2007 Regular Board meeting.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Memorandum

To: Chairperson, Mark Ross and Members
of the Board of Directors

From: Jack P. Broadbent
Executive Officer/APCO

Date: May 16, 2007

Re: Report of Division Activities for the Months of January 2007 - March 2007

**FINANCE, ADMINISTRATION AND
INFORMATION SERVICES DIVISION – J. McKAY, DIRECTOR**

Finance

Linda Serdahl joined the District as Finance Manager.

The Air District continues to support the statewide audit of the Carl Moyer program. The District is hosting auditors from three separate agencies – the Bureau of State Audits, the Department of Finance and the California Air Resources Board. Each of these agencies will deliver a separate audit report. The reports are expected to be delivered in June.

The Air District has reviewed its obligations for funding medical benefits. Beginning in fiscal year 08-09 the Air District will be required to include these obligations in its financial reporting. The District set aside \$1.4 M in reserve funds for future use against these obligations.

Business Office

Matt Serier joined the Air District in the newly created Buyer position. This position will improve our ability to optimize our costs through improved sourcing and contract management.

In the last quarter the Air District executed 42 contracts.

Facilities

In October of 2006 the Board approved plans to perform deferred maintenance in the Air District office space. The first large goal in this work was to refurbish the 5th Floor West office space. This work was accomplished slightly ahead of schedule as reported in the prior Quarterly Report. In the first quarter of the calendar year the Air District continued this work by refurbishing the HR area on the fourth floor.

Information Systems

The Air District completed Business Process Mapping for the Production System replacement of IRIS and Databank on schedule. The team has now turned its attention to mapping the desired future processes. Both the Engineering team and the Enforcement team continue to contribute a substantial number of hours to this work. Legal and other divisions are also participating.

Build out of the secondary server room continues – this is the first step in Data Center remodeling and Network Topography re-engineering.

Several employees have been provided with pilot implementations of laptop-based workstations. The workstations include wireless connectivity and advanced data protection and encryption techniques. This program has been received with enthusiasm and is likely to expand – providing an increasing number of employees with mobile offices.

COMPLIANCE & ENFORCEMENT DIVISION – K. WEE, DIRECTOR**Enforcement Program**

Staff issued a public nuisance Notice of Violation to Chevron Refinery in Richmond for the crude unit fire that occurred on January 15, 2007. A Community Warning System Level 3 (off-site impacts) shelter-in-place was ordered and the Richmond/San Rafael Bridge toll plaza was evacuated due to the smoke plume. Staff participated in a community meeting co-sponsored by the City of Berkeley on February 7, 2007 to inform residents of the progress at Pacific Steel Castings (PSC). Information about the Health Risk Assessment, the air pollution abatement equipment, and the District's portable air monitoring station were presented. Staff prepared a position for a variance request by the Tesoro Refinery regarding a leaking component on a compressor.

Compliance Assurance Program

Staff attended the CAPCOA vapor recovery committee meeting in Sacramento on January 17 and 18. The committee discussed Enhanced Vapor Recovery (EVR) Phase II with in-station diagnostics and procedures for identifying faulty components in the field. Staff attended a CARB West Oakland community meeting on January 31, 2007 to discuss "Health Risk Assessments Underway for Diesel Soot in West Oakland" and conducted a field survey of diesel truck-related businesses in the West Oakland area in January to assess possible diesel particulate matter sources for inclusion in the Health Risk Assessment. Staff attended the Faster Freight Cleaner Air Conference held in Long Beach on February 26 through February 28. Staff attended a Harbor Safety Committee Meeting on March 8, 2007 and the Truckers Workgroup Meeting on March 26, 2007 at the Port of Oakland. Staff commented on a California Air Response Planning Alliance (CaARPA) Air Agency Emergency Response Resource Survey. On April 7, 2007, staff responded to a fire at Sims Hugo NEU facility in Redwood City. This facility is a scrap metal processing facility that shreds cars and appliances for recycle. The fire consisted of cars, appliances and other debris.

Compliance Assistance and Operations

The Flare Minimization Plans for all five petroleum refineries were release for a 60-day public comment period on April 2, 2007. The Flare Minimization Plans represent commitments to reduce the frequency and magnitude of petroleum refinery flaring by implementing prevention measures appropriate for each refinery. Staff presented information on the State ATCM for Naturally Occurring Asbestos (NOA) at the Sonoma County Engineering Contractors Association meeting on January 24, 2007 and co-sponsored a March 7, 2007 workshop focused on reducing printers' exposure to hazardous materials while using solvents. Staff presented an overview of the District and the Compliance and Enforcement Division activities for a group of 20 environmental managers visiting the United States from China. The District was awarded a Green Business Certificate at the ABAG board meeting on March 15, 2007. The District has been a partner of the Green Business program since its inception in the early 1990s, but the District's certification represents its own commitment to be Green and is also the first government agency to obtain such a certification within the County of San Francisco.

Staff continued the pilot PM sampling that was started during the May 2006 winter. Sampling occurred in San Jose on January 6, 2007, in Concord on January 13, 2007, in Oakland on January 19, 2007 and in Napa on February 2, 2007. Staff was trained in January on the District's new thermal imaging camera (FLIR). Training activities included In-Service training for the 1st quarter, defensive driving training, and planning for new inspector training in the next quarter. Staff completed contract negotiations with vendor Telepath Corporation for the replacement of the current radio system and work is targeted to be completed by May 30, 2007.

(See Attachment for Activities by County)

ENGINEERING DIVISION – B. BATEMAN, DIRECTOR**Toxics Program**

Staff completed a total of 95 Health Risk Screening Analyses (HRSAs) during the 1st quarter of 2007. The majority of these HRSAs were for diesel engine emergency generators and gas stations.

Staff completed the review of a draft Air Toxics Hot Spots Emissions Inventory Report for Pacific Steel Casting Company (Berkeley). The District-approved emissions inventory will be the basis for a facility-wide Health Risk Assessment (HRA), which is due to be submitted to the District by April 30, 2007. Staff completed review of a revised protocol for this HRA based on the use of EPA's recently approved AERMOD dispersion model.

Staff continued to participate with CARB, and the Port of Oakland, in CARB's preparation of several Health Risk Assessments in the West Oakland community.

Staff initiated a contract to develop a GIS-based approach to developing inputs for the new AERMOD model, based on detailed Bay Area land-use information provided by ABAG. It is expected that this project can be completed in the 2nd quarter of 2007.

Staff participated in several meetings of the CAPCOA TARMAC (Toxics and Risk Management) Committee. TARMAC has been active in the development of Airborne Toxic Control Measures (ATCMs), AB-2588 guidelines, and AERMOD and HARP modeling issues.

Title V Program

Engineering Division staff continued to process Major Facility Review Permits (Title V permits and Synthetic Minor Operating permits), and progress was made in reducing the backlog of Title V permit applications. Sixteen Major Facility Review permit actions were finalized during the quarter. Meetings were held with Bay Area refinery representatives to discuss plans to update the Title V permits for those facilities.

Permit Evaluation Program

During the 1st quarter of 2007, 320 new permit applications were received (300 New Source Review applications, 13 Title V applications, and 7 Banking applications). During this period, the District issued 122 Authorities to Construct and 361 Permits to Operate.

The Engineering Division continued to evaluate major refinery permit applications including the ConocoPhillips Clean Fuels Expansion Project and Chevron Energy and Renewal Project. Preliminary review of the ConocoPhillips project was completed, and a public comment period ending April 20, 2007 was initiated. District staff met with the Contra Costa County Community Development Department and provided comments on the Draft EIR for the project as a responsible agency under CEQA. Review of the Chevron project continued, and Engineering Division staff met with Chevron representatives on a bi-weekly basis to discuss and resolve permitting issues. District staff also met with the City of Richmond Planning Department and provided comments on the Draft EIR being prepared for the project.

Engineering Division staff continued to evaluate several major power plant permit applications. Staff is reviewing the proposed East Shore Energy Project (Hayward), a 115-MW project consisting of 14 large natural gas-fired engines. The Preliminary Determination of Compliance (PDOC) for this project is nearing completion. The Russell City Energy Center is a proposed 600-MW combined cycle gas turbine power plant (Hayward) that had been previously permitted by the District. The current application is a request to move the project site approximately 1300 feet southwest from the original permitted site. A new Health Risk Screening Analysis and PSD impact analysis were needed for this change. In addition, the project is now subject to current, more stringent, Best Available Control Technology requirements for NO_x and CO emissions. The PDOC for this application has been issued, and a public comment period ending May 12, 2007 initiated. The District is also evaluating a permit application for the Calpine-Agnews Energy Center (San Jose), a 25-MW gas turbine project. The current application is a proposal to retrofit the turbine with a Cheng Power Cycle System to replace the existing water injection and Selective Catalytic Reduction system. Evaluation of this permit application is nearing completion.

Staff continued work to implement the Statewide ATCM for stationary diesel engines. Permit applications related to this ATCM, and the ATCM for portable diesel engines, continue to provide a significant workload for the Division.

Engineering Division staff continued work related to Pacific Steel Casting Company's new Plant 3 carbon abatement system. Data collected during the initial startup period was analyzed and staff is currently working on preparation of final permit conditions for the Permit to Operate issuance. An application for a revised Synthetic Minor Operating Permit (SMOP) was also reactivated, based on the completion of extensive emissions testing at the facility.

Engineering Special Projects Program

Engineering Division staff continued to actively participate in the District's Flare Working Group. The Flare Minimization Plan (FMP) approvability tables were sent to each of the refineries in January, and the refineries were given a month to provide their responses regarding the FMP approvability items. The Project Team met a number of times with each of the refineries. In the month of March, revised FMPs were received from each refinery. The District will conduct a series of five public meetings from mid-April to early-May to receive public comment on the FMPs. Engineering Division staff participated in the investigation of an incident at the Shell Martinez Refinery involving three Carbon Monoxide (CO) boilers used to abate CO emissions generated within the regenerator section of a Fluidized Catalytic Cracking Unit. A problem at the facility led to excess CO emissions for a period of time.

Engineering Division staff continued active participation in the Business Production System project. Staff is participating in the Business Process Mapping/Improvement/Requirements

Phase (Phase I of the project), and is working closely with the consultants and Information Systems Services Division staff on mapping and investigation of issues that may improve operations.

Staff revised and updated the following Permit Handbook chapters: Micro Turbines, Bulk Loading, Non-Halogenated Dry cleaning, and Synthetic Solvent Dry cleaning.

Engineering Division staff participated in the preparation of a 2007 Cost Recovery Study. Proposed amendments to Regulation 3: Fees were prepared using the Study's results as a basis. A public workshop was held to discuss the proposed fee amendments with interested stakeholders.

Engineering Division staff began work with CARB to support their efforts to comply with the AB32 requirements for greenhouse gas inventory and reporting for refineries and cement plants. Staff also met with representatives of the California Energy Commission on petroleum infrastructure permitting issues, and attended a meeting of the CAPCOA Engineering Managers Committee.

LEGAL DIVISION – B. BUNGER, DISTRICT COUNSEL

In the *3rd QUARTER of Fiscal Year 2006-07*, the District Counsel's Office received 140 Violations reflected in Notices of Violation (NOVs) for processing.

In the *3rd QUARTER of Fiscal Year 2006-07*, Mutual Settlement Program staff initiated settlement discussions regarding civil penalties for 144 Violations reflected in NOVs. In addition, Mutual Settlement Program staff sent 3 Final 30 Day Letters regarding civil penalties for 5 Violations reflected in NOVs. Finally, settlement negotiations by Mutual Settlement Program staff resulted in collection of \$56,441 in civil penalties for 75 Violations reflected in NOVs.

In the *3rd QUARTER of Fiscal Year 2006-07*, Counsel in the District Counsel's Office initiated settlement discussions regarding 22 civil penalties for Violations reflected in NOVs. Settlement negotiations by counsel in the District Counsel's Office resulted in collection of \$477,938 in civil penalties for 54 Violations.

(See Attachment for Penalties by County)

PLANNING DIVISION – H. HILKEN, DIRECTOR**Community Air Risk Evaluation (CARE) Program**

Staff has participated in numerous technical conference calls related to the West Oakland Health Risk Assessment (HRA) on health effects from diesel particulate matter (PM), with particular emphasis on the development of the modeling and emissions inventory estimates. Draft emissions for Part 1 (Maritime Port of Oakland) of the HRA are complete and a preliminary methodology document was reviewed by the District and comments were sent to ARB, the Port of Oakland, and their contractors. Emissions and modeling for Part 2 (Union Pacific Railroad) are also complete. For Part 3 (West Oakland Community) District staff and District contractor Sonoma Technology Inc. have completed draft estimates for detailed emissions of diesel particulate from truck-related businesses and construction in West Oakland. Staff has also worked with community members to identify sources of diesel PM. ARB is preparing emissions estimates for other diesel PM emission sources, including non-Port harbor craft, on-road trucks, and trains. District staff helped plan and participated in a community meeting on the HRA in West Oakland on January 31, 2007. On March 13, 2007 the Executive Officer provided a presentation to the Berkeley City Council on programs to reduce toxic air contaminants in the Bay Area. Staff held a meeting of CARE Task Force on March 14, 2007 at which Dr. Manuel Pastor and Dr. James Sadd presented the findings of their Air Quality and Environmental Justice study in the Bay Area. At the Task Force meeting, District and ARB staff also presented an update on the West Oakland HRA. District staff also presented an update on CARE Phase II projects.

Rule Development Program

Staff hosted a public workshop on proposed amendments to Regulation 9, Rule 8: Nitrogen Oxides and Carbon Monoxide from Stationary Internal Combustion Engines on March 1, 2007; and for a new rule, Regulation 6, Rule 2: Commercial Cooking Operations on March 6, 2007. Public hearings are anticipated in 2nd quarter 2007. Staff also provided public notice and posting of proposed amendments to Regulation 3: Fees, scheduled for a public hearing on May 2, 2007.

Staff is also developing draft regulatory language and workshop reports on proposed amendments to the following District rules: Regulation 9, Rule 6: Nitrogen Oxides from Natural Gas-Fired Water Heaters and Regulation 9, Rule 7: Nitrogen Oxides and Carbon Monoxide from Industrial, Institutional and Commercial Boilers, Steam Generators and Process Heaters, Regulation 8, Rule 20: Graphic Arts Operations; Regulation 8, Rules 33 and 39, concerning gasoline bulk terminals, bulk plants and delivery vehicles; Regulation 1: General Provisions and Definitions; and Regulation 8, Rule 32: Wood Products Coating. Staff participated in a conference call hosted by the Air Resources Board staff on development of a Suggested Control Measure for Architectural Coatings (District Rule 8-3). Staff met with URS to review the final report on greenhouse gas mitigation measures: *Opportunities for Further GHG Emission Reductions from BAAQMD Stationary Sources*. Staff is reviewing control measures from other California district's planning documents for the District's 2007 Ozone Strategy.

Air Quality Planning Program

Staff has attended in person or by web cast numerous committees and workshops related to implementation of AB 32, the California Global Warming Solutions Act. These included; Discrete Early Action Items meetings; Greenhouse Gas Emission Inventory Technical Working Group meetings; Market Advisory Committee meeting; Economic and Technology Advancement Advisory Committee meeting; and the Environmental Justice Advisory Committee meetings. In addition, staff met with Catherine Witherspoon, Chuck Shulock and ARB's senior management to discuss the District's climate protection activity and collaborative opportunities with ARB for the implementation of AB32. Staff has participated in the development of JPC's recommendations on coordinating the four regional agencies climate protection activities. Staff is meeting with representatives of ICLEI, PG&E, Stop Waste.org and MTC to discuss technical assistance that can be provided to local jurisdictions that would like to develop green house gas emission inventories and climate action plans.

Staff is participating in MTC's 2009 RTP update through a regional working group; this effort includes identifying strategies to implement climate protection policies into the 2009 RTP. Staff attended several of ABAG's Focusing our Vision meetings and public workshops on developing primary development areas based on smart growth/TOD principals. Staff has begun development of a triennial update to the Bay Area 2005 Ozone Strategy. Staff submitted comments on CEQA documents for the following projects: Concord General Plan DEIR; Marin County General Plan DEIR; Oak Knoll Community Development Plan NOP (Oakland); the Murphy Ranch Residential Project NOP (Milpitas); and Lawrence Berkeley National Laboratory Long-Range Development Plan DEIR.

Research and Modeling Program

Staff participated in Central California Ozone Study (CCOS) and California Regional Particulate Matter Air Quality Study (CRPAQS) activities through conference calls and meetings. Activities included review of results from completed projects, development of new projects, and update of the conceptual understanding of the formation of ozone and particulate matter (PM) in the Bay Area. Staff made significant progress in generating meteorological inputs to the District's permit model, AERMOD. Staff participated in a conference call organized by NOAA to discuss a field measurement program in California during the summer and winter of 2010, which will include ozone and particulate matter measurements. Staff prepared a summary report on ambient PM_{2.5} levels in the Bay Area from November 2006 through February 2007. Staff issued a request for proposals to develop an ammonia emission inventory in the Bay Area for PM modeling. Staff compared the CARE emission inventory, created by Sonoma Technology, Inc. against the particulate matter modeling inventory, created by ARB, and provided feedback to both organizations. Staff met with Rob Harley of UC Berkeley to discuss the results of his Caldecott tunnel measurements, which suggested that diesel formaldehyde and acetaldehyde may be significantly underestimated in the ozone and PM modeling inventories created by ARB.

Special Projects

Staff continued working on preparing the Base Year 2005 emission inventory and responding to requests on emissions data. Staff prepared 2005 point source criteria and toxic pollutant report and submitted it to ARB. Staff prepared and submitted 2005 emission data to STI to update the CARE inventory. Staff attended in person or by web cast numerous committee and workshops on implementation of AB 32, the California Global Warming Solutions Act.

These included: Technical Working Group (TWC); Cement and Utilities protocol development and Market Advisory Committee meetings.

OUTREACH AND INCENTIVES – J. COLBURN, DIRECTOR

Spare the Air Day/Night

The Air District announced the close of the 2006/2007 Spare the Air Tonight season. A record-breaking 30 advisories were issued this season, resulting in approximately 91 print and 240 television and radio stories, an estimated 16,677,701 media impressions with a comparable ad value of \$558,880. This was the most media coverage received in the history of the Spare the Air Tonight program.

The results from two recent measurement surveys were completed to determine: 1) the public response to the wintertime STA Tonight program, and 2) the Spare the Air Program's brand recognition. The results of the wintertime survey demonstrate a sharp increase in public response – with 17.6% of households with wood-burning heating devices stating they did not burn or reduced burning wood this winter because of the STA Tonight program (up from 2.4% in 2006). The brand-recognition survey results demonstrate strong ongoing recognition and support for the STA programs with a recognition rate 81% and with 89% of respondents of the opinion that the STA program benefits residents in the Bay Area.

Subscriptions to the Air District's AirAlert email notification service rose to an all-time high of 47,170 users.

Public Information & Media

The Executive Officer participated in a live interview on KCBS regarding the Environmental Protection Agency's intent to tighten federal ozone standards.

Responded to interviews by print and broadcast media regarding a recent study entitled, "Still Toxic After All These Years: Environmental Justice in the San Francisco Bay Area," on February 20, 2007. The report discusses environmental findings in neighborhoods with high minority populations.

KQED Quest interviewed the Executive Officer on February 27, 2007 and February 28, 2007, for a television segment "Earth Day Special: Where We've Been, Where We're Headed" to air during the week of Earth Day.

Staff was interviewed by CBS Channel 5 regarding the Air District's Smoking Vehicle Prevention Program. The interview aired on a news segment called, "A Good Question" in March and is available online.

The Air District issued a press release about the settlement agreement for \$382,500 in penalties from United Airlines for violations at the SFO airport.

The Winter 2007 issue of Air Currents features articles on the Air District's Climate Change activities, the 2006-07 Spare the Air Tonight season, expanded Open Burn outreach, and a wrap-up of 2006 Rulemaking activity. The issue has been mailed out and is available online.

Staff completed grants program collateral design and production. The new series includes the following six informational flyers:

- Clean Air Grants and Incentives: An Overview
- Cash for Retiring Old Vehicles
- Grants for Owners of Off-Road Heavy Duty Engines
- Grants for Owners of On-Road Heavy Duty Vehicles
- Clean Air Grants for School Districts and School Bus Fleet Companies
- Clean Air Grants for County Congestion Management Agencies and Public Agencies

Community Outreach

Attended the West Oakland Truck Survey “Coordination and Information Gathering” Work Group meeting held in Oakland, Monday, January 8, 2007. Discussions focused on future truck surveys, how they should be coordinated, and community involvement in all surveys and initiatives going forward.

Attended the Truck Incentives Work Group and West Oakland Toxic Reduction Collaborative meeting on Wednesday, January 10, 2007. The group discussed ways in which to have an incentive program that is both effective and equitable.

Coordinated the award of a \$5,000 District Scholarship grant to two local environmental groups to cover travel costs for eight community residents to attend the Clean Ships Conference in San Diego and the Faster Freight Cleaner Air Conference in Long Beach.

Coordinated a series of informational meetings to present the Flare Minimization Plan to Bay Area communities. District Regulation 12, Rule 12 requires oil refiners to make periodic presentations to the public to describe their efforts to reduce flaring episodes.

The Air District sponsored and staffed a booth at the New Partners' Smart Growth conference February 7-11, 2007, in Los Angeles. The Air District also sponsored and staffed a booth at the Climate Change Registry conference in Santa Barbara. The Executive Officer moderated a panel discussion.

Staff met with the Director of Marketing for the San Francisco International Airport (SFO) on February 21, 2007, to discuss their interest in working with the Air District's Community Outreach Resource Teams on promoting car free tourism in the Bay Area. Several ideas were discussed and are now pending approval by SFO.

Staff met with Enterprise Rideshare regarding their involvement with the Community Outreach Resource Teams. Enterprise renewed its commitment and will donate \$2,500 to the team for a local project in the Tri-Valley area this year.

Completed the Church Light retrofit Project in the Bay View neighborhood. The San Francisco Community Power Cooperative coordinated the program, with funding provided by the District, to help secure safer wiring and new lighting for three churches in Bay View neighborhood. This project will result in lower energy use, better light and less pollution.

Coordinated the District's participation in the 2007 Aviation Symposium, held at the Renaissance Stanford Court Hotel March 4-7. The Executive Officer delivered the keynote

speech, and former Board Chairman Marland Townsend acted as moderator for a breakout session on alternative fuels. Staff presented the District's CARE Program.

The District co-hosted a community event on Wednesday, March 14, 2007, in celebration of a Carl Moyer Program retrofit of a Richmond Pacific Railroad diesel engine in Richmond. The event was covered by the Contra Costa Times.

Grant Programs

The Mobile Source Committee and the Board of Directors approved staff's recommendations regarding the continuation of funding of the Transportation Fund for Clean Air (TFCA) project types included in the performance review conducted by an independent firm, and the policies for fiscal year 2007/2008 for the TFCA County Program Manager Fund.

Grants staff participated in a January 13, 2007, tour of the Port of Oakland and a subsequent meeting with staff from the Port of Oakland and the California Air Resources Board to discuss options for berth emission reductions.

Staff continued to process more than 200 grant applications requesting more than \$35 million in funding for the Year 8 funding cycle of the CMP.

Staff made a presentation on the Air District's grant programs for engine-based projects at a meeting of the California Dump Truck Owners Association on February 13, 2007.

Coordinated with staff from the Bureau of State Audits and the California Air Resources Board in relation to their audit of the Air District's implementation of the Carl Moyer Program (CMP) and the Lower-Emission School Bus Program.

Staff released a request for comments on the proposed revisions to the TFCA Regional Fund policies and evaluation criteria for fiscal year 2007/2008 and on the proposed guidelines for a new program to be funded with TFCA revenues, the Bicycle Facility Program (BFP) on February 26, 2007.

A public workshop was held at the Air District on March 6, 2007 to request comments on the proposed guidelines for the new Bicycle Facility Program which will be funded with TFCA revenues.

Finalized the reports on the proposed policies and evaluation criteria for fiscal year 2007/2008 for the Transportation Fund for Clean Air (TFCA) revenues, including the Bicycle Facility Program (BFP), the grant award recommendations for the Year 8 and Year 9 funding cycles of the Carl Moyer Program (CMP) with a supplement from the Mobile Source Incentive Program (MSIF) revenues, and the TFCA annual report for fiscal year 2006/2007.

Other

Staff welcomed two new Public Information Officers, Jim Smith and Jennifer Alverson, to the Division. Ms. Alverson joins the Public Information section and Mr. Smith joins the Community Outreach section.

TECHNICAL DIVISION – G. KENDALL, DIRECTOR**Air Quality**

During the first quarter of 2007, Bay Area PM_{2.5} levels exceed the 35µg/m³ national 24-hour PM_{2.5} standard on ten days, in January and early February. On two of those days, the State PM₁₀ standard was also exceeded at several locations. This period was generally cool and dry, conditions conducive to the build up of particulate, and the few storms that moved across the Bay Area were weak and produced little rainfall. January rainfall totals ranged from 15% of normal at San Francisco to 31% of normal at San Jose. Stronger storms began on February 7th and particulate levels dropped to the Good or low-Moderate AQI categories. By contrast, January and early February of 2006 had above normal rainfall and the national PM_{2.5} standard was not exceeded.

The winter season Spare the Air Tonight program began on November 20, 2006 and ended on February 16, 2007. Air District PM_{2.5} filter-based PM_{2.5} monitors recorded 20 exceedances of the PM_{2.5} standard during the 2006/2007 winter season.

Air Monitoring

There were 25 air monitoring stations operating from January through March 2007, with all equipment operating on routine, EPA-mandated schedules. The increased wintertime sampling schedule for PM_{2.5} began at designated stations on October 1st, 2006 and ended on March 31, 2007. Ozone monitors at six satellite stations were shut down during the low ozone season on December 1, 2006 and remained shutdown through March 31, 2007, as allowed under a waiver granted by the EPA. A re-locatable air monitoring station was installed in Benicia to meet a commitment made by the Air District to City of Benicia related to the Valero Refinery VIP project.

Meteorology and Forecasting

Fourth quarter 2006 air quality data were quality assured and entered into the EPA Air Quality System (AQS) database. Staff continued to make daily air quality, Spare the Air Tonight, and burn forecasts. The winter calibration of the District meteorological network was completed.

Quality Assurance

The Quality Assurance (QA) group conducted regular, mandated performance audits of 65 monitors at 20 Air District monitoring stations. QA staff completed performance audits on the Ground Level Monitoring (GLM) networks at the Valero, Chevron and Tesoro Refineries. All GLM monitors at Valero and Chevron passed the audit. However, one H₂S monitor at Tesoro failed the audit. Tesoro subsequently replaced all of the monitors in its GLM network. QA staff re-audited the Tesoro GLM network and all monitors passed the audit.

Laboratory

In addition to ongoing routine analyses, twenty nine source samples from Pacific Steel Casting in Berkeley were analyzed for lead, nickel, zinc, chromium, cadmium, mercury, beryllium, copper, arsenic and manganese content.

Three ambient air samples taken in the vicinity of the Chevron Refinery during the level 3 fire incident of January 15, 2007 were analyzed for hydrocarbons and total reduced sulfur compounds. Two ambient air samples taken in the vicinity of the ConocoPhillips, Rodeo acid gas flaring incident of March 18, 2007 were analyzed for toxics, sulfur dioxide and hydrogen sulfide.

Eight aqueous samples collected from the cocoa roaster exhaust at Scharffen Berger Chocolate in Berkeley, CA were analyzed for aldehydes and organic acids. One gaseous sample collected from that source was analyzed for paraffins, olefin, aromatic and oxygenated hydrocarbons.

One wash oil sample from Chevron Refinery was analyzed for benzene, toluene, xylenes, phenols and total sulfur.

Source Test

Ongoing Source Test activities during January, February, and March of 2007 included Continuous Emissions Monitoring (CEM) Field Accuracy Tests, source tests, gasoline cargo tank testing, and evaluations of tests conducted by outside contractors. The ConocoPhillips Rodeo Refinery's open path monitor monthly reports for December, January, and February were reviewed. The Source Test Section participated in the District's Rule Development efforts for Refinery Cooling Towers, Stationary Gas Turbines, Gasoline Bulk Terminals, and Char-broilers. The Source Test Section continued its participation in the Air District's business system analysis for the new production system.

STATISTICS

Compliance and Enforcement Division:

Enforcement Program

Reportable Compliance Activity investigated	134
Citizen complaints investigated	689
GDF tags issued	117
Violations resulting in Notices of Violation	90
Violations resulting in Notice to Comply	417
New Hearing Board cases reviewed	4

Compliance and Operations Program

Asbestos plans received	1,295
Coating & other petitions evaluated	11
Open burn notifications received	2,089
Prescribed burn plans evaluated	12
Smoking vehicle complaints received	5,523
Tank/soil removal notifications received	37
Compliance assistance inquiries received	295
Green Business Reviews	4
Flare Notifications	114

Compliance Assurance Program

Industrial inspections conducted	2,231
GDF inspections conducted	330
Asbestos inspections conducted	393
Open burning inspections conducted	123
Auto Body/Dry Cleaning inspections conducted ..	193

Technical Services Division:

1st Quarter 2007 Ambient Air Monitoring

Days Exceeding National 24-hour PM _{2.5} Std	10
Days Exceeding National 24-hour PM ₁₀ Std	0
Days Exceeding State 24-hour PM ₁₀ Standard	2
Days Exceeding the National 8-hour Ozone Std	0
Days Exceeding the State 1-hour Ozone Std	0
Days Exceeding the State 8-hour Ozone Std	0

Ozone Totals, Jan. – Dec. 2007

Days Exceeding National 8-hour Ozone Standard	0
Days Exceeding State 1-hour Ozone Standard	0
Days Exceeding State 8-hour Ozone Standard	0

Particulate Totals, Jan. – Dec. 2007

Days Exceeding National 24-hour PM _{2.5} Standard	10
Days Exceeding National 24-hour PM ₁₀ Standard	0
Days Exceeding State 24-hour PM ₁₀ Standard	2

PM 2.5 Winter Season Totals For 2006-2007

Days Exceeding National 24-hour PM _{2.5} Standard	20
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1st Quarter 2007 Agricultural Burn Days

Jan.-Mar. Permissive Burn Days – North	68
Jan.-Mar. No-Burn Days – North	22
Jan.-Mar. Permissive Burn Days – South	71
Jan.-Mar. No-Burn Days – South	19
Jan.-Mar. Permissive Burn Days – Coastal	71
Jan.-Mar. No Burn Days – Coastal	19

Technical Library

Titles Indexed/Catalogued	95
Periodicals Received/Routed	301

Source Test

Total Source Tests	224
Pending Source Tests	6
Violation Notices Recommended	4
Contractor Source Tests Reviewed	2271

Continuous Emissions Monitoring (CEM)

Indicated Excess Emission Reports Evaluated	35
Monthly CEM Reports Reviewed	144
Indicated Excesses from CEM	17

Ground Level Monitoring (GLM)

Jan.-Mar. Ground Level Monitoring SO ₂ Excess reports	0
Jan.-Mar. Ground Level Monitoring H ₂ S Excess reports	3
Titles Indexed/Catalogued	95
Periodicals Received/Routed	301

These facilities have received one or more Notices of Violations
Report period: January 1, 2007 – March 31, 2007

Alameda County

Status				Regulation
Date	Site #	Site Name	City	Title
2/15/2007	A3590	City of Berkeley/Engr Div/Public Works	Berkeley	Parametric Monitoring & Recordkeeping Procedures; Failure to Meet Permit Conditions
3/26/2007	C8530	ARCO Facility #04977	Castro Valley	Gasoline Dispensing Facilities
1/10/2007	R8195	Solomon Netis	Emeryville	Asbestos Demolition, Renovation & Mfg.
2/09/2007	C8687	Warm Spring Gas	Fremont	Gasoline Dispensing Facilities
1/10/2007	L4085	R&B Equipment, Inc	Hayward	Asbestos Demolition, Renovation & Mfg.
1/10/2007	L3268	Synergy Enterprises	Hayward	Asbestos Demolition, Renovation & Mfg.
3/26/2007	C5444	Castro Valley Union 76	Hayward	Gasoline Dispensing Facilities
2/07/2007	S0218	Augustine Garcia	Livermore	Open Burning
1/29/2007	C0733	Chevron Stevenson	Newark	Gasoline Dispensing Facilities
2/27/2007	A1190	Evergreen Oil, Inc	Newark	Public Nuisance
3/12/2007	A0591	East Bay Municipal Utility District	Oakland	Failure to Meet Permit Conditions
3/14/2007	B7602	Capitol Recycling - Oakland	Oakland	Asbestos Demolition, Renovation & Mfg.
1/29/2007	B8197	Olson Steel	San Leandro	Authority to Construct; Permit to Construct
2/07/2007	S0216	Akido Printing, LLC dba Promotion Xpress	San Leandro	Authority to Construct; Permit to Construct
2/22/2007	A4784	Ghirardelli Chocolate Co	San Leandro	Failure to Meet Permit Conditions
2/27/2007	C9033	Raintree Carwash	San Leandro	Failure to Meet Permit Conditions
3/23/2007	S0980	ePAC	San Leandro	Authority to Construct; Permit to Construct
1/22/2007	R2288	Restoration Management Company	Union City	Asbestos Demolition, Renovation & Mfg.

Contra Costa County

Status				Regulation
Date	Site #	Site Name	City	Title
3/12/2007	R8724	Scott & Karen Heisley	Alamo	Asbestos Demolition, Renovation & Mfg.
2/15/2007	B2967	TRC	Antioch	Failure to Meet Permit Conditions
3/23/2007	A0173	Georgia Pacific Gypsum LLC	Antioch	Failure to Meet Permit Conditions
1/17/2007	M3823	Soil Enterprises, Inc.	Brentwood	Asbestos Demolition, Renovation & Mfg.

7				
3/07/2007	S0241	Jim Williamson	Brentwood	Open Burning
7				
1/10/2007	D0479	Gas of America	Concord	Gasoline Dispensing Facilities
7				
2/28/2007	A7448	Sparklizing Cleaners	Danville	Petroleum Dry Cleaning Operations
7				
1/03/2007	A0907	Central Contra Costa Sanitary District	Martinez	Failure to Meet Permit Conditions
7				
1/24/2007	A0091	Chevron Products Co	Martinez	Parametric Monitoring & Recordkeeping Procedures
7				
2/14/2007	B0408	County Asphalt	Martinez	Failure to Meet Permit Conditions
7				
2/15/2007	R2380	Henry's Woodfarms	Martinez	Public Nuisance
7				

**These facilities have received one or more Notices of Violations
Report period: January 1, 2007 – March 31, 2007 (Continued)**

Contra Costa County

Status Date	Site #	Site Name	City	Regulation Title
2/15/2007	B2758	Tesoro Refining and Marketing Company	Martinez	NOx & CO from Stationary Internal Combustion Engines
3/20/2007	A0011	Shell Martinez Refinery	Martinez	Flare Monitoring at Petroleum Refineries
2/15/2007	A0031	Dow Chemical Company	Pittsburg	Failure to Meet Permit Conditions
2/16/2007	A2371	USS-POSCO Industries	Pittsburg	Failure to Meet Permit Conditions Continuous Emission Monitoring & Recordkeeping Procedures; Failure to Meet Permit Conditions
3/12/2007	B1928	Calpine Pittsburg LLC	Pittsburg	Flare Monitoring at Petroleum Refineries; Failure to Meet Permit Conditions; Sulfur Dioxide
3/28/2007	A0010	Chevron Products Company	Richmond	Failure to Meet Permit Conditions; Terminals & Bulk Plants
3/14/2007	A0016	ConocoPhillips - San Francisco Refinery	Rodeo	
2/28/2007	A6014	Imperial Cleaners	San Ramon	Petroleum Dry Cleaning Operations
3/05/2007	C0396	Unocal Service Station	Walnut Creek	Gasoline Dispensing Facilities
3/09/2007	C9838	Chevron Inc	Walnut Creek	Gasoline Dispensing Facilities

Marin County

Status Date	Site #	Site Name	City	Regulation Title
1/17/2007				Open Burning
7	R9837	Daniel Buntin Murray	Belvedere	
2/26/2007				Asbestos Demolition, Renovation & Mfg.
7	S0500	Scandia Builders	Sausalito	

Napa County

Status Date	Site #	Site Name	City	Regulation Title
3/26/2007				Gasoline Dispensing Facilities
7	C9108	Arco Facility #2106	Napa	

These facilities have received one or more Notices of Violations
Report period: January 1, 2007 – March 31, 2007 (Continued)

San Francisco County

Status Date	Site #	Site Name	City	Regulation Title
1/10/2007	R9717	J. T. Builders	San Francisco	Asbestos Demolition, Renovation & Mfg.
2/28/2007	S0530	Citi Apartments	San Francisco	Asbestos Demolition, Renovation & Mfg.
3/09/2007	C0313	ARCO Facility #444	San Francisco	Gasoline Dispensing Facilities
3/09/2007	C2445	Chevron Station, Inc 93535	San Francisco	Failure to Meet Permit Conditions
3/09/2007	C9757	Lincoln Way Shell	San Francisco	Gasoline Dispensing Facilities
3/26/2007	S1018	ARGO Construction, Inc.	San Francisco	Asbestos Demolition, Renovation & Mfg.

San Mateo County

Status Date	Site #	Site Name	City	Regulation Title
2/07/2007	N1032	KAG West, LLC	Brisbane	Gasoline Bulk Terminals & Gasoline Delivery Vehicles
1/29/2007	D1198	Lexus of Serramonte - Attn: Ray Chin	Colma	Gasoline Dispensing Facilities
1/18/2007	R9836	City Hardwood Floors	Daly City	Asbestos Demolition, Renovation & Mfg.
3/26/2007	B1092	Membrane Technology & Research Inc	Menlo Park	Failure to Meet Permit Conditions
3/27/2007	Q6120	Code Electric	Redwood City	Asbestos Demolition, Renovation & Mfg.

