



BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT

BOARD OF DIRECTORS REGULAR MEETING December 2, 2009

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
DECEMBER 2, 2009
9:45 A.M.

BOARD ROOM
7TH FLOOR

CALL TO ORDER

Opening Comments
Roll Call
Pledge of Allegiance

Chairperson, Pamela Torliatt
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.

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)

COMMENDATIONS/PROCLAMATIONS/AWARDS

The Board of Directors will recognize outgoing Advisory Council Chairperson, Harold M. Brazil, for his outstanding leadership on the Advisory Council this past year.

CONSENT CALENDAR (ITEMS 1 – 5)

Staff/Phone (415) 749-

1. Minutes of November 18, 2009

L. Harper/5073

lharp@baaqmd.gov

2. Communications

J. Broadbent/5052

jbroadbent@baaqmd.gov

Information only.

3. District Personnel 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.

4. Consider Revising the existing Job Classification of Facilities Manager to be titled Strategic Facilities Planning Manager

J. Broadbent/5052
jbroadbent@baaqmd.gov

The Board of Directors will consider revising the existing job classification of Facilities Manager to be titled Strategic Facilities Planning Manager with modified duties as described in the attached classification description.

5. Approve Proposed Amendments to the Air District's Administrative Code Division III – Personnel Policies and Procedures – Section 3 adding a new subsection 3.12, entitled Fraud, Misconduct, and Dishonesty in the Workplace

J. Broadbent/5052
jbroadbent@baaqmd.gov

The Board of Directors will approve proposed amendments to the Administrative Code Division III, Personnel Policies and Procedures – Section 3 adding a new subsection 3.12, entitled Fraud, Misconduct, and Dishonesty in the Workplace.

COMMITTEE REPORTS AND RECOMMENDATIONS

6. Report of the **Executive Committee Meeting** of November 19, 2009

CHAIR: P. TORLIATT

J. Broadbent/5052
jbroadbent@baaqmd.gov

Action: The Committee recommends Board of Directors' approval of the Joint Policy Committee (JPC) policies regarding SB 375.

7. Report of the **Personnel Committee Meeting** of November 23, 2009

CHAIR: H. BROWN

J. Broadbent/5052
jbroadbent@baaqmd.gov

Action: The Committee recommends Board of Directors' approval of the following:

- A) *Re-appoint Ken Blonski, Secretary, Regional Park District; Jeffrey Bramlett, Vice Chair, Park & Recreation; Harold Brazil, Chair, Mass Public Transportation; Kraig Kurucz, Industry; Kendal Oku, Organized Labor to the Advisory Council, to two-year terms, effective January 1, 2010 through December 31, 2011; and*
- B) *Appoint Gary Lucks to the Advisory Council, Conservation Organization category, to a two-year term of office, effective January 1, 2010 through December 31, 2011;*
- C) *Re-advertise one vacancy in the Conservation Organization category and conduct outreach to advocacy groups in the recruitment process.*

PUBLIC HEARING(S)

8. Public Hearing to consider adoption of proposed amendments to Regulation 8, Rule 50: Polyester Resin Operations; and Adoption of a CEQA Negative Declaration

H. Hilken/4642
hhilken@baaqmd.gov

Proposed amendments to Regulation 8, Rule 50 reduce volatile organic compound (VOC) and toxic air contaminant (TAC) emissions from composite product manufacturing using polyester resins. Composite products include watercraft; bathroom vanity sinks and other bathware products; architectural facades; computer board parts; automotive and aerospace parts; and pipes, storage tanks and secondary containment for chemicals,

sewage and petroleum products. The District proposed to consider VOC reductions under the 2005 Ozone Strategy Control Measure SS-4.

9. Public Hearing Continued from November 18, 2009 to Receive Testimony on Proposed Amendments to the District's California Environmental Quality Act (CEQA) Thresholds of Significance

H. Hilken/4642
hhilken@baaqmd.gov

CEQA Thresholds of Significance are developed to assist local jurisdictions and agencies in complying with the requirements of CEQA regarding potentially adverse impacts to air quality. The thresholds provide a means to identify proposed local plans and development projects that may have a significant adverse effect on air quality, public health, attainment of state and national ambient air quality standards, and to provide recommendations to mitigate those impacts. The proposed amendments to the Thresholds of Significance include staff-recommended thresholds for construction, operational-related, and plan-level emissions of criteria air pollutants and ozone precursors, greenhouse gases, toxic air contaminants, and odors.