Santa Clara County

Status Date	Site #	Site Name	City	Regulation Title
1/29/2007	D0367	Berry Blue Valero	San Jose	Gasoline Dispensing Facilities
3/09/2007	C3420	Chevron #5954	Cupertino	Gasoline Dispensing Facilities
2/26/2007	A0049	Chevron Products Company	San Jose	Storage of Organic Liquids
1/10/2007	A2721	City of Palo Alto Landfill	Palo Alto	Solid Waste Disposal Sites
1/10/2007	A0017	Hanson Permanente Cement	Cupertino	Failure to Meet Permit Conditions
1/17/2007	A9013	International Disposal Corporation of Calif	Milpitas	Gasoline Dispensing Facilities
3/14/2007	S0788	Jose Morales	San Martin	Open Burning
2/08/2007	B3289	Los Esteros Critical Energy Facility	San Jose	Failure to Meet Permit Conditions
1/17/2007	B1696	Maxim Integrated Products, Incorporated	San Jose	Failure to Meet Permit Conditions

These facilities have received one or more Notices of Violations
Report period: January 1, 2007 – March 31, 2007 (Continued)

Santa Clara County

Status Date	Site #	Site Name	City	Regulation Title
1/29/2007	C9911	McCarthy Ranch Chevron & Carwash	Milpitas	Gasoline Dispensing Facilities
1/23/2007	A1163	Merix San Jose	San Jose	Failure to Meet Permit Conditions
1/08/2007	A1230	Metric Design & Manufacturing Inc	Campbell	Failure to Meet Permit Conditions
2/26/2007	C7394	Pacific Pride Cardlock #81	San Jose	Gasoline Dispensing Facilities
3/08/2007	A4020	SFPP, LP	San Jose	Failure to Meet Permit Conditions; Gasoline Dispensing Facility
1/23/2007	C8211	Shell Of Los Gatos	Los Gatos	Gasoline Dispensing Facilities
3/08/2007	A0592	Spansion LLC	Sunnyvale	Failure to Meet Permit Conditions
2/26/2007	A3606	Syva Company - Dade Behring	Cupertino	Failure to Meet Permit Conditions
1/23/2007	C9606	Unocal Service Station #4425	Santa Clara	Gasoline Dispensing Facilities
3/09/2007	C3359	USA Petroleum	Campbell	Gasoline Dispensing Facilities
3/09/2007	C3722	Valero	Palo Alto	Gasoline Dispensing Facilities
1/10/2007	D0357	Valero Refining Co SS#7850	Santa Clara	Gasoline Dispensing Facilities
2/26/2007	B8238	Valet Organizers Inc	Campbell	Authority to Construct; Permit to Construct
2/26/2007	A5346	West Coast Aggregates Inc	Los Gatos	Permit to Operate

Solano County

Status Date	Site #	Site Name	City	Regulation Title
3/27/2007	C4655	David's Spirit	Fairfield	Gasoline Dispensing Facilities
2/26/2007	B7828	Klimisch's Inc	Vallejo	Permit to Operate
3/23/2007	C6943	Solano Community College	Suisun City	Open Burning
1/10/2007	A0901	Valero Benicia Asphalt Plant	Benicia	Failure to Meet Permit Conditions; Parametric Monitoring & Recordkeeping Procedures; Terminals & Bulk Plants
3/08/2007	B2626	Valero Refining Company - California	Benicia	Terminals & Bulk Plants; Flare Monitoring at Petroleum Refineries; Failure to Meet Permit Conditions
3/26/2007	C0236	West Coast Fueling Systems Inc	Benicia	Gasoline Dispensing Facilities
1/03/2007	F4406	Williams Tank Lines/Mike Stewart	Benicia	Gasoline Bulk Terminals & Gasoline Delivery Vehicles

These facilities have received one or more Notices of Violations
Report period: January 1, 2007 – March 31, 2007 (Continued)

Sonoma County

Status Date	Site #	Site Name	City	Regulation Title
2/09/2007	S0258	Ben Hurst	Sebastopol	Open Burning
2/07/2007	S0215	Bill Ernst	Healdsburg	Open Burning
2/01/2007	S0129	Cal Coast Construction	Santa Rosa	Asbestos Demolition, Renovation & Mfg.
3/20/2007	F0523	Gil Labrucherie	Windsor	Open Burning
1/22/2007	B6485	Greater Works Printing & Graphics, Inc	Rohnert Park	Authority to Construct
3/20/2007	S0918	Jean McMullen	Windsor	Open Burning
3/20/2007	R7847	Julius Vegvary	Kenwood	Open Burning
1/22/2007	C0356	K & N Gas Inc	Santa Rosa	Gasoline Dispensing Facilities
2/09/2007	S0256	Kendall-Jackson	Santa Rosa	Open Burning
2/09/2007	S0259	Milt Yoshioka	Petaluma	Open Burning
1/22/2007	B8170	Minuteman Press	Santa Rosa	Authority to Construct; Permit to Construct
3/23/2007	S0978	Pete Lewis	Fulton	Open Burning
3/14/2007	C4859	Raintree Car Wash	Petaluma	Gasoline Dispensing Facilities
3/14/2007	F7078	Ralph Curran Co.	Santa Rosa	Asbestos Demolition, Renovation & Mfg.
3/12/2007	B2024	Rich's Auto Paint & Body Repair	Petaluma	Motor Vehicle & Mobile Equip Coating Operations
3/26/2007	C9739	Santa Rosa Chevron	Santa Rosa	Gasoline Dispensing Facilities
2/01/2007	A2254	Sonoma County Department of Public Works	Petaluma	Failure to Meet Permit Conditions

**Closed NOV's with Penalties by County
January 2007 – March 2007**

Alameda

Site Name	Site Occurrence	City	Penalty Amount	# of Violations Closed
Agricultural Bag Mfg, Inc	B7824	Oakland	\$15,000	3
American Brass & Iron Foundry	A0062	Oakland	\$3,000	1
Bill Rose	C6695	Pleasanton	\$250	1
City and County of San Francisco-PUC	B5592	Sunol	\$1,500	2
ConocoPhillips #2705760	C9247	Fremont	\$250	1
Cooks Collision	B1873	Berkeley	\$1,500	3
Earl Adams Tile and Plaster	R9393	Pleasanton	\$650	1
East Bay Municipal Utility District	A0591	Oakland	\$6,400	3
Finisar Corporation	B2297	Fremont	\$1,500	1
Hayward Waste Water Treatment Plant	A1009	Hayward	\$600	1
Hexcel Corporation	A0054	Livermore	\$2,000	1
Morton International Inc	A0079	Newark	\$3,000	1
National Elevator Co	A9445	Pleasanton	\$750	2
Niles Machine & Tool Works, LLC	B7839	Livermore	\$1,291	2
Restoration Management Company	R9734	Union City	\$250	1
Solomon Netis	R8195	Emeryville	\$1,500	2
SSA Marine Terminal	Q4000	Oakland	\$750	1
SSA Terminals - Oakland	B5760	Oakland	\$6,300	1
Stevedoring Services of America	P8662	Oakland	\$450	1
Unocal #6034	C8949	Livermore	\$500	1
Valero Refining Co SS#7399	D0361	Pleasanton	\$250	1

Alameda Continued**Total Violations Closed: 31****Contra Costa**

Site Name	Site Occurrence	City	Penalty Amount	# of Violations Closed
Allied Crane, Inc	B7762	Pittsburg	\$1,500	2
Fashion Cleaners	B0409	Walnut Creek	\$350	1
Henkel Corporation-Aerospace Group	B2855	Bay Point	\$1,750	3
Mineral Resource Technologies, INC	B2925	Pittsburg	\$1,000	2
Quebecor World Pittsburg	A0932	Pittsburg	\$1,500	2
Saver's Gas	C5455	Brentwood	\$1,450	2
Seven-Eleven #16693	C1489	Pittsburg	\$500	1
State of California	B2076	Richmond	\$3,750	1
Tower Mart #92	C9973	Martinez	\$500	1
Unocal Service Station	C0396	Walnut Creek	\$500	1

Total Violations Closed: 16**Marin**

Site Name	Site Occurrence	City	Penalty Amount	# of Violations Closed
Econo Gas	C9547	Larkspur	\$750	1
Miller Avenue Chevron	C6562	Mill Valley	\$850	2
Spotless Cleaners	A7036	San Anselmo	\$150	1
Unocal SS #7380	C7948	Mill Valley	\$400	1

Total Violations Closed: 5

Napa

Site Name	Site Occurrence	City	Penalty Amount	# of Violations Closed
City of St Helena	A1205	Saint Helena	\$500	1

Total Violations Closed: 1

San Francisco

Site Name	Site Occurrence	City	Penalty Amount	# of Violations Closed
Dollar Rent-A-Car	C9865	San Francisco	\$1,500	1
Hang Construction	Q5578	San Francisco	\$3,000	3
Murrieta Livermore Associates, LLC	R6929	San Francisco	\$17,500	4
One Hour Martinizing	B0473	San Francisco	\$350	1
The Ritz Carlton San Francisco	B2799	San Francisco	\$300	1
UCSF/Parnassus	A2478	San Francisco	\$3,000	1

Total Violations Closed: 11

San Mateo

Site Name	Site Occurrence	City	Penalty Amount	# of Violations Closed
ARCO Facility #00573 - IQBAL SINGH BAINS	C9072	Redwood City	\$500	1
Brittan Shell-Shell Oil Products	C3158	San Carlos	\$250	1
Browning-Ferris Industries of CA, Inc	A2266	Half Moon Bay	\$1,500	1
FibroGen Inc	B7972	South San Francisco	\$1,500	2
Hickey-Gateway Shell-Shell Oil Products	C8831	Pacifica	\$250	1
South Bayside System Authority	A1534	Redwood City	\$800	1
United Airlines, SF Maintenance Center	A0051	San Francisco	\$372,500	10
United Airlines SFOPV	B2197	San Francisco	\$10,000	3

San Mateo Continued

Westlake Village Apts	Q5577	Daly City	\$8,750	4
Woodside Gasoline Inc	C8697	Redwood City	\$750	2

Total Violations Closed: 26

Santa Clara

Site Name	Site Occurrence	City	Penalty Amount	# of Violations Closed
ARCO Facility #00538	D0032	Sunnyvale	\$250	1
ARCO Facility #00707-BP W Coast Products	C7200	Los Altos	\$500	1
ARCO Facility#09601-ERLINDA DE LOS SANTOS	C9804	San Jose	\$450	1
Auto Pride Car Wash	D0458	San Jose	\$1,500	3
Berry Blue Valero	D0367	San Jose	\$750	2
Blossom Hill Gasoline	C8931	San Jose	\$200	1
Camaro Cleaners	A3285	Sunnyvale	\$1,625	2
Chevron #6139	C4001	San Jose	\$500	1
City of San Jose (Singleton Road Landfill)	A4175	San Jose	\$2,500	1
Coast Oil Company, LLC	A2981	Gilroy	\$500	1
Costco Wholesale	C9899	Sunnyvale	\$150	1
Greif Bros Corporation	A8765	Morgan Hill	\$1,000	1
International Disposal Corporation of Calif	A9013	Milpitas	\$1,000	1
O L S Energy-Agnews	A6044	San Jose	\$750	1
San Martin Gas & Mart	C5339	San Martin	\$300	1
Shell Of Los Gatos	C8211	Los Gatos	\$400	1
Unocal Service Station #4425	C9606	Santa Clara	\$400	1

Total Violations Closed: 21

Sonoma

Site Name	Site Occurrence	City	Penalty Amount	# of Violations Closed
Ben Hurst	S0258	Sebastopol	\$500	1
City of Santa Rosa Wastewater Treatment	A1403	Santa Rosa	\$200	1
Costco Wholesale #41	C9748	Santa Rosa	\$750	1
Gas Mart	C5007	Santa Rosa	\$500	1
Richard Peterson	R5375	Fulton	\$250	1
Santa Rosa Recycling and Collection	B5694	Cotati	\$1,000	1

Total Violations Closed: 6

District Wide

Site Name	Site Occurrence	City	Penalty Amount	# of Violations Closed
KAG West, LLC	A4021	West Sacramento	\$3,000	1
Matrix Seismic Corporation	Q0949	Mission Viejo	\$10,000	2
MV Atlantica c/o Transmarine	R7002	Stockton	\$5,000	1
Sabek	B2611	King City	\$2,000	1
Williams Tank Lines/Mike Stewart	A0049	Stockton	\$2,300	1
Williams Tank Lines/Mike Stewart	A4020	Stockton	\$4,600	2
Williams Tank Lines/Mike Stewart	B2611	Stockton	\$7,600	3
Williams Tank Lines/Mike Stewart	C0381	Stockton	\$500	1

Total Violations Closed: 12

ACRONYMS AND TERMINOLOGY

ABAG	Association of Bay Area Governments
AC	Authority to Construct issued to build a facility (permit)
AMBIENT	The surrounding local air
AQI	Air Quality Index
ARB	[California] Air Resources Board
ATCM	Airborne Toxic Control Measure
BAAQMD	Bay Area Air Quality Management District
BACT	Best Available Control Technology
BANKING	Applications to deposit or withdraw emission reduction credits
BAR	[California] Bureau of Automotive Repair
BARCT	Best Available Retrofit Control Technology
BIODIESEL	A fuel or additive for diesel engines that is made from soybean oil or recycled vegetable oils and tallow. B100=100% biodiesel; B20=20% biodiesel blended with 80% conventional diesel
BTU	British Thermal Units (measure of heat output)
CAA	[Federal] Clean Air Act
CAL EPA	California Air Resources Board
CCAA	California Clean Air Act [of 1988]
CCCTA	Contra Costa County Transportation Authority
CEQA	California Environmental Quality Act
CFCs	Chlorofluorocarbons
CMA	Congestion Management Agency
CMAQ	Congestion Management Air Quality [Improvement Program]
CMP	Congestion Management Program
CNG	Compressed Natural Gas
CO	Carbon monoxide
EBTR	Employer-based trip reduction
EJ	Environmental Justice
EIR	Environmental Impact Report
EPA	[United States] Environmental Protection Agency
EV	Electric Vehicle
HC	Hydrocarbons
HOV	High-occupancy vehicle lanes (carpool lanes)
hp	Horsepower
I&M	[Motor Vehicle] Inspection & Maintenance ("Smog Check" program)
ILEV	Inherently Low Emission Vehicle
JPB	[Peninsula Corridor] Joint Powers Board
LAVTA	Livermore-Amador Valley Transit Authority ("Wheels")
LEV	Low Emission Vehicle
LNG	Liquefied Natural Gas

MPG	Miles per gallon
MTC	Metropolitan Transportation Commission
NAAQS	National Ambient Air Quality Standards (federal standards)
NO _x	Nitrogen oxides, or oxides of nitrogen
NPOC	Non-Precursor Organic Compounds
NSR	New Source Review
O ₃	Ozone
PM _{2.5}	Particulate matter less than 2.5 microns
PM ₁₀	Particulate matter (dust) less than 10 microns
PM _{>10}	Particulate matter (dust) over 10 microns
POC	Precursor Organic Compounds
pphm	Parts per hundred million
ppm	Parts per million
PUC	Public Utilities Commission
RFG	Reformulated gasoline
ROG	Reactive organic gases (photochemically reactive organic compounds)
RIDES	RIDES for Bay Area Commuters
RTP	Regional Transportation Plan
RVP	Reid vapor pressure (measure of gasoline volatility)
SCAQMD	South Coast [Los Angeles area] Air Quality Management District
SIP	State Implementation Plan (prepared for <i>national</i> air quality standards)
SO ₂	Sulfur Dioxide
TAC	Toxic Air Contaminant
TCM	Transportation Control Measure
TFCA	Transportation Fund for Clean Air [BAAQMD]
TIP	Transportation Improvement Program
TMA	Transportation Management Association
TOS	Traffic Operations System
tpd	tons per day
Ug/m ³	micrograms per cubic meter
ULEV	Ultra low emission vehicle
ULSD	Ultra low sulfur diesel
USC	United States Code
UV	Ultraviolet
VMT	Vehicle miles traveled (usually per <i>day</i> , in a defined area)
VTA	Santa Clara Valley Transportation Authority
ZEV	Zero Emission Vehicle

BAY AREA AIR QUALITY MANGEMENT DISTRICT

Memorandum

To: Chairperson, Mark Ross and Members
of the Board of Directors

From: Jack P. Broadbent
Executive Officer/APCO

Date: May 8, 2007

Re: District Personnel on Out-of-State Business Travel

RECOMMENDED ACTION:

Receive and file.

BACKGROUND

In accordance with Section 5.4 (b) of the District's Administrative Code, Fiscal Policies and Procedures Section, the Board is hereby notified that the following District personnel have traveled on out-of-state business.

DISCUSSION

Virginia Lau, Sr. Air Quality Specialist, attended the ASHRAE Technical Committee (TC) 5.10 Meeting in Dallas, TX January 27 – 29, 2007.

Jack Colbourn, Outreach & Incentives Division Director, attended the 2007 National Air Quality Conference in Orlando, FL February 10 – 14, 2007.

Gary Kendall, Technical Services Division Director, attended the 2007 National Air Quality Conference in Orlando, FL February 11 – 14, 2007.

Jack Colbourn, Outreach & Incentives Division Director, attended the Hearth Products Association Wood Smoke Conference in Reno, NV March 14 – 15, 2007.

Eric Pop, Air Quality Specialist, attended the EPA Residential Wood Smoke Workshop in Reno, NV March 14 – 17, 2007.

Ralph Borrmann, Public Information Officer, attended the Hearth Products Association Wood Smoke Conference in Reno, NV March 13 – 16, 2007.

Ralph Myers, Building Maintenance Mechanic, attended the UNIV Management Skill / Maintenance Supervisor Seminar in Las Vegas, NV March 17 – 21, 2007.

Peter Hess, Deputy Air Pollution Control Officer, attended the Hearth Products Association Wood Smoke Conference in Reno, NV March 15, 2007 (No District Fund Used).

Kelly Wee, Compliance & Enforcement Division Director, attended the EPA Residential Wood Smoke Workshop in Reno, NV March 14 – 16, 2007.

Peter Hess, , Deputy Air Pollution Control Officer, attended the National Assoc. of Clean Air Agencies Spring Membership Meeting in Louisville, KY April 30 – May 2, 2007

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Linda Serdahl
Reviewed by: Jeff McKay

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Memorandum

To: Chairperson, Mark Ross and Members
of the Board of Directors

From: Jack P. Broadbent
Executive Officer/APCO

Date: May 7, 2007

Re: Consider Establishing a New Classification of Facilities Maintenance
Worker with a Salary Set at Pay Range 108 Effective as of the Date of
Board Approval

RECOMMENDATION

Approve establishing the new job classification of Facilities Maintenance Worker with a salary set at Pay Range 108.

BACKGROUND

This classification creates a position which will perform a variety of semi-skilled activities related to facilities, grounds and vehicles, including keeping the building space and grounds in orderly condition and performing minor maintenance and repair work. The Facilities Maintenance Worker position is a level lower than the Building Maintenance Mechanic.

The Human Resources Office has completed discussions with the Employees' Association regarding the job classification description and pay level for this new job classification. The proposed budget for FY 2007/08 includes a request to add one Facilities Maintenance Worker position. The Board of Directors' approval of the new classification and the attached draft job description is needed in order for the position to be added to the classification system.

DISCUSSION

Currently, the duties detailed in the Facilities Maintenance Worker classification are being performed by a temporary worker; however, the need to provide for maintenance of the District's building and grounds is on-going. This position will be in the Finance, Administration, and Information Services Division.

BUDGET CONSIDERATION/FINANCIAL IMPACT

There is no financial impact beyond that which will be contemplated during approval of the FY2007-08 budget.

Respectfully Submitted,

Jack Broadbent
Executive Officer/APCO

Prepared by: Michael Rich

FACILITIES MAINTENANCE WORKER

DEFINITION

Under general supervision, performs a variety of semi-skilled activities related to facilities, grounds and vehicles; keeps assigned building space and grounds in orderly condition by performing minor maintenance and repairs in and around the facility; performs miscellaneous semi-skilled maintenance and repair work; performs related work as assigned.

DISTINGUISHING CHARACTERISTICS

Facilities Maintenance Worker is a specialized class responsible for performing and/or coordinating a wide variety of semi-skilled activities related to facilities, grounds, and vehicles. The work requires broad knowledge of building, equipment, and vehicle operation and repair. Facilities Maintenance Worker is a standalone class assigned to the Administrative Services Division. The incumbent receives instructions for assigned tasks, but works independently and has latitude in selecting work methods. Work is reviewed upon completion for final results. Incumbents are expected to refer to the supervisor for instructions to assignments which do not fit a clear pattern.

EXAMPLES OF DUTIES (Illustrative Only)

Daily cleaning and power-washing of all areas around the building, including sidewalks, alleys, parking lots and gutters.

Performs general grounds cleaning and maintenance; picks up rubbish and paper.

Performs semi-skilled maintenance of stair-wells, elevators and foyers.

Removes graffiti.

Collect used hypodermic needles from the premises; coordinate with City health officials for proper disposal.

Monitor the District building and premises and report suspicious or illegal activity to the proper authorities.

Perform cosmetic maintenance of carpets (e.g. shampooing) and internal walls, as well as restrooms and kitchen facilities.

May perform other basic cleaning tasks as necessary.

Performs basic, semi-skilled painting and carpentry work.

Replaces light bulbs and fluorescent tubes; maintains light fixtures.

Operates a variety of hand and power tools.

Keeps tools and equipment in clean and safe working condition.

Selects and orders materials and supplies to complete assignments.

Reconfigures modular office furniture to accommodate user needs; moves file cabinets and related office furnishings; moves and arranges furniture and equipment for meetings and special events.

Assists with the setup and control of storage space.

Assists in transporting District vehicles and obtaining needed parts; may arrange for vehicle repairs.

Arranges for cleaning of vehicles; may clean vehicle interior and exterior as assigned.

May issue and control building keys.

QUALIFICATIONS

Knowledge of:

Standard tools, methods, practices, and materials used to maintain the appearance and cleanliness of facilities and grounds.

Standard tools, methods, practices, and materials used to maintain and repair facilities and grounds.

Current practices, procedures and techniques of building maintenance including basic carpentry, electrical, grounds keeping, painting, and plumbing.

Occupational hazards and safety precautions, rules and procedures as they relate to facilities, grounds maintenance, and vehicle operation and repair.

Basic principles and practices of mechanical repair and preventative maintenance.

Skill in:

Performing a variety of janitorial and semi-skilled maintenance and repair work using a variety of tools and equipment.

Operating vehicles; observing legal and defensive driving practices.
Using and caring for hand and power tools.

Establishing and maintaining cooperative and effective relationships with those contacted in the course of the work.

Maintaining accurate records related to inventory, scheduled work, and ordering supplies.

Following oral and written instructions without close supervision; reading, writing, speaking and understanding English sufficient to perform the duties of the position.

Other Requirements:

Must possess a valid California Driver's License and meet the automobile insurability requirements of the District.

Must be able to climb ladders and work at heights up to 30-feet, lift equipment or materials up to 50 pounds in weight, and perform heavy manual labor as needed.

Education and Experience

A typical way to obtain the knowledge and skills outlined above is:

Equivalent to graduation from high school and at least two years of experience in one of the building trades or performing building maintenance work.

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson, Mark Ross and Members
of the Board of Directors

From: Jack P. Broadbent
Executive Officer/APCO

Date: May 8, 2007

Re: Report of the Climate Protection Committee Meeting of May 3, 2007

RECOMMENDED ACTIONS

Receive and file.

DISCUSSION

The Climate Protection Committee met on Thursday, May 3, 2007. The Committee received the following presentations:

- 1) AB 32 "California Global Warming Solutions Act of 2006:" Implementation by the Air Resources Board staff; and
- 2) Minimizing the Air District's Carbon Footprint

Due to the length of the discussion on implementation of AB 32 the presentation from the consultants on the Air District's study, "Opportunities for Greenhouse Gas Reductions from Stationary Sources," was deferred to the next meeting of the Committee. Attached are the staff reports presented in the Climate Protection Committee packet.

Chairperson Pamela Torliatt will provide an oral report of the meeting.

BUDGET CONSIDERATION/FINANCIAL IMPACTS

None.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Mary Ann Goodley

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Torliatt and Members
of the Climate Protection Committee

From: Jack P. Broadbent
Executive Officer/APCO

Date: April 23, 2007

Re: ARB Staff Presentation on AB 32 Implementation

RECOMMENDED ACTION:

None. For information only.

BACKGROUND

Last August the California Legislature passed Assembly Bill No. 32, the "California Global Warming Solutions Act of 2006." The Governor signed AB 32 in San Francisco on September 27, 2006. The legislation charges the State Air Resources Board with monitoring and regulating sources of greenhouse gas emissions in order to achieve a reduction in statewide greenhouse gas emissions to 1990 levels by the year 2020.

The legislation laid out a series of steps and deadlines for ARB as follows:

- By July 1, 2007, adopt a list of discrete, early action measures that can be implemented before January 1, 2010, and adopt such measures.
- By January 1, 2008, establish a statewide greenhouse gas emissions cap for 2020 based on 1990 emissions.
- By January 1, 2008, adopt mandatory reporting rules for significant sources of greenhouse gases.
- By January 1, 2009, adopt a plan for achieving emission reductions via regulations, market mechanisms, and other actions.
- By January 1, 2011, adopt regulations to achieve the maximum technologically feasible, cost effective reductions in greenhouse gases, with provisions for market mechanisms and alternative compliance mechanisms.
- Convene an Environmental Justice Advisory Committee and an Economic and Technological Advancement Advisory Committee to advise ARB.

- Prior to imposing mandates, evaluate impacts on California's economy, environment, and public health; equity between regulated entities; electricity reliability and conformance with other environmental laws, and ensure that rules do not disproportionately impact low income communities.

DISCUSSION

AB 32 has received international attention. The bill includes ambitious emission reduction goals and further establishes California as a climate protection leader. District staff has had numerous discussions with staff at ARB and at other California air districts regarding the role of local districts in AB 32 implementation. ARB staff will make a presentation on the implementation of AB 32.

BUDGET CONSIDERATION / FINANCIAL IMPACT:

None.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Ana Sandoval
Reviewed by: Henry Hilken

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Torliatt and Members
of the Climate Protection Committee

From: Jack P. Broadbent
Executive Officer/APCO

Date: April 23, 2007

Re: Opportunities for Greenhouse Gas Emission Reductions from Bay Area
Stationary Sources

RECOMMENDED ACTION:

Receive and file.

BACKGROUND

On June 1, 2005 the Board of Directors adopted a resolution establishing a Climate Protection Program and acknowledging the link between climate protection and programs to reduce air pollution in the Bay Area. One of the Climate Protection initiatives identified by Air District staff and presented to the Ad Hoc Committee for Climate Protection at its February 23, 2006 meeting involved conducting a study of potential greenhouse gas reduction strategies from sources historically regulated by the District. Subsequently, at the June 1, 2006 meeting of the Ad Hoc Committee on Climate Protection, staff recommended URS, Inc. be awarded a \$100,000 contract to conduct a region-wide study to identify and evaluate potential greenhouse gas emission control options for permitted stationary sources in the Bay Area. The Board of Directors approved the contract on June 6, 2006.

DISCUSSION

The study, "Opportunities for Further Greenhouse Gas Emissions Reductions for the BAAQMD Stationary Sources," identified the industries and source categories which most significantly contribute to greenhouse gas emissions and potential mitigation options for controlling those emissions. The evaluation qualitatively considered the effectiveness, costs, and impacts of each of the most promising options. The study also included a ranking of the most promising source categories for opportunities to reduce greenhouse gas emissions. Mr. Mark Strehlow of URS will present a summary of the findings.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Alex Ezersky
Reviewed by: Henry Hilken

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Torliatt and Members
of the Climate Protection Committee

From: Jack P. Broadbent
Executive Officer/APCO

Date: April 24, 2007

Re: Minimizing the Air District's Carbon Footprint

RECOMMENDED ACTION:

None. For information only.

BACKGROUND

As an overall goal of the Climate Protection Program, Air District staff is working to integrate climate protection into all aspects of Air District functions and programs, including capital and operational planning. As such, Air District staff is evaluating the climate impact of the District's operations as well as ways to minimize that impact.

DISCUSSION

The Air District has a history of utilizing climate-friendly business practices in its day to day operations, including:

- an award-winning employee commuter benefits program;
- a 9-80 flex work schedule that eliminates 10% of commute travel for participating employees;
- participation in the ABAG and City of San Francisco Green Business Program;
- use of hybrid and CNG vehicles in the Air District fleet.

Currently, Air District staff is evaluating the "carbon footprint," or total greenhouse gas emissions, due to Air District operations. The carbon footprint analysis will include electricity and natural gas consumption, employee business travel, and Board of Directors travel.

Air District staff will continue to pursue additional climate-friendly business practices that will allow us to further reduce the District's overall carbon footprint. However, staff will purchase "offsets" for those emissions that cannot be eliminated in order to make Air District operations "carbon neutral". The cost of offsets will be approximately \$10,000 to \$15,000 for 2006. Purchase of carbon offsets can be used to support activities such as renewable energy development or energy efficiency projects.

The Air District has experience with making activities carbon neutral. The 2006 Climate Protection Summit was planned so as to minimize emissions; offsets were purchased for the remaining emissions. In 2006, the Advisory Council calculated the greenhouse gas emissions associated with its travel and purchased emission offsets.

The Air District's climate neutral status will be announced on June 1, 2007, the two-year anniversary of the Climate Protection Program.

BUDGET CONSIDERATION / FINANCIAL IMPACT:

The cost of offsetting the Air District's carbon footprint is included in the proposed FY 2007-2008 budget.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Ana Sandoval
Reviewed by: Henry Hilken

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson, Mark Ross and Members
of the Board of Directors

From: Jack P. Broadbent
Executive Officer/APCO

Date: May 8, 2007

Re: Report of the Public Outreach Committee Meeting of May 8, 2007

RECOMMENDED ACTION

Receive and file.

BACKGROUND

The Public Outreach Committee met on Monday, May 7, 2007 to receive the following presentations:

- 1) 2007 Spare the Air/Free Transit Ozone Campaign Update; and
- 2) Youth Outreach Program – FY 2006/2007 Update.

Attached are the staff reports presented in the Public Outreach Committee packet.

Chairperson Kwok will give an oral report of the meeting.

BUDGET CONSIDERATION/FINANCIAL IMPACT

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Mary Ann Goodley

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Kwok and Members
of the Public Outreach Committee

From: Jack P. Broadbent
Executive Officer/APCO

Date: April 30, 2007

Re: 2007 Spare the Air/Fee Transit – Ozone Campaign Update

RECOMMENDED ACTION

For information only.

BACKGROUND

The Spare the Air program was established in 1991 to educate the public about air pollution and to promote long-term individual behavior changes that improve air quality. The 2006 Spare the Air campaign was the most successful to date in terms of public recognition and public participation. In addition, the expansion of the free transit program in 2006 to include 26 operators and six full free transit days provided an opportunity to explore the region-wide impact of the free transit incentive.

Suggestions for future improvement were received from the transit partners, media, public and Air District Board of Directors. In consideration of this stakeholder feedback, staff developed the following program refinements for 2007:

- Focus message on promotion of clean air choices and positive, long-term behavior change;
- Increase program measurement to begin the process of estimating long-term behavior change and assessing program impact;
- Expand program to include private partners; and
- Refine free transit incentive to include four (4) partial-day commutes on BART, Caltrain and the ferries and full-day rides on regional bus systems.

DISCUSSION

The Metropolitan Transportation Commissioners have approved \$7.5 million in funding for the *2007 Spare the Air/Free Transit Incentive Program*. This year, thirty-one transit agencies that operate in the Bay Area have agreed to participate in the program. In response to rider and transit operator feedback, the *2007 Spare the Air/Free Transit Incentive Program* will offer four half-day rides (until 1 pm) on Caltrain, BART and ferries and full-day rides on buses. Cost-savings from partial-days also improves the program's cost-effectiveness. Staff continues to explore opportunities to partner with the private sector and pursue incentives and funding to augment the 2007 season and future campaigns.

AGENDA: 4

The Outreach and Incentives Division will conduct outreach to increase public awareness about the sources of summertime air pollution and to promote the clean air choices individuals can make to protect air quality. A full description of the outreach strategy and draft copies of the collateral materials will be presented at the committee meeting.

This season, the frequency of surveying will be expanded to collect data regarding public behavior on all Spare the Air Days (not only free transit days) and on “normal” or non-Spare the Air days. A Request for Proposals for a Public Opinion Measurement Service was issued on March 28, 2007, and bid proposals are currently under review.

BUDGET CONSIDERATION/FINANCIAL IMPACT

Funding for Spare the Air activities through June 30, 2007, is included in the current budget. Funding for activities after July 1, are included in the proposed FY 2007/08 budget. The largest source of funding for the program is the Congestion Mitigation Air Quality (CMAQ) program. Federal funding includes a \$1 million CMAQ grant which is administered locally by Caltrans on behalf of the Federal Highway Administration. Local funding is through the Transportation Fund for Clean Air (TFCA) program. The remaining non-motor vehicle portion of the funds is from General Revenues.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Karen M. Schkolnick
Reviewed by: Jack M. Colbourn

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Kwok and Members
of the Public Outreach Committee

From: Jack P. Broadbent
Executive Officer/APCO

Date: April 30, 2007

Re: Youth Outreach Program – FY 2006/2007 Update

RECOMMENDED ACTION

For information only.

BACKGROUND

Staff will update the committee on activities of the Air District's youth outreach program.

DISCUSSION

An important component of the Air District's comprehensive outreach effort is the youth outreach program. This effort is primarily focused on science-based education for middle and high school students through the Clean Air Challenge curriculum. This curriculum helps science teachers to meet California standards while students conduct research on environmental problems that impact their health. During the 2006/2007 school year, 133 teachers attended the Clean Air Challenge trainings and over 14,840 students received the curriculum. In the current fiscal year, the District contributed \$50,000 to this program and leveraged an additional \$100,000 from Agilent Technologies. Since 2003, more than 500 teachers have attended the training and an estimated 60,000 students received the curriculum.

Staff is currently working to develop a new climate protection curriculum aimed at fourth and fifth grade students. The curriculum will include information about actions individuals can take to reduce greenhouse gas emissions in each of three topic areas: energy, waste, and transportation. This curriculum will meet California State Content Standards and will be introduced as a pilot teacher-training program through Dominican College in August 2007.

The Air District also supports additional youth outreach efforts including:

- Funding a pilot carbon reduction project targeting Sonoma County High Schools: "Greening the Student Commute Project".
- Coordinating a model project to promote Safe Routes to School in Sebastopol that can be replicated in other school districts.
- Sponsoring a youth panel at the Climate All Stars Conference to be held in San Francisco in September 2007.
- Funding for surveys in Milpitas, Sunnyvale, Mountain View, and Palo Alto to measure the impact of traffic around schools for use in development of traffic mitigation projects.

BUDGET CONSIDERATIONS/FINANCIAL IMPACT

Funding for the youth outreach is included in the FY 2006/2007 budget.

Respectfully submitted,

Jack P. Broadbent Executive
Officer/APCO

Prepared by: Richard Lew
Reviewed by: Jack Colbourn

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson, Mark Ross and Members
of the Board of Directors

From: Jack P. Broadbent
Executive Officer/APCO

Date: May 8, 2007

Re: Public Hearing to Consider Adoption of Proposed Regulation 6, Rule 2:
Commercial Cooking Equipment, and Adoption of CEQA Negative
Declaration

RECOMMENDED ACTION:

Staff recommends that the Board of Directors take the following actions:

- Adopt proposed Regulation 6, Rule 2: Commercial Cooking Equipment;
- Adopt proposed amendments to Regulation 6: Particulate Matter and Visible Emissions; and
- Adopt a California Environmental Quality Act (CEQA) Negative Declaration

BACKGROUND

Proposed Regulation 6, Rule 2: Commercial Cooking Equipment will fulfill the District's commitment to control restaurant emissions under the Senate Bill 656 Particulate Matter Implementation Schedule and implement potential controls proposed for evaluation in further study measure FS-3 from the Bay Area 2005 Ozone Strategy.

Cooking operations emit an estimated 3.35 tons of particulate matter (PM) and 1.32 tons of organic compounds per day in the Bay Area. Several studies conducted by the University of California Riverside and the University of Minnesota indicate that charbroilers are responsible for over 80% of commercial cooking emissions.

DISCUSSION

Proposed Regulation 6, Rule 2 would regulate restaurant charbroiler emissions of PM₁₀, as defined, and organic compounds. The proposed rule will require that:

1. Catalytic oxidizers, or alternative controls at least as effective, be installed on all chain-driven charbroilers. This requirement would become effective June 1, 2008.
2. All new installations of under-fired charbroilers with an aggregate grill surface area of ten square feet or more emit no more than 1.9 lbs of PM₁₀ per 1,000 lbs of meat cooked and install listed hoods. This requirement would become effective June 1, 2009.

3. Existing installations of under-fired charbroilers with an aggregate grill surface area of ten square feet or more meet the same emission standard as new installations of under-fired charbroilers. This requirement would become effective June 1, 2012.
4. Owners or operators of chain-driven and under-fired charbroilers subject to this rule register with the District. The owner or operator would pay a registration fee of \$475 and an annual fee of \$135.

A socioeconomic analysis has found that the costs of the rule would not create significant economic dislocation or loss of jobs. Pursuant to the California Environmental Quality Act (Public Resources Code 21000 et seq.), an initial study for the proposed amendments has been conducted, concluding that the proposed rule would not create significant adverse environmental impacts.

The proposed amendments to Regulation 6: Particulate Matter and Visible Emissions, renumber and rename the rule. The changes do not alter the substance of the rule.

RULE DEVELOPMENT PROCESS

Proposed Regulation 6, Rule 2 was developed through a collaborative effort with hood manufacturers, industry representatives, restaurant operators, and county health departments. Initially, 17,000 postcards were mailed to restaurant owners and equipment and ventilation vendors to inform them of the proposed regulation. Staff conducted four public workshops in November 2006, on an initial draft rule. After the November workshops, staff received several comment letters and engaged in discussions with hood manufacturers and industry representatives to refine the proposed rule. Staff published a second draft in February 2007 and hosted a workshop in March 2007. Comments were then incorporated into the final draft. In addition to manufacturers, vendors, and restaurants, Staff has discussed the rule with the Golden Gate Restaurant Association, the California Restaurant Association, San Francisco Building Code Advisory Committee, California Environmental Health Association, PG&E Food Service Technology Center, American Society of Heating, Refrigeration, and Air-Conditioning Engineers (ASHRAE) and county health departments.

BUDGET CONSIDERATION/FINANCIAL IMPACTS

Operating costs to administer and enforce the new rule will be recovered by registration fees set out in proposed Regulation 3 Fees, Schedule R: Commercial Cooking Equipment. The Board conducted a public hearing on amendments to Regulation 3, including proposed Schedule R, on May 2, 2007, and will continue the public hearing on Schedule R on June 6, 2007.

MODIFICATIONS TO RULE LANGUAGE

Regulation 6, Rule 2 contains several minor changes made after the Public Hearing Notice was issued. Two changes align the effective dates for registration of chain-driven charbroilers and new under-fired charbroilers with the dates that the respective standards for each equipment type go into effect. These changes are non-substantive and do not require a continuation of the public hearing. Also, the effective dates for recordkeeping requirements

for new under-fired charbroilers and associated control equipment have been changed to reflect the public hearing dates. These are non-substantive and do not require a continuation of the public hearing. The date changes are indicated by strikethroughs and underlines in the attached draft.

Respectfully submitted,

Jack P. Broadbent
Executive Officer / Air Pollution Control Officer

Prepared by: Virginia Lau
Reviewed by: Henry Hilken

Attachments:

Proposed Regulation 6, Rule 2: Commercial Cooking Equipment
Proposed amendments to Regulation 6: Particulate Matter and Visible Emissions
Staff Report including appendices
 Appendix 1: Emission Calculations
 Appendix 2: Socioeconomic Analysis
 Appendix 3: CEQA Initial Study and Negative Declaration

**REGULATION 6
PARTICULATE MATTER
RULE 2
COMMERCIAL COOKING EQUIPMENT
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**REGULATION 6
PARTICULATE MATTER
RULE 2
COMMERCIAL COOKING EQUIPMENT**

6-2-100 GENERAL

6-2-101 Description: The purpose of this rule is to reduce emissions from commercial cooking equipment.

6-2-102 Applicability: This rule applies to any person who owns, operates or plans to install an under-fired charbroiler or chain-driven (conveyorized) charbroiler in a restaurant located within the District.

6-2-200 DEFINITIONS

6-2-201 Catalytic Oxidizer: An emission control device that employs a catalyst fixed onto a substrate to oxidize air contaminants in an exhaust stream, thereby converting the air contaminants into carbon dioxide and water.

6-2-202 Chain-driven (Conveyorized) Charbroiler: A semi-enclosed charbroiler designed to mechanically move food on a grated grill through the broiler.

6-2-203 Charbroiler: A cooking device composed of a grated grill and a heat source. Food resting on the grated grill cooks as the food receives heat either directly from the heat source, or indirectly by way of a radiant surface.

6-2-204 Listed Hood: A ventilation hood that has been tested against, and meets, the standards of Underwriters Laboratory (UL) Standard 710.

6-2-205 Organic Compounds: Any organic compounds of carbon, excluding methane, carbon monoxide, carbonic acid, metallic carbides or carbonates and ammonium carbonate.

6-2-206 Particulate Matter: Any finely divided solid or liquid airborne material.

6-2-207 PM10: Particulate matter with an aerodynamic diameter that is less than or equal to a nominal 10 microns, but greater than 0.3 microns.

6-2-208 Restaurant: Any stationary facility that cooks food for human consumption and that engages in the retail sale, or offer for sale, of the cooked food. This includes, but is not limited to, dinner houses, cafeterias, catering operations, and hotel or motel food service operations.

6-2-209 Under-fired Charbroiler: A charbroiler, other than a chain-driven charbroiler, where the heat source and radiant surface, if any, are positioned at or below the level of the grated grill.

6-2-210 Ventilation Hood: An air-intake device connected to a mechanical exhaust system for collecting and removing grease, vapors, fumes, smoke, steam, heat, or odors from cooking equipment.

6-2-300 STANDARDS

6-2-301 Chain-Driven Charbroilers:

301.1 Effective June 1, 2008, no person shall operate a chain-driven charbroiler unless it is equipped and operated with a catalytic oxidizer approved by the APCO for use in combination with the specific model of chain-driven charbroiler.

301.2 Notwithstanding Section 6-2-301.1, a person may operate a chain-driven charbroiler with a control device approved by the APCO pursuant to Sections 6-2-403 and 6-2-601 as limiting the PM10 and organic compound emissions of the chain-driven charbroiler to no more than 0.74 pounds of PM10 and 0.23 pounds of organic compounds per 1,000 pounds of meat cooked.

6-2-302 New Installation of Under-Fired Charbroilers: In any restaurant that contains one or more under-fired charbroilers installed on or after June 1, 2009 such that the

under-fired charbroilers in the restaurant have a combined total grill surface area of at least ten (10) square feet,

302.1 Under-Fired Charbroilers: No person shall operate any under-fired charbroiler unless emissions from the under-fired charbroiler are exhausted through a control device approved by the APCO pursuant to Sections 6-2-403 and 6-2-602 as limiting the PM10 emissions of the under-fired charbroiler to no more than 1.9 pounds of PM10 per 1000 pounds of meat cooked.

302.2 Ventilation Hood: No person shall operate any under-fired charbroiler without exhausting the emissions from the under-fired charbroiler through a listed ventilation hood.

6-2-303 Existing Under-Fired Charbroilers: Effective June 1, 2012, no person shall operate an under-fired charbroiler in any restaurant that contains one or more under-fired charbroilers with a total aggregate grill surface area of at least ten (10) square feet, unless emissions from each under-fired charbroiler are exhausted through a control device approved by the APCO pursuant to Sections 6-2-403 and 6-2-602 as limiting the PM10 emissions of the under-fired charbroiler to no more than 1.9 pounds of PM10 per 1000 pounds of meat cooked.

6-2-304 Control Equipment Maintenance: Any emission control device installed and/or operated under this rule shall be operated, cleaned, and maintained in accordance with the manufacturer's specifications.

6-2-400 ADMINISTRATIVE REQUIREMENTS

6-2-401 Registration for Chain-Driven Charbroiler: ~~By Effective~~ June 1, 2007 2008, any person operating any chain-driven charbroiler shall register the charbroiler and any emission control device that operates with the charbroiler in accordance with Regulation 1, Section 410. Any person registering a charbroiler shall pay the fees required, as set forth in Regulation 3.

6-2-402 Registration for Under-Fired Charbroilers: Effective June 1, 2009, ~~the~~ owner or operator of any restaurant that contains one or more under-fired charbroilers installed on or after June 1, 2008 such that the under-fired charbroilers in the restaurant have a combined total grill surface area of at least ten (10) square feet shall register the under-fired charbroiler(s) and any emission control device(s) that operates with the charbroiler(s) in accordance with Regulation 1, Section 410. Effective June 1, 2012, the owner or operator of any restaurant that contains one or more under-fired charbroilers that have a combined total grill surface area of at least ten (10) square feet shall register the under-fired charbroiler(s) and any emission control device(s) that operates with the charbroiler(s) in accordance with Regulation 1, Section 410. Any person registering a charbroiler shall pay the fees required, as set forth in Regulation 3.

6-2-403 Emission Control Equipment Compliance: No person shall install any emission control device to satisfy the emission limitations in Sections 6-2-301.2, 6-2-302, or 6-2-303 of this rule, unless the APCO has approved the emission control device pursuant to this section as satisfying the applicable emission limitations. To receive the approval of the APCO for an emission control device, the manufacturer of the device must demonstrate the device satisfies the emissions limitations in Sections 6-2-301.2, 6-2-302, or 6-2-303 by conducting the appropriate source test or source tests described in Sections 6-2-601 and 6-2-602 and submitting to the APCO for review a report detailing the source test method employed and the source test results. The report must include all the information required under Sections 6-2-601.5 and 6-2-602.5 and must be accompanied by a written verification that the information conveyed in the report is true and correct. The verification must be signed under penalty of perjury by the manufacturer or, if the manufacturer is an entity other than a natural person, by a natural person, such as an officer or general partner of the manufacturer, who is responsible for the management and operation of the manufacturer under the provisions of law and articles of incorporation or

organization pursuant to which the manufacturer is formed. After completing review of the verified source test report, the APCO will approve, or will deny approval of, the emission control device.

6-2-500 MONITORING AND RECORDS

6-2-501 Recordkeeping Regarding Chain-Driven Charbroilers: The owner or operator of a chain-driven charbroiler shall maintain on the premises of the restaurant record of each of the following:

501.1 The date of installation of any emission control device installed to abate emissions from the chain-driven charbroiler.

501.2 All maintenance, including, but not limited to, preventative maintenance, breakdown repair, and cleaning, performed on the emission control device. The records shall include the date, time, and a brief description of the work.

6-2-502 Recordkeeping Regarding Under-Fired Charbroilers: The owner or operator of a restaurant subject to Section 6-2-302 and/or Section 6-2-303 shall maintain on the premises of the restaurant record of each of the following:

502.1 The date any control device was initially installed in the restaurant.

502.2 The date any under-fired charbroiler was installed in the restaurant, if installed after May 216, 2007.

502.3 All maintenance, including, but not limited to, preventative maintenance, breakdown repair, and cleaning, performed on the emission control device. The records shall include the date, time, and a brief description of the work.

502.4 The contract under which the owner or operator purchased the control device, or any sales receipt from the purchase, if purchased after May 216, 2007.

6-2-503 Retention of Records: The owner or operator shall maintain all records required under Sections 6-2-501 or 6-2-502 for a period of not less than five (5) years and shall make the records available to the APCO upon request.

6-2-600 MANUAL OF PROCEDURES

6-2-601 Determination of Emissions from Chain-Driven Charbroilers: Approval of abatement equipment pursuant to Section 6-2-403 as complying with the standards specified in Section 6-2-301.2 shall be determined using the following procedures:

601.1 Laboratory testing shall be performed on a control device that is installed per manufacturer's specification above a conveyORIZED charbroiler fueled by natural gas. The testing shall be conducted in accordance with the most recent version of ASTM Standard Test Method F 2239. If the control device is installed after a hood, clean grease baffles shall be installed in the hood prior to testing. The broiler shall be positioned such that a minimum of six (6) inches is maintained between the edge of the hood and the vertical plane of the front and sides of the appliance. Both sides of the broiler shall be a minimum of three (3) feet from any side wall, side partition, or other operating appliance. The velocity of the duct shall correspond to a flow rate of 300 cubic feet per minute (cfm) for each linear foot of hood length. The broiler's temperature controls shall be set at manufacturer's recommended setting for a minimum of 60 minutes prior to testing.

601.2 Pure beef, finished grind hamburgers of 0.33 lbs each shall be cooked on the under-fired charbroiler during testing. The patties shall consist of 18-22% fat by weight and 58-62% moisture. The patties shall be shaped into 0.625 inch thick round patties of five (5) inch diameter. The fat and moisture content of the patties shall be verified in accordance with the laboratory procedures set forth in the Association of Official Analytical Chemists Official Actions 960.39 and 950.46.

601.3 Hamburger patties shall be loaded, cooked, and removed in accordance with Section 10 of ASTM test method F2239-03, or in the analogous provision of

the most recent version of ASTM Standard Test Method F 2239, for heavy load conditions.

601.4 Testing shall be performed in triplicate following EPA Method 5 in conjunction with US EPA Method 202. During each test, samples shall be collected from the outlet of the control.

601.5 The manufacturer shall notify the APCO seven (7) days prior to testing. Test data submitted to the APCO for compliance with Section 6-2-403 include all raw data sheets, data logs, calibration sheets, and complete test documentation.

6-2-602 **Determination of Emissions from Under-Fired Charbroilers:** Approval of abatement equipment pursuant to Section 6-2-403 as complying with the standards specified in Sections 6-2-302.1 and 6-2-303 shall be determined using the following procedures:

602.1 Laboratory testing shall be performed on a control device that is installed following manufacturer's specification above an under-fired charbroiler fueled by natural gas that has a grill size of ten square feet or more. The charbroiler shall be operated in accordance with the most recent version of ASTM Standard Test Method F 1695. If the control device is installed after the hood, clean grease baffles shall be installed in the hood prior to testing. The velocity of the duct shall correspond to a flow rate of 400 cubic feet per minute (cfm) for each linear foot of hood length. The hood shall extend over the surface of the under-fired charbroiler by at least six (6) inches in the front and sides. The broiler shall be warmed up for a minimum of 30 minutes prior to testing and operate at a maximum temperature of 600 degrees Fahrenheit, as measured by a plate thermocouple placed at the center of each location where the meat shall be cooked.

602.2 Pure beef, finished grind hamburgers of 0.33 lbs each shall be cooked on the under-fired charbroiler during testing. The patties shall consist of 18-22% fat by weight and 58-62% moisture. The patties shall be shaped into 0.625 inch thick round patties of five (5) inch diameter. The fat and moisture content of the patties shall be verified in accordance with the laboratory procedures set forth in the Association of Official Analytical Chemists Official Actions 960.39 and 950.46.

602.3 Hamburger patties shall be loaded, cooked, and removed in accordance with Section 10 of ASTM test method F1695-03, or in the analogous provision of the most recent version of ASTM Standard Test Method F 1695, for heavy load conditions. Testing shall begin once the first patty is placed on the broiler and continue for a minimum of 60 minutes, with the end of sampling corresponding to the end of the cooking cycle.

602.4 Testing shall be performed in triplicate following EPA Method 5 front half only. During each test, samples shall be collected from the outlet of the control.

602.5 The manufacturer shall notify the APCO seven (7) days prior to testing. Test data submitted to the APCO for compliance with Section 6-2-403 include all raw data sheets, data logs, calibration sheets, and complete test documentation.

REGULATION 6
PARTICULATE MATTER AND VISIBLE EMISSIONS
RULE 1
GENERAL REQUIREMENTS

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REGULATION 6
PARTICULATE MATTER AND VISIBLE EMISSIONS
RULE 1
GENERAL REQUIREMENTS

6-1-100 GENERAL

6-1-101 Description: The purpose of this Regulation is to limit the quantity of particulate matter in the atmosphere through the establishment of limitations on emission rates, concentration, visible emissions and opacity.

6-1-110 Exemption, Temporary Sandblasting Operations: Temporary Sandblasting operations are exempt from the provisions of this Rule. Such operations are subject to the provisions of Regulation 12, Rule 4. (Adopted July 11, 1990)

6-1-111 Exemption, Open Outdoor Fires: The limitations of this rule shall not apply to emissions arising from open outdoor fires. (Adopted December 19, 1990)

6-1-200 DEFINITIONS

6-1-201 Exhaust Gas Volume: The volume of gases discharged from an operation; or an emission point.

6-1-202 Particulate Matter: Any material which is emitted as liquid or solid particles, or gaseous material which becomes liquid or solid particles at the testing temperatures specified in the Manual of Procedures, excluding uncombined water.

6-1-203 Process Weight: The total weight of all material introduced into an operation, excluding liquids and gases used solely as fuels, air which is not consumed as a reactant, and combustion air.

6-1-204 Process Weight Rate: A rate established as follows:

204.1 For continuous or long-run steady-state operations, the total process weight for the entire period of continuous operation or for a typical portion thereof, divided by the number of hours of such period or portions thereof.

204.2 For cyclical or batch operations, the total process weight for a period which covers a complete operation or an integral number of cycles, divided by the hours of actual process operation during such period. Where the nature of any process or operation or the design of any equipment is such as to permit more than one interpretation of this section, that interpretation which results in the minimum value for allowable emission shall apply.

6-1-300 STANDARDS

6-1-301 Ringelmann No. 1 Limitation: Except as provided in Sections 6-1-303, 6-1-304 and 6-1-306, a person shall not emit from any source for a period or periods aggregating more than three minutes in any hour, a visible emission which is as dark or darker than No. 1 on the Ringelmann Chart, or of such opacity as to obscure an observer's view to an equivalent or greater degree. (Amended July 11, 1990)

6-1-302 Opacity Limitation: Except as provided in Sections 6-1-303, 6-1-304 and 6-1-306, a person shall not emit from any source for a period or periods aggregating more than three minutes in a any hour an emission equal to or greater than 20% opacity as perceived by an opacity sensing device, where such device is required by District regulations.

(Amended July 11, 1990)

6-1-303 Ringelmann No. 2 Limitation: A person shall not emit for a period or periods aggregating more than three minutes in any hour, a visible emission which is as dark or darker than No. 2 on the Ringelmann Chart, or of such opacity as to obscure an observer's view to an equivalent or greater degree, nor shall said emission, as perceived by an opacity sensing device in good working order, where such device is required by District regulations, be equal to a greater than 40% opacity, from the following sources:

- 303.1 Internal combustion engines of less than 25 liters (1500 in³) displacement, or any engine used solely as a standby source of motive power;
- 303.2 Laboratory equipment used exclusively for chemical or physical analyses or experimentation;
- 303.3 Portable brazing, soldering or welding equipment;
- 303.4 Deleted July 11, 1990. (Amended January 5, 1983, July 11, 1990)

6-1-304 Tube Cleaning: During tube cleaning, and except for three minutes in any one hour, a person shall not emit from any heat transfer operation using fuel at a rate of not less than 148 GJ (140 million BTU) per hour, a visible emission as dark or darker than No. 2 on the Ringelmann Chart, or of such opacity as to obscure an observer's view to an equivalent or greater degree, or equal to or greater than 40% opacity as perceived by an opacity sensing device in good working order. The aggregate duration of such emissions in any 24 hour period shall not exceed 6.0 minutes per 1055 GJ (one billion BTU) gross heating value of fuel burned during such 24 hour period.

6-1-305 Visible Particles: A person shall not emit particles from any operation in sufficient number to cause annoyance to any other person, which particles are large enough to be visible as individual particles at the emission point or of such size and nature as to be visible individually as incandescent particles. This Section 6-1-305 shall only apply if such particles fall on real property other than that of the person responsible for the emission.

6-1-306 Diesel Piledriving Hammers: Piledriving hammers powered by diesel fuel shall comply with one of the following standards:

- 306.1 A person shall not emit from any diesel piledriving hammer for a period or periods aggregating more than four minutes during the driving of a single pile, a visible emission which is as dark or darker than No. 1 on the Ringelmann Chart, or of such opacity as to obscure an observer's view to an equivalent or greater degree.
- 306.2 A person shall not emit from any diesel piledriving hammer for a period or periods aggregating more than four minutes during the driving of a single pile, a visible emission which is as dark or darker than No. 2 on the Ringelmann Chart or of such opacity as to obscure an observer's view to an equivalent or greater degree provided that the operator utilizes kerosene, smoke suppressing fuel additives and synthetic lubricating oil, and the requirements of Section 6-1-503 are satisfied. (Adopted July 11, 1990)

6-1-310 Particulate Weight Limitation: A person shall not emit from any source particulate matter in excess of 343 mg per dscm (0.15 gr. per dscf) of exhaust gas volume.

- 310.1 Incineration or Salvage Operations. For the purposes of 6-1-310, the actual measured concentration of particulate matter in the exhaust gas from any incineration operation or salvage operation shall be corrected to the concentration which the same quantity of particulate matter would constitute in the exhaust gas minus water vapor corrected to standard conditions, containing 12% CO₂ by volume, and as if no auxiliary fuel had been used.
- 310.2 Gas-fired Pathological Waste Incinerators. The particulate emissions from gas-fired pathological waste incinerators, where emissions are not mingled with emissions from incineration of general wastes, shall be corrected as specified in Section 6-1-310.1 except that correction for auxiliary fuel shall not be required.
- 310.3 Heat Transfer Operation. For the purposes of 6-1-310, the actual measured concentration of particulate matter in the exhaust from any heat transfer operation shall be corrected to the concentration which the same quantity of particulate matter would constitute in the exhaust gas minus water vapor, corrected to standard conditions, containing 6% oxygen by volume.

6-1-311 General Operations: In addition to the limitation of Section 6-1-310, a person shall not discharge into the atmosphere from any general operation particulate matter from any emission point, at a rate in excess of that specified in Table 1 for the process weight rate indicated. This section shall not apply to fuel-fired indirect heat exchangers.

TABLE 1
ALLOWABLE RATE OF EMISSIONS BASED ON PROCESS WEIGHT RATE

Process wt rate = P		Emission = E	
kg/hour	lbs/hour	kg/hour	lbs/hour
250	550	0.8	1.8
300	660	0.9	2.0
400	880	1.1	2.4
500	1100	1.3	2.9
1000	2205	2.1	4.6
2000	4410	3.3	7.3
3000	6615	4.3	9.5
4000	8820	5.2	11.0
5000	11020	6.0	13.0
10000	22045	9.6	21.0
20000	44090	15.2	33.0
over 26000	57320	18.1	40.0

(interpolation formula deleted May 21, 1980. See page 6-1-5 for formulae.)

Interpolation in kg/hr

$$E \text{ in kg/hr} = 0.02 P^{0.67} \text{ in kg/hr}$$

The interpolation of the data in this Table shall be accomplished by the use of the equation $E = 0.022P^{0.67}$, where E = rate of emission in kg/hour, not to exceed 18.1 kg/hour and P = process weight rate in kg/hour.

Interpolation in lbs/hr

$$E \text{ in lbs/hr} = 4.10 P^{0.67} \text{ in lbs/hr}$$

6-1-320 Sulfuric Acid Manufacturing Plants: A person shall not emit from any operation manufacturing sulfuric acid using as a principal raw material any sulfur-containing material, any emission having a concentration of SO₃ or H₂SO₄, or both, expressed as 100% H₂SO₄, exceeding 92 mg per dscm (0.04 gr. per dscf) of exhaust gas volume.

6-1-330 Sulfur Recovery Units: A person shall not emit from any operation manufacturing sulfur, using as a principal raw material any sulfur-containing material, any emission having a concentration of SO₃ or H₂SO₄, or both, expressed as 100% H₂SO₄, exceeding 183 mg dscm (0.08 gr. dscf) of exhaust gas volume.

6-1-400 ADMINISTRATIVE REQUIREMENTS

6-1-401 Appearance of Emissions: Every person responsible for an emission (except from gas fired heat transfer operations regulated by Sections 6-1-301, 6-1-303 and 6-1-304) shall have and maintain means whereby the operator of the plant shall be able to know the appearance of the emission at all times.

6-1-500 MONITORING AND RECORDS

6-1-501 Sampling Facilities and Instruments Required: Persons subject to this regulation shall provide sampling facilities and install instruments as required pursuant to the provisions of Sections 1-501, 1-520 and 1-521 of Regulation 1.

6-1-502 Data, Records and Reporting: Persons monitoring emissions in accordance with the requirements of Sections 1-520 and 1-521 of Regulation 1 shall keep records, report emission excesses and provide summaries of data collected as required by Regulation 1.

6-1-503 Records: A person responsible for the operation of a diesel pile-driving hammer who chooses to comply with subsection 6-1-306.2 shall maintain and have available for inspection records which establish the use of kerosene, smoke suppressing fuel additives and synthetic lubricating oil. (Adopted July 11, 1990)

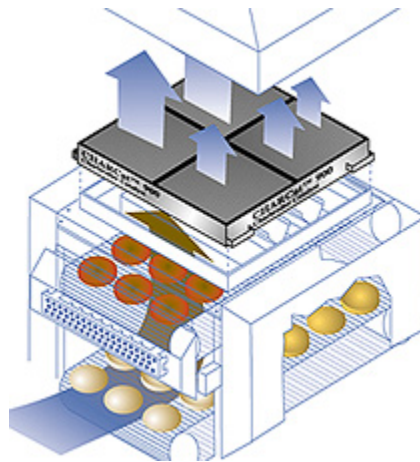
6-1-600 MANUAL OF PROCEDURES

6-1-601 Particulate Matter, Sampling, Sampling Facilities, Opacity Instruments and Appraisal of Visible Emissions: The MOP contains the testing temperature for the determination of the presence of particulate matter, procedures relating to the siting of sampling facilities, source test procedures, opacity instrument specifications, calibration and maintenance requirements, and the procedure for appraising visible emissions.

Bay Area Air Quality Management District
939 Ellis Street
San Francisco, CA 94109

Staff Report

**Regulation 6, Rule 2:
Commercial Cooking Equipment**



May 2007

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I. EXECUTIVE SUMMARY

Every day in the Bay Area, commercial and non-commercial cooking operations collectively emit an estimated 3.35 tons of particulate matter (PM) and 1.32 tons of volatile organic compounds (VOC). The Bay Area and neighboring regions are not yet in attainment with the State one-hour and eight-hour ozone standards and particulate matter standards and so further reductions of VOC and PM are needed.

Currently, no Bay Area Air Quality Management District (District) rule directly regulates emissions from restaurants. The District proposes adoption of Regulation 6, Rule 2 in accordance with its Senate Bill (SB) 656 Particulate Matter Implementation Schedule, and in connection with Further Study Measure (FS) 3 in the District's 2005 Ozone Strategy, which proposes evaluation of a rule to control emissions from commercial charbroilers.

The District focused its efforts on reducing emissions from two types of charbroilers: chain-driven charbroilers and under-fired charbroilers. Charbroilers are a central appliance for most restaurant kitchens and produce over 80% of commercial cooking emissions. Besides generating VOC and PM, charbroilers also produce carbon dioxide (CO₂), a gas contributing to climate change. The District estimates that the average CO₂ emissions for cooking activities per restaurant are approximately 25,000 pounds annually based on operation of the cooking appliances and associated ventilation equipment.

The District investigated a variety of control options for addressing emissions from charbroilers. To determine a list of available control technologies, the District reviewed reports and studies conducted either by universities, other air districts, or city-based health departments. Regulation 6, Rule 2 will require restaurants with chain-driven charbroilers to install a catalytic oxidizer or equivalent certified control to limit emissions of both PM and VOC. Owners of restaurants with one or more under-fired charbroilers with a total grill surface area of at least 10 square feet will be required to install a control certified to reduce PM emissions, by an effective date that depends on when the charbroilers were installed. The District anticipates these proposed standards will result in at least an 85% reduction in PM emitted by commercial charbroilers and a 60% reduction in VOC emitted by chain-driven charbroilers.

A socioeconomic analysis of the proposed regulation concludes that the new regulation would not have significant economic effects. An initial study of the proposed regulation concludes that the rule would not cause significant adverse environmental impacts, and a CEQA negative declaration is proposed for adoption.

Because this regulation addresses a new source category, the District undertook a comprehensive public outreach program to involve in the development of the proposed rule all stakeholders, including individual restaurant owners, hood manufacturers, restaurant trade organizations and industry representatives, county health departments, and vendors and installers of commercial kitchen appliances. The District held four public workshops on November 14 and 15, 2006, and based on public input, revised the draft proposal for presentation at a fifth workshop held on March 6, 2007.

II. BACKGROUND

A. Introduction

Restaurants vent substantial amounts of particulate matter (PM) and volatile organic compounds (VOC) into the atmosphere. Every day in the Bay Area, cooking operations collectively (commercial and non-commercial) emit an estimated 3.35 tons of PM and 1.32 tons of VOC.

Several California air districts have adopted rules limiting emissions from commercial cooking operations. The South Coast Air Quality Management District (SCAQMD) funded a detailed study that determined chain-driven charbroilers, under-fired charbroilers, and griddles generate most of the VOC and PM emissions from commercial cooking operations. At present, SCAQMD, the San Joaquin Valley Unified Air Pollution Control District, and the Ventura County Air Pollution Control District have each adopted a rule that limits emissions from restaurant charbroilers. Each of these rules requires chain-driven charbroilers to operate with a control device to limit the emissions of VOC and PM.

Currently, no District rule directly regulates emissions from restaurants. The District proposes adoption of Regulation 6, Rule 2 to fulfill a commitment in its Senate Bill (SB) 656 Particulate Matter Implementation Schedule, and in connection with Further Study Measure (FS) 3 in the District's 2005 Ozone Strategy, which proposes evaluation of a rule to control emissions from commercial charbroilers.

B. Source Description

Broilers are the central appliance for most restaurant kitchens and are used to cook steak, hamburgers, fish, chicken, and seafood, as well as to brown food and reheat plated food. All broilers are comprised of a grated grill and a heat source, where food resting on the grated grill cooks as the food receives heat either directly from the heat source, or indirectly by way of a radiant surface.

Proposed Regulation 6, Rule 2 would regulate two types of charbroilers: chain-driven and under-fired. Figure 1 presents examples of a chain-driven charbroiler and an under-fired charbroiler. A chain-driven (conveyorized) charbroiler is a semi-enclosed broiler designed to move food mechanically on a grated grill through the device as the food cooks. Food cooks quickly, because chain-driven charbroilers have burners located both above and below the grill. Chain-driven charbroilers are most common in fast food restaurants.

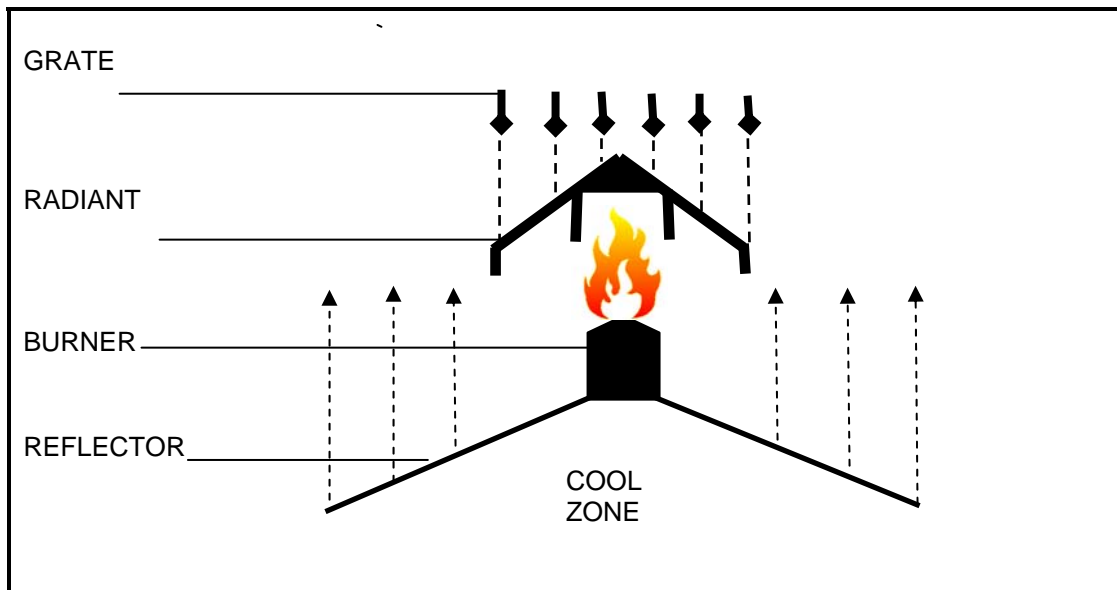
Figure 1. Examples of Chain-Driven Broiler (left) and Under-Fired Broiler (right)



Sources: Nieco and Magikitch'n

In an under-fired charbroiler, the heat source is positioned at or below the level of the grated grill. Designs of under-fired charbroilers vary widely. Some under-fired broilers use charcoal or wood for fuel, but usually, the broilers are fueled by gas or electricity. In gas under-fired charbroilers, a radiant surface, such as a bed of ceramic briquettes or a metal shield, placed above the burners diffuses heat from the burners. (See Figure 2.) The heating elements of electric charbroilers are often interwoven with, or sheathed inside, the grill. Under-fired charbroilers are common in fine dining and casual restaurants.

Figure 2. Diagram of Under-Fired Charbroiler



Source: Vulcan-Hart Company

C. Emissions Inventory

Charbroilers produce air pollutants through combustion. The air pollutants are primarily generated from incomplete combustion of grease and meat additives, such as tenderizers and marinade. The air contaminants are released when grease and meat additives fall onto the heat source, radiant surface, or hot plate, or when grease flares in the drip tray or bubbles at the surface.

The smoke and vapors generated from the process contain VOC and PM that consist of aldehydes, organic acids, alcohol, nitrogen and sulfur compounds, and polycyclic aromatic hydrocarbons (PAHs). VOC reacts with other compounds in the atmosphere to form ground-level ozone, commonly called smog. PM consists of airborne particles. PM can be emitted directly and also can be formed in the atmosphere through chemical reactions between other pollutants, including VOC. Cooking emissions include fine particles that are equal to or less than 10 microns in diameter, commonly referred to as PM₁₀. PM₁₀ generated by cooking appliances passes through the ventilation system and is exhausted into the atmosphere.

Both VOC and PM₁₀ present public health risks. Ozone produced from chemical reactions involving VOC may damage lung tissues and the respiratory tract. Once inhaled, PM₁₀ may become lodged in the respiratory tract and lead to wheezing, nose and throat irritation, bronchitis, and lung damage.

The SCAQMD and the California Air Resources Board (CARB) sponsored several studies in order to determine the percentage of restaurants that use charbroilers, the amount and type of meat cooked on charbroilers, and the amount of PM₁₀ and VOC produced from meat cooked on charbroilers. The District relied on these research studies, and on information provided by the health department of each of the nine Bay Area counties, to estimate the amount of PM₁₀ and VOC emitted from restaurant charbroilers in the Bay Area. A more detailed description of the methodology is presented in Appendix A.

District staff estimated the number of restaurants in operation in the Bay Area with assistance from the health department of each county in the District. Each county health department provided the District with the number of restaurants permitted within the county. District staff refined the number of restaurants by eliminating the establishments that are not open to the public (e.g., private clubs, dormitories, and company cafeterias) because charbroiler usage would likely be much less in than a commercial restaurant. Restaurants that have gone out of business, as well as those that are less likely to cook, such as, ice cream parlors and delicatessens were also eliminated. The District estimates that there are approximately 14,838 restaurants in the Bay Area.

To estimate the number of charbroilers used in Bay Area restaurants, the District consulted the 1997 SCAQMD report, "Staff Recommendations Regarding Controlling Emissions from Restaurant Operations." The SCAQMD report

surveyed the type of equipment that was used in restaurant cooking operations in Southern California. The report found that approximately 33% of restaurants operate under-fired charbroilers and 4% operate chain-driven broilers. Based on these percentages, the District estimates that approximately 4,897 Bay Area restaurants operate under-fired charbroilers and 554 operate chain-driven charbroilers.

The District used several studies to estimate the amount of meat cooked on restaurant charbroilers and the associated emissions. The District relied on data developed for CARB by the Public Research Institute pertaining to the average amount of meat cooked on each type of appliance. Table 1 presents the estimated average pounds of meat cooked per year on an individual charbroiler in the Bay Area.

Table 1. Estimated Average Yearly Pounds of Meat Cooked in the Bay Area

Type of Food	Conveyorized Broiler (lbs/year)	Under-Fired Broiler (lbs/year)
Hamburger	41,486	14,049
Steaks	12,281	9,363
Poultry with Skin	7,651	7,485
Poultry without Skin	13,842	9,311
Pork	2,997	7,699
Seafood	6,179	7,416
TOTAL	84,436	55,323

Source: PRI

Emission factors developed by the University of California Riverside (UCR) and the University of Minnesota were used to quantify average emissions from each type of meat cooked on under-fired charbroilers including hamburger, steaks, chicken with or without skin, pork, and seafood. For the chain-driven charbroiler, emissions factors for hamburgers were applied to all meats because only hamburger was tested on this cooking appliance. The estimated emissions of PM₁₀ and VOC by chain-driven and under-fired broilers are presented in Table 2 based on data regarding the number of charbroilers in the Bay Area, the average yearly amount of meat cooked, and the meat-specific emission factors, when available.

Table 2. Emissions from Charbroilers in the Bay Area

Type of Food	Chain-driven Broiler		Under-Fired Broiler	
	PM10 (tons/day)	VOC (tons/day)	PM10 (tons/day)	VOC (tons/day)
Hamburger	0.23	0.072	0.90	0.37
Steaks	0.069	0.021	0.78	0.32
Poultry with Skin	0.043	0.013	0.10	0.093
Poultry without Skin	0.078	0.024	0.19	0.17
Pork	0.017	0.0052	0.040	0.036
Seafood	0.035	0.011	0.14	0.016
Total Emissions (tons/day)	0.48	0.15	2.1	1.0
Total Emissions (tons/year)	174	53	782	369

In addition to VOC and PM emissions, cooking operations also produce carbon dioxide (CO₂), a gas contributing to climate change. In 2005, the District adopted a Climate Protection Program aimed at reducing greenhouse gas emissions. A University of Minnesota study found that gas charbroilers generated most of the CO₂ emitted by cooking operations. Charbroilers generate CO₂ through the combustion of natural gas and when grease drippings combust on hot radiant surfaces. The District estimates that the average CO₂ emissions for cooking activities per restaurant are approximately 25,000 pounds of CO₂ annually based on operation of the cooking appliances and energy usage for the associated ventilation system¹.

D. Regulatory Framework

The District is proposing Regulation 6, Rule 2, in accordance with the District's SB 656 Particulate Matter Implementation Schedule and in connection with FS 3 in the District's 2005 Ozone Strategy, as a means to reduce restaurant emissions of PM and VOC in the Bay Area. VOC are ozone precursors, and also contribute to indirect or secondary PM. The Bay Area is not yet in attainment of the State ozone and particulate matter standards, and so, further reductions of VOC and PM are needed.

SB 656 requires that all air districts in California adopt an implementation schedule that prioritizes appropriate measures for reducing PM emissions. The District's Particulate Matter Implementation Schedule, adopted in November

¹ Energy usage only accounts for the energy required to operate the cooking appliances and associated ventilation system. It does not include the energy required to power the air conditioning and heating systems, refrigeration units, make-up air, lights, and other types of equipment.

2005 proposes to adopt Regulation 6, Rule 2 as a measure to reduce direct and indirect PM emissions in the Bay Area.

Under FS 3, the District proposes to examine the feasibility of reducing ozone precursor emissions from restaurants. FS 3 is part of the District's 2005 Ozone Strategy, directed towards attainment of the State one-hour ozone standard.

Currently, no District rule directly regulates the emissions of air pollutants from restaurants. Restaurants, cafeterias, and other food establishments are exempt from obtaining a permit to operate under the District's Regulation 2, Rule 1. Nevertheless, restaurants must comply with the District's regulations of general applicability, such as Regulation 6: *Particular Matter and Visible Emissions*, and Regulation 7: *Odorous Substances*². Regulation 6 sets limitations on the emission of visible particulate matter. Regulation 7 restricts the discharge of odorous substances.

Bay Area restaurants are issued permits to operate by county health departments and in some cases, city health departments. The health departments require restaurants to adhere to California building codes, fire protection codes, and retail food laws. These codes require restaurants to install an exhaust ventilation hood with a fire suppression system above commercial cooking equipment that generates grease, smoke, steam, and vapor. The health departments also monitor the handling of food and ensure that all of the grease traps and hood filters are routinely cleaned.

At present, the SCAQMD, San Joaquin Valley Unified Air Pollution Control District, and Ventura County Air Pollution Control District have each adopted a rule that limits emissions from restaurant charbroilers. These rules each require that chain-driven charbroilers be operated with a control device to limit emissions of VOC and PM.

In addition, the City of Aspen Environmental Health Department has an ordinance regulating restaurant charbroiler emissions under Municipal Code Section 13.08.100: Restaurant Grills. The ordinance requires all restaurants that operate any charbroiler to install a control device that is certified by the manufacturer to reduce PM₁₀ emissions by 90%.