OTHER BUSINESS

10. Report of the Executive Officer/APCO
11. Chairperson's Report
12. Time and Place of Next Meeting – 9:45 A.M. Wednesday, December 16, 2009 - 939 Ellis Street, San Francisco, CA 94109
13. Adjournment

CONTACT EXECUTIVE OFFICE - 939 ELLIS STREET SF, CA 94109

(415) 749-5130
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.
- Any writing relating to an open session item on this Agenda that is distributed to all, or a majority of all, members of the body to which this Agenda relates shall be made available at the Air District's headquarters at 939 Ellis Street, San Francisco, CA 94109, at the time such writing is made available to all, or a majority of all, members of that body. Such writing(s) may also be posted on the Air District's website (www.baaqmd.gov) at that time.

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

EXECUTIVE OFFICE:
MONTHLY CALENDAR OF DISTRICT MEETINGS

NOVEMBER 2009

<u>TYPE OF MEETING</u>	<u>DAY</u>	<u>DATE</u>	<u>TIME</u>	<u>ROOM</u>
Board of Directors Public Outreach Committee <i>(Meets 1st Thursday each Month)</i>	Friday	13	9:30 a.m.	4 th Floor Conf. Room
Board of Directors Stationary Source Committee <i>(Meets 3rd Monday Quarterly)</i>	Monday	16	9:30 a.m.	Board Room
Board of Directors Personnel Committee <i>(At the Call of the Chair)</i>	Wednesday	18	9:00 a.m.	4th Floor Conf. Room
Board of Directors Regular Meeting <i>(Meets 1st & 3rd Wednesday of each Month)</i>	Wednesday	18	9:45 a.m.	Board Room
Executive Committee Meeting <i>(Meets at the Call of the Chair)</i>	Thursday	19	9:30 a.m.	4 th Floor Conf. Room
Joint Policy Committee <i>(Meets 3rd Friday Every Other Month) - RESCHEDULED TO FRIDAY, NOVEMBER 6, 2009</i>	Friday	20	10:00 a.m.	MTC Auditorium 101 8 th Street Oakland, CA 94607
Board of Directors Personnel Committee <i>(At the Call of the Chair)</i>	Monday	23	9:30 a.m.	4th Floor Conf. Room
Board of Directors Budget & Finance Committee <i>(At the Call of the Chair)</i> - CANCELLED & RESCHEDULED TO MONDAY, NOVEMBER 2, 2009	Wednesday	25	1:30 p.m.	4th Floor Conf. Room
Board of Directors Mobile Source Committee <i>(Meets 4th Thursday each Month)</i> CANCELLED	Thursday	26	9:30 a.m.	4 th Floor Conf. Room

DECEMBER 2009

<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	2	9:45 a.m.	Board Room
Board of Directors Public Outreach Committee <i>(Meets 1st Thursday each Month)</i> CANCELLED	Thursday	3	9:30 a.m.	4 th Floor Conf. Room
Board of Directors Mobile Source Committee <i>(Meets 4th Thursday each Month)</i>	Monday	7	9:30 a.m.	4 th Floor Conf. Room

DECEMBER 2009

<u>TYPE OF MEETING</u>	<u>DAY</u>	<u>DATE</u>	<u>TIME</u>	<u>ROOM</u>
Board of Directors Climate Protection Committee <i>(Meets 2nd Thursday each Month)</i> RESCHEDULED TO FRIDAY, DECEMBER 11, 2009	Thursday	10	9:30 a.m.	4th Floor Conf. Room
Board of Directors Climate Protection Committee <i>(Meets 2nd Thursday each Month)</i>	Friday	11	9:30 a.m.	4th Floor Conf. Room
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 Mobile Source Committee – <i>(Meets 4th Thursday of each Month)</i> - CANCELLED	Thursday	24	9:30 a.m.	4 th Floor Conf. Room

JANUARY 2010

<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
Board of Directors Public Outreach Committee <i>(Meets 1st Thursday each Month)</i>	Thursday	7	9:30 a.m.	4 th Floor Conf. Room
Advisory Council Regular Meeting	Wednesday	13	9:00 a.m.	Board Room
Board of Directors Climate Protection Committee <i>(Meets 2nd Thursday each Month)</i>	Thursday	14	9:30 a.m.	4th Floor Conf. Room
Board of Directors Legislative Committee <i>(Meets 2nd Thursday each Month)</i>	Thursday	14	Following Board Climate Protection Cme. Mtg.	4 th Floor Conf. Room
Joint Policy Committee <i>(Meets 3rd Friday Every Other Month)</i>	Friday	15	10:00 a.m.	MTC Auditorium 101 8 th Street Oakland, CA 94607
Board of Directors Regular Meeting <i>(Meets 1st & 3rd Wednesday of each Month)</i>	Wednesday	20	9:45 a.m.	Board Room
Board of Directors Mobile Source Committee <i>(Meets 4th Thursday each Month)</i>	Thursday	28	9:30 a.m.	4 th Floor Conf. Room

HL – 11/18/09 (12:10 p.m.)
P/Library/Forms/Calendar/Calendar/Moncal

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Pamela Torliatt and Members
of the Board of Directors

From: Jack P. Broadbent
Executive Officer/APCO

Date: November 23, 2009

Re: Board of Directors' Draft Meeting Minutes

RECOMMENDED ACTION:

Approve attached draft minutes of the Board of Directors Regular Meeting of November 18, 2009.