III. AVAILABLE CONTROL TECHNOLOGY

The District considered a variety of technologies to control emissions from charbroilers. District staff reviewed reports and studies conducted by the UCR, College of Engineering, Center for Environmental Research and Technology (CE-CERT), on available control technologies in support of the SCAQMD Regulation 1138 to control emissions from chain-driven charbroilers. In addition,

² On adoption of proposed Regulation 6, Rule 2, current Regulation 6 will be re-numbered as Regulation 6, Rule 1.

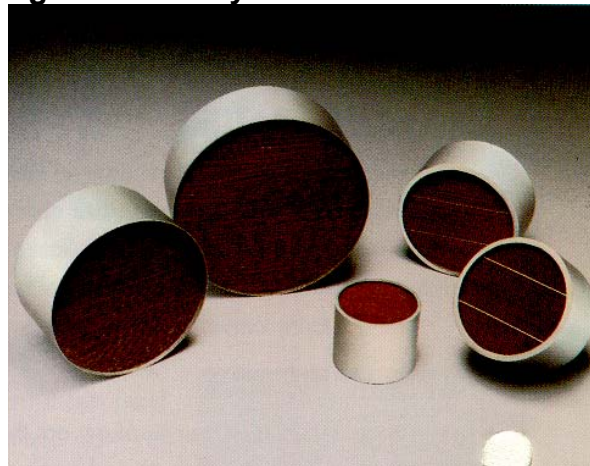
District staff contacted the City of Aspen Environmental Health Department regarding their ordinance regulating restaurant charbroiler emissions under Municipal Code Section 13.08.100: Restaurant Grills. District staff also consulted hood manufacturers and industry representatives.

Available control technologies that are effective at removing either or both PM and VOC from charbroilers include catalytic oxidizers and thermal incinerators. Each of these is a reliable, proven, and commonly-used control technology. The District also considered wet scrubbers, electrostatic precipitators (ESPs), fiber-bed filters, and high-efficiency particulate arresting (HEPA) filters as effective control devices for removing PM only. Other control technologies such as ultraviolet (UV) lamps and high-efficiency filters are available. The effectiveness of UV lamps at removing PM and VOC has not been investigated in an independent research study. High-efficiency filters have a significantly lower PM removal efficiency in comparison to the proven control technologies discussed below.

Catalytic Oxidizers (flameless)

A catalytic oxidizer is a flameless incineration device that is fitted to the top of a chain-driven charbroiler. Cooking exhaust is initially processed in the catalytic oxidizer through the heat exchanger where air is introduced. The air mixture then enters a flameless combustion chamber where it is evenly distributed onto the catalyst bed to ensure complete mixing of PM and VOC with oxygen. The PM and VOC oxidize into carbon dioxide and water vapor once the mixture reaches the combustion temperature. The released combustion energy is absorbed by the catalyst bed and is transferred to the heat recovery system. The control device is activated by the heat of the charbroiler and does not require any additional fuel to operate. The catalyst, which is a metal alloy, covers a substrate, typically either a honeycombed ceramic or a bed of ceramic beads housed in a canister. (See Figure 3.)

Figure 3. Catalytic Oxidizers Canisters



Source: W.R. Grace and Company

The catalyst is cleaned by immersion in water for one hour per month. Testing has shown catalytic oxidizers are capable of an overall PM and VOC removal efficiency of approximately 85% (83% for PM and 86% for VOC). Catalytic oxidizers are highly effective and virtually maintenance-free control devices for chain-driven charbroilers. However, this technology is not used to control emissions from under-fired charbroilers because of the high energy usage required to raise the exhaust temperature to activate the catalyst in such broilers.

Thermal Incineration

Thermal incineration oxidizes PM and VOC from an air stream at high temperatures, converting them into carbon dioxide and water. Thermal incinerators are not commonly used in commercial cooking applications. There are two types of thermal incinerators, recuperative and regenerative. Thermal recuperative incinerators consist of a gas preheating section (heat exchanger), a combustion chamber typically equipped with gas burner(s), and a heat recovery section. The heat exchanger is used to preheat the exhaust stream prior to combustion and may be used to recover heat to generate steam.

Regenerative incinerators use direct contact with a high-density medium such as a ceramic-packed bed or catalyst bed for heat recovery and to preheat the exhaust stream. Preheated PM and VOC enters the combustion chamber where they are converted to carbon dioxide and water. Cleaned gases are then diverted to reheat the packed beds. PM and VOC removal efficiency is dependent upon temperature, residence time, and mixing inside the incinerator.

PM and VOC conversion efficiencies typically range from 97% to 99.9% for recuperative incineration and 95% to 99% for regenerative incinerators. Thermal incinerators may be used as a control device for both chain-driven and under-fired charbroilers.

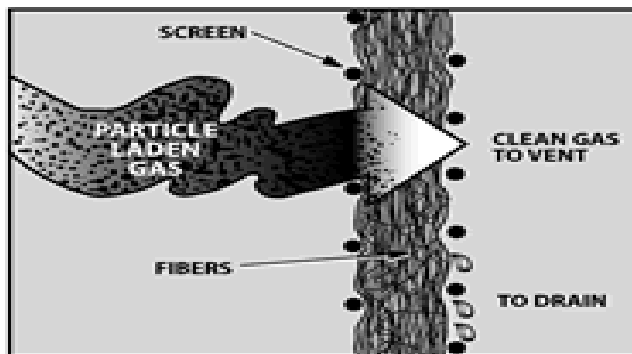
Fiber-Bed Filters

Fiber-bed filters may be used as stand-alone control devices or in conjunction with another control device such as a wet scrubber. Fiber-bed filters use a combination of impaction, interception and Brownian diffusion to remove particulate matter from an air stream. Particulates become trapped in the fibers of the filter and eventually drain into a capture area below the filter as illustrated in Figure 4. The filter bed may be made of fiberglass, polyester, polypropylene, or ceramic, depending on the PM concentration, exhaust flow, and temperature of the air stream.

Periodically the filters must be replaced or washed to remove grease and other materials before returning to service. Fiber-bed filters have an overall PM removal efficiency of 90%. Filter-bed technology has been successfully used on chain-driven charbroilers in Southern California; however, they are not used in

restaurants that operate under-fired charbroilers and thus, the costs for installing and maintaining the control device are not included for under-fired charbroilers.

Figure 4. Operation of Typical Fiber-Bed Filters



Source: Kimre, Inc.

Electrostatic Precipitators

Electrostatic precipitators (ESPs) have a proven track record of removing PM from the gas streams of many industries. An ESP functions by screening out large PM with a pre-filter, and then imparting an electrostatic charge in the remaining exhaust particles with a high voltage direct current. The charged particles then attach to an oppositely charged plate, from which they are later removed. An after filter is occasionally used after the plates to restore a positive back-pressure and ensure good gas distribution.

The PM removal efficiencies of ESPs range from 90% to 99%. The removal efficiencies depend largely on whether the ESPs are frequently and properly cleaned. ESPs are effective control devices for either chain-driven charbroilers or under-fired charbroilers.

Wet Scrubbers

Wet scrubbers use a finely atomized stream of water to capture PM from an air stream. An exhaust stream flows upward through a series of grated impingement plates. Water is introduced from the top of the wet scrubber and flows down to each successive plate, counter to the exhaust flow. The cooking exhaust rises through the grated grills and cools once it contacts the water. The particles adhere to the water droplets which are then collected as liquid waste. The liquid waste collected at the bottom of the scrubbers requires either treatment for reuse or disposal. Liquid particles entrained in the exhaust gas leaving the scrubber are removed using an after filter. PM removal efficiencies of 90% to 99% have been achieved depending on particle size, load, flows, and pressure drop. Wet scrubbers may be used as a control device for either the chain-driven or under-fired charbroiler.

HEPA Filters

HEPA filters are comprised of a series of three (3) filters designed to capture successively finer particles sizes. The first filter is called a pre-filter, which is a fully disposable pleated filter that must be replaced every four (4) weeks. The second filter is a medium filter that is a fully disposable bag filter that is replaced every eight (8) weeks. The final filter is a fully disposable 12 inch HEPA filter that is replaced every six (6) months. The PM removal efficiencies of HEPA filters varies from 95% to 99%. HEPA filters have been exclusively used at restaurants that operate under-fired charbroilers. Because there are more inexpensive control options available, restaurants with chain-driven charbroilers have not installed this control device.

IV. REGULATORY PROPOSAL

Under proposed Regulation 6, Rule 2: Commercial Cooking Equipment, the District is seeking to achieve further reductions of VOC and PM by requiring controls for under-fired and chain-driven charbroiler emissions. This chapter describes the proposed standards in Regulation 6, Rule 2.

A. Proposed Standard for Chain-Driven Charbroilers

Based on studies conducted by the UCR CE-CERT (1997), chain-driven charbroilers account for 4% of restaurant PM emissions and 13% of VOC emissions. Proposed Regulation 6, Rule 2 requires that, within one year of adoption of the rule, all chain-driven charbroilers in the District be equipped and operated with a District-approved catalytic oxidizer or other certified control, as explained below.

Currently, three California air districts regulate chain-driven charbroiler emissions: SCAQMD, San Joaquin Valley Unified Air Pollution Control District, and Ventura County Air Pollution Control District. Each of these air districts requires chain-driven charbroilers to be equipped and operated with a catalytic oxidizer or equivalent control. As a result, the catalytic oxidizer has an established track record and has been proven capable of reliably reducing chain-driven charbroiler emissions of PM₁₀ by 83% and VOC by 86%.

The proposed rule allows a restaurant operator the flexibility to install an alternative control device, provided the device has been approved by the District for use under the rule and certified by the manufacturer to reduce emissions to no more than 0.74 pounds (lbs.) of PM₁₀ and 0.23 lbs. of organic compounds per 1,000 lbs. of meat cooked. Before a restaurant operator may install and operate an alternative control, the manufacturer of the control is required to perform a laboratory test, in accordance with specific procedures prescribed in the rule, to determine the ability of the control to meet the emission standards the rule requires. The manufacturer is required to submit all information pertaining to the test to the District for review. After completing review of the source test report,

the District will approve, or deny approval of, the emission control device for use under the rule.

B. Proposed Standard for New Under-Fired Charbroiler Installations

Under-fired charbroilers account for 82% of PM emissions generated by restaurants, according to the UCR 1997 study. The focus of the proposed standard for new under-fired charbroiler installations is to reduce emissions from high-production restaurants that cook large quantities of meat on under-fired charbroilers and, consequently, are responsible for a large portion of commercial cooking emissions. The proposed standard calls for any owner or operator who, starting two years after adoption of this rule, installs any under-fired charbroiler in a restaurant such that the restaurant's under-fired charbroilers, taken together, have a total grill surface area of at least 10 square feet, to exhaust charbroiler emissions through a District-approved control device certified by the manufacturer to limit charbroiler emissions to no more than 1.9 lbs. of PM₁₀ per 1,000 lbs. of meat cooked.

The standard recognizes that effective control equipment that meets these emission standards requires planning to install. Newly constructed restaurants can integrate the installation of the controls into their ventilation system to effectively reduce emissions. Owners of an existing restaurant who choose to install one or more additional under-fired charbroiler(s) in the restaurant and thereby become subject to the rule will have to install an approved control device. Alternatively, the restaurant owner may elect to install cooking equipment other than an under-fired charbroiler, such as a clamshell griddle or over-fired charbroiler, that emits much less PM than an under-fired charbroiler, and consequently, is not subject to the regulation. Also, cooking appliances such as clamshell griddles and over-fired charbroilers have the added benefit of using less energy than under-fired charbroilers.

Owners and operators of new installations subject to the rule will also be required to vent their emissions through a listed ventilation hood that has been tested against and meets the standards of Underwriters Laboratory (UL) Standard 710. Current building codes allow restaurants to install unlisted hoods that meet the prescribed material and design requirements of the local building and health code. UL 710 conforms to existing building and health code, and also more effectively captures and contains the thermal plume. As discussed more fully below, this may result in a cost savings to owners and operators given that approximately 28% of a restaurant's energy usage is for heating, cooling, and ventilation. A well designed hood system that is equipped with a UL 710 listed hood can reduce the volume of air needed for ventilation by almost 30%.

C. Proposed Standard for Existing Under-Fired Charbroilers

PM emissions from under-fired charbroilers can be reduced by 90% (up to 0.4 tpd) by regulating existing under-fired charbroilers. Approximately 82% of Bay Area PM emissions from commercial cooking are attributed to the approximately

5,000 under-fired charbroilers in use in the Bay Area, while new installations of under-fired charbroilers are responsible for 10% of the total of those emissions.

Starting five years after rule adoption, the proposed rule requires all restaurants with under-fired charbroilers with an aggregate grill surface area of 10 square feet or more to install a control technology approved by the District and certified by the control device manufacturer to emit no more than 1.9 lbs. of PM₁₀ per 1,000 lbs. of meat cooked. This will reduce emissions by 90%.

Current control technologies are available that can be retrofitted into existing restaurants. However, some restaurants may require remodeling, additional plumbing, or additional structural support in order to install and operate currently available control devices. As a result, an extended implementation date for this standard is designed to allow time to advance the development of emerging control technologies or adapt existing technologies to be more suitable for existing restaurants.

D. Administrative Requirements

Chain-Driven Charbroilers

All operators of chain-driven charbroilers will be required to register with the District each chain-driven charbroiler and any emission control device operated with the charbroiler. The District will implement a web-based registration system to simplify the registration process. Controls that have already been approved for use in the District will be listed on the District web site. Restaurant owners will be assessed an initial registration fee and recurring annual fee to recover the District's costs of administering and enforcing the proposed rule. The proposed registration fee is \$475 and the proposed annual fee is \$135. The fees are to be adopted as part of the proposed amendments to Regulation 3: Fees. The proposed amendments to Regulation 3: Fees had an initial public hearing on May 2, 2007. The hearing will be continued on June 6, 2007.

The proposed rule also has a recordkeeping provision that requires owners and operators to record the date of installation of, and any maintenance and repairs performed on, the control device. The repair logs will contain the date, time, and description of the work that was performed. The owner or operator must keep the records for at least five years. The purpose of this recordkeeping requirement is to ensure that the control is operated in accordance with the manufacturer's specifications.

The manufacturer of an emission control device other than a catalytic oxidizer must perform a laboratory test, in accordance with specific procedures prescribed in the rule, to determine the ability of the control to meet the emission standards the rule requires. The manufacturer is required to submit all information pertaining to the test to the District Source Test Section for review, and must verify under penalty of perjury that the information submitted is true and

correct. After completing review of the source test report, the District will approve, or deny approval of, the emission control device for use under the rule.

Under-Fired Charbroilers

An operator of a restaurant with one or more under-fired charbroiler(s), with a grill surface area totaling at least 10 square feet will be required to register with the District the under-fired charbroiler(s) and any emission control device operated with the charbroiler(s) as specified in the proposed rule. The District will implement a web-based registration system that will include a list of certified controls for use in the Bay Area. At the time of registration, restaurant owners will be assessed a registration fee followed by an annual fee. The proposed registration fee is \$475 and the proposed annual fee is \$135. The fees are to be adopted as part of the proposed amendments to Regulation 3: Fees. The proposed amendments to Regulation 3: Fees had an initial public hearing on May 2, 2007. The hearing will be continued on June 6, 2007.

The proposed rule requires that owners and/or operators of restaurants subject to the rule must keep records for not less than five years. The records must include date of installation of any control device operated to comply with the rule, the contract under which the control was purchased or any sales receipt from the purchase, and records of any maintenance or repairs performed on the control device. The maintenance and repair records must contain the date, time, and description of the work that was performed. The purpose of this recordkeeping requirement is to ensure that the control is operated in accordance with the manufacturer's specifications.

As with chain-driven charbroilers, manufacturers of control equipment for under-fired charbroilers will be required to certify that their control equipment meets the emission standards the rule requires and to provide verified results of a source test conducted in accordance with the procedures outlined in the rule.

V. EMISSION REDUCTIONS

Charbroilers produce PM and VOC through incomplete combustion of tenderizers, marinade, and fats in the meat cooked. The District estimates that chain-driven charbroilers in the Bay Area emit a total of 0.48 tons per day (tpd) of PM and 0.15 tpd of VOC. Under-fired charbroilers, which produce significantly more emissions and outnumber chain-driven charbroilers by roughly a ten to one ratio, collectively emit approximately 2.1 tpd of PM and 1.0 tpd of VOC in the Bay Area. A more detailed description of the emission estimates is presented in Appendix A.

Chain-Driven Charbroilers

The proposed standards for chain-driven charbroilers will become effective on

June 1, 2008. This standard is anticipated to reduce emissions of PM by 83% (0.40 tpd) and of VOC by 86% (0.13 tpd), reducing the combined PM and VOC emissions from chain-driven charbroilers to 0.11 tpd. Laboratory testing (UCR, 2002) conducted on catalytic oxidizers has verified that the control devices are capable of achieving these emission reductions.

New Under-Fired Charbroilers

The proposed standards for new installations of large under-fired charbroilers will become effective on June 1, 2009. Based on data provided by the county health departments, about 50 restaurants per year (10% of all permitted restaurants) will become subject to the requirements of this rule due to remodeling or new construction. Each year, these new installations will add an additional 0.045 tons of PM production per day that will be subject to the requirements of the rule, assuming that only hamburgers are grilled. If a mixture of meats (chicken, pork, seafood, steak, and hamburgers) are cooked proportional to the percentages listed in Table 1, these new installations will add an additional 0.027 tons of PM production per day that will be subject to the requirements of the rule. The proposed rule would reduce PM emissions from these new installations by 90% (0.041 tpd for restaurants cooking only hamburgers and 0.024 tpd for restaurants cooking a variety of meats).

Existing Under-Fired Charbroilers

The District estimates that there are currently 489 restaurants in the District operating one or more under-fired charbroilers with a total grill surface area of at least 10 square feet. The District is proposing to control emissions from restaurants with large under-fired grill capacities since they likely cook significant quantities of food and consequently, produce a considerable portion of the total emissions from restaurants. Based on data provided by the University of Minnesota study (Gerstler et al, 1999), approximately 0.033 tons per year (0.00009 tpd) of PM and 0.016 tons per year (0.00004 tpd) of VOC are produced from cooking hamburgers for each square foot of grill surface area on an under-fired charbroiler. The emissions are representative of cooking 190 lbs of hamburgers per day on an under-fired charbroiler, which is typical for a high production restaurant. Given this data, all existing under-fired charbroilers with an aggregate grill surface of at least 10 square feet generate approximately 0.44 tons per day of PM and 0.21 tons per day of VOC if these restaurants were solely cooking hamburgers. If restaurants with existing under-fired charbroilers of this size cook a combination of chicken, steak, pork, and seafood in amounts proportional to the percentages listed in Table 1, then the restaurants would emit about 0.26 tpd of PM and 0.12 tpd of VOC.

Effective June 1, 2012, these restaurants will become subject to the proposed rule, which would reduce PM emissions from these restaurants by 90%. This would result in an emission reduction of 0.40 tpd if restaurants cook only

hamburgers. For restaurants that cook a variety of meat on these under-fired charbroilers, the rule would result in a reduction in PM emissions of approximately 0.23 tpd. Table 3 presents the emissions and reductions from existing chain-driven and under-fired charbroilers, and the potential emissions and reductions from new under-fired charbroilers.

Table 3. Emission Reductions from Charbroilers

Type of Charbroiler	Type of Meat Cooked	Uncontrolled PM ₁₀ Emissions (tpd)	PM ₁₀ Emission Reduction (tpd)	Uncontrolled VOC Emissions (tpd)	VOC Emission Reduction (tpd)
Chain-Driven Charbroilers	Hamburgers	0.48	0.40	0.15	0.13
Existing Under-Fired Charbroilers >= 10 sq. feet	Hamburgers	0.44	0.40	0.21	---
	Hamburger, steak, chicken, pork, and seafood	0.26	0.23	0.12	---
TOTAL		0.74 – 0.92	0.63 – 0.80	0.27 - 0.36	0.13
New Under-Fired Charbroilers >= 10 sq. feet*	Hamburgers	0.045	0.041	0.021	---
	Hamburger, steak, chicken, pork, and seafood	0.027	0.024	0.012	---

* Note: new under-fired charbroilers estimated to increase at a rate of 10% per year.

Energy Efficiency

The proposal regarding new under-fired charbroilers has an added provision that may result in a reduction of energy usage and greenhouse gas generation. Commercial cooking equipment has a high energy demand for heating, cooling, and ventilation (approximately 28% of a restaurant’s energy usage) that indirectly leads to production of greenhouse gases, primarily carbon dioxide from power generation. Often, restaurant ventilation systems operate at ventilation rates that are higher than necessary, resulting in higher construction costs and higher energy costs over the life of the system.

The District is proposing to require that restaurants with an under-fired charbroiler installed at least two years after rule adoption and with under-fired charbroiler grill surface area totaling at least 10 square feet also install UL listed ventilation hoods. County health departments prescribe basic standards for commercial kitchen exhaust hood construction. The standards dictate the exhaust rate for the ventilation system based on the usage of the appliance and the length, or open-face area, of the hood. The code-specific exhaust rate may be significantly greater than what is required for effective capture and containment of the cooking plume, in order to allow flexibility in the hood design

and a diversity of appliances to be placed beneath the hood. This “safety factor” places an energy cost burden on commercial kitchen ventilation systems through its demand for more heated and cooled air.

The building codes allow exceptions to these exhaust rates if the hoods have been tested against a recognized standard such as UL Standard 710, Exhaust Hoods for Commercial Cooking Equipment. UL Standard 710 is a safety standard that a hood can meet only where the test yields no evidence that smoke or flame escapes outside of the exhaust hood. Hoods bearing a recognized laboratory mark are called “listed hoods” while those bearing no such mark are called “unlisted hoods”.

Requiring the use of listed hoods may have the added benefit of reducing restaurant energy consumption, thereby lowering restaurant operating costs and the indirect emission of carbon dioxide associated with power generation. Generally, listed hoods can operate at a lower exhaust rate than an unlisted hood of comparable style and size over the same cook line. As illustrated in Table 4, listed hoods have the ability to operate at an exhaust rate 100 to 300 cfm lower than that required for unlisted hoods. As a result, listed hoods may use less energy, which would result in the emission of less carbon dioxide than unlisted hoods. An owner and operator using a listed hood may therefore experience lower operating costs due to direct energy savings. Estimates of the savings range from \$1.00 to \$3.00 per cubic foot of annual air costs. In addition, duct systems and building duct shafts using listed hoods are generally smaller, reducing the costs of construction.

Table 4. Minimum Exhaust Rates for Charbroilers

Type of Hood	Unlisted Hood (cfm per linear foot of hood)	Listed Hood (cfm per linear foot of hood)
Wall-mounted Canopy	400	200 – 400
Single Island Canopy	600	300 – 600
Double Island Canopy	400	250 – 400
Backshelf/Passover	400	300 – 400

Source: Energy Design Resources

VI. ECONOMIC IMPACTS

This section discusses the estimated costs associated with the proposed rule.

A. Cost Analysis for Charbroilers

The District investigated the technical feasibility, potential emission reductions, and costs of installing and operating the control strategies identified in Section III. The total annual costs for a control technology are calculated based on a ten year period and are comprised of the annualized capital costs and the annual

recurring operation and maintenance (O & M) costs.

The District estimated capital costs using the capital recovery method, which accounts for depreciation and interest (i.e., inflation) costs over the useful life of the control. The District annualized the capital costs using the following equation:

$$\text{Total Annualized Cost} = (\text{Capital Recovery Factor}) \times (\text{Capital Expenditure}) + \text{Annual O \& M Costs}$$

Where:

Capital Expenditure is the equipment and installation costs

Capital Recovery Factor is 14.2% (7% per year over 10 years)

Annual O & M Costs are expenditures for utilities and equipment maintenance

The annual recurring O & M cost includes expenditures for cleaning the equipment and the duct work.

District staff also estimated a control technology's cost effectiveness by summing the total annual costs for the control technology installed at restaurants and dividing that sum by the total annual PM and VOC emissions reductions to be achieved.

Chain-driven Charbroilers

Costs associated with control devices for chain-driven charbroilers were derived from the SCAQMD Staff Report for Proposed Rule 1138 (1997) and San Joaquin Valley Unified Air Pollution Control District Draft Staff Report for Commercial Charbroiling (2001). The District verified and adjusted costs to 2007 dollars. Table 5 presents a summary of the total annual cost for installing and maintaining the equipment and Table 6 presents the cost-effectiveness.

Catalytic Oxidizer

Capital Costs: Manufacturers sell a catalytic oxidizer at a cost ranging from \$1,500 to \$4,700. For this analysis, the capital cost was assumed to be \$9,000 for a new chain-driven charbroiler equipped with a catalytic oxidizer. The cost would essentially be the same if an existing broiler was retrofitted with a catalytic oxidizer. After five years, the catalyst will need to be replaced at a cost of \$4,000. Installation of the equipment was assumed to not exceed \$1,000, although typical installation costs ranges from \$500 to \$1,000.

Operating Costs: Annual O & M costs of cleaning the catalyst are expected to be \$750, which includes the cost from cleaning the exhaust stack once a year. Cost savings associated with less frequent cleaning of the grease traps were not included in this cost estimate. The anticipated lifetime of the catalytic oxidizer is seven to eleven years with proper maintenance.

The total annualized cost of installing a catalytic oxidizer, including O & M, is \$2,028 (see Table 5). Based on the estimates of 0.48 tpd of PM emissions and 0.15 tpd of VOC emissions (Table 3) from chain-driven charbroilers, it is expected that 0.40 tpd of PM and 0.129 tpd of VOC (total of 190 tons per year) emission reductions can be achieved by installing a catalytic oxidizer, assuming an 83% removal efficiency for PM and 86% removal efficiency for VOC. The cost-effectiveness to reduce emissions from all chain-driven charbroilers in the Bay Area is \$5,913 per ton of PM and VOC reduced.

Wet Scrubber

Capital Costs: A wet scrubber unit has a capital cost of \$27,025 that includes an estimated installation cost of \$2,000. The unit contains all the components and accessories to operate at 2,000 cfm, including surfactant feeder, controller, remote start/stop control, re-circulation pump, valves, and exhaust blower.

Operating Costs: Annual O & M costs are anticipated to not exceed \$2,000. O & M includes the energy cost for operating the controller and exhaust blower as well as the monthly expense of purchasing non-foaming surfactants detergent.

The total annualized cost of installing this control, including O & M, is \$5,838. PM removal efficiencies of 90% or higher have been achieved at restaurants in which wet scrubbers were installed as the control device. Based on the estimates of 0.48 tpd of PM emissions, it is expected that 0.43 tpd of PM (total of 157 tons per year) emission reductions can be achieved. The cost-effectiveness to reduce emissions by installing wet scrubber is \$20,599 per ton of PM reduced.

Electrostatic Precipitators

Capital Costs: Manufacturers estimated a cost ranging from \$10,000 to \$40,000 for a single unit electrostatic precipitator including ducting and exhaust fan. For this assessment, a cost of \$32,000 was used assuming a ventilation rate of 2,000 cfm. An additional installation cost of \$2,000 was included.

Operating Costs: Annual O & M cost is anticipated to not exceed \$2,000. The ESP unit itself uses minimal energy, equivalent to a 60 watt light bulb. However, industry representatives have stated that O & M costs will vary depending on the options that are installed in the unit at the time of purchase. For example, restaurant owners may purchase a self-cleaning ESP that automatically water washes the interior of the unit. In this case, the restaurant would have lower maintenance costs, but increased costs from purchasing manufacturer-approved detergents. In addition, restaurant owners may opt for purchasing a second set of plates for the ESP so that it can be used while the first set is washed. Restaurant owners may also purchase optional odor control units that will increase the cost of the unit by at least \$4,000 and the operational cost by at

least \$10,000 per year. For this assessment, the District estimated costs for operating a single unit electrostatic precipitator without an odor control unit where the plates are removed nightly for cleaning.

The total annualized cost of installing this control, including O & M, is \$6,544. An ESP has a tested collection efficiency for PM removal of 90%. Based on the estimates of 0.48 tpd of PM emissions, it is expected that 0.43 tpd of PM (total of 157 tons per year) emission reductions can be achieved. The cost-effectiveness to reduce emissions by installing an ESP is \$23,092 per ton of PM reduced.

Fiber-Bed Filters

Capital Costs: Fiber bed filter system have a capital cost of \$25,000 with an estimated installation cost of \$2,500.

Operating Costs: Annual O & M costs of replacing the filter (\$3.18 per cubic feet per minute flow) and utility costs for operating the equipment are \$7,500.

The total annualized cost of installing this control, including O & M, is \$11,405. The filters are capable of removing 90% of PM emissions. Based on the estimates of 0.48 tpd of PM emissions, it is expected that 0.43 tpd of PM (total of 157 tons per year) emission reductions can be achieved. The cost-effectiveness to reduce emissions by installing fiber-bed filters is \$40,244 per ton of PM reduced.

Thermal or Direct-fired Incineration

Capital Costs: Manufacturers estimated a cost of \$25,000 for the incineration unit plus an additional \$6,350 for the installation.

Operating Costs: The unit requires 26 therms of natural gas per hour to operate. Using a rate of \$0.63 cents per therm and assuming 16 hours of operation for 365 days per year, the annual O & M cost is \$95,659.

The total annualized cost of installing this control including O & M is \$100,111. PM and VOC removal efficiencies range from 95% to 99.9% depending upon the temperature, residence time, and mixing inside the incinerator. Assuming a removal efficiency of 95%, a total PM and VOC emission reduction of 0.60 tpd (216 tons per year) is expected. The cost-effectiveness is approximately \$256,765 per ton of PM and VOC reduced.

Table 5. Annual Cost for Controls on Chain-driven Charbroilers

Control for Chain-driven Charbroiler	Capital Cost (Dollars)	Annualized Capital Cost (Dollars per year)	Annual Recurring O & M Costs (Dollars per year)	Total Annual Cost (Dollars per year over 10 years)
Catalytic Oxidizer	\$9,000	\$1,278	\$750	\$2,028
Wet Scrubber	\$27,025	\$3,838	\$2,000	\$5,838
Electrostatic Precipitators	\$34,000	\$4,828	\$2,000	\$6,828
Fiber Bed Filters	\$27,500	\$3,905	\$7,500	\$11,405
Thermal Incinerator	\$31,350	\$4,452	\$95,659	\$100,111

Table 6. Cost Effectiveness of Potential Controls on Chain-driven Charbroilers

Control for Chain-driven Charbroiler	Total Annual Cost (Dollars per year over 10 years)	Total PM and VOC Emission Reduction (Tons per year)	Number of Chain-Driven Charbroilers	Cost-Effectiveness (Dollars per ton of VOC and PM removed)
Catalytic Oxidizer	\$2,028	190	554	\$5,913
Wet Scrubber	\$5,838	157	554	\$20,599
Electrostatic Precipitators	\$6,828	157	554	\$24,094
Fiber Bed Filters	\$11,405	157	554	\$40,244
Thermal Incinerator	\$100,111	216	554	\$256,765

Under-fired Charbroilers

As described in Section III, the District evaluated the technical feasibility, potential emission reductions, and costs of installing an ESP, thermal incinerator, wet scrubber, or HEPA filter to control particulate matter emissions from under-fired charbroilers. Table 7 presents a summary of the total annual cost for installing and maintaining the equipment, and Table 8 presents the cost-effectiveness.

Electrostatic Precipitators

Capital Costs: Manufacturers provided a range of costs for a single unit electrostatic precipitator (ESP) with ducting and exhaust fan of \$32,000 for a ventilation rate of 2,000 cfm to \$40,152 for a ventilation rate of 5,000 cfm. For

this assessment, a maximum ventilation rate of 3,000 cfm was used. The cost of an ESP that operates at a ventilation rate of 3,000 cfm is \$35,000. Installation costs are site-specific and will vary depending on given local building codes. For a single floor restaurant where the control is located on the roof, the cost of installing the equipment is about \$2,000. However, industry representatives have noted that costs for the control as well as the installation costs may be higher.

Operating Costs: The annual O & M cost is anticipated to not exceed \$2,000. For more information regarding O & M costs for an ESP, see the discussion of electrostatic precipitator operating costs under the heading “Chain-Driven Charbroilers,” above.

The total annualized cost of installing this control, including O & M, is \$7,254. ESPs have a tested collection efficiency for PM removal of 90%. Based on the estimates of 0.48 tpd of PM emissions from cooking hamburgers, it is expected that 0.44 tpd of PM (total of 161 tons per year) emission reductions can be achieved. The cost-effectiveness to reduce emissions by installing ESP is \$24,285 per ton of PM reduced.

For restaurants that cook a variety of meats, the cost effectiveness may be higher for installing and operating an ESP unit. Cooking other types of meat, including chicken, pork, and seafood, produces less PM emissions than cooking hamburgers. As a result, the cost-effectiveness of installing this control may decrease. The District estimates that the cost-effectiveness may decrease to as much as approximately \$41,333 per ton of PM removed, depending on the amount and type of meats that are cooked on an under-fired charbroiler.

HEPA Filters

Capital Costs: HEPA filters have a capital cost of \$35,000 for a 3,000 cfm unit and an estimated installation cost of \$2,000.

Operating Costs: The annual O & M cost is anticipated to not exceed \$3,000. HEPA filter units use a filter module that consists of three filters placed in series. The first filter is called a pre-filter that is fully disposable pleated filter that cost \$6 per filter and must be replaced every four (4) weeks. The second filter is a medium filter that is a fully disposable bag filter that cost approximately \$10 per filter and is replaced every eight (8) weeks. The final filter is a fully disposable 12 inch HEPA filter that costs \$200 per filter and is replaced every six (6) months.

The total annualized cost of installing this control, including O & M, is \$8,254. It is expected that 95% of PM may be captured using this control device. Based on estimate of 0.48 tpd of PM emissions from cooking hamburgers, the PM emission reduction is anticipated to be 0.46 tpd (total of 167 tons per year). The cost-effectiveness to reduce emissions by installing HEPA filters is \$26,640 per ton of

PM reduced. The cost-effectiveness may decrease to as much as \$44,705 if other meats in addition to hamburgers are cooked on the under-fired charbroiler.

Wet Scrubber

Capital Costs: A wet scrubber unit has a capital cost of \$30,452 for a system that operates at 3,000 cfm, and an estimated installation cost of \$6,266. The costs include all components and accessories necessary for the complete operation of the unit.

Operating Costs: The annual O & M cost is anticipated to not exceed \$6,582. This O & M cost estimate includes the energy cost for operating the controller and exhaust blower, as well as the monthly expense of purchasing non-foaming surfactants detergent.

The total annualized cost of installing this control including O & M is \$11,796. Although wet scrubbers have achieved PM removal efficiencies of 90% at restaurants in the South Coast Air Quality Management District, wet scrubbers are not commonly used in restaurants located in the Bay Area. Based on the estimates of 0.48 tpd of PM emissions from hamburgers, it is expected that 0.44 tpd of PM (total of 161 tons per year) emission reductions can be achieved. The cost-effectiveness to reduce emissions by installing a wet scrubber is \$39,491 per ton of PM reduced. The cost-effectiveness may increase to as much as \$67,639 if other meats in addition to hamburgers are cooked on the under-fired charbroiler.

Thermal or Direct-fired Incineration

Capital Costs: Manufacturers estimated a cost of \$25,000 for the incineration unit plus an additional \$6,350 for the installation.

Operating Costs: The unit requires 26 therms of natural gas per hour to operate. Using a rate of \$0.63 cents per therm and assuming 16 hours of operation for 365 days per year, the annual O & M cost is \$95,659.

The total annualized cost of installing this control including O & M is \$100,111. PM and VOC removal efficiencies range from 95% to 99.9% depending upon the temperature, residence time, and mixing inside the incinerator. Assuming a removal efficiency of 95%, a total PM and VOC emission reduction of 0.68 tpd (248 tons per year) is expected from cooking hamburgers. The cost-effectiveness is approximately \$217,580 per ton of PM and VOC reduced. The cost-effectiveness may increase to as much as \$403,375 if other meats in addition to hamburgers are cooked on the under-fired charbroiler.

Table 7. Annual Cost for Controls on Under-Fired Charbroilers

Control for Chain-driven Charbroiler	Capital Cost (Dollars)	Annualized Capital Cost (Dollars per year)	Annual Recurring O & M Costs (Dollars per year)	Total Annual Cost (Dollars per year over 10 years)
Electrostatic Precipitators	\$37,000	\$5,254	\$2,000	\$7,254
HEPA Filters	\$37,000	\$5,254	\$3,000	\$8,254
Wet Scrubber	\$36,718	\$5,214	\$6,582	\$11,796
Thermal Incinerator	\$31,350	\$4,452	\$95,659	\$100,111

Table 8. Cost Effectiveness of Proposed Controls on Under-Fired Charbroilers

Control for Chain-driven Charbroiler	Total Annual Cost (Dollars per year over 10 years)	Total PM and VOC Emission Reduction (Tons per year)	Number of Under-Fired Charbroilers	Cost-Effectiveness (Dollars per ton of VOC and PM removed)
Electrostatic Precipitator	\$7,254	161	539	\$24,285
HEPA Filters	\$8,254	167	539	\$26,640
Wet Scrubber	\$11,796	161	539	\$39,491
Thermal Incinerator	\$100,111	248	539	\$217,580

B. Energy Savings

The District is proposing to require that any restaurant that installs an under-fired charbroiler such that, after the installation, the restaurant has under-fired charbroilers totaling at least 10 square feet in grill surface area, install a listed ventilation hood. This requirement would go into effect two years after rule adoption. Listed hoods are tested against UL Standard 710 that attests to the hood’s efficiency in capturing and containing cooking appliance exhaust. Listed hoods cost approximately \$500 to \$6,000 more than unlisted hoods at the time of purchase, but are allowed to operate at a lower ventilation rate than unlisted hoods. The advantage of the listed hood is that it can be operated in a manner that uses less energy which may, in turn, result in lower energy bills over the lifetime of the hood.

Based on the range of minimum exhaust rates presented in Table 4, a listed hood can operate, on average, at a rate of 187.5 cfm per linear foot of hood length lower than an unlisted hood. For an under-fired charbroiler with 10 square foot grill surface area and 0.5 foot overhang on each side, the lower exhaust rate would equate to a reduction in ventilation rate of 1,125 cfm. At this exhaust rate,

the exhaust fan uses 981 kilowatts less energy per year than if an unlisted hood were installed. Assuming electricity costs of \$0.168 per kilowatt-hour this would result in a cost savings of \$165 per year over the lifetime of the hood. The cost savings does not account for additional savings associated with less cooling and heating of make-up air required to replace the air exhausted by the hood and is thus a conservative estimate. As an example, the “Up Your Stack” web site (www.upyourstack.com), a resource web page dedicated to commercial kitchen ventilation, estimates a savings of \$1.00 to \$3.00 per cubic foot of annual air costs based on installation of unlisted hood. In a 10 foot by 10 foot kitchen with 10 foot ceiling, the restaurant owner might expect a lower energy cost of \$100 to \$300 annually.

In order to incorporate this cost savings into the cost analysis presented in Section VI–A, the incremental additional capital cost of installing a listed hood was included. Because listed hoods may operate at a lower ventilation rate, a smaller duct shaft may be used that lowers the overall construction costs in new restaurant buildings. The \$2,000 incremental capital cost of installing a listed hood was reduced by \$200 to account for a reduction in the necessary duct shaft size and attendant reduction in constructions costs. The final incremental capital cost that was used in this report is \$1,000. The O & M costs were reduced by \$165 to take in to account the annual energy savings realized from operating a listed hood.

Tables 9 and 10 present, respectively, the annual costs and cost-effectiveness associated with each control technology, taking into account the energy savings described above that result from use of a listed hood. These costs are only presented for restaurants that install one or more under-fired charbroilers totaling at least 10 square feet grill surface area.

Table 9. Annual Cost for Installing Listed Hoods with Controls

Control for Chain-driven Charbroiler	Capital Cost (Dollars)	Annualized Capital Cost (Dollars per year)	Annual Recurring O & M Costs (Dollars per year)	Total Annual Cost (Dollars per year over 10 years)
Electrostatic Precipitators	\$38,800	\$5,510	\$1,835	\$7,345
HEPA Filters	\$38,800	\$5,510	\$2,835	\$8,345
Wet Scrubber	\$38,518	\$5,470	\$6,417	\$11,887
Thermal Incinerator	\$33,150	\$4,707	\$95,494	\$100,201

Table 10. Cost Effectiveness of Installing Listed Hoods with Controls

Control for Chain-driven Charbroiler	Total Annual Cost (Dollars per year over 10 years)	Total PM and VOC Emission Reduction (Tons per year)	Number of Under-Fired Charbroilers	Cost-Effectiveness (Dollars per ton of VOC and PM removed)
Electrostatic Precipitator	\$7,231	161	539	\$24,208
HEPA Filters	\$8,231	167	539	\$26,566
Wet Scrubber	\$11,773	161	539	\$39,414
Thermal Incinerator	\$100,088	248	539	\$217,529

C. Incremental Cost Effectiveness

Section 40920.6 of the California Health and Safety Code requires an air district to perform an incremental cost analysis for any proposed Best Available Retrofit Control Technology rule or feasible measure. The air district must: (1) identify one or more control options achieving the emission reduction objectives for the proposed rule, (2) determine the cost effectiveness for each option, and (3) calculate the incremental cost effectiveness for each option. To determine incremental costs, the air district must “calculate the difference in the dollar costs divided by the difference in the emission reduction potentials between each progressively more stringent potential control option as compared to the next less expensive control option.”

To determine incremental costs, the District compared the cost-effectiveness of each control device presented in Table 6 for chain-driven charbroilers and Table 8 for under-fired charbroilers. Table 11 presents a summary of the incremental cost-effectiveness associated with the proposed regulation.

As shown in Table 11, the catalytic oxidizer is the most cost-effective control device for chain-driven charbroiler. The other control technologies have an increased cost-effectiveness that ranges from \$14,686 to \$250,852 over the cost of purchasing and operating a catalytic oxidizer. In addition, the catalytic oxidizer operates without an external energy supply since it uses the heat generated from the cooking process to activate the catalyst. The catalyst also radiates heat back to the charbroiler, and as a result, less energy is required to operate the charbroiler. Although the proposed standard essentially allows the use of any of the control technologies listed in Table 11, the proposed standard is based on the effectiveness of a catalytic oxidizer.

For under-fired charbroilers, ESP and HEPA filters are the most cost-effective control devices for controlling PM emissions. The wet scrubber is also a viable control option to restaurant owners given its proven control efficiencies in other industries. The thermal incinerator has substantially higher costs to operate.

Table 11. Incremental Cost Effectiveness of Proposed Controls on Under-Fired Charbroiler

Type of Charbroiler	Control	Cost-Effectiveness (Dollars per ton of VOC and PM removed)	Incremental Cost Effectiveness
Chain-Driven Charbroiler	Catalytic Oxidizer	\$5,913	\$0.0
	Wet Scrubber	\$20,599	\$14,686
	Electrostatic Precipitator	\$24,094	\$18,181
	Fiber Bed Filters	\$40,244	\$34,331
	Thermal Incinerator	\$256,765	\$250,852
Under-Fired Charbroiler	Electrostatic Precipitator	\$24,285	\$0.0
	HEPA Filters	\$26,640	\$2,355
	Wet Scrubber	\$39,491	\$15,206
	Thermal Incinerator	\$217,580	\$193,295

D. District Staff Impacts

Currently, the District does not regulate emissions from restaurants. Implementing this rule will require District resources from all divisions including enforcement, engineering, source test, and administration. The actual personnel involved will likely involve an air quality inspector assigned to restaurants; an air quality technician to coordinate development of the web-based registration system, review registrations, and answers questions from the public; Source Test engineers to review the manufacturer’s certification and testing procedures; a program analyst to design the web-based registration and maintain the registration database; and an accountant to process registration and annual fees.

In the first year after adoption, the proposal calls for all owners and operators of chain-driven charbroilers to install a catalytic oxidizer or equivalent control device approved for use under the rule. There are approximately 554 chain-driven charbroilers currently operating in the Bay Area. The District anticipates that an inspection should require no more than 130 minutes for each restaurant. Given the number of restaurants, inspection time would be about 1,200 hours in the first year which is equivalent to 0.60 full-time employees (FTE), at a cost of \$128,000 for an air quality inspector.

This proposal is also the first District rule to offer web-based registration. In order to develop this system, total of 500 hours, or 0.25 FTE, of a program analyst and air quality engineer are required to develop the registration form, maintain the registration database, review registrations, and respond to public inquiries. Both a program analyst position and an engineer costs \$53,500 for combined 0.25 FTE. Because many catalytic oxidizers have already been approved by other air districts, the District is anticipating that no more than 80 hours (0.05 FTE) would be required to review the manufacturer’s certification and testing protocol. A Principal Engineer’s time costs \$13,000 at 0.05 FTE.

New installations of under-fired charbroilers totaling at least ten square feet of grill surface area would be subject to the proposal, starting two years after the rule is adopted. In five years, all restaurants with under-fired charbroilers totaling at least ten square feet of grill surface area would be required to install a control device. There are currently 489 restaurants in the Bay Area that have under-fired charbroilers totaling at least 10 square feet of grill surface area. Inspections are anticipated to require no more than 1,060 hours per year or 0.53 FTE, costing \$113,420. To maintain the web-based registration, the District estimates that 0.13 FTE of an engineer will be required at a cost of \$27,300. A Principal Engineer will be required to review the source test data provided by the manufacturer for each control device submitted to the District for approval under the rule. The District estimates that 720 hours will be required to review 30 certifications at a cost of 0.36 FTE (\$94,320).

The District is anticipated to incur a cost of approximately 1.0 FTE in the first five years of implementing this regulation based on the estimation presented above. To recover costs, the cost of administrating the regulation corresponds to a registration fee of \$475 and annual recurring fee of \$135. The fee schedule for restaurants is proposed to be contained in Regulation 3 under Schedule R.

E. Socioeconomic Impacts

Section 40728.5 of the Health and Safety Code requires an air district to assess the socioeconomic impacts of the adoption, amendment, or repeal of a rule if the rule is one that “will significantly affect air quality or emissions limitations.” Applied Economic Development, Berkeley, California, has prepared a socioeconomic analysis. The analysis concludes that the affected restaurants should be able to absorb the costs of compliance with the proposed rule without significant economic dislocation or loss of jobs. The socioeconomic analysis is attached as Appendix B.

VII. ENVIRONMENTAL IMPACTS

Pursuant to the California Environmental Quality Act, the District has had an initial study for the proposed amendments prepared by Environmental Audit, Inc. The initial study concludes that there are no potential significant adverse environmental impacts associated with the proposed amendments. A negative declaration is proposed for adoption by the District Board of Directors. The initial study and negative declaration is to be circulated for public comment during the period from April 2, 2007 to April 23, 2007.

VIII. REGULATORY IMPACTS

Section 40727.2 of the Health and Safety Code requires an air district, in adopting, amending, or repealing an air district regulation, to identify existing federal and district air pollution control requirements for the equipment or source type affected by the proposed change in district rules. The district must then note any differences between these existing requirements and the requirements imposed by the proposed change.

Adoption of this rule would not conflict with any existing federal or District requirement. Under the federal air pollution requirements, there is no rule that limits emissions from restaurants. The District also does not have any rules that are applicable to restaurants except those of general applicability such as Regulation 6: Particulate Matter and Visible Emissions, and Regulation 7: Odorous Substances.

IX. RULE DEVELOPMENT PROCESS

The District staff has undertaken a comprehensive public outreach program to involve all stakeholders in developing this proposal, including individual restaurant owners, hood manufacturers, restaurant trade organizations and industry representatives, county health departments, and vendors and installers of commercial kitchen appliances.

The District started the rule development process in January 2005. At that time, the District contacted the SCAQMD to receive copies of all research documents and staff reports that were produced in support of SCAQMD Regulation 1138. The District then contacted the health departments of all the counties in the District in March 2005 and December 2005, to request an inventory of currently permitted restaurants and to apprise the counties of the District's intent to consider restaurant controls. The District held two meetings with county health officials, one on January 19, 2006, and another on July 28, 2006. The purpose of the meetings was to discuss the current emission inventory, solicit suggestions for ways to control emissions, and development of a cooperative enforcement strategy between the District and the various counties.

The District also initiated contact with the Golden Gate Restaurant Association in February 2006 to invite their participation in the rule development process. The District met with representatives of the Golden Gate Restaurant Association on February 24, 2006, and had follow-on telephone discussions as the rule evolved.

District contacted the PG&E Food Service Technology Center in San Ramon, California in May 2006 regarding emission factors for specific types of commercial cooking equipment. After conducting a site walk of their facility, the District has been in continuous discussions with representatives from the Food

Service Technology Center in developing this proposal. The Center represents the interests of the restaurant industry and kitchen ventilation hood manufacturers. The Center is also a clearing house for commercial kitchen equipment performance and has expertise in commercial kitchen ventilation and building energy efficiency.

The District also verified the emission inventory by conducting source tests on four restaurants in the Bay Area. The District tested two restaurants that operated either a chain-driven charbroiler or under-fired charbroiler that exhausted their emissions through a control device. For comparison purposes, the District also collected particulate matter samples from two restaurants that operated either a chain-driven charbroiler or under-fired charbroiler without any control device. The emission estimates were used to determine emission standards in the proposed rule.

In October 2006, in advance of public workshops held in November 2006, District staff published the draft regulation and provided a workshop report explaining the proposed regulation. The first draft of Regulation 6, Rule 2, and the workshop report were posted on the District web site and e-mailed to stakeholders on October 16, 2006. Simultaneous to the posting on the District web site, the District sent out approximately 17,000 postcards to individual restaurant owners, hood vendors, and installers informing them of the rule and the then-upcoming public workshop. The District also developed a rule summary fact sheet that was translated to Chinese and Spanish and made available on the District web site.

Once the regulation was posted, the District received and responded to more than 20 telephone inquiries and e-mails regarding specific topics and issues about the draft rule and workshop report.

The District held four (4) public workshops on November 14 and 15, 2006, in San Francisco, San Jose, Oakland, and Vallejo to solicit comments from public, members of county health departments, industry organizations, and other interested parties on the proposed rule. A total of approximately 20 people attended these workshops, with most of the interested parties being hood manufacturers, a restaurant organization, and independent local restaurants. The District received written comments from hood manufacturers that were identical to comments provided by the restaurant organization.

Overall, the public comments supported the standard for chain-driven charbroilers. Input from the first workshop raised concerns about the technical feasibility and costs of installing high efficiency filters, a modest control, in all restaurants that operate a Type I hood. There was disagreement within the industry regarding the effectiveness of high efficiency filters. The trade organization did not support the installation of controls on restaurants that utilize low emission cooking equipment. Another comment suggested that the rule

would result in more energy consumption and additional greenhouse gas emissions.

After the November public workshops, the District continued discussions with hood manufacturers and trade organizations regarding ways to revise the proposal. These interactions lead directly to developing a second draft of Regulation 6, Rule 2 to address emissions from only charbroilers. A supplement to the workshop report was generated to summarize the differences from the original proposal. The District presented the revised proposal before the American Society of Heating, Refrigeration, and Air-Conditioning Engineers (ASHRAE) Technical Committee 5.10 Kitchen Ventilation on January 27, 2007. The second workshop notice and revised rule were posted on the District website and e-mailed to all interested parties. The second workshop was held on March 6, 2007.

Input from the second workshop was focused primarily on removing certain requirements intended to promote energy efficiency and on the cost-effectiveness of control technologies. One set of comments requested that the District lower the effective grill size from 10 square feet to six (6) square feet and include a provision to regulate emissions from griddles. Staff used input received from the second workshop to develop the final draft of the proposed regulation that is published as a companion to this Staff Report for comments on April 2, 2007. The proposed rule is scheduled for a public hearing by the Board of Directors on May 16, 2007.

A Public Hearing Notice for proposed Regulation 6, Rule 2 was issued on April 16, 2007. As of May 7, no public comments had been received. The draft rule contains several minor changes made after the Public Hearing Notice was issued. Two changes to sections 6-2-401 and 402 align the effective dates for registration of chain-driven charbroilers and new under-fired charbroilers with the dates that the respective standards for each equipment type go into affect. These changes are non-substantive and do not require a continuation of the public hearing. Also, recordkeeping requirements for new under-fired charbroilers and associated control equipment in section 6-2-502 have been changed to reflect the public hearing dates. These are non-substantive and do not require a continuation of the public hearing. The date changes are indicated by strikethroughs and underlines in the attached draft.

The District will continue to follow the development of cost effective control technologies for existing under-fired charbroilers and provide technical updates to members of the Board of Directors.

X. FUTURE RESEARCH

Emissions from restaurant operations currently make up over 6% of all PM₁₀ emissions in the Bay Area. This rule is an important first step in achieving

emission reductions from a source category that has not been regulated in the past. District staff is committed to working with industry representatives and to provide the Board of Directors with periodic updates on the development of control technology for under-fired charbroilers. This rule is an opportunity for hood manufacturers, abatement equipment manufacturers, and cooking equipment manufacturers and vendors to work together in developing new and adapting existing technologies.

Catalytic oxidizers, a highly cost-effective and virtually maintenance-free control device for chain-driven charbroilers were developed in response to the SCAQMD Regulation 1138, adopted in 1997. Because the SCAQMD rule did not regulate under-fired charbroilers, there has been limited research and development directed at control technologies for these cooking devices. A regulatory mandate will help to create a market for under-fired charbroiler abatement technology. For this reason, the compliance date for existing under-fired charbroilers is set five years in the future, to allow time for development of better, more cost-effective technologies.

The proposed rule is only the first step in an ongoing commitment to reduce emissions from commercial cooking appliances. As additional data becomes available, District staff will be evaluating possible controls on other types of cooking equipment, including griddles, woks, and wood-fired cooking appliances. There are over 7,000 griddles that operate in the Bay Area that, collectively, are responsible for about 14% of commercial cooking emissions. Studies conducted on wok cooking indicate woks emit a number of toxic compounds from volatilization and partial combustion of the cooking oils. Combustion of wood in wood-fired cooking appliances produces the same emissions as wood stoves and fireplaces and occurs much more frequently than residential wood burning. District investigation into possible controls on these and other types of cooking equipment will be part of efforts to reduce PM emissions in order to achieve state PM standards and (if necessary) the new federal 24-hour PM standard.

Staff is interested in further research in this field to support further development of data on emissions from griddles, woks, wood-fired cooking appliances, and other types of cooking appliances. The District will closely monitor research which could be used to refine the emission inventory, assess risk factors, and identify whether additional rule making should be conducted.

In addition to reducing PM and VOC emissions, this proposed rule also may reduce restaurant energy costs and reduce the emissions of greenhouse gases in the Bay Area. The Foodservice Consultants Society International (FCSI) of North America has a "Best Practice" design and specification guideline for restaurant owners that provides practical ways to reduce heating and cooling costs. Staff will evaluate whether there are additional standards that may be adopted to improve performance in commercial kitchen ventilation systems, and thus, reduce energy use, energy costs, and greenhouse gas emissions.

XI. CONCLUSION

Pursuant to Section 40727 of the California Health and Safety Code, the proposed rule must meet findings of necessity, authority, clarity, consistency, non-duplication, and reference. The proposed regulation is:

- Necessary to protect public health by reducing ozone precursors and particulate matter emissions to meet the requirements of Senate Bill 656 Particulate Matter Implementation Schedule and further study commitment of the Bay Area 2005 Ozone Strategy;
- Authorized by California Health and Safety Code Sections 40000, 40001, 40702, and 40725 through 40728;
- Clear, in that the new regulation specifically delineates the affected industry, compliance options, and administrative requirements for industry subject to this rule, so that its meaning can be easily understood by the persons directly affected by it;
- Consistent with other District rules, and not in conflict with state or federal law;
- Non-duplicative of other statutes, rules, or regulations; and
- Implementing, interpreting and making specific the provisions of the California Health and Safety Code sections 40000 and 40702.

The proposed rule has met all legal noticing requirements, has been discussed with the regulated community and other interested parties, and reflects the input and comments of many affected and interested parties. District staff recommends adoption of proposed Regulation 6, Rule 2: Commercial Cooking Equipment and adoption of the CEQA Negative Declaration.

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APPENDIX A EMISSIONS CALCULATIONS

The following sections describe the method used to quantify PM and VOC emissions from broilers for the nine Bay Area counties.

A. Estimated Number of Restaurants with Broilers

To obtain an accurate estimate of the total number of commercial restaurants in the District, staff contacted the health and environmental departments from each of the nine Bay Area counties: Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Solano, and Sonoma. County health agencies maintain lists of restaurants and other facilities in order to inspect and regulate food handling practices within the county's jurisdiction. Table A-1 presents the results of the survey. Restaurants situated in the City of Berkeley are under the jurisdiction of the local health department and not regulated by the Alameda County health department. The number of restaurants in the City of Berkeley is included in Table A-1.

Table A-1. Commercial Restaurants by County

County/City	Total Number of Restaurants	Adjusted Total for Commercial Restaurants
Alameda County	3,700	2,651
Contra Costa County	1,989	1,425
City of Berkeley	468	336
Marin County	607	435
Napa County	345	248
San Francisco County	3,997	2,863
San Mateo County	2,018	1,446
Santa Clara County	4,933	3,534
Solano County*	1,146	821
Sonoma County*	1,504	1,078
TOTAL	20,707	14,838

Note: * - The number of restaurants for Solano and Sonoma counties was adjusted based on the percentage of the total population within the District jurisdiction (71.2% for Solano County and 87.7% for Sonoma County).

The initial estimate of 20,707 restaurants in the District includes establishments that do not cook (i.e., delicatessens, ice cream parlors, juice bars, etc), institutional eating facilities (i.e., school cafeterias, lodges, retirement homes), and restaurants that have gone out of business. Because the restaurant names and addresses were not requested as part of the survey, the exact number of facilities that would normally be excluded as "noncommercial" restaurants could not be determined. Pacific Environmental Services (PES) conducted a similar study for the South Coast Air Quality Management District (SCAQMD) in 1999 to

determine the number of commercial restaurants under its jurisdiction and found that on average, approximately 77% of the facilities classified as restaurants were commercial facilities that served food to the general public. The study was based on a restaurant survey conducted in the City of Pasadena, the City of Vernon, and Riverside County where 19.4, 16.7 and 23.9 percent, respectively, of the facilities were not commercial restaurants. In addition, PES also determined that approximately 6.97% of the restaurants have gone out of business since the health department lists were compiled.

Using the results of the PES study, a factor of 0.7163 (0.77 for commercial restaurants multiplied by 0.9303 for open business) was then applied to the total number of restaurants in the District to exclude those facilities from the survey that did not serve food, were not open to the public, or have gone out of business. Rounding all estimates to the next whole number, the final number of commercial restaurants in the District was projected at 14,838.

The PES study further surveyed the type of equipment that was used in the cooking operations of the commercial restaurants. Based on the SCAQMD report, the majority of emissions (87% of PM and 82% of VOC) from cooking operations are generated from chain-driven and under-fired broilers.

Chain-driven broilers consist of conveyORIZED belts that carry meat to a flame area that broils the meat on the top and bottom simultaneously. Under-fired broilers have three components: a heating source, high temperature radiant surface, and slotted grill. The grill holds the meat while it is cooked from radiant heat. The study found that the fraction of facilities in the SCAQMD that operated chain-driven and under-fired broilers based on 95th percent confidence limits (in parenthesis) was:

Under-fired broilers:	0.330 (0.29 – 0.37), or 33%
Chain-driven broilers:	0.0373 (0.0212 – 0.0534), or 4%

A state-wide study conducted by Public Research Institute (PRI) in 2001 for the California Air Resources Board and the California Environmental Protection Agency found that approximately 8% of the restaurants had chain-driven broilers while 45% of the restaurants had under-fired broilers. The PRI study determined a higher average percentage of broilers per restaurant than the PES study mainly due to the fact that the PRI study focused on restaurants thought to conduct more broiling activities than other types of restaurants. Given this bias, District staff considered the PES study results more reflective of the likely representation of broilers in the Bay Area.

Multiplying by the fraction of broilers determined in the PES study, the estimated number of broilers in the District is (rounding up to the nearest whole number):

Under-fired broilers:	4,897
Chain-driven broilers:	554

B. Amount and Type of Meat Cooked on Broilers

The PES study asked the restaurants to report their average weekly use of hamburger, steaks, poultry (with and without skin), pork and seafood, based on the type of cooking equipment used. The average food throughput for chain-driven broiler and under-fired broiler restaurants is presented in Table A-2.

Table A-2. Average Pounds of Meat Cooked Per Year (PES Study)

Type of Food	Chain-driven Broiler (lbs/year)	Under-Fired Broiler (lbs/year)
Hamburger	108,846	7,795
Steaks	9,443	6,474
Poultry with Skin	5,200	15,226
Poultry without Skin	18,413	6,027
Pork	6,932	1,404
Seafood	7,457	5,673
TOTAL	156,291	42,599

In a state-wide phone survey conducted by PRI, the average amount of meat cooked per year varied significantly from the results of the PES study. Table 3 presents the results of the PRI study.

Table A-3. Average Pounds of Meat Cooked Per Year (PRI Survey)

Type of Food	Chain-driven Broiler (lbs/year)	Under-Fired Broiler (lbs/year)
Hamburger	41,486	14,049
Steaks	12,281	9,363
Poultry with Skin	7,651	7,485
Poultry without Skin	13,842	9,311
Pork	2,997	7,699
Seafood	6,179	7,416
TOTAL	84,436	55,323

Although both studies had comparable a number of responders (543 for PES and 655 for PRI), the major differences between the PES and PRI studies were: (1) the PRI study used computer-assisted telephone interviews instead of PES's use of a self-administered (mail-out) questionnaire; (2) PRI used a more detailed restaurant classification scheme and not all categories of restaurants were surveyed; (3) the PRI study focused on restaurants most likely to use broilers; and (4) PRI surveyed restaurants throughout California while PES investigated restaurants within SCAQMD. Overall, PES had a low response rate with only 12.9% of the restaurants responding to the survey while PRI had a response rate of 41%. Given that PES did not receive any responses from the 210 national chain restaurants in its study area, it is unknown if this would significantly impact

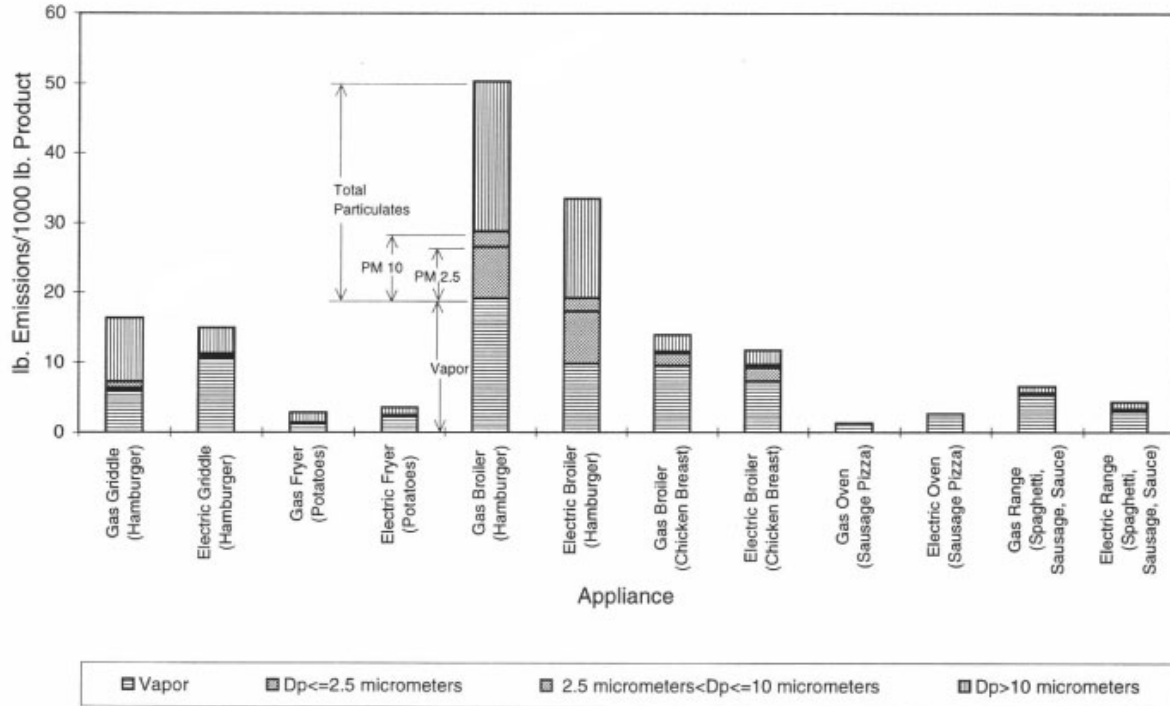
their estimated amount of hamburger cooked on chain-driven broilers. (A majority of this type of equipment is utilized by fast food restaurants). It should be noted that PES did receive responses from local chain and fast food restaurants that were not considered “national” chains. PRI received responses from 157 fast food restaurants, which equated to 23.9% of the responders. Based on the broader geographic coverage of the responders and the inclusion of cooking practices from fast food restaurants, District staff considered the results of the PRI study (Table A-3) a more representative estimate of the amount of meat cooked on broilers per year.

C. Emission Factors from Broilers

SCAQMD contracted the University of California Riverside, College of Engineering – Center for Environmental Research and Technology (CE-CERT) in 1997 to develop a test method that estimates emission factors for PM₁₀ and VOC released from various restaurant cooking operations. The resulting study (the “CE-CERT study”) included tests conducted for hamburger cooked on under-fired and chain-driven broilers. A subsequent study sponsored by ASHRAE, published in 1999 by Gerstler, et al., from the University of Minnesota, Department of Mechanical Engineering (the “Gerstler study”) characterized the effluent emissions from various grease producing cooking processes. The study measured grease particulate and vapor emissions and real time particulate size distributions within the exhaust duct using a sample probe and following US EPA Method 5.

Figure A-1 shows the average grease distribution emitted from each appliance as determined by the Gerstler study. The actual composition of the emitted products is complex and it is difficult to determine the portion of the emissions that are particulates. That is because condensable vapors such as water and grease are present in vapor as well as liquid form. Generally, condensables are vapors in gaseous form at entry into the ventilation hood, but may condense into particulate form (i.e., liquid or solid state) in the duct works, on exiting the exhaust fan, or in the atmosphere. The CE-CERT study included the emissions from condensable vapors into its total particulate emission factor. Because these vapors behave as gases, they cannot be removed through mechanical filtration. Particulates greater than 10 microns in size are generally not emitted into the atmosphere, the CE-CERT study confirmed. Standard baffle filters and the exhaust fan prevent the release of particles greater than 10 microns in size. Based on the emission factors from the Gerstler study, it is estimated that Type 1 hoods (hoods with fire suppression built into the exhaust system, required for all cooking appliances in restaurants) capture 1,573 tons per year (4.3 tons per day) of PM greater than 10 micron in size from the nine Bay Area counties. For this report, emissions were estimated for particulates less than PM₁₀ and for VOC.

Figure A-1. Average Grease Distribution by Appliance



Source: Gerstler et al, 1999

A total of 50 lbs. of emissions is generated from a gas broiler for every 1000 lbs. of hamburger cooked. Based on the Gerstler study, approximately 39% (19 lbs. for every 1000 lbs. of meat cooked) of the total grease emitted from cooking hamburgers on an under-fired broiler is in the form of condensable vapors. Of the remaining 61% (31 lbs) of grease emissions, 42% (21.5 lbs) of the particulates are greater than 10 microns and 15% (7.3 lbs) of the emissions are less than 2.5 microns in size. Significantly lower emissions are generated from cooking chicken on under-fired broilers due to the very low fat content. The Gerstler study measured only 14 lbs of total grease emissions for every 1000 lbs. of chicken breast cooked. Approximately 69% of the emissions from chicken are in the form of condensable vapors while the remaining 31% are particulates. Table A-4 presents a summary of the emissions factors produced from the Gerstler study.

Table A-4. PM Emission Factors for Under-Fired Broilers (lbs/1000 lbs of food cooked)

Type of Food	Under-Fired Broiler	
	PM >10 micron	PM < 10 micron
Hamburger	21.5	9.5
Chicken breast	2.5	2.0

Source: Gerstler et al, 1999

The emission factors for both types of meats from the Gerstler study compared well with previous emission factors determined by the CE-CERT study. It should be noted that the impinger methods used by both studies may create positive mass artifacts that result in higher emissions rates (Hildemann et al., 1999).

A study conducted in 2003 by MacDonald et al., from the Desert Research Institute (DRI) (the “DRI study”), used the same cooking equipment as at CE-CERT to estimate emissions of particulate matter less than 2.5 microns. The DRI study collected samples from a stainless steel dilution tube, rather than an impinger, because: (1) doing so allowed a broader range of sampling media and methods to be employed; and (2) the conditions experienced by the sample more closely match those experienced by the exhaust gas leaving the vent as they mix with the atmosphere (England et al., 2001). Hildemann et al., (1989) found that run-to-run variability is typically large using traditional impinger test methods due to the presence of random non-combustion generated particles that lead to artifact formation in the liquid impingers. Artifacts result in a large positive bias in the condensable particle measurement using traditional methods (England et al., 2001). Unfortunately, the DRI study only quantified emissions for particulates less than 2.5 micron and a portion of condensable vapors that solidified in the dilution tube. For this reason, the DRI emission factors are not directly comparable to either those of the CE-CERT study or the Gerstler study.

Thus, District staff used the emission factors from the Gerstler study to estimate emissions of PM₁₀ from under-fired charbroilers. Because the Gerstler study did not test chain-driven charbroilers or determine emission factors for VOC, District staff used emission factors developed in the CE-CERT study to estimate PM and VOC emissions from chain-driven charbroilers, and VOC emissions from under-fired charbroilers. Hamburger emissions estimated using chain-driven broilers were applied to all meats cooked on chain-driven broilers, because other types of meat were not tested on chain-driven broilers. Under-fired emission factors for chicken breast were used to estimate emissions from pork and chicken with and without skin cooked on under-fired broilers. District staff used emission factors for seafood developed in the CE-CERT study, because the Gerstler study did not develop any such emission factors. The final emission factors used in this study are presented in Table A-5.

Table A-5. Emission Factors (lbs/1000 lbs of food cooked)

Type of Food	Chain-driven Broiler		Under-Fired Broiler	
	PM10 (b)	VOC (b)	PM10 (a)	VOC (b)
Hamburger	7.42	2.27	9.5	3.94
Steaks	7.42 (c)	2.27 (c)	9.5 (c)	3.94 (c)
Poultry with Skin	7.42 (c)	2.27 (c)	2	1.82
Poultry without Skin	7.42 (c)	2.27 (c)	2 (d)	1.82 (d)

Type of Food	Chain-driven Broiler		Under-Fired Broiler	
	PM10 (b)	VOC (b)	PM10 (a)	VOC (b)
Pork	7.42 (c)	2.27 (c)	2 (d)	1.82 (d)
Seafood	7.42 (c)	2.27 (c)	3.3 (b)	0.38

Note:

a: Emission factors are taken from Gerstler et al study.

b: Emission factors are taken from CE-CERT study.

c: Emissions factors for hamburger were applied to all other meats since these meats were not tested on this equipment.

d: Emission factors for chicken breast were applied to chicken with/without skin, and pork

D. Emissions from Broilers

The emission inventory for chain-driven and under-fired broilers is estimated by multiplying the number of broilers by the average amount of meat cooked and the emission rates using the following relationship:

$$EM = \frac{EF \times E_{all} \times M}{2000 \text{ lbs/ton}}$$

Where:

EM = Emission inventory from broilers (tons/year);

EF = Emission factor (lbs of PM10 or VOC/1000 lbs of meat cooked);

E_{all} = Total number of broilers in District (unitless); and

M = Average pounds per year of meat cooked on one broiler.

Table A-6 presents the final estimated emissions of PM₁₀ and VOC for broilers.

Table A-6. Emissions from Broilers

Type of Food	Chain-driven Broiler		Under-Fired Broiler	
	PM10 (tons/yr)	VOC (tons/yr)	PM10 (tons/yr)	VOC (tons/yr)
Hamburger	85.3	26.1	327	135
Steaks	25.2	7.72	286	118
Poultry with Skin	15.7	4.81	37.5	34.1
Poultry without Skin	28.5	8.70	67.8	61.7
Pork	6.16	1.88	14.7	13.3
Seafood	12.7	3.89	49.9	5.75
Total (tons/year)	174	53	782	369
Total (tons/day)	0.48	0.15	2.1	1.0

SOCIOECONOMIC
ANALYSIS
PROPOSED RULE

REGULATION 6, RULE 2:
EMSSIONS FROM
COMMERCIAL COOKING EQUIPMENT

March 21, 2007

Prepared for
Bay Area Air Quality
Management District

Prepared by

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1. EXECUTIVE SUMMARY

INTRODUCTION

This report describes the socioeconomic impacts of proposed Regulation 6, Rule 2 that, if implemented, will help the Bay Area Air Quality Management District (District) to achieve and maintain state ambient air quality standards for ozone and particulate matter. Following this summary, the report summarizes the proposed rule requirements and describes the methodology for the socioeconomic analysis. The report also describes the economic characteristics of sites affected by the proposed rule along with the socioeconomic impacts of the proposed rule.

SUMMARY

The proposed rule affects Bay Area restaurants. Specifically, it affects full-service restaurants and limited-service restaurants. A total of 1,093 restaurants are expected to be impacted. Of these 1,093, 586 are expected to be full-service and 507 are expected to be limited-service. Combined, the impacted restaurants generate sales of approximately \$905.6 million annually. Profits for these businesses are estimated at nearly \$143.2 million.

For each type of affected charbroiler, there are at least three control technologies that represent less than ten percent of profits for impacted sites. The available control technologies range in cost between \$2,028 and \$100,111 annually. Most of the control options cost less than \$10,000 per year.

The analysis concludes that the costs associated with compliance will not result in significant economic dislocation or job losses. The total annual cost of compliance is far below the 10 percent of profits threshold for significant impact. Additionally, it is believed that small businesses will not be disproportionately impacted by the proposed rule.

2. DESCRIPTION OF THE PROPOSED RULE

CURRENT STATUS OF THE RULE

The District does not currently have a rule which directly regulates emissions from commercial cooking equipment in restaurants. Senate Bill 656 relating to particulate matter implementation schedules (SB 656) requires that all air districts in California adopt an implementation schedule that prioritizes appropriate measures for reducing PM emissions. Under Further Study Measure 3 (FS 3)¹, the District proposes to examine the feasibility of reducing ozone precursor emissions from restaurants. The District is considering Regulation 6, Rule 2 as a means to reduce restaurant emissions of PM and VOCs in the Bay Area. This rule will fulfill a commitment proposed in the District's SB 656 Particulate Matter Implementation Schedule and is consistent with FS 3.

PROPOSED RULE AMENDMENTS

With consideration to comments the District has received, Regulation 6, Rule 2, proposes the following requirements for commercial cooking equipment in restaurants:

- Require owners and/or operators of chain-driven charbroilers to install a catalytic oxidizer within one year of rule adoption. An alternative control device that has been certified by the manufacturer to reduce emissions to no more than 0.74 lbs of PM10 and 0.23 lbs of organic compounds per 1,000 lbs of meat cooked may be substituted for a catalytic oxidizer.
- Require that a control technology be installed on all existing under-fired charbroilers with an aggregate grill surface of at least 10 square feet. The control technology must be certified by the manufacturer to emit no more

¹ Further Study Measure 3 was part of the District's 2005 Ozone Strategy, directed towards attainment of the State's one-hour ozone standard.

than 1.9 lbs of PM10 per 1,000 lbs of meat cooked and must be installed within five years of rule adoption.

- Require owners and/or operators of newly installed under-fired charbroilers, installed two years after rule adoption, to exhaust the cooking emissions through a control device. This will apply to units with an aggregate cooking surface of ten square feet or greater.
- Require owners and/or operators of applicable newly installed under-fired charbroilers to vent their emissions through a listed ventilation hood.
- Owners and/or operators of chain-driven charbroilers and applicable under-fired charbroilers will be required to register their equipment with the District.
- Owners and/or operators of applicable new and existing under-fired charbroilers will be required to retain records for up to five years on the date of installation of the control, the contract in which the control was purchased, and any maintenance and repairs performed on the control device. The repair logs will contain the date, time, and description of the work that was performed.
- Owners and/or operators of chain-driven charbroilers will be required to maintain records on the date of installation and any maintenance and repairs performed on the control device.

EMISSIONS REDUCTIONS

BAAQMD estimates that the proposed rule will reduce combined PM and VOC emissions from chain-driven charbroilers by 0.53 tons per day (tpd). Chain-driven charbroilers in the Bay Area currently account for 0.63 tpd of combined PM and VOC emissions. For under-fired charbroilers, the proposed rule will reduce PM emissions by between 0.25 and 0.44 tpd depending upon the type of meat cooked.

3. IMPACT OF PROPOSED RULE AMENDMENTS

This section of the socioeconomic analysis describes demographic and economic trends in the San Francisco Bay Area (Bay Area) region. Following an overview of the methodology for the socioeconomic analysis, the first part of this section compares the Bay Area against California and provides a context for understanding demographic and economic changes that have occurred within the Bay Area between 1995 and 2005. After an overview of Bay Area industries, we focus on the following industries:

- NAICS 722110, Full-service Restaurants²
- NAICS 722211, Limited-service Restaurants³

Then the impacts on businesses within these industries of the proposed changes to Regulation 6, Rule 2 concerning emissions from commercial cooking equipment are analyzed. For the purposes of this report, the Bay Area region is defined as Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma Counties.

METHODOLOGY

The socioeconomic analysis of the proposed rule concerning emissions from commercial cooking equipment involves the use of information provided directly by BAAQMD. In addition, it utilizes secondary data used to describe the industries affected by the proposed rule. Based on information provided by BAAQMD staff, ADE determined that the impacts would affect full-service and limited-service restaurants.

² NAICS 722110: Full-service Restaurants consists of restaurants patrons order and are served while seated and pay after eating.

³ NAICS 722211: Limited-service Restaurants consists of restaurants where patrons select items and pay before eating (e.g. fast food restaurants, pizza parlors, etc.).

With this information we began to prepare economic descriptions of the industry groups of which the impacted sites are a part, as well as to analyze data on the number of jobs, sales levels, the typical profit ratios and other economic indicators for the Bay Area businesses. ADE also reviewed and summarized documents available to the public such as annual reports for publicly traded companies.

With the annual reports and data from the US Economic Census, ADE was able to estimate revenues and profit ratios for the sites impacted by the proposed rule. In calculating aggregate revenues generated by full- and limited-service restaurants in the Bay, ADE estimated average annual revenues using the 2002 US Economic Census.⁴ Using annual reports for publicly traded restaurant operators and other publicly available data, ADE calculated ratios of profit per dollar of sales for the businesses on which the analysis focused. To estimate employment, ADE used employment data from the California Employment Development Department.

The result of the socioeconomic analysis shows what proportion of profit the compliance costs represent. Based on a given threshold of significance, ADE discusses in the report whether the affected sites are likely to reduce jobs as a means of recouping the cost of compliance or as a result of reducing business operations. To the extent that such job losses appear likely, the indirect multiplier effects of the job losses area estimated using a regional IMPLAN input-output model.

REGIONAL DEMOGRAPHIC TRENDS

The Bay Area experienced moderate population growth from 1995 to 2005. Between 1995 and 2000, the nine-county region increased by nearly 6.7 percent, from 6.3 million in 1995 to almost 6.8 million in 2000. From 1995 to 2005, the population increase was from 6.3 million to close to 7.1 million for an increase of approximately 10.4 percent. At the same time, California had population growth of almost 14 percent.

⁴ The average revenue estimates were calculated per Bay Area establishment and inflated to current dollars.

Within the Bay Area, the greatest percentage increase occurred in Contra Costa County. From 1995 to 2005 Contra Costa increased its population by nearly 15 percent. All other Bay Area counties had population increases slower than the State. The smallest percentage increase occurred in Marin County where population grew less than 5.5 percent from 1995 to 2005. Table 1 shows the population changes that have occurred in the Bay Area and California from 1995 to 2005.

Table 1
Population Growth: San Francisco Bay Area

	Population			Percent Change		
	1995	2000	2005	95-00	00-05	95-00
California	31,617,000	33,871,648	36,728,196	6.7%	7.8%	13.9%
Bay Area	6,329,800	6,783,760	7,067,403	6.7%	4.0%	10.4%
Alameda County	1,332,900	1,443,741	1,500,228	7.7%	3.8%	11.2%
Contra Costa County	869,200	948,816	1,019,101	8.4%	6.9%	14.7%
Marin County	238,100	247,289	251,820	3.7%	1.8%	5.4%
Napa County	116,800	124,279	132,990	6.0%	6.6%	12.2%
San Francisco County	741,600	776,733	792,952	4.5%	2.0%	6.5%
San Mateo County	673,300	707,161	719,655	4.8%	1.7%	6.4%
Santa Clara County	1,568,200	1,682,585	1,752,653	6.8%	4.0%	10.5%
Solano County	368,000	394,542	420,307	6.7%	6.1%	12.4%
Sonoma County	421,700	458,614	477,697	8.0%	4.0%	11.7%

Source: Applied Development Economics, based on household population estimates from The California Department of Finance

REGIONAL ECONOMIC TRENDS

The Bay Area is one of the world's greatest regional economies. It benefits from pre-eminent knowledge-based industries, with competitive strength flowing from an unmatched culture of entrepreneurship, world-leading research institutions, and some of the nation's best educated and most highly skilled workforce. With these remarkable advantages, it has led through innovation in a wide range of research and industrial fields.

Many of the Bay Area's most prominent industries are manufacturing related. From Intel to PowerBar, Bay Area manufacturers are often high profile companies with world-renowned recognition. From small to large, Bay Area industry has been dynamic, creating wealth and jobs in both the export sector and local serving industries.

The economic base is typically comprised of export industries within the manufacturing, minerals-resource extraction, and agricultural sectors. There are also the “local support industries” such as retail or service sectors, the progress of which is a function of the economic base and demographic changes, and more so the latter than the former. As population increases in a given area, demand for services – such as realtors, teachers, healthcare – increases, as does demand for basic retail items like groceries, gas for commuting, or clothing at the local apparel shops.

As of 2005, the professional and business services sector was the largest employer in the region, at 529,100 jobs or 17 percent of all private and public sector jobs. This is a change from 1995 when professional and business services accounted for 16 percent of all Bay Area employment. During the same period, professional and business services increased 14 percent. The next largest industry in the Bay Area is public service, or government, with 468,100 jobs. In 2005, government accounted for 15 percent of all Bay Area employment. From 1995 to 2005, government had one of the lowest growth rates of all industries at less than 6 percent. Two other industries came close to manufacturing in total employment. Retail trade and education & health care both made up 11 percent of total employment and had only a few thousand jobs less than manufacturing. Unlike manufacturing, both retail trade and education & health care had significant job gains from 1995 to 2005. All other industries made up less than manufacturing in total employment in 2005. Table 2 shows Bay Area industry sectors and their trends from 1995 to 2005.

Table 2
Employment Profile of the San Francisco Bay Area, 1995-2005

Industry	1995	2000	2005	% of Total Employment in 2005	% Change 1995 - 2000	% Change 2000 - 2005
Farm	21,100	25,800	20,000	1%	22%	-22%
Natural Resources & Mining	2,920	4,600	4,560	0%	58%	-1%
Construction	105,200	165,700	164,100	5%	58%	-1%
Manufacturing	428,800	484,500	351,300	11%	13%	-27%
Wholesale Trade	121,700	138,800	122,900	4%	14%	-11%
Retail Trade	304,900	350,600	336,600	11%	15%	-4%
Transportation, Warehousing and Utilities	116,600	125,600	100,400	3%	8%	-20%
Information	92,100	151,600	112,300	4%	65%	-26%
Financial Activities	189,300	198,500	213,000	7%	5%	7%
Professional and Business Services	464,400	670,300	529,100	17%	44%	-21%
Educational and Health Services	299,300	334,300	361,600	11%	12%	8%
Leisure and Hospitality	260,400	297,700	311,000	10%	14%	4%
Other Services	100,700	110,800	109,900	3%	10%	-1%
Government	442,100	465,200	468,100	15%	5%	1%
Total	2,949,520	3,524,000	3,204,860	100%	19%	-9%

Source: Applied Development Economics from data supplied by the Labor Market Information Division of the California Employment Development Department

DESCRIPTION OF AFFECTED INDUSTRIES

The proposed to Regulation 6, Rule 2 affect industries in the following NAICS codes:

- NAICS 722110, Full-service Restaurants
- NAICS 722211, Limited-service Restaurants

What follows is a description of these industries, along with their economic trends in the Bay Area, and it provides a comparison between 2001 and 2005. Data in Table 3 below are for all sources, not just the major sites that have been focused on in the Bay Area. As shown in Table 3, Bay Area employment in both full- and limited-service restaurants increased over the four-year period from 2001 to 2005, growing 2.49 and 1.04 percent respectively. This is consistent with the general trend in Accommodation and Food Service employment during the same period. Statewide, however, employment in full- and limited-service restaurants increased 9.75 and 4.37 percent respectively with a 7.96 percent increase in overall Accommodation and Food Service employment. In short, while employment in Bay Area full-

and limited-service restaurants increased between 2001 and 2005, this growth was below the statewide average.

Table 3
Employment Trends: Industries Affected by Proposed Amendments, 2001 - 2005

	2001	2005	Change from 2001 to 2005	% Change from 2001 to 2005
Bay Area Region				
Accommodation and food services	363,124	369,563	6,439	1.77%
Full-service restaurants	151,309	155,083	3,774	2.49%
Limited-service restaurants	96,192	97,189	997	1.04%
California				
Accommodation and food services	1,613,174	1,741,515	128,341	7.96%
Full-service restaurants	636,491	698,535	62,044	9.75%
Limited-service restaurants	525,485	548,428	22,943	4.37%

Source: Calculations by Applied Development Economics; Based upon California Employment Development Department, Quarterly Census of Employment and Wages, BAAQMD

Table 4 identifies the economic characteristics of the specific sites affected by the proposed rule to Regulation 6, Rule 2. This table shows that the affected full- and limited-service restaurants employ an estimated 18,483 workers. These 1,093 sites have an estimated aggregate payroll of more than \$312.2 million, and estimated revenues of nearly \$905.6 million. In calculating aggregate revenues generated by impacted businesses, the consultant utilized the 2002 US Economic Census to estimate an average revenue figure per establishment, expressed in current dollars.

Table 4
Economic Characteristics of Impacted Businesses in the San Francisco Bay Area

	No. of Businesses	Estimated Sales	Estimated Employment	Estimated Payroll
Using Chain-driven Charbroilers				
Full-service Restaurants	310	\$279,873,400	5,790	\$106,866,128
Limited-service Restaurants	244	\$181,253,791	3,629	\$53,067,592
Subtotal	554	\$461,127,192	9,419	\$159,933,720
Using Under-fired Charbroilers				
Full-service Restaurants	275	\$248,460,379	5,140	\$94,871,462
Limited-service Restaurants	264	\$195,988,192	3,924	\$57,381,538
Subtotal	539	\$444,448,571	9,064	\$152,253,000
Total Full-service Restaurants	586	\$528,333,779	10,931	\$201,737,590
Total Limited-service Restaurants	507	\$377,241,984	7,552	\$110,449,130
Total Impacted Restaurants	1,093	\$905,575,763	18,483	\$312,186,720

Source: U.S. Economic Census 2002; California Employment Development Department Quarterly Census of Employment and Wages; Calculations by Applied Development Economics.

Table 4 also estimates the number of businesses using chain-driven charbroilers versus under-fired. These estimates assume that each restaurant has either a chain-driven or an under-fired charbroiler, which is consistent with the PES study that District staff used to estimate the number of chain-driven versus under-fired charbroilers present in the Bay Area. The consultant then used a weighted average to estimate number of full- and limited-service restaurants that utilize each type of charbroiler.

As Table 5 shows, approximately seven percent of the Bay Area’s full-service restaurants will be impacted by the proposed rule. Nearly eight percent of the Bay Area’s limited-service restaurants will be impacted. The impacted sites represent 1.56 percent of the State’s full-service restaurants and 1.38 percent of the State’s limited-service restaurants.

Table 5
Employment at Impacted Sites Relative to Bay Area and California

	No. of Businesses	Estimated Employment	Impacted Sites as a % of Bay Area	Impacted Sites as a % of California
			Total	Total
Full-service restaurants	586	10,931	7.05%	1.56%
Limited-service restaurants	507	7,552	7.77%	1.38%
Total	1,093	18,483		

Source: U.S. Economic Census 2002; California Employment Development Department Quarterly Census of Employment and Wages; Calculations by Applied Development Economics.

COMPLIANCE COSTS

This section discusses the compliance costs associated with the proposed rule. The compliance costs include both capital and operating costs; and, are amortized over ten years. For both types of charbroilers, as well as installation of listed hoods with controls, multiple compliance options are available. It is believed that compliance will require selection of only one available option.

Table 6 details the annualized costs associated with the compliance options available for chain-driven charbroilers. Amortized over ten years, three of the five options available

cost less than \$10,000 annually. One of them costs less than \$12,000; one only slightly more than \$2,000.

Table 6
Annualized Control Costs (Chain-Driven Charbroilers)

Control	Annualized Capital Cost	Annual Recurring O&M Costs	Total Annual Cost
Catalytic Oxidizer	\$1,278	\$750	\$2,028
Fiber Bed Filters	\$3,905	\$7,500	\$11,405
Thermal Incinerator	\$4,452	\$95,659	\$100,111
Electrostatic Precipitators	\$4,828	\$2,000	\$6,828
Wet Scrubber	\$3,838	\$2,000	\$5,838

Source: BAAQMD

Table 7 illustrates the annualized costs for the available compliance options for under-fired charbroilers. Of the four options available, two cost less than \$10,000 per year when amortized over ten years. Of the two options that cost more than \$10,000, one of them is still less than \$12,000.

Table 7
Annualized Control Cost (Under-Fired Charbroiler)

Control	Annualized Capital Cost	Annual Recurring O&M Costs	Total Annual Cost
Electrostatic Precipitators	\$5,254	\$2,000	\$7,254
Thermal Incinerator	\$4,452	\$95,659	\$100,111
Wet Scrubber	\$5,214	\$6,582	\$11,796
HEPA Filters	\$5,254	\$3,000	\$8,254

Source: BAAQMD

This section concludes with Table 8, which shows the annualized costs for the various options associated with installing a listed hood with controls on new under-fired charbroilers. As with the control options available for existing under-fired charbroilers (Table 7), two of the four options cost less than \$10,000 per year when amortized over ten years. One of the remaining two options costs less than \$12,000.

Table 8
Annual Cost to Install a Listed Hood with Controls

Control	Annualized Capital Cost	Annual Recurring O&M Costs	Total Annual Cost
Electrostatic Precipitators	\$5,396	\$1,835	\$7,231
Thermal Incinerator	\$4,595	\$95,494	\$100,089
Wet Scrubber	\$5,356	\$6,417	\$11,773

HEPA Filter	\$5,396	\$2,835	\$8,231
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Source: BAAQMD

BUSINESS RESPONSE TO COMPLIANCE COSTS

Sites impacted by the proposed emissions from commercial cooking equipment rule may respond in a variety of ways when faced with new regulatory costs. These responses may range from simply absorbing the costs and accepting a lower rate of return to shutting down the business operation all together. Businesses may also seek to pass the costs on to their customers in the form of higher prices, although, in the restaurant industry, price increases typically have a significant impact on demand for meals. More likely, they may renew efforts to increase productivity and reduce costs elsewhere in their operation in order to recoup the regulatory costs and maintain profit levels.

IMPACT ANALYSIS

The businesses' responses to increased compliance costs hinge on the effect of the costs on the profits generated at the affected sites. An impact on estimated profits greater than 10 percent implies that the source would experience serious economic effects because of the compliance cost. When compliance costs are greater than 10 percent of estimated profits, companies typically respond to the impact by laying off some workers, reducing hours of operation, or, in the most drastic case, possibly closing restaurants.

Using the compliance cost estimates developed for the proposed emissions from commercial cooking equipment rule, ADE calculated the socioeconomic impacts of the proposed actions. In calculating impacts on profits, ADE used annual reports of publicly-traded companies that operate full- and limited-service restaurants. Based on this information, we estimate that the impacted businesses generated a combined profit of \$143.2 million on \$905.6 million in revenues.

Table 9 details the projected impacts of compliance with the proposed emissions reductions on the profits of affected sites, which have chain-driven charbroilers. Though one available option, thermal incinerators, would have a significant impact, four of the five represent less than ten percent of profits for impacted sites. It is expected that impacted businesses will not opt for thermal incinerators, since there are four available technologies whose costs represent less than ten percent of profits. Therefore, compliance with the proposed rule for chain-driven charbroilers is not expected to have a significant socioeconomic impact.

Table 9
Impact of Estimated Compliance Cost on Estimated Profits at Bay Area Restaurants (Chain-driven Charbroilers)

Control	No. of Businesses	Estimated Profits	Annual Compliance Cost	Cost as % of Profits
Catalytic Oxidizer	554	\$72,547,905	\$1,123,512	1.55%
Fiber Bed Filters	554	\$72,547,905	\$6,318,370	8.71%
Thermal Incinerator	554	\$72,547,905	\$55,461,494	76.45%
Electrostatic Precipitators	554	\$72,547,905	\$3,782,712	5.21%
Wet Scrubber	554	\$72,547,905	\$3,234,252	4.46%

Source: ADE calculations, based upon 2002 US Economic Census; CA Employment Development Department, Quarterly Census of Employment and Wages; SEC 10k Filings

Note: Assumes a 14.4 percent profit ratio for full-service restaurants and a 16.1 percent ratio for limited-service

Table 10 discusses the projected impacts of compliance with the proposed emissions reductions on the profits of affected sites, which have existing under-fired charbroilers. For these pieces of equipment, there are four available control technologies from which impacted business may choose. While one of them, thermal incinerators, represents a greater than ten percent impact on profits, three of them do not. Compliance with the proposed rule for existing under-fired charbroilers is not expected to have a significant socioeconomic impact. Since there are three options which account for less than ten percent of profits, it is expected that affected businesses will opt for one of these control technologies.

Table 10
Impact of Estimated Compliance Cost on Estimated Profits at Bay Area Restaurants (Under-fired Charbroilers)

Control	No. of Businesses	Estimated Profits	Annual Compliance Cost	Cost as % of Profits
Electrostatic Precipitators	539	\$70,646,275	3,909,906	5.53%
Thermal Incinerator	539	\$70,646,275	53,959,829	76.38%
Wet Scrubber	539	\$70,646,275	6,358,044	9.00%
HEPA Filters	539	\$70,646,275	4,448,906	6.30%

Source: ADE calculations, based upon 2002 US Economic Census; CA Employment Development Department, Quarterly Census of Employment and Wages; SEC 10k Filings

Note: Assumes a 14.4 percent profit ratio for full-service restaurants and a 16.1 percent ratio for limited-service

Table 11 evaluates the projected impacts of compliance with the proposed emissions reductions on the profits of affected sites, which install listed hoods with control technologies when they install new under-fired charbroilers. As with retrofitting existing under-fired charbroilers with available control technologies, there are four options for listed hoods. Once again, thermal incinerators represent a greater than ten percent profit impact. However, there are three control technologies, which do not. It is expected that affected businesses will opt for one of the three control technologies which do not represent a greater than ten percent profit impact. Therefore, compliance with the proposed rule for installation of new under-fired charbroilers is not expected to have a significant socioeconomic impact.

Table 11
Impact of Estimated Compliance Cost on Estimated Profits at Bay Area Restaurants (Listed Hoods)

Control	No. of Businesses	Estimated Profits	Annual Compliance Cost	Cost as % of Profits
Electrostatic Precipitators	1,093	\$143,194,180	7,903,483	5.52%
Thermal Incinerator	1,093	\$143,194,180	109,397,277	76.40%
Wet Scrubber	1,093	\$143,194,180	12,867,889	8.99%
HEPA Filter	1,093	\$143,194,180	8,996,483	6.28%

Source: ADE calculations, based upon 2002 US Economic Census; CA Employment Development Department, Quarterly Census of Employment and Wages; SEC 10k Filings

Note: Assumes a 14.4 percent profit ratio for full-service restaurants and a 16.1 percent ratio for limited-service

IMPACT ON SMALL BUSINESS

DEFINITION OF SMALL BUSINESS PER CALIFORNIA STATUTE

For purposes of qualifying small businesses for bid preferences on state contracts and other benefits, the State of California defines small businesses in the following manner:

- Must be independently owned and operated;
- Cannot be dominant in its field of operation;
- Must have its principal office located in California
- Must have its owners (or officers in the case of a corporation) domiciled in California; and,
- Together with its affiliates, be either:
 - A business with 100 or fewer employees, and an average gross receipts of \$10 million or less over the previous tax years, or
 - A manufacturer with 100 or fewer employees

SMALL BUSINESS IMPACT ANALYSIS

Individual restaurant establishments typically qualify as small businesses in terms of employment. In fact, in the Bay Area, nearly all restaurants have less than 100 employees. The majority, 81 percent, have fewer than 20 employees. Table 12 illustrates the percent distribution Bay Area restaurants in terms of employment.

Table 12
Distribution of Bay Area
Restaurants by Employment Size

No. of Employees	% of Restaurants
1 to 4	29%
5 to 9	21%
10 to 19	31%
20 to 49	14%
50 to 99	4%
100 to 249	1%
250 to 499	0%
500 to 999	0%
TOTAL	100%

Source: ADE Calculations, based on ReferenceUSA

Table 13
Distribution of Bay Area Restaurants by
Annual Sales

Annual Sales Volume	% of Restaurants
> \$500,000	71%
\$500,000 to \$1,000,000	13%
\$1,000,000 to \$2,500,000	12%
\$2,500,000 to \$5,000,000	3%
\$5,000,000 to \$10,000,000	1%
\$10,000,000 to \$20,000,000	0%
\$20,000,000 to \$50,000,000	0%
\$100,000,000 to \$500,000,000	0%
TOTAL	100%

Source: ADE Calculations, based on ReferenceUSA

In order to qualify as a California small business, a restaurant will not only need to have less than 100 employees, but will also have to generate less than \$10 million in revenue. Based upon the data in Table 13, nearly all Bay Area restaurants generate less than \$10 million annually. Since most Bay Area restaurants also have less than 100 employees, it is assumed that most of them qualify as California small businesses.

Though most of the Bay Area's restaurants qualify as California small businesses, it is believed that they will not be disproportionately impacted by the proposed rule. The restaurant industry includes a mix of independent restaurants and national chains. In some cases, multiple franchised chain establishments are under common ownership. The data in Tables 12 and 13 do not necessarily reflect common ownership of multiple restaurants.

Also, it is believed that affected under-fired charbroilers are primarily used by larger restaurants. The proposed rule for under-fired charbroilers will only affect businesses which utilize units with an aggregate cooking surface of ten square feet or larger. Only eleven percent of the total under-fired charbroilers in the Bay Area are believed to be larger than ten square feet. Comments received by the District through the public workshops indicate that the mid-size chain restaurants do not use under-fired charbroilers of this size. Also, through the public workshop process, the district has not identified

any smaller restaurants that use affected under-fired charbroilers.

Finally, it is assumed that chain-driven charbroilers will only be used by higher volume restaurant operations. Chain-driven charbroilers allow restaurants to cook larger volumes of meat in shorter periods of time compared to other pieces of cooking equipment, such as griddles, grill tops, and ranges, which are not covered by this rule. It is believed that lower volume restaurants will exclusively use cooking equipment which is not covered by this rule. Therefore, it is believed that this rule will only affect the higher volume restaurant operations. In the event that a small business is utilizing a charbroiler covered by this proposed rule, Table 14 evaluates the revenue levels at which the compliance costs have a significant impact. For each type of charbroiler covered by the rule, there is at least one option available to businesses in each annual sales volume range⁵ that does not represent a significant impact.

Table 14
Thresholds of Significance (Annual Revenue)

Control	Annual Compliance Cost	Profit Threshold	Annual Revenue Threshold
Chain-driven Charbroilers			
Catalytic Oxidizer	\$2,028	\$20,280	\$125,998
Fiber Bed Filters	\$11,405	\$114,050	\$708,581
Thermal Incinerator	\$100,111	\$1,001,110	\$6,219,792
Electrotatic Precipitators	\$6,828	\$68,280	\$424,217
Wet Scrubber	\$5,838	\$58,380	\$362,709
Under-fired Charbroilers			
Electrostatic Precipitators	\$7,254	\$72,540	\$450,683
Thermal Incinerator	\$100,111	\$1,001,110	\$6,219,792
Wet Scrubber	\$11,796	\$117,960	\$732,873
HEPA Filters	\$8,254	\$82,540	\$512,812
Listed Hood with Controls			
Electrostatic Precipitators	\$7,231	\$72,310	\$449,254
Thermal Incinerator	\$100,089	\$1,000,110	\$6,218,425
Wet Scrubber	\$11,773	\$117,730	\$731,444
HEPA Filter	\$8,231	\$82,310	\$511,383

Source: ADE calculations, based upon BAAQMD

Note: Assumes an average 16.1 percent profit ratio

⁵ As listed in Table 13

**Initial Study/Negative Declaration for the
Bay Area Air Quality Management District Regulation 6, Rule 2:
Commercial Cooking Equipment**

Prepared for:

Bay Area Air Quality Management District
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San Francisco, CA 94109
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March 2007

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Chapter 2

Description of the Proposed Rule

Background

The Bay Area Air Quality Management District (District) is proposing adoption of Regulation 6, Rule 2 (Rule 6-2): Commercial Cooking Equipment. This proposed rule would control air pollution from charbroilers used in commercial restaurants. The District proposes adoption of Regulation 6, Rule 2 to fulfill a commitment proposed in its Senate Bill (SB) 656 Particulate Matter Implementation Schedule, and in connection with Further Study Measure (FS) 3 in the District's 2005 Ozone Strategy, which proposes evaluation of a rule to control emissions from commercial charbroilers.

Currently, no District rule directly regulates emissions from restaurants although restaurants vent substantial amounts of particulate matter (PM) and volatile organic compounds (VOCs) into the atmosphere. Restaurants, cafeterias, and other food establishments are exempt from obtaining a permit to operate under the District's Regulation 2, Rule 1. Nevertheless, restaurants must comply with District's regulations of general applicability, such as Regulation 6: *Particular Matter and Visible Emissions*, and Regulation 7: *Odorous Substances*.

Proposed Regulation 6, Rule 2 would regulate two types of charbroilers: chain-driven and under-fired. A chain-driven (conveyorized) charbroiler is a semi-enclosed broiler designed to move food mechanically on a grated grill through the device as the food cooks. Food cooks quickly, because chain-driven charbroilers have burners located both above and below the grill. Chain-driven charbroilers are most common in fast food restaurants.

In an under-fired charbroiler, the heat source is positioned at or below the level of the grated grill. Designs of under-fired charbroilers vary widely. Some under-fired broilers use charcoal or wood for fuel, but usually, the broilers are fueled by gas or electricity. In gas under-fired charbroilers, a radiant surface, such as a bed of ceramic briquettes or a metal shield, placed above the burners diffuses heat from the burners. The heating elements of electric charbroilers are often interwoven with, or sheathed inside, the grill. Under-fired charbroilers are common in fine dining and casual restaurants.

Charbroilers produce air pollutants through incomplete combustion of grease and meat additives, such as tenderizers and marinade. The air contaminants are released when grease and meat additives fall onto the heat source, radiant surface, or hot plate, or when grease flares in the drip tray or bubbles at the surface.

The smoke and vapors generated from the process contain VOC and PM that consist of aldehydes, organic acids, alcohol, nitrogen and sulfur compounds, and polycyclic

aromatic hydrocarbons (PAHs). Every day in the Bay Area, cooking operations collectively (commercial and non-commercial) emit an estimated 3.35 tons of PM and 1.32 tons of VOC. VOC reacts with other compounds in the atmosphere to form ground-level ozone, commonly called smog. PM consists of airborne particles. PM can be emitted directly and also can be formed in the atmosphere through chemical reactions between other pollutants, including VOC. Cooking emissions include fine particles that are equal to or less than 10 microns in diameter, commonly referred to as PM₁₀. PM₁₀ generated by cooking appliances passes through the ventilation system and is exhausted into the atmosphere.

Both VOC and PM₁₀ present public health risks. Ozone produced from chemical reactions involving VOC may damage lung tissues and the respiratory tract. Once inhaled, PM₁₀ may become lodged in the respiratory tract and lead to wheezing, nose and throat irritation, bronchitis, and lung damage.

In order to determine the emissions from restaurant cooking, the District reviewed several studies sponsored by the South Coast Air Quality Management District and the California Air Resources Board (CARB) to determine the percentage of restaurants that use charbroilers, the amount and type of meat cooked on charbroilers, and the amount of PM₁₀ and VOC produced from meat cooked on charbroilers. The District relied on these research studies, and on information provided by the health department of each of the nine Bay Area counties, to estimate the amount of PM₁₀ and VOC emitted from restaurant charbroilers in the Bay Area. The District estimates that there are approximately 14,838 restaurants in the Bay Area, 4,897 of which operate under-fired charbroilers while 554 restaurants operate chain-driven charbroilers. The estimated emissions of VOC and PM₁₀ by type of appliance are shown in Table 2-1.

Table 2-1. Emissions from Charbroilers in the Bay Area

Type of Food	Chain-driven Broiler		Under-Fired Broiler	
	PM10 (tons/day)	VOC (tons/day)	PM10 (tons/day)	VOC (tons/day)
Hamburger	0.23	0.072	0.90	0.37
Steaks	0.069	0.021	0.78	0.32
Poultry with Skin	0.043	0.013	0.10	0.093
Poultry without Skin	0.078	0.024	0.19	0.17
Pork	0.017	0.0052	0.040	0.036
Seafood	0.035	0.011	0.14	0.016
Total Emissions (tons/day)	0.48	0.15	2.1	1.0
Total Emissions (tons/year)	174	53	782	369

In addition to VOC and PM emissions, cooking operations also produce carbon dioxide (CO₂), a gas contributing to climate change. The District estimates that the average CO₂ emissions for cooking activities per restaurant are approximately 25,000 pounds annually based on operation of the cooking appliances and associated ventilation equipment.

Objectives

The objective of Rule 6-2 is to reduce PM₁₀ and VOC emissions from commercial cooking equipment in order to reduce particulate matter and ozone levels in the Bay Area. The Bay Area is not in attainment with the State particulate matter and ozone standards, so further reductions in emissions of PM and ozone precursors are needed.

The Bay Area attains the federal annual PM₁₀ (particulate matter of 10 microns or less in diameter) and federal annual PM_{2.5} (particulate matter of 2.5 microns or less in diameter) standards, but is not in attainment of the California annual PM₁₀ or PM_{2.5} or the California 24-hour PM₁₀ standard. The Bay Area is unclassified for the federal 24-hour PM₁₀ or new PM_{2.5} standard.

The BAAQMD is not required to produce an attainment plan for particulate matter. However, under the requirements of Senate Bill 656 (SB 656, Sher), adopted in 2003, the District is required to develop a Particulate Matter Implementation Schedule in order to make progress toward attaining state and federal PM standards. The proposed Rule 6-2 was included in the District's PM Implementation Schedule as one of the measures that the BAAQMD could adopt to reduce particulate matter.

The U.S. Environmental Protection Agency (U.S. EPA) has set primary national ambient air quality standards for ozone and other air pollutants to define the levels considered safe for human health. The California Air Resources Board (CARB) has also set California air quality standards. The Bay Area is a non-attainment area for the state one-hour standard and new federal eight-hour standard, and as of yet unclassified for the new California eight-hour ozone standard. Under State law, non-attainment areas must prepare plans showing how they will attain the state standard. The 2005 Ozone Strategy is the most recent planning document for the State one-hour ozone standard. Because the Bay Area is a marginal non-attainment area for the national eight-hour standard, the least severe non-attainment classification, the BAAQMD is not required to prepare an attainment plan for the national standard.

The 2005 Ozone Strategy includes measures to reduce emissions of the pollutants that form ozone, i.e., nitrogen oxides and volatile organic compounds. These measures may be proposals to adopt new regulations or amendments to existing regulations. The 2005 Ozone Strategy also includes further study measures. Further study measures require additional analysis before the District can determine whether to proceed with rulemaking or implementation. Further study measures proposed examining potential control of emissions from commercial charbroilers.

Proposed Rule

The District is proposing Regulation 6, Rule 2 to achieve the maximum feasible PM₁₀ and VOC reduction produced from commercial charbroilers to reduce particulate matter and ground level ozone in the Bay Area.

Chain-Driven Charbroilers: Proposed Regulation 6, Rule 2 requires that, within one year of adoption of the rule, all chain-driven charbroilers in the District be equipped and operated with a District-approved catalytic oxidizer or other certified control. In the alternative, the proposed rule allows a restaurant operator the flexibility to install an alternative control device, provided the device has been approved by the District for use under the rule and certified by the manufacturer to reduce emissions to no more than 0.74 pounds (lbs.) of PM₁₀ and 0.23 lbs. of organic compounds per 1,000 lbs. of meat cooked. Before a restaurant operator may install and operate an alternative control, the manufacturer of the control is required to perform a laboratory test, in accordance with specific procedures prescribed in the rule, to determine the ability of the control to meet the emission standards the rule requires.

New Under-Fired Charbroilers: The proposed standard calls for any owner or operator who, starting two years after adoption of this rule, installs any under-fired charbroiler in a restaurant such that the restaurant's under-fired charbroilers, taken together, have a total grill surface area of at least 10 square feet, to exhaust charbroiler emissions through a District-approved control device certified by the manufacturer to limit charbroiler emissions to no more than 1.9 pounds (lbs.) of PM₁₀ per 1,000 lbs. of meat cooked. Owners of an existing restaurant who choose to install one or more additional under-fired charbroiler(s) in the restaurant and thereby become subject to the rule will have to install an approved control device. Alternatively, the restaurant owner may elect to install cooking equipment other than an under-fired charbroiler, such as a clamshell griddle or over-fired charbroiler, that emits much less PM than an under-fired charbroiler, and consequently, is not subject to the regulation.

Owners and operators of new installations subject to the rule will also be required to vent their emissions through listed ventilation hood that has been tested against, and meets the standards of Underwriters Laboratory (UL) Standard 710. This provision is anticipated to result in a significant cost savings to owners and operators given that approximately 28% of a restaurant's energy usage is for heating, cooling, and ventilation. A well designed hood system that is equipped with a UL 710 listed hood can reduce the volume of air needed for ventilation by almost 30%. This directly correlates to a reduction in energy usage, lower energy bills, and reduction in greenhouse gas emissions.

Existing Under-Fired Charbroilers: Starting five years after rule adoption, the proposed rule requires all restaurants with under-fired charbroilers with an aggregate grill surface area of at least 10 square feet to install a control technology approved by the District and certified by the control device manufacturer to emit no more than 1.9 lbs. of PM₁₀ per 1,000 lbs. of meat cooked. The extended implementation date for this standard is designed to allow time to advance the development of emerging control technologies or adapt existing technologies to be suitable for existing restaurants.

Administrative Requirements: All operators of chain-driven charbroilers and under-fired charbroilers with a grill surface area of at least 10 square feet will be required to register with the District each charbroiler and any emission control device operated with the charbroiler, as specified in the proposed regulation. The District will implement a

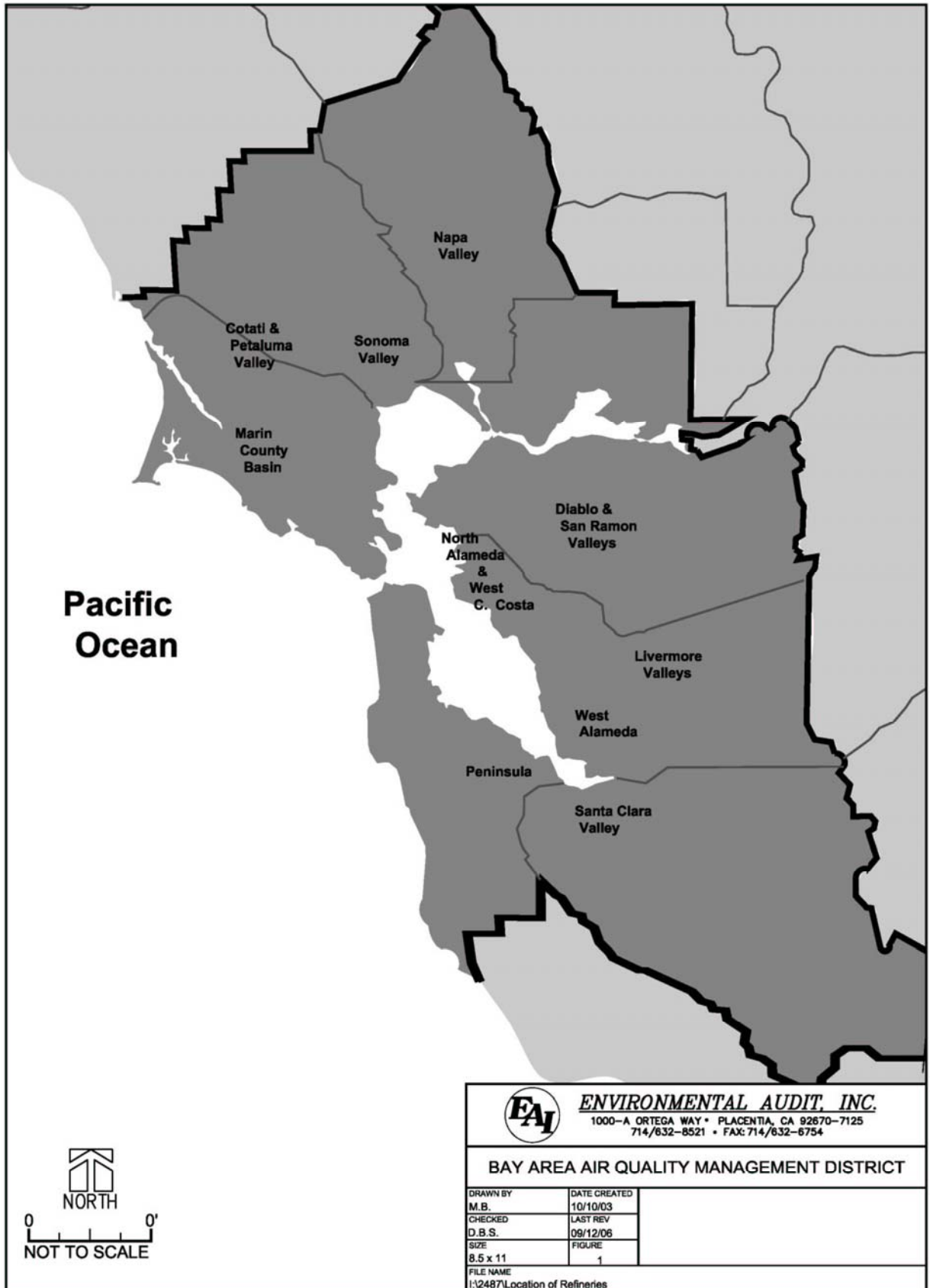
web-based registration system to simplify the registration process. Controls that have already been approved for use in the District will be listed on the District web site. Restaurant owners will be assessed an initial registration fee of \$475 and recurring annual fee of \$135 to recover the District's costs of administering and enforcing the proposed rule. The proposed rule also has a recordkeeping provision that requires owners and operators to record the date of installation of, and any maintenance and repairs performed on, the control device. The repair logs will contain the date, time, and description of the work that was performed. The owner or operator must keep the records for at least five years. The purpose of this recordkeeping requirement is to ensure that the control is operated in accordance with the manufacturer's specifications.

Affected Area

The proposed rule amendments would apply to restaurants within the BAAQMD jurisdiction. The BAAQMD jurisdiction includes all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma counties (approximately 5,600 square miles). The San Francisco Bay Area is characterized by a large, shallow basin surrounded by coastal mountain ranges tapering into sheltered inland valleys. The combined climatic and topographic factors result in increased potential for the accumulation of air pollutants in the inland valleys and reduced potential for buildup of air pollutants along the coast. The Basin is bounded by the Pacific Ocean to the west and includes complex terrain consisting of coastal mountain ranges, inland valleys, and bays.

The facilities affected by the proposed rule amendments are located within the jurisdiction of the Bay Area Air Quality Management District (see Figure 1).

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Chapter 3

Environmental Checklist**ENVIRONMENTAL CHECKLIST FORM**

- 1. Project Title:** Bay Area Air Quality Management District (BAAQMD) Proposed Regulation 6, Rule 2: Commercial Cooking Equipment.
- 2. Lead Agency Name and Address:** Bay Area Air Quality Management District
939 Ellis Street
San Francisco, California 94109
- 3. Contact Person and Phone Number:** Virginia Lau, Planning, Rules and Research Division
415/749-4696 or vlau@baaqmd.gov
- 4. Project Location:** The proposed rule applies to the area within the jurisdiction of the Bay Area Air Quality Management District, which encompasses all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma Counties.
- 5. Project Sponsor's Name and Address:** Bay Area Air Quality Management District
939 Ellis Street
San Francisco, California 94109
- 6. General Plan Designation:** The proposed rule applies to facilities with commercial cooking equipment that are usually located in commercial areas.
- 7. Zoning** The proposed rule applies to facilities with commercial cooking equipment that are usually located in commercially zoned areas.
- 8. Description of Project** See "Background" in Chapter 2.
- 9. Surrounding Land Uses and Setting** See "Affected Area" in Chapter 2.
- 10. Other Public Agencies Whose Approval Is Required** None

Environmental Factors Potentially Affected:

The environmental factors checked below would potentially be affected by this Project (i.e., the project would involve one impact that is a “Potentially Significant Impact”), as indicated by the checklist on the following pages.

- | | | |
|--|---|---|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agriculture Resources | <input type="checkbox"/> Air Quality |
| <input type="checkbox"/> Biological Resources | <input type="checkbox"/> Cultural Resources | <input type="checkbox"/> Geology/Soils |
| <input type="checkbox"/> Hazards & Hazardous Materials | <input type="checkbox"/> Hydrology/Water Quality | <input type="checkbox"/> Land Use/Planning |
| <input type="checkbox"/> Mineral Resources | <input type="checkbox"/> Noise | <input type="checkbox"/> Population/Housing |
| <input type="checkbox"/> Public Services | <input type="checkbox"/> Recreation | <input type="checkbox"/> Transportation/Traffic |
| <input type="checkbox"/> Utilities/Service Systems | <input type="checkbox"/> Mandatory Findings of Significance | |

Determination:

On the basis of this initial evaluation:

- I find the proposed project COULD NOT have a significant effect on the environment, and that a NEGATIVE DECLARATION will be prepared.
- I find that although the proposed project could have a significant effect on the environment, there will not be significant effects in this case because revisions to the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- I find that the proposed project MAY have an impact on the environment that is "potentially significant" or "potentially significant unless mitigated" but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION, pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature

Date

Printed Name

For

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less-than-Significant Impact	No Impact
--	--------------------------------	---	------------------------------	-----------

I. AESTHETICS.

Would the project:

- | | | | | |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Have a substantial adverse effect on a scenic vista? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings along a scenic highway? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Substantially degrade the existing visual character or quality of the site and its surroundings? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Setting

The BAAQMD covers all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma Counties. The area of coverage is vast (about 5,600 square miles), so that land uses vary greatly and include commercial, industrial, residential, agricultural, and open space uses

Many of the facilities with commercial cooking equipment affected by the proposed rule are located in commercial and areas throughout the Bay Area.

Regulatory Background

Visual resources are generally protected by the City and/or County General Plans through land use and zoning requirements.

Discussion of Impacts

I a-d. The proposed Regulation 6, Rule 2 (Rule 6-2) would further reduce PM and VOC emissions from commercial cooking equipment in order to reduce ozone levels and particulate matter in the Bay Area. The catalytic oxidizer system is semi-enclosed and situated above the restaurant charbroiler which is located inside a facility. The installation of the catalytic oxidizer will not create any noticeable changes in the visual characteristics of commercial cooking facilities. Under-fired charbroilers are expected to be controlled by use of a roof-mounted

control device such as a HEPA filter or electrostatic precipitator. These devices are expected to be integrated into the existing ducting and would not rise significantly above the level of existing ductwork and exhaust fans.

Likewise, additional light or glare would not be created since the proposed rule would not require additional light generating equipment. Therefore, no adverse significant aesthetic impacts are expected due to the proposed project.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
--	--------------------------------------	---	------------------------------------	-----------

II. AGRICULTURE RESOURCES.

In determining whether impacts on agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation. Would the project:

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Conflict with existing zoning for agricultural use or conflict with a Williamson Act contract? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland, to non-agricultural use? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Setting

The BAAQMD covers all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma Counties. The area of coverage is vast (about 5,600 square miles) so that land uses vary greatly and include commercial, industrial, residential, agricultural, and open space uses. Some of these agricultural lands are under Williamson Act contracts.

The facilities with commercial cooking equipment affected by the proposed rule are located in commercial areas throughout the Bay Area. Agricultural resources are generally not located in the vicinity of commercial areas.

Regulatory Background

Agricultural resources are generally protected by the City and/or County General Plans, Community Plans through land use and zoning requirements, as well as any applicable specific plans, ordinances, local coastal plans, and redevelopment plans.

Discussion of Impacts

II a-c. The proposed Rule 6-2 would further reduce PM and VOC emissions from commercial cooking equipment in order to reduce particulate matter and ozone levels in the Bay Area. Installation of catalytic oxidizers or equivalent control devices on chain-driven charboilers or control devices integrated into the ductwork to control under-fired charbroilers would not result in increasing the size of the commercial cooking facilities or result in additional construction activities outside of the confines of the current commercial cooking facility, with the exception of work on the roof to install roof-mounted control devices. Further, commercial cooking facilities are generally located in commercially zone areas, so no impact on agricultural resources is expected. Therefore, no adverse significant impacts to agricultural resources are expected due to the proposed project.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
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III. AIR QUALITY

When available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Violate any air quality standard or contribute to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a non-attainment area for an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- | | | | | | |
|----|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| e) | Create objectionable odors affecting a substantial number of people? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| f) | Diminish an existing air quality rule or future compliance requirement resulting in a significant increase in air pollutant(s)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Setting

Meteorological Conditions

The summer climate of the West Coast is dominated by a semi-permanent high centered over the northeastern Pacific Ocean. Because this high pressure cell is quite persistent, storms rarely affect the California coast during the summer. Thus the conditions that persist along the coast of California during summer are a northwest air flow and negligible precipitation. A thermal low pressure area from the Sonoran-Mojave Desert also causes air to flow onshore over the San Francisco Bay Area much of the summer.

In winter, the Pacific High weakens and shifts southward, upwelling ceases, and winter storms become frequent. Almost all of the Bay Area's annual precipitation takes place in the November through April period. During the winter rainy periods, inversions are weak or nonexistent, winds are often moderate and air pollution potential is very low. During winter periods when the Pacific high becomes dominant, inversions become strong and often are surface based; winds are light and pollution potential is high. These periods are characterized by winds that flow out of the Central Valley into the Bay Area and often include fog.

Topography

The San Francisco Bay Area is characterized by complex terrain consisting of coastal mountain ranges, inland valleys and bays. Elevations of 1,500 feet are common in the higher terrain of this area. Normal wind flow over the area becomes distorted in the lower elevations, especially when the wind velocity is not strong. This distortion is reduced when stronger winds and unstable air masses move over the areas. The distortion is greatest when low level inversions are present with the surface air, beneath the inversion, flowing independently of the air above the inversion.

Winds

In summer, the northwest winds to the west of the Pacific coastline are drawn into the interior through the Golden Gate and over the lower portions of the San Francisco Peninsula. Immediately to the south of Mount Tamalpais, the northwesterly winds accelerate considerably and come more nearly from the west as they stream through the Golden Gate. This channeling of the flow through the Golden Gate produces a jet that sweeps eastward but widens downstream producing southwest winds at Berkeley and northwest winds at San Jose; a branch curves eastward through the Carquinez Straits and into the Central Valley. Wind speeds may be locally strong in regions where air is channeled through a narrow opening such as the Carquinez Strait, the Golden Gate, or San Bruno Gap.

In winter, the Bay Area experiences periods of storminess and moderate-to-strong winds and periods of stagnation with very light winds. Winter stagnation episodes are characterized by outflow from the Central Valley, nighttime drainage flows in coastal valleys, weak onshore flows in the afternoon and otherwise light and variable winds.

Temperature

In summer, the distribution of temperature near the surface over the Bay Area is determined in large part by the effect of the differential heating between land and water surfaces. This process produces a large-scale gradient between the coast and the Central Valley as well as small-scale local gradients along the shorelines of the ocean and bays. The winter mean temperature high and lows reverse the summer relationship; daytime variations are small while mean minimum nighttime temperatures show large differences and strong gradients. The moderating effect of the ocean influences warmer minimums along the coast and penetrating the Bay. The coldest temperatures are in the sheltered valleys, implying strong radiation inversions and very limited vertical diffusion.

Inversions

A primary factor in air quality is the mixing depth, i.e., the vertical dimension available for dilution of contaminant sources near the ground. Over the Bay Area the frequent occurrence of temperature inversions limits this mixing depth and consequently limits the availability of air for dilution. A temperature inversion may be described as a layer or layers of warmer air over cooler air.

Precipitation

The San Francisco Bay Area climate is characterized by moderately wet winters and dry summers. Winter rains (December through March) account for about 75 percent of the average annual rainfall; about 90 percent of the annual total rainfall is received in November to April period; and between June and September, normal rainfall is typically less than 0.10 inches. Annual precipitation amounts show greater differences in short distances. Annual totals exceed 40 inches in the mountains and are less than 15 inches in the sheltered valleys.

Pollution Potential

The Bay Area is subject to a combination of physiographic and climatic factors which result in a low potential for pollutant buildups near the coast and a high potential in sheltered inland valleys. In summer, areas with high average maximum temperatures tend to be sheltered inland valleys with abundant sunshine and light winds. Areas with low average maximum temperatures are exposed to the prevailing ocean breeze and experience frequent fog or stratus. Locations with warm summer days have a higher pollution potential than the cooler locations along the coast and bays.

In winter, pollution potential is related to the nighttime minimum temperature. Low minimum temperatures are associated with strong radiation inversions in inland valleys that are protected from the moderating influences of the ocean and bays. Conversely, coastal locations experience higher average nighttime temperatures, weaker inversions, stronger breezes and consequently less air pollution potential.

Air Quality

Criteria Pollutants

It is the responsibility of the BAAQMD to ensure that State and federal ambient air quality standards are achieved and maintained in its geographical jurisdiction. Health-based air quality standards have been established by California and the federal government for the following criteria air pollutants: ozone, carbon monoxide (CO), nitrogen dioxide (NO₂), particulate matter less than 10 microns in diameter (PM₁₀), particulate matter less than 2.5 microns in diameter (PM_{2.5}), sulfur dioxide (SO₂) and lead. These standards were established to protect sensitive receptors with a margin of safety from adverse health impacts due to exposure to air pollution. The California standards are more stringent than the federal standards. California has also established standards for sulfate, visibility, hydrogen sulfide, and vinyl chloride.

The State and national ambient air quality standards for each of these pollutants and their effects on health are summarized in Table 3-1. The BAAQMD monitors levels of various criteria pollutants at 26 monitoring stations. The 2005 air quality data from the BAAQMD's monitoring stations are presented in Table 3-2.

Air quality conditions in the San Francisco Bay Area have improved since the Air District was created in 1955. Ambient concentrations of air pollutants and the number of days on which the region exceeds air quality standards have fallen dramatically (see Table 3-3). The Air District is in attainment of the State and federal ambient air quality standards for CO, nitrogen dioxide (NO₂), and sulfur dioxide (SO₂). The Air District is not considered to be in attainment with the State PM₁₀ and PM_{2.5} standards, and is unclassified for the new federal 24-hour PM_{2.5} standard.

The 2005 air quality data from the BAAQMD monitoring stations are presented in Table 3-2. All monitoring stations were below the standard and federal ambient air quality standards for CO, NO₂, and SO₂. The federal eight-hour standard was exceeded on two days in the District in 2005. The Bay Area is designated as a non-attainment area for the California one-hour ozone standard. The State one-hour ozone standard was exceeded in the District on 9 days in 2005; most frequently in the Eastern District (Livermore) (see Table 3-2).

All monitoring stations were in compliance with the federal PM₁₀ standards. The California PM₁₀ standards were exceeded on 12 days in 2005, most frequently in San Jose. The Air District did not exceed the federal PM_{2.5} standard in 2005 (see Table 3-2).

**TABLE 3-1
FEDERAL AND STATE AMBIENT AIR QUALITY STANDARDS**

AIR POLLUTANT	STATE STANDARD CONCENTRATION/ AVERAGING TIME	FEDERAL PRIMARY STANDARD CONCENTRATION/ AVERAGING TIME	MOST RELEVANT EFFECTS
Ozone	0.09 ppm, 1-hr. avg. > 0.070 ppm, 8-hr	0.08 ppm, 8-hr avg. >	(a) Short-term exposures: (1) Pulmonary function decrements and localized lung edema in humans and animals (2) Risk to public health implied by alterations in pulmonary morphology and host defense in animals; (b) Long-term exposures: Risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans; (c) Vegetation damage; (d) Property damage
Carbon Monoxide	9.0 ppm, 8-hr avg. > 20 ppm, 1-hr avg. >	9 ppm, 8-hr avg.> 35 ppm, 1-hr avg.>	(a) Aggravation of angina pectoris and other aspects of coronary heart disease; (b) Decreased exercise tolerance in persons with peripheral vascular disease and lung disease; (c) Impairment of central nervous system functions; (d) Possible increased risk to fetuses
Nitrogen Dioxide	0.25 ppm, 1-hr avg. >	0.053 ppm, ann. avg.>	(a) Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; (b) Risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; (c) Contribution to atmospheric discoloration
Sulfur Dioxide	0.04 ppm, 24-hr avg.> 0.25 ppm, 1-hr. avg. >	0.03 ppm, ann. avg.> 0.14 ppm, 24-hr avg.>	(a) Bronchoconstriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in persons with asthma
Suspended Particulate Matter (PM10)	20 µg/m ³ , annarithmic mean > 50 µg/m ³ , 24-hr average>	50 µg/m ³ , annual arithmetic mean > 150 µg/m ³ , 24-hr avg.>	(a) Excess deaths from short-term exposures and exacerbation of symptoms in sensitive patients with respiratory disease; (b) Excess seasonal declines in pulmonary function, especially in children
Suspended Particulate Matter (PM2.5)	12 µg/m ³ , annual arithmetic mean>	15 µg/m ³ , annual arithmetic mean> 35 µg/m ³ , 24-hour average>	Decreased lung function from exposures and exacerbation of symptoms in sensitive patients with respiratory disease; elderly; children.
Sulfates	25 µg/m ³ , 24-hr avg. >=		(a) Decrease in ventilatory function; (b) Aggravation of asthmatic symptoms; (c) Aggravation of cardio-pulmonary disease; (d) Vegetation damage; (e) Degradation of visibility; (f) Property damage
Lead	1.5 µg/m ³ , 30-day avg. >=	1.5 µg/m ³ , calendar quarter>	(a) Increased body burden; (b) Impairment of blood formation and nerve conduction
Visibility-Reducing Particles	In sufficient amount to give an extinction coefficient >0.23 inverse kilometers (visual range to less than 10 miles) with relative humidity less than 70%, 8-hour average (10am – 6pm PST)		Nephelometry and AISI Tape Sampler; instrumental measurement on days when relative humidity is less than 70 percent

**TABLE 3-2
BAY AREA AIR POLLUTION SUMMARY 2005**

MONITORING STATIONS	Ozone						CARBON MONOXIDE			NITROGEN DIOXIDE			SULFUR DIOXIDE			PM10				PM2.5								
	Max 1-Hr	Nat Days	Cal Days	3-Yr Avg	Max 8-Hr	Nat Days	3-Yr Avg	Max 1-Hr	Max 8-Hr	Nat/Cal Days	Max 1-Hr	Ann Avg	Nat/Cal Days	Max 24-Hr	Ann Avg	Nat/Cal Days	Ann Avg	Max 24-Hr	Nat Day	Cal Days	Max 24-Hr	Nat Days	3-Yr Avg	Ann Avg	3-Yr Avg			
	(ppb)						(ppm)			(ppb)			(ppb)			$(\mu\text{g}/\text{m}^3)$				$(\mu\text{g}/\text{m}^3)$								
NORTH COUNTIES																												
Napa	91	0	0	0	67	0	61	3.2	2.0	0	60	10	0	--	--	--	18.0	40	0	0	--	--	--	--	--	--	--	--
San Rafael	81	0	0	0	59	0	51	3.0	1.7	0	54	13	0	--	--	--	16.5	39	0	0	--	--	--	--	--	--	--	--
Santa Rosa	72	0	0	0	51	0	49	2.5	2.0	0	47	11	0	--	--	--	15.9	39	0	0	33.6	0	0	28.2	7.6	8.2		
Vallejo	90	0	0	0	70	0	60	3.9	3.1	0	70	11	0	5	1.2	0	17.3	52	0	1	43.8	0	0	32.5	9.7	10		
COAST & CENTRAL BAY																												
Oakland	68	0	0	0.0	45	0	39	3.4	2.4	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Richmond	--	--	--	--	--	--	--	--	--	--	--	--	--	6	1.1	0	--	--	--	--	--	--	--	--	--	--	--	--
San Francisco	58	0	0	0.0	54	0	48	2.5	2.1	0	66	16	0	7	1.4	0	20.1	46	0	0	43.6	0	0	32.6	9.5	9.9		
San Pablo	66	0	0	0.0	57	0	52	2.8	1.3	0	54	12	0	6	1.7	0	19.0	42	0	0	--	--	--	--	--	--	--	--
EASTERN DISTRICT																												
Bethel Island	89	0	0	0.0	77	0	72	1.1	0.9	0	38	7	0	6	2.0	0	18.5	64	0	1	--	--	--	--	--	--	--	--
Concord	98	0	1	0.0	80	0	73	2.2	1.5	0	55	12	0	7	1.0	0	16.4	42	0	0	48.9	0	0	35.1	9	9.8		
Crockett	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fairfield	90	0	0	0.0	73	0	68	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Livermore	120	0	6	0	90	1	78	3.4	1.8	0	72	14	0	--	--	--	18.8	49	0	0	32.1	0	0	29.4	9	9.4		
Martinez	--	--	--	--	--	--	--	--	--	--	--	--	--	7	1.7	0	--	--	--	--	--	--	--	--	--	--	--	--
Pittsburg	94	0	0	0.0	78	0	69	3.3	1.7	0	58	11	0	9	2.4	0	20.1	57	0	1	--	--	--	--	--	--	--	--
SOUTH CENTRAL BAY																												
Fremont	105	0	1	0.0	78	0	60	3.2	2.0	0	69	15	0	--	--	--	17.8	54	0	1	33.4	0	0	27.6	9	9		
Hayward	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Redwood City	84	0	0	0.0	61	0	57	4.5	2.3	0	62	15	0	--	--	--	20.9	81	0	2	30.9	0	0	27.8	8.8	9		
San Leandro	99	0	1	0.0	61	0	52	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SANTA CLARA VALLEY																												
Gilroy	87	0	0	0.0	67	0	71	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Los Gatos	110	0	3	0.0	87	1	72	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
San Jose Central*	113	0	1	*	80	0	61	4.3	3.1	0	74	19	0	--	--	--	22.3	54	0	2	54.6	0	0	39	11.8	11.7		
San Jose East	110	0	1	0.0	83	0	59	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
San Jose, Tully Road	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	24.2	71	0	4	50.6	0	0	35.9	10.5	10.3		
San Martin	108	0	2	0.0	77	0	75	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sunnyvale	97	0	1	0.0	73	0	64	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Bay Area Days over Standard	0	9				2			0			0			0		0	12			0							

(ppm) = parts per million, $(\mu\text{g}/\text{m}^3)$ = micrograms per cubic meter, (ppb) = parts per billion

TABLE 3-3
TEN-YEAR BAY AREA AIR QUALITY SUMMARY
Days over standards

YEAR	OZONE		CARBON MONOXIDE				NO _x	SULFUR DIOXIDE		PM10		PM2.5
	1-Hr		8-Hr		1-Hr		8-Hr	24-Hr		24-Hr*		24-Hr**
	Nat	Cal	Nat	Cal	Nat	Cal	Cal	Nat	Cal	Nat	Cal	Nat
1996	8	34	-	0	0	0	0	0	0	0	3	-
1997	0	8	-	0	0	0	0	0	0	0	4	-
1998	8	29	16	0	0	0	0	0	0	0	5	-
1999	3	2	9	0	0	0	0	0	0	0	12	-
2000	3	12	4	0	0	0	0	0	0	0	7	1
2001	1	15	7	0	0	0	0	0	0	0	10	5
2002	2	16	7	0	0	0	0	0	0	0	6	5
2003	1	19	7	0	0	0	0	0	0	0	6	0
2004	0	7	0	0	0	0	0	0	0	0	7	1
2005	0	9	1	0	0	0	0	0	0	0	6	0

* PM10 is sampled every sixth day – actual days over standard can be estimated to be six times the numbers listed.

** 2000 is the first full year for which the Air District measured PM2.5 levels.

Toxic Air Pollutants

The BAAQMD maintains a network of monitoring stations to monitor certain toxic air contaminants (TACs) in ambient air. In addition, the California Air Resources Board (CARB) maintains several monitoring stations in the Bay Area as part of a statewide toxics monitoring effort. Table 3-4 shows the maximum, minimum and mean concentration of toxic air contaminants at 22 of the 23 separate sites at which samples were collected. Data from the Fort Cronkhite “clean-air” background site were not included.

TABLE 3-4
SUMMARY OF BAY AREA AMBIENT AIR TOXIC AIR CONTAMINANT MONITORING DATA - 2002¹

COMPOUND	Level of Detection (ppb)	% of Samples < LOD	Maximum Conc. (ppf)	Minimum Conc. (ppb)	Mean Conc. (ppb)
Benzene	0.10	0	2.20	<0.10	0.47
Carbon Tetrachloride (CCl4)	0.01	0	0.36	<0.01	0.11
Chloroform (CHCl3)	0.02	65	0.12	<0.02	0.02
Methylene Chloride (DCM)	0.50	85	8.70	<0.50	0.38
Ethylene Dibromide	0.02	100	<0.02	<0.02	0.01
Ethylene Dichloride	0.10	100	<0.10	<0.10	0.05
Methyl Tert-Butyl Ether (MTBE)	0.50	44	4.60	<0.50	0.75
Perchloroethylene	0.01	24	0.30	<0.01	0.05
1,1,1-Trichloroethane (TCA)	0.05	47	2.69	<0.05	0.11
Trichloroethylene	0.08	96	0.84	<0.08	0.04
Toluene	0.10	0	24.9	0.10	1.48
Vinyl Chloride	0.30	100	<0.30	<0.30	0.15

(1) BAAQMD, Toxic Air Contaminant, 2002 Annual Report, June 2004.

Regulatory Background

Criteria Pollutants

At the federal level, the Clean Air Act (CAA) Amendments of 1990 give the U.S. EPA additional authority to require states to reduce emissions of ozone precursors and particulate matter in non-attainment areas. The amendments set attainment deadlines based on the severity of problems. At the state level, CARB has traditionally established state ambient air quality standards, maintained oversight authority in air quality planning, developed programs for reducing emissions from motor vehicles, developed air emission inventories, collected air quality and meteorological data, and approved state implementation plans. At a local level, California’s air districts, including the BAAQMD, are responsible for overseeing stationary source emissions, approving permits, maintaining emission inventories, maintaining air quality stations,

overseeing agricultural burning permits, and reviewing air quality-related sections of environmental documents required by CEQA.

The BAAQMD is governed by a 22-member Board of Directors composed of publicly-elected officials apportioned according to the population of the represented counties. The Board has the authority to develop and enforce regulations for the control of air pollution within its jurisdiction. The BAAQMD is responsible for implementing emissions standards and other requirements of federal and state laws. It is also responsible for developing air quality planning documents required by both federal and state laws.

Toxic Air Contaminants

TACs are regulated in the District through federal, state, and local programs. At the federal level, TACs are regulated primarily under the authority of the CAA. Prior to the amendment of the CAA in 1990, source-specific National Emission Standards for Hazardous Air Pollutants (NESHAPs) were promulgated under Section 112 of the CAA for certain sources of radionuclides and Hazardous Air Pollutants (HAPs).

Title III of the 1990 CAA amendments requires U.S. EPA to promulgate NESHAPs on a specified schedule for certain categories of sources identified by U.S. EPA as emitting one or more of the 189 listed HAPs. Emission standards for major sources must require the maximum achievable control technology (MACT). MACT is defined as the maximum degree of emission reduction achievable considering cost and non-air quality health and environmental impacts and energy requirements. All NESHAPs were to be promulgated by the year 2000. Specific incremental progress in establishing standards must be made by the years 1992 (at least 40 source categories), 1994 (25 percent of the listed categories), 1997 (50 percent of remaining listed categories), and 2000 (remaining balance). The 1992 requirement was met; however, many of the four-year standards were not promulgated as scheduled. Promulgation of those standards has been rescheduled based on court ordered deadlines, or the aim to satisfy all Section 112 requirements in a timely manner.

Many of the sources of TACs that have been identified under the CAA are also subject to the California TAC regulatory programs. CARB developed three regulatory programs for the control of TACs. Each of the programs is discussed in the following subsections.

Control of TACs Under the TAC Identification and Control Program: California's TAC identification and control program, adopted in 1983 as Assembly Bill 1807 (AB 1807) (California Health and Safety Code §39662), is a two-step program in which substances are identified as TACs, and airborne toxic control measures (ATCMs) are adopted to control emissions from specific sources. Since adoption of the program, CARB has identified 18 TACs, and CARB adopted a regulation designating all 189 federal HAPs as TACs.

Control of TACs Under the Air Toxics "Hot Spots" Act: The Air Toxics Hot Spot Information and Assessment Act of 1987 (AB 2588) (California Health and Safety Code §39656) establishes a state-wide program to inventory and assess the risks from facilities that emit TACs and to notify the public about significant health risks associated with those emissions. Inventory reports must be updated every four years under current state law. The BAAQMD uses a maximum individual cancer risk of 10 in one million, or an ambient concentration above a non-cancer reference exposure level, as the threshold for notification.

Senate Bill (SB) 1731, enacted in 1992 (California Health and Safety Code §44390 et seq.), amended AB 2588 to include a requirement for facilities with significant risks to prepare and implement a risk reduction

plan which will reduce the risk below a defined significant risk level within specified time limits. At a minimum, such facilities must, as quickly as feasible, reduce cancer risk levels that exceed 100 per one million. The BAAQMD adopted risk reduction requirements for perchloroethylene dry cleaners to fulfill the requirements of SB 1731.

Targeted Control of TACs Under the Community Air Risk Evaluation Program: In 2004, BAAQMD established the Community Air Risk Evaluation (CARE) program to identify locations with high emissions of toxic air contaminants (TAC) and high exposures of sensitive populations to TAC and to use this information to help establish policies to guide mitigation strategies that obtain the greatest health benefit from TAC emission reductions. For example, BAAQMD will use information derived from the CARE program to develop and implement targeted risk reduction programs, including grant and incentive programs, community outreach efforts, collaboration with other governmental agencies, model ordinances, new regulations for stationary sources and indirect sources, and advocacy for additional legislation.

Discussion of Impacts

III a. The objective of the proposed Rule 6-2 is to reduce PM and VOC emissions from commercial cooking equipment in order to reduce particulate matter and ozone levels in the Bay Area. The District is proposing Regulation 6, Rule 2, in accordance with the District's SB 656 Particulate Matter Implementation Schedule and in connection with FS 3 in the District's 2005 Ozone Strategy, as a means to reduce restaurant emissions of PM and VOCs in the Bay Area. Therefore, the proposed regulation is in compliance with and will implement a portion of local air quality strategies. No significant adverse impacts are expected.

III b, c, d, and f. The District is proposing Regulation 6, Rule 2, in accordance with the District's SB 656 Particulate Matter Implementation Schedule and in connection with FS 3 in the District's 2005 Ozone Strategy, as a means to reduce restaurant emissions of PM and VOCs in the Bay Area. VOCs are ozone precursors, and also contribute to indirect or secondary PM. SB 656 requires that all air districts in California adopt an implementation schedule that prioritizes appropriate measures for reducing PM emissions. The District's Particulate Matter Implementation Schedule proposes to adopt Regulation 6, Rule 2 as a measure to reduce direct and indirect PM emissions in the Bay Area. Implementation of proposed Regulation 6, Rule 2 would require catalytic oxidizers to be installed on chain-driven (conveyorized) charbroilers, but allow alternative certified controls to be installed if the control can reduce emissions to no more than 0.74 lbs of PM10 and 0.23 lbs of organic compounds per 1,000 lbs of meat cooked (effective PM10 reduction of 90 percent). The catalytic oxidizers are expected to be fitted to the top of a chain-driven charbroiler, where it will burn grease and gases from the cooking process, turning them into carbon dioxide and water. Heat from the cooking process activates the device such that an external fuel source is not required. Controls for under-fired charbroilers are more likely to be mounted in the exhaust ventilation on the restaurant roof. Based on the air quality analysis, proposed Rule 6-2 is expected to result in reductions in PM and VOC emissions and, thus, provide air quality benefits. No significant adverse impacts to air quality are expected.

In addition to criteria pollutants, cooking operations also produce carbon dioxide, a gas contributing to climate change. In 2005, the District adopted a Climate Protection Program aimed at reducing greenhouse gas emissions. In addition to combustion of natural gas, some carbon dioxide is produced when grease drippings combust on hot radiant surfaces. The District estimates that the average carbon dioxide emissions for cooking activities per restaurant are approximately 25,000 pounds per year based on operation of the

cooking appliances and energy usage (BAAQMD, 2006). Catalytic oxidizers will actually reduce carbon dioxide generation, because the radiant heat from the oxidizer will require less power be consumed to operate the conveyORIZED charbroiler. Controls for under-fired charbroilers will require more electric power, increasing carbon dioxide emissions; however, the additional power usage will not be significant compared to the overall power usage of the restaurant. In addition, proposed Rule 6-2 requires new installations of under-fired charbroilers to install listed ventilation hoods. For new under-fired charbroiler installations that require installation of a listed hood, there may be a net reduction in energy usage at the restaurant.

III e. Proposed Rule 6-2 requires a reduction PM and VOC emissions from some commercial cooking equipment. Facilities are expected to comply with the required installation of control devices. Once installed, the control devices are not expected to result in any physical changes to the facilities and would not be expected to generate any additional odors. Catalytic oxidizers installed to control emissions from conveyORIZED charbroilers will reduce odors. The rule is not expected to generate any additional odors at the affected facilities.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
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IV. BIOLOGICAL RESOURCES. Would the project:

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|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal wetlands, etc.) through direct removal, filling, hydrological interruption, or other means? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

- e) Conflicting with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?
- f) Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan?

Setting

The BAAQMD covers all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma Counties. The area of coverage is vast (about 5,600 square miles) so that land uses vary greatly and include commercial, industrial, residential, agricultural, and open space uses. A wide variety of biological resources are located within the Bay Area.

The facilities affected by the proposed rule are located in the Bay Area-Delta Bioregion (as defined by the State’s Natural Communities Conservation Program). This Bioregion is comprised of a variety of natural communities, which range from salt marshes to chaparral to oak woodland. The facilities affected by the proposed rule are located in commercial areas throughout the Bay Area. The affected facilities have been graded to develop the various commercial structures and are typically, surrounded by other commercial facilities. Native vegetation, other than landscape vegetation, has generally been removed from operating portions of the commercial facilities to minimize safety and fire hazards.

Regulatory Background

Biological resources are generally protected by the City and/or County General Plans through land use and zoning requirements which minimize or prohibit development in biologically sensitive areas. Biological resources are also protected by the California Department of Fish and Game, and the U.S. Fish and Wildlife Service. The U.S. Fish and Wildlife Service and National Marine Fisheries Service oversee the federal Endangered Species Act. Development permits may be required from one or both of these agencies if development would impact rare or endangered species. The California Department of Fish and Game administers the California Endangered Species Act which prohibits impacting endangered and threatened species. The U.S. Army Corps of Engineers and the U.S. EPA regulate the discharge of dredge or fill material into waters of the United States, including wetlands.

Discussion of Impacts

IV a – f. No impacts on biological resources are anticipated from the proposed rule which would apply to existing and new facilities with commercial cooking equipment. The restaurants are located within the confines of commercial facilities. The net effect of implementing proposed Rule 6-2 will be improved air quality resulting from reduction of restaurant emissions which is expected to be beneficial for both plant and animal life. Installation of control devices would not result in any physical changes outside of the

confines of the existing commercial cooking facilities and would not affect any biological resources in the area. Therefore, no adverse significant impacts to biological resources are expected due to the proposed project.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
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V. CULTURAL RESOURCES. Would the project:

a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Disturb any human remains, including those interred outside formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Setting

The BAAQMD covers all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma Counties. The area of coverage is vast (about 5,600 square miles) so that land uses vary greatly and include commercial, industrial, residential, agricultural and open space uses. Cultural resources are defined as buildings, sites, structures, or objects which might have historical architectural, archaeological, cultural, or scientific importance.

The Carquinez Strait represents the entry point for the Sacramento and San Joaquin Rivers into the San Francisco Bay. This locality lies within the San Francisco Bay and the west end of the Central Valley archaeological regions, both of which contain a rich array of prehistoric and historical cultural resources. The areas surrounding the Carquinez Strait and Suisun Bay have been occupied for millennia given their abundant combination of littoral and oak woodland resources.

The facilities with commercial cooking equipment affected by the proposed rule generally are located in commercial areas throughout the Bay Area. The sites have been graded to develop the various commercial structures and are typically surrounded by other commercial and industrial facilities. Cultural resources are generally not located within the operating portions of commercial facilities.

Regulatory Background

The State CEQA Guidelines define a significant cultural resource as a “resource listed or eligible for listing on the California Register of Historical Resources” (Public Resources Code Section 5024.1). A project would have a significant impact if it would cause a substantial adverse change in the significance of a historical resource (State CEQA Guidelines Section 15064.5(b)). A substantial adverse change in the significance of a historical resource would result from an action that would demolish or adversely alter the physical characteristics of the historical resource that convey its historical significance and that qualify the resource for inclusion in the California Register of Historical Resources or a local register or survey that meets the requirements of Public Resources Code Sections 50020.1(k) and 5024.1(g).

Discussion of Impacts

V a – d. No impacts on cultural resources are anticipated from the proposed rule that would apply to existing facilities with commercial cooking equipment. The equipment already exists and is located within the confines of existing facilities. Catalytic oxidizers are expected to be fitted to the top of a chain-driven charbroilers, and therefore, would not result in any physical changes outside of the confines of the existing commercial cooking facilities. Also, although buildings that are considered cultural resources may have restaurants, it is unlikely that the restaurants would be fitted with conveyORIZED charbroilers or under-fired charbroilers large enough to trigger the requirements in the rule. If restaurants did have a charbroiler subject to the proposed rule, alternative lower-emitting cooking equipment could be used in lieu of installation of a control device. Therefore, no adverse significant impacts to cultural resources are expected due to the proposed project.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
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VI. GEOLOGY AND SOILS.

Would the project:

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|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| • Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| • Strong seismic ground shaking? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| • Seismic-related ground failure, including liquefaction? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

- Landslides?
- b) Result in substantial soil erosion or the loss of topsoil?
- c) Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project, and potentially result in onsite or offsite landslide, lateral spreading, subsidence, liquefaction or collapse?
- d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?
- e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater?

Setting

The BAAQMD covers all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma Counties. The area of coverage is vast (about 5,600 square miles) so that land uses vary greatly and include commercial, industrial, residential, agricultural, and open space uses. The facilities affected by the proposed rule are located in the commercial areas throughout the Bay Area.

The affected facilities with commercial cooking equipment are located in the natural region of California known as the Coast Ranges geomorphic province. The province is characterized by a series of northwest trending ridges and valleys controlled by tectonic folding and faulting, examples of which include the Suisun Bay, East Bay Hills, Briones Hills, Vaca Mountains, Napa Valley, and Diablo Ranges.

Regional basement rocks consist of the highly deformed Great Valley Sequence, which include massive beds of sandstone inter-fingered with siltstone and shale. Unconsolidated alluvial deposits, artificial fill, and estuarine deposits, (including Bay Mud) underlie the low-lying region along the margins of the Carquinez Straight and Suisun Bay. The estuarine sediments found along the shorelines of Solano County are soft, water-saturated mud, peat and loose sands. The organic, soft, clay-rich sediments along the San Francisco and San Pablo Bays are referred to locally as Bay Mud and can present a variety of engineering challenges due to inherent low strength, compressibility and saturated conditions. Landslides in the region occur in weak, easily weathered bedrock on relatively steep slopes.

The San Francisco Bay Area is a seismically active region, which is situated on a plate boundary marked by the San Andreas Fault System. Several northwest trending active and potentially active faults are included with this fault system. Under the Alquist-Priolo Earthquake Fault Zoning Act, Earthquake Fault Zones were established by the California Division of Mines and Geology along “active” faults, or faults along which surface rupture occurred in Holocene time (the last 11,000 years). In the Bay area, these faults include the

San Andreas, Hayward, Rodgers Creek-Healdsburg, Concord-Green Valley, Greenville-Marsh Creek, Seal Cove/San Gregorio and West Napa faults. Other smaller faults in the region classified as potentially active include the Southampton and Franklin faults.

Ground movement intensity during an earthquake can vary depending on the overall magnitude, distance to the fault, focus of earthquake energy, and type of geological material. Areas that are underlain by bedrock tend to experience less ground shaking than those underlain by unconsolidated sediments such as artificial fill. Earthquake ground shaking may have secondary effects on certain foundation materials, including liquefaction, seismically induced settlement, and lateral spreading.

Regulatory Background

Construction is regulated by the local City or County building codes that provide requirements for construction, grading, excavations, use of fill, and foundation work including type of materials, design, procedures, etc. which are intended to limit the probability of occurrence and the severity of consequences from geological hazards. Necessary permits, plan checks, and inspections are generally required.

The City or County General Plan includes the Seismic Safety Element. The Element serves primarily to identify seismic hazards and their location in order that they may be taken into account in the planning of future development. The Uniform Building Code is the principle mechanism for protection against and relief from the danger of earthquakes and related events.

In addition, the Seismic Hazard Zone Mapping Act (Public Resources Code §§2690 – 2699.6) was passed by the California legislature in 1990 following the Loma Prieta earthquake. The Act required that the California Division of Mines and Geology (DMG) develop maps that identify the areas of the state that require site specific investigation for earthquake-triggered landslides and/or potential liquefaction prior to permitting most urban developments. The act directs cities, counties and state agencies to use the maps in their land use planning and permitting processes.

Local governments are responsible for implementing the requirements of the Seismic Hazards Mapping Act. The maps and guidelines are tools for local governments to use in establishing their land use management policies and in developing ordinances and review procedures that will reduce losses from ground failure during future earthquakes.

Discussion of Impacts

VI a. No impacts on geology and soils are anticipated from the proposed rule that would apply to existing operations at affected facilities. The cooking equipment already exists and is located within the confines of existing facilities. Catalytic oxidizers are expected to be fitted to the top of a chain-driven charbroiler. Installation of HEPA filters or electrostatic precipitators to control under-fired charbroilers would occur in existing exhaust ducting. In some cases, restaurant roof supports may need to be strengthened to accommodate the new equipment, however, alternative lower-emitting cooking equipment could be used that would not be subject to the rule's requirements.. New control equipment may require building permits from the local jurisdiction and compliance with the Uniform Building Codes. The Uniform Building Code is considered to be a standard safeguard against major structural failures and loss of life. The goal of the code

is to provide structures that will: (1) resist minor earthquakes without damage; (2) resist moderate earthquakes without structural damage, but with some non-structural damage; and (3) resist major earthquakes without collapse, but with some structural and non-structural damage. The Uniform Building Code bases seismic design on minimum lateral seismic forces ("ground shaking"). The Uniform Building Code requirements operate on the principle that providing appropriate foundations, among other aspects, helps to protect buildings from failure during earthquakes. The basic formulas used for the Uniform Building Code seismic design require determination of the seismic zone and site coefficient, which represent the foundation conditions at the site.

The new control equipment may be required to obtain building permits, if applicable. The issuance of building permits from the local agency will assure compliance with the Uniform Building Code requirements which include requirements for building within seismic hazard zones. No significant impacts from seismic hazards are expected since the project will be required to comply with the Uniform Building Codes. Therefore no people or structures are expected to be exposed to potential substantial adverse effects, including the risk of loss, injury, or death due to rupture of a known earthquake fault, strong seismic ground shaking or seismic-related ground failure, including liquefaction landslides. Therefore, no adverse significant impacts related to seismic activity are expected due to the proposed rule.

VII b – e. No impacts on geology and soils are anticipated from the proposed rule that would apply to existing operations at affected facilities. Installation of catalytic oxidizers or equivalent control devices on chain-driven charboilers would not result in any physical changes to the facilities. Installation of control equipment for under-fired charbroilers would occur on existing roofs. Therefore, construction activities associated with the proposed rule is not expected to result in substantial soil erosion or the loss of topsoil. The facilities already exist and no construction activities outside the confines of the existing commercial cooking facilities are expected. Likewise, no new structure is expected to be constructed on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property. Construction would not affect soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater. Therefore, no adverse significant impacts to geology and soils are expected due to the proposed rule.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
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VII. HAZARDS AND HAZARDOUS

MATERIALS. Would the project:

- a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?
- b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

- | | | | | | |
|----|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| c) | Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) | Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e) | Be located within an airport land use plan or, where such a plan has not been adopted, be within two miles of a public airport or public use airport, and result in a safety hazard for people residing or working in the project area? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| f) | Be located within the vicinity of a private airstrip and result in a safety hazard for people residing or working in the project area? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| g) | Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| h) | Expose people or structures to a significant risk of loss, injury or death involving wild land fires, including where wild lands are adjacent to urbanized areas or where residences are intermixed with wild lands? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Setting

The risks posed by operations at each facility are unique and determined by a variety of factors. The facilities affected by the proposed amendments tend to be located in commercial areas. For all affected facilities, risks to the public are reduced if there is a buffer zone between industrial processes and residences or other sensitive land uses, or the prevailing wind blows away from residential areas and other sensitive land uses. The hazards associated with commercial cooking operations are generated limited to fire hazards associated with cooking activities.

Regulatory Background

There are many federal and state rules and regulations that affected facilities must comply with which serve to minimize the potential impacts associated with hazards at these facilities.

Under the Occupational Safety and Health Administration (OSHA) regulations [29 Code of Federal Regulations (CFR) Part 1910], facilities which use, store, manufacture, handle, process, or move highly

hazardous materials must prepare a fire prevention plan. In addition, 29 CFR Part 1910.119, Process Safety Management (PSM) of Highly Hazardous Chemicals, and Title 8 of the California Code of Regulations, General Industry Safety Order §5189, specify required prevention program elements to protect workers at facilities that handle toxic, flammable, reactive, or explosive materials. Prevention program elements are aimed at preventing or minimizing the consequences of catastrophic releases of the chemicals and include process hazard analyses, formal training programs for employees and contractors, investigation of equipment mechanical integrity, and an emergency response plan.

Section 112 (r) of the Clean Air Act Amendments of 1990 [42 U.S.C. 7401 et. Seq.] and Article 2, Chapter 6.95 of the California Health and Safety Code require facilities that handle listed regulated substances to develop Risk Management Programs (RMPs) to prevent accidental releases of these substances, U.S. EPA regulations are set forth in 40 CFR Part 68. In California, the California Accidental Release Prevention (CalARP) Program regulation (CCR Title 19, Division 2, Chapter 4.5) was issued by the Governor's Office of Emergency Services (OES). RMPs consist of three main elements: a hazard assessment that includes off-site consequences analyses and a five-year accident history, a prevention program, and an emergency response program. Refineries are also required to comply with the U.S. EPA's Emergency Planning and Community Right-to-Know Act (EPCRA).

California Assembly Bill 2185 requires local agencies to regulate the storage and handling of hazardous materials and requires development of a plan to mitigate the release of hazardous materials. Businesses that handle any of the specified hazardous materials must submit to government agencies (i.e., fire departments), an inventory of the hazardous materials, an emergency response plan, and an employee training program. The business plans must provide a description of the types of hazardous materials/waste on-site and the location of these materials. The information in the business plan can then be used in the event of an emergency to determine the appropriate response action, the need for public notification, and the need for evacuation.

Discussion of Impacts

VII a - c. The proposed rule is expected to reduce emissions from existing commercial cooking equipment at affected facilities thus reducing PM and VOC emissions. The rule will not require or change the use or storage of any hazardous material. The catalytic oxidizer required by the rule will not cause any hazard impacts or introduce any additional fire hazards, as it contains a catalyst bed made up of an inert ceramic material. With open flame equipment, most restaurant kitchens already have a potential for fire hazards. Installation of a catalytic oxidizer is not expected to increase fire hazards because they do not require an additional combustion source. Further, installation of the catalytic oxidizer is expected to reduce natural gas usage by up to seven percent, thus slightly reducing existing fire hazards. Cleaning the catalyst does not generate hazardous wastewater effluent and is not expected to create additional health hazards or result in exposing people to existing sources of potential health hazards. Similarly, cleaning electrostatic precipitator plates does not generate hazardous wastewater effluent and is not expected to create additional health hazards. Therefore, no significant adverse impacts on releases of hazardous materials into the environment are expected.

VII d. No impacts on hazardous material sites are anticipated from the proposed rule that would apply to existing commercial cooking operations. The proposed rule would have no affect on hazardous materials nor would the rule create a significant hazard to the public or environment. The cooking equipment already

exists and is located within the confines of existing commercial facilities. The proposed rule neither requires, nor is likely to result in, activities that would affect hazardous materials or existing site contamination. Therefore, no significant adverse impacts on hazards are expected.

VII e – f. No impacts on airports or airport land use plans are anticipated from the proposed rule, which would apply to operations at existing facilities. The cooking equipment already exists and is located within the confines of existing facilities. Installation of catalytic oxidizers or equivalent control devices on chain-driven charbroilers would not result in any physical changes to the facilities and would not affect the environment outside of affected facilities. Therefore, no significant adverse impacts on hazards at airports are expected.

VII g. No impacts on emergency response plans are anticipated from the proposed rule that would apply to existing facility operations. Installation of catalytic oxidizers or equivalent control devices on chain-driven charbroilers and is not expected to result in any changes to emergency response plans. Therefore, no significant adverse impacts on emergency response plans are expected.

VII h. No increase in hazards related to wildfires is anticipated from implementation of the proposed rule. The cooking equipment already exists and is located within the confines of existing facilities. Installation of catalytic oxidizers or equivalent control devices on chain-driven charbroilers is not expected to result in any physical changes that would increase wildfire hazards. Vegetation surrounding commercial facilities has generally been removed, with the exception of landscape vegetation. Therefore, no significant adverse impacts on fire hazards are expected.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
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VIII. HYDROLOGY AND WATER QUALITY.

Would the project:

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|----|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) | Violate any water quality standards or waste discharge requirements? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) | Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g. the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) | Substantially alter the existing drainage pattern of the site or area, including through alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation onsite or offsite? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| d) Substantially alter the existing drainage pattern of the site or area, including through alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding onsite or offsite? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e) Create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| f) Otherwise substantially degrade water quality? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| g) Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| j) Inundation by seiche, tsunami, or mudflow? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Setting

The BAAQMD covers all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma Counties. The area of coverage is vast (about 5,600 square miles) so that land uses and affected environment vary substantially throughout the area and include commercial, industrial, residential, agricultural, and open space uses.

The facilities affected by the proposed rule are located in the commercial areas throughout the Bay Area. Affected facilities are generally surrounded by other commercial. Reservoirs and drainage streams are located throughout the area and discharge into the Bays. Marshlands incised with numerous winding tidal channels containing brackish water are located throughout the Bay Area.

The affected facilities are located within the San Francisco Bay Area Hydrologic Basin. The primary regional groundwater water-bearing formations include the recent and Pleistocene (up to two million years old) alluvial deposits and the Pleistocene Huichica formation. Salinity within the unconfined alluvium appears to increase with depth to at least 300 feet. Water of the Huichica formation tends to be soft and relatively high in bicarbonate, although usable for domestic and irrigation needs.

Regulatory Background

The Federal Clean Water Act of 1972 primarily establishes regulations for pollutant discharges into surface waters in order to protect and maintain the quality and integrity of the nation's waters. This Act requires industries that discharge wastewater to municipal sewer systems to meet pretreatment standards. The regulations authorize the U.S. EPA to set the pretreatment standards. The regulations also allow the local treatment plants to set more stringent wastewater discharge requirements, if necessary, to meet local conditions.

The 1987 amendments to the Clean Water Act enabled the U.S. EPA to regulate, under the National Pollutant Discharge Elimination System (NPDES) program, discharges from industries and large municipal sewer systems. The U.S. EPA set initial permit application requirements in 1990. The State of California, through the State Water Resources Control Board, has authority to issue NPDES permits, which meet U.S. EPA requirements, to specified industries.

The Porter-Cologne Water Quality Act is California's primary water quality control law. It implements the state's responsibilities under the Federal Clean Water Act but also establishes state wastewater discharge requirements. The RWQCB administers the state requirements as specified under the Porter-Cologne Water Quality Act, which include storm water discharge permits. The water quality in the Bay Area is under the jurisdiction of the San Francisco Bay Regional Water Quality Control Board.

In response to the Federal Act, the State Water Resources Control Board prepared two state-wide plans in 1991 and 1995 that address storm water runoff: the California Inland Surface Waters Plan and the California Enclosed Bays and Estuaries Plan. Enclosed bays are indentations along the coast that enclose an area of oceanic water within distinct headlands or harbor works. San Francisco Bay, and its constituent's parts, including Carquinez Strait and Suisun Bay, fall under this category.

The San Francisco Bay Basin Plan identifies the: (1) beneficial water uses that need to be protected; (2) the water quality objectives needed to protect the designated beneficial water uses; and (3) strategies and time schedules for achieving the water quality objectives. The beneficial uses of the Carquinez Strait that must be protected which include water contact and non-contact recreation, navigation, ocean commercial and sport fishing, wildlife habitat, estuarine habitat, fish spawning and migration, industrial process and service supply, and preservation of rare and endangered species. The Carquinez Strait and Suisun Bay are included on the 1998 California list as impaired water bodies due to the presence of chlordane, copper, DDT, diazinon, dieldrin, dioxin and furan compounds, mercury, nickel, PCBs, and selenium.

Discussion of Impacts

VIII a. No significant adverse impacts on hydrology/water quality resources are anticipated from implementation of the proposed rule, which would apply to existing commercial facilities. Owners/operators of facilities affected by the proposed rule would be required to install catalytic oxidizers or other control devices and to maintain the equipment in good working order to effectively reduce PM and VOC emissions. Standard maintenance procedure involves soaking the catalyst in water to remove the residue build-up. The frequency of maintenance to maintain proper working order depends upon the individual usage of the charbroiler. Frequency of clean-up (soaking in soapy water) ranges from every three to six months. This removes residue that has built-up on the catalyst bed. Due to the small size of the catalyst bed and the

frequency of the needed soaking, the amount of salt removed per cleaning is expected to be negligible. The resulting wastewater, which also may contain grease and particles, will require minimal treatment from publicly owned treatment works prior to discharge.

The San Francisco Public Utilities Commission (PUC) is a department of the City and County of San Francisco that provides water, wastewater, and municipal power services to San Francisco. Under contractual agreement with 29 wholesale water agencies, the SFPUC also supplies water to 1.6 million additional customers within three Bay Area counties. The San Francisco PUC treats and discharges approximately 84 million gallons per day of treated wastewater during dry weather to the San Francisco Bay and Pacific Ocean. During wet weather, with additional facilities and increased operations, the plants can treat approximately 465 million gallons of combined flows per day (www.sfwater.org). Since only a small increase in salt is expected due to cleaning activities, no violation of any water quality standards or waste discharge requirements is expected.

VIII b. The cooking equipment affected by the proposed rule already exists and are located within the confines of existing restaurants and facilities. The proposed rule does not require the installation of new large pieces of equipment or require new public services. According to current users of catalytic oxidizers, the frequency of clean-up ranges from every three to six months. If soaked once every three months in 10 gallons of soapy water, the 554 catalysts in the district would increase the district water demand by approximately 62 gallons per day (22,630 gallons per year) (10 gallons/3 months) x (554 catalysts) x (month/30 day). Cleaning electrostatic precipitators would use less additional water than soaking catalysts. The use of catalytic oxidizers, electrostatic precipitators or HEPA filters, however, would tend to keep exhaust fans and downstream ductworks cleaner, requiring less water usage for periodic cleaning. The 2005 Ozone Strategy addressed the impacts of the proposed control measures on water demand. Although FS-3 was not part of the control strategy, the analysis did consider water supply impacts of other rules involving similar controls. The potential water demand was determined to be within the capacity of water supplied from various sources in the Bay Area (estimated water demand of about 1,880 billion gallons per year in 2010) (BAAQMD, 2005) and is not considered significant compared with current and projected future demand and supply. While there are projected drought-year shortages in some regions of California, these shortages would occur regardless of the proposed control measures. The use of other control technology, such as wet gas scrubbers, would require additional water use. However, facilities are expected to comply using catalytic oxidation so additional water demand impacts are not expected. The proposed rule is not expected to deplete groundwater supplies or interfere with groundwater recharge. Therefore, no significant impacts on groundwater supplies or are expected due to the proposed implementation of Rule 6-2.

VIII c - f. No significant adverse impacts on hydrology/water quality resources are anticipated from implementation of the proposed rule, which would apply to existing commercial restaurant facilities and only require alternations to the existing cooking facilities. Therefore the proposed rule is not expected to alter the existing drainage or drainage patterns of the site, result in erosion or siltation, alter of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding onsite or offsite. Nor is the proposed rule expected to create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff. The proposed rule is not expected to degrade water quality. Therefore, no significant adverse impacts are expected.

VIII g – i. Owners/operators of facilities affected by the proposed rule would be required to install catalytic oxidizers or other emission control devices on conveyORIZED charbroilers and electrostatic precipitators, HEPA filters or some other control devices on large under-fired charbroilers. The proposed rule is not expected to place any additional structures within 100-year flood zones or other areas subject to flooding. Therefore, no significant adverse impacts due to flooding are expected.

VIII j. Owners/operators of facilities affected by the proposed rule would be required to install emission control devices on existing equipment. The rule is not expected to place any additional structures within areas subject to inundation by seiche, tsunami or mudflow. Therefore, no significant adverse impacts on hydrology/water due to seiche, tsunami or mudflow are expected.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
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IX. LAND USE AND PLANNING. Would the project:

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Physically divide an established community? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to a general plan, specific plan, local coastal program or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Conflict with any applicable habitat conservation plan or natural community conservation plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Setting

The BAAQMD covers all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma Counties. The area of coverage is vast (about 5,600 square miles) so that land uses vary greatly and include commercial, industrial, residential, agricultural, and open space uses. The facilities affected by the proposed rule are located in the commercial areas throughout the Bay Area.

Regulatory Background

Land uses are generally protected and regulated by the City and/or County General Plans through land use and zoning requirements.

Discussion of Impacts

IX a-c. Owners/operators of facilities affected by the proposed rule would be required to install emission control devices on existing equipment in commercial areas for restaurants that operate conveyORIZED charbroilers or large under-fired charbroilers. Installation of the control equipment is not expected to result in any physical changes that would require construction outside of the confines of the existing facilities or alter existing land use. Therefore, no adverse significant land use impacts are expected due to the proposed project.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
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X. MINERAL RESOURCES. Would the project:

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|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
-

Setting

The BAAQMD covers all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma Counties. The area of coverage is vast (about 5,600 square miles) so that land uses and the affected environment vary greatly throughout the area. The facilities affected by the proposed rule are located in commercial areas throughout the Bay Area.

Regulatory Background

Mineral resources are generally protected and regulated by the City and/or County General Plans through land use and zoning requirements.

Discussion of Impacts

X a-b. Owners/operators of facilities affected by the proposed rule would be required to install catalytic oxidizers or other emission control devices on coveryORIZED charbroilers and electrostatic precipitators, HEPA filters or other emission control devices on under-fired charbroilers in restaurants in commercial areas. Installation of the control equipment is not expected to result in any action that would result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state, or of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan. A catalytic oxidizer will generate radiant heat back into the cooking equipment, that in turn will require less natural gas or electricity consumption to operate. The use of a HEPA filter or electrostatic precipitator to control an under-fired charbroiler will require more electricity, however, the District has determined that the additional power usage on a per restaurant basis is not significant compared to the power the restaurant uses to operate cooking, heating, cooling, and ventilation equipment. New installations of under-fired charbroilers will be required to install listed hoods. The use of listed hoods, even with the additional power usage caused by the control device, should result in a net reduction of electrical power usage compared to a new, unabated restaurant without a listed hood. Therefore, no significant impacts on mineral resources are expected.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
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XI. NOISE. Would the project:

- | | | | | |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Expose persons to or generate of excessive ground borne vibration or ground borne noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e) Be located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport and expose people residing or working in the project area to excessive noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

- f) Be located within the vicinity of a private airstrip and expose people residing or working in the project area to excessive noise levels?

Setting

The BAAQMD covers all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma Counties. The area of coverage is vast (about 5,600 square miles) so that land uses and the affected environment vary greatly throughout the area. The facilities affected by the proposed rule are located in commercial areas throughout the Bay Area. Most affected facilities are surrounded by other commercial facilities.

Regulatory Background

Noise issues related to construction and operation activities are addressed in local General Plan policies and local noise ordinance standards. The General Plan and noise ordinances generally establish allowable noise limits within different land uses including residential areas, other sensitive use areas (e.g., schools, churches, hospitals, and libraries), commercial areas, and industrial areas.

Discussion of Impacts

XI a-f. Owners/operators of facilities affected by the proposed rule would be required to install catalytic oxidizers or other emission control devices on existing equipment in commercial areas. Installation of the control equipment, whether atop a cooking device or roof-mounted, is not expected to result in any physical changes to the facilities that would generate additional noise. The control devices are not expected to result in noise increases over the current noise levels of existing commercial cooking facilities. Therefore, no adverse significant impacts to noise are expected due to the proposed project.

Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
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XII. POPULATION AND HOUSING. Would the project:

- a) Induce substantial population growth in an area either directly (e.g., by proposing new homes and businesses) or indirectly (e.g. through extension of roads or other infrastructure)?

- | | | | | | |
|----|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| b) | Displace a substantial number of existing housing units, necessitating the construction of replacement housing elsewhere? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) | Displace a substantial number of people, necessitating the construction of replacement housing elsewhere? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Setting

The BAAQMD covers all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma Counties. The area of coverage is vast (about 5,600 square miles) so that land uses and the affected environment vary greatly throughout the area. The facilities affected by the proposed rule are located in commercial areas throughout the Bay Area.

Regulatory Background

Population and housing growth and resources are generally protected and regulated by the City and/or County General Plans through land use and zoning requirements.

Discussion of Impacts

XII a. Owners/operators of facilities affected by the proposed rule would be required to install catalytic oxidizers or other emission control devices on conveyORIZED charbroilers and electrostatic precipitators or HEPA filters on certain restaurants in commercial areas. Installation activities would involve minor changes to existing cooking equipment or to roof-mounted exhaust systems. Installation of the control equipment is not expected to result in any physical changes to the facilities and would not affect population or housing. The minor installation activities are expected to be completed by existing workers or contractors. No additional workers are expected to be required at the affected facilities; therefore no adverse significant impacts to population or housing are expected due to the proposed project.

XII b-c. The commercial cooking equipment already exists and is located within the confines of existing facilities within commercial areas. No housing would be impacted or removed by the proposed rule and no displacement of housing would occur. Therefore, no significant adverse impacts on population/housing are expected.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
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XIII. PUBLIC SERVICES. Would the project:

- a. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or a need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:

Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Setting

The BAAQMD covers all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma Counties. The area of coverage is vast (about 5,600 square miles) so that land uses and the affected environment vary greatly throughout the area. The facilities affected by the proposed rule are located in commercial areas throughout the Bay Area.

Given the large area covered by the BAAQMD, public services are provided by a wide variety of local agencies. Fire protection and police protection/law enforcement services within the BAAQMD are provided by various districts, organizations, and agencies. There are several school districts, private schools, and park departments within the BAAQMD. Public facilities within the BAAQMD are managed by different county, city, and special-use districts.

Regulatory Background

City and/or County General Plans usually contain goals and policies to assure adequate public services are maintained within the local jurisdiction.

Discussion of Impacts

XIII a. Owners/operators of facilities affected by the proposed rule would be required to install catalytic oxidizers or other emission control devices on conveyorized charbroilers and electrostatic precipitators or HEPA filters on under-fired charbroilers in certain restaurants in commercial areas. Installation activities would involve minor changes to existing cooking equipment. Catalytic oxidizers used to control conveyorized charbroilers would reduce the chance of fire from accumulation of grease in the ductwork and exhaust system, a common source of restaurant fires. Electrostatic precipitators, if not properly maintained, could potentially create a fire hazard that does not currently exist. Building permits to install this equipment would require periodic cleaning and fire suppression systems, and proposed Rule 6-2 also requires that control equipment be cleaned and maintained as per manufacturers’ instructions. Proper cleaning and maintenance prevents an increased fire safety risk as well as ensures the control equipment reduces air pollutants as intended. Consequently, no significant impacts on the need for fire or police protection are expected. The proposed rule is not expected to require additional workers at the facilities or result in population growth so no impacts on schools or parks are expected. Therefore, no significant adverse impacts on public services are expected.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
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XIV. RECREATION. Would the project:

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Setting

The BAAQMD covers all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma Counties. The area of coverage is vast (about 5,600 square miles) so that there are numerous areas for recreational activities. The facilities affected by the proposed rule are located in commercial areas throughout the Bay Area. Public recreational land uses are generally not located within the confines of commercial facilities.

Regulatory Background

Recreational areas are generally protected and regulated by the City and/or County General Plans at the local level through land use and zoning requirements. Some parks and recreation areas are designated and protected by state and federal regulations.

Discussion of Impacts

XIV a-b. Owners/operators of facilities affected by the proposed rule would be required to install catalytic oxidizers or other emission control devices on conveyORIZED charbroilers and electrostatic precipitators or HEPA filters on under-fired charbroilers in certain restaurants in commercial areas. Installation activities would involve minor changes to existing cooking equipment. Installation of the control equipment is not expected to result in any physical changes to the facilities. The proposed rule is not expected to require additional workers at the facilities or result in population growth so no impacts on recreation are expected. Therefore, no significant adverse impacts on recreation are expected

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
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XV. TRANSPORTATION/TRAFFIC. Would the project:

a) Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in the number of vehicle trips, the volume-to-capacity ratio on roads, or congestion at intersections)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause, either individually or cumulatively, exceedance of a level-of-service standard established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards because of a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Result in inadequate parking capacity?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g. bus turnouts, bicycle racks)?

Setting

The BAAQMD covers all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma Counties. The area of coverage is vast (about 5,600 square miles). Transportation systems located within the Bay Area include railroads, airports, waterways, and highways. The Port of Oakland and three international airports in the area serve as hubs for commerce and transportation. The transportation infrastructure for vehicles and trucks in the Bay Area ranges from single lane roadways to multilane interstate highways. The Bay Area contains over 19,600 miles of local streets and roads, and over 1,400 miles of state highways. In addition, there are over 9,040 transit route miles of services including rapid rail, light rail, commuter, diesel and electric buses, cable cars, and ferries. The Bay Area also has an extensive local system of bicycle routes and pedestrian paths and sidewalks. At a regional level, the share of workers driving alone was about 68 percent in 2000. The portion of commuters that carpool was about 12.9 percent in 2000. About 3.2 percent of commuters walked to work in 2000. In addition, other modes of travel (bicycle, motorcycle, etc.), account for 2.2 percent of commuters in 2000 (MTC, 2004).

Cars, buses, and commercial vehicles travel about 143 million miles a day (2000) on the Bay Area Freeways and local roads. Transit serves about 1.7 million riders on the average weekday (MTC, 2004).

The region is served by numerous interstate and U.S. freeways. On the west side of San Francisco Bay, Interstate 280 and U.S. 101 run north-south. U.S. 101 continues north of San Francisco into Marin County. Interstates 880 and 660 run north-south on the east side of the Bay. Interstate 80 starts in San Francisco, crosses the Bay Bridge, and runs northeast toward Sacramento. Interstate 80 is a six-lane north-south freeway which connects Contra Costa County to Solano County via the Carquinez Bridge. State Routes 29 and 84, both highways that allow at-grade crossings in certain parts of the region, become freeways that run east-west and across the Bay. Interstate 580 starts in San Rafael, crosses the Richmond-San Rafael Bridge, joins with Interstate 80, runs through Oakland, and then runs eastward toward Livermore. From the Benicia-Martinez Bridge, Interstate 680 extends north to Interstate 80 in Cordelia. Caltrans constructed a second freeway bridge adjacent and east of the existing Benicia-Martinez Bridge. The new bridge consists of five northbound traffic lanes. The existing bridge was re-striped to accommodate four lanes for southbound traffic. Interstate 780 is a four lane, east-west freeway extending from the Benicia-Martinez Bridge west to I-80 in Vallejo.

Regulatory Background

Transportation planning is usually conducted at the county level. Each Bay Area County has a Congestion Management Agency. The Congestion Management Agency is responsible for transportation planning and administration of improvement projects in each county and in some cases, shares these responsibilities with the county departments. County development agencies conduct and oversee the transportation and planning

for new development projects while the Congestion Management Agency implements the transportation programs and projects.

Discussion of Impacts

XV a-b. Owners/operators of facilities affected by the proposed rule would be required to install emission control devices on conveyORIZED charbroilers and large under-fired charbroilers in commercial areas. Installation activities would involve minor changes to existing cooking equipment or roof-mounted equipment in exhaust systems. Installation of the control equipment is not expected to result in any physical changes to the facilities. The proposed rule does not require the installation of pieces of equipment large enough to affect traffic or affect access of any emergency service. No impacts on the need for fire or police protection are expected. The proposed rule is expected to be conducted by existing workers or existing contractors so that no additional vehicle trips are expected to be required. No changes to traffic patterns or levels of service at local intersections are expected. Therefore, no adverse significant impacts to traffic are expected.

XV c. The proposed rule includes minor modifications to the cooking equipment of existing restaurant facilities. The project will not involve the delivery of materials via air so no increase and no adverse impacts in air traffic are expected.

XV d - e. The proposed rule is not expected to increase traffic hazards or create incompatible uses at or adjacent to the site. Emergency access provided at the facilities, will continue to be maintained and will not be impacted by the proposed rule.

XV f. The commercial cooking equipment affected by the proposed rule already exists and is located within the confines of existing facilities within commercial areas. The proposed rule does not require the installation of new pieces of equipment large enough to significantly affect parking capacity, except temporarily during installation, at which time the restaurant would not be operational and would therefore likely have adequate parking onsite. Parking required for installation contractors would be provided onsite. No increase in permanent workers is expected. Therefore, the proposed rule will not result in significant adverse impacts on parking.

XV g. The proposed rule will result in fewer PM and VOC emissions from affected facilities. The proposed rule is not expected to conflict with adopted policies, plans, or programs supporting alternative transportation modes (e.g., bus turnouts, bicycle racks).

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less-than- Significant Impact	No Impact
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XVI. UTILITIES AND SERVICE SYSTEMS.

Would the project:

- a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

- | | | | | |
|---|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or would new or expanded entitlements needed? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| g) Comply with federal, state, and local statutes and regulations related to solid waste? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Setting

The BAAQMD covers all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of southwestern Solano and southern Sonoma Counties. The area of coverage is vast (about 5,600 square miles) so that land uses and the affected environment vary greatly throughout the area.

Given the large area covered by the BAAQMD, public utilities are provided by a wide variety of local agencies. The affected facilities have wastewater and storm water treatment facilities and discharge treated wastewater under the requirements of NPDES permits.

Water is supplied to affected facilities by several water purveyors in the Bay Area. Solid waste is handled through a variety of municipalities, through recycling activities and at disposal sites.

There are no hazardous waste disposal sites within the jurisdiction of the BAAQMD. Hazardous waste generated at area facilities, which is not reused on-site, or recycled off-site, is disposed of at a licensed in-state hazardous waste disposal facility. Two such facilities are the Chemical Waste Management Inc. (CWMI) Kettleman Hills facility in King's County, and the Safety-Kleen facility in Buttonwillow (Kern County). Hazardous waste can also be transported to permitted facilities outside of California. The nearest

out-of-state landfills are U.S. Ecology, Inc., located in Beatty, Nevada; USPCI, Inc., in Murray, Utah; and Envirosafe Services of Idaho, Inc., in Mountain Home, Idaho. Incineration is provided at the following out-of-state facilities: Aptus, located in Aragonite, Utah and Coffeyville, Kansas; Rollins Environmental Services, Inc., located in Deer Park, Texas and Baton Rouge, Louisiana; Chemical Waste Management, Inc., in Port Arthur, Texas; and Waste Research & Reclamation Co., Eau Claire, Wisconsin.

Regulatory Background

City and/or County General Plans usually contain goals and policies to assure adequate utilities and service systems are maintain within the local jurisdiction.

Discussion of Impacts

XVI a, b, d and e. The commercial cooking equipment affected by the proposed rule already exists and is located within the confines of existing facilities within commercial areas. The proposed rule does not require the installation of new large pieces of equipment or require new public services. Facilities are expected to comply by installing control technology consisting of catalytic oxidizers (in the case of conveyORIZED charbroilers) or electrostatic precipitators or HEPA filters (in the case of under-fired charbroilers). Once the equipment is installed, the rule is not expected to result in any physical changes to the facilities. The cleaning of equipment may result in a slight increase in water consumption; however, the wastewater generated will be processed by the restaurants' grease traps and additional grease will not be introduced into existing wastewater treatment facilities. The 2005 Ozone Strategy addressed the impacts of the proposed control measures on water demand. Although FS-3 was not part of the control strategy, the analysis did consider water supply impacts of other rules involving similar controls. The potential water demand was determined to be within the capacity of water supplied from various sources in the Bay Area (estimated water demand of about 1,880 billion gallons per year in 2010) (CARB, 2000) and is not considered significant compared with current and projected future demand and supply. While there are projected drought-year shortages in some regions of California, these shortages would occur regardless of the proposed control measures. Based upon the above considerations, no significant adverse impacts on water demand were expected due to implementation of the control measures within the 2005 Ozone Strategy. Therefore, no significant impacts on water use or wastewater discharges are expected due to proposed Rule 6-2. No significant adverse impacts on utilities and service systems are anticipated from the proposed rule would apply to existing facilities with commercial cooking equipment.

XVI c. Owners/operators of facilities affected by the proposed rule would be required to install catalytic oxidizers or other emission control devices on existing equipment in commercial areas. Installation activities would involve minor changes to existing cooking equipment or roof-mounted exhaust systems. Installation of the control equipment is not expected to result in any physical changes to the facilities. Therefore, no changes to or increases in storm water are expected due to the proposed rule.

XVI f. Restaurants generate grease from cooking operations, that is collected in grease traps and professionally disposed of in landfills or composted. The proposed rule is expected to generate an additional amount of additional grease, due to the capture of the grease within control equipment rather than release onto the restaurant roof or into the environment. The amount generated would be less than significant. Under-fired charbroilers would likely comply by the use of an electrostatic precipitator or HEPA filter. HEPA filters are not likely to be the more popular option; however, the filters themselves would have to be

replaced periodically, and the used filters disposed of. This would generate solid waste that the restaurant would not otherwise generate. HEPA filters would constitute a small addition to the waste that a restaurant already generates. Consequently, any additional increase on waste generation is expected to be less than significant.

XVI g. The proposed rule would not affect the ability of facilities to comply with federal, state, and local statutes and regulations related to solid waste. No significant impacts on waste generation are expected from the proposed rule.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
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XVII. MANDATORY FINDINGS OF SIGNIFICANCE.

- | | | | | |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Discussion of Impacts

XVII a. The proposed rule does not have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory, as discussed in the previous sections of the CEQA checklist. The proposed

rule is expected to result in emission reductions from facilities with commercial cooking equipment thus providing a beneficial air quality impact and improvement in air quality. No significant adverse impacts are expected.

XVII b. Proposed Rule 6-2 is expected to result in emission reductions of VOC and PM from affected facilities with commercial cooking equipment, thus providing a beneficial air quality impact and improvement in air quality. The proposed rule is part of a long-term plan to bring the Bay Area into compliance with the state ambient air quality standards for ozone and reduce emissions of particulate matter. The proposed rule does not have adverse environmental impacts that are limited individually, but cumulatively considerable when considered in conjunction with other regulatory control projects. The proposed rule is not expected to have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly. No significant adverse impacts are expected.

XVII c. The proposed rule is expected to result in emission reductions from affected facilities, thus providing a beneficial air quality impact and improvement in air quality. The proposed rule is part of a long-term plan to bring the Bay Area into compliance with the state ambient air quality standards for ozone and reduce emissions of particulate matter, thus reducing the potential health impacts due to these pollutants. The proposed rule is not expected to have significant adverse effects (either directly or indirectly) to human beings.

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Chapter 4**References**

- South Coast Area Air Quality Management District (SCAQMD), 1997. Subsequent Environmental Assessment for Proposed Rule 1138 – Control of Emissions from Restaurant Operations, July 29, 1997.
- Bay Area Air Quality Management District (BAAQMD), 2001. Revised 2001 San Francisco Bay Area Ozone Attainment Plan for the 1-hour National Ozone Standard, adopted October 24, 2001.
- BAAQMD, 2004. Toxic Air Contaminant 2002 Annual Report. June, 2004.
- BAAQMD, 2004. Initial Study/Negative Declaration for the Amendments to Bay Area Air Quality Management District Regulation 8, Rule 8. June 2004.
- BAAQMD, 2005. Draft Staff Report, Proposed Amendments to Regulation 8, Rule 28: Episodic Releases from Pressure Relief Devices at Petroleum Refineries and Chemical Plants, August 12, 2005.
- BAAQMD, 2005. 2005 BAAQMD Ambient Air Quality Data.
- BAAQMD, 2006. Bay Area 2005 Ozone Strategy, January 4, 2006
- BAAQMD, 2006. Initial Study/Negative Declaration for the Amendments to Bay Area Air Quality Management District Regulation 8, Rule 5. September 2006.
- BAAQMD, 2006. Initial Study/Negative Declaration for the Amendments to Bay Area Air Quality Management District Regulation 9, Rule 9. October 2006.
- BAAQMD, 2006. Workshop Report, Proposed Regulation 6, Rule 2: Control of Emissions from Commercial Cooking Equipment, October 2006.
- BAAQMD, 2007. Public Workshop Notice for the proposed Bay Area Air Quality Management District Regulation 6, Rule 2. January 2007.

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson, Mark Ross and Members
of the Board of Directors

From: Jack P. Broadbent
Executive Officer/APCO

Date: May 8, 2007

Re: First Public Hearing on the Proposed District Budget for
Fiscal Year 2007/2008

RECOMMENDED ACTION:

Request that the Board of Directors open the first of two required public hearings on the proposed District Budget for public review and comment. Final action will be taken at the conclusion of the second public hearing scheduled for June 6, 2007.

SUMMARY

Pursuant to Health and Safety Code Section 40131 the Executive Officer/APCO will present the Fiscal Year 2007/2008 proposed operating budget to the Board of Directors for review and comment only.

A copy of the proposed budget is attached for your review.

BUDGET CONSIDERATION/FINANCIAL IMPACT

No impact on current year budget. The proposed consolidated budget for Fiscal Year 2007/2008 is \$67,536,734.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Jeff McKay