DISCUSSION

Attached for your review and approval are the draft minutes of the Board of Directors Regular Meeting of November 18, 2009.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Bay Area Air Quality Management District
939 Ellis Street
San Francisco, CA 94109
(415) 749-5000

Board of Directors' Regular Meeting
November 18, 2009

DRAFT MINUTES

CALL TO ORDER: Chairperson Pamela Torliatt called the meeting to order at 9:51 a.m.

Roll Call: Chairperson Pamela Torliatt; Secretary Tom Bates; and Directors Harold Brown, Chris Daly, Dan Dunnigan, Susan Garner, Carole Groom, Scott Haggerty, Jennifer Hosterman, Yoriko Kishimoto, Carol Klatt, Nate Miley, Mark Ross, Gayle B. Uilkema, Ken Yeager

Absent: Vice Chairperson Brad Wagenknecht; Directors John Gioia, Liz Kniss, Eric Mar, James Sperring and Shirlee Zane

PLEDGE OF ALLEGIANCE: Chairperson Torliatt led the Pledge of Allegiance.

Chairperson Torliatt announced protocols for the public hearing and noted that there was overflow meeting capacity in the 4th Floor Conference Room.

Public Comments:

Ray Davis, Las Gatos, spoke in opposition to the Lehigh Cement Plant's permit renewal.

Cathy Helgerson voiced concern of pollution from the Lehigh cement plant, asked that the plant be shut down, and questioned accessibility of documents on the District's website.

Barry Chang, Cupertino Councilmember, voiced opposition to the Lehigh cement plant's Title V permit renewal and requested the Air District delay issuance of the permit.

Bill Almon stated that the Air District submitted the proposed permit for Lehigh to the EPA, believed the matter was a significant public issue, and voiced concern with the process moving forward to stop the permit's issuance.

Board Member Comments:

Chairperson Torliatt requested clarification on comments, and Mr. Broadbent reported that the Title V permit for the Lehigh facility has not yet been issued. The public comment period has closed and the District's normal process is to send the permit to the EPA for comment. A decision will not be made until the first quarter of next year and the matter will be discussed again at the February Stationary Source Committee meeting. Mr. McKay confirmed that information is posted on the District's website.

CONSENT CALENDAR (Items 1-5):

Director Daly requested removal of Item 3 for discussion.

1. Approval of Minutes of November 4, 2009 Regular Meeting;
2. Set a Public Hearing for December 2, 2009 to consider adoption of proposed amendments to Regulation 8, Rule 50: Polyester Resin Operations, and the adoption of a Negative Declaration pursuant to the California Environmental Quality Act (CEQA);
3. Set Public Hearing for December 16, 2009 to Consider Proposed Amendments to Regulation 2, Rule 5: New Source Review of Toxic Air Contaminants; and Adoption of a CEQA Negative Declaration;
4. Contract with the City of Fremont Redevelopment Agency for Interchange Improvement Costs;
5. Adjust Pay Range for the Strategic Facilities Manager Classification to 148M in accordance with all other District Manager classifications

Board Action: Director Uilkema made a motion to approve Consent Calendar Items 1, 2, 4, and 5; Director Yeager seconded the motion; carried unanimously without opposition.

Director Daly reiterated his request for staff to provide the original September report with an explanation and justification of why the previous recommendation was made, and Mr. Broadbent replied that the report would be provided in the staff presentation on Item 11.

Board Action: Director Daly made a motion to approve Consent Calendar Item 3; Director Klatt seconded the motion; carried unanimously without opposition.

COMMITTEE REPORTS AND RECOMMENDATIONS:

6. **Nominating Committee Meeting**
November 4, 2009
Chair: P. Torliatt

The Nominating Committee met on Wednesday, November 4, 2009 and approved the Nominating Committee minutes of November 5, 2008. The Committee considered the 2010 Board Officers for the 2010 Term of Office, discussed Board Member interest, rotation between supervisor and city members, diversity of representation, and knowledge and experience, and recommended the following Board Officers for 2010: Chairperson Brad Wagenknecht, Vice Chairperson Tom Bates, and Secretary John Gioia. The next meeting of the Nominating Committee is at the call of the Chair.

Board Action: Chairperson Torliatt made a motion to approve the report and recommendation of the Nominating Committee; Director Uilkema seconded the motion; which carried unanimously.

7. **Mobile Source Committee Meeting**
November 5, 2009
Report given by Chairperson S. Haggerty

The Mobile Source Committee met on Thursday, November 5, 2009 and approved the minutes of the October 5, 2009 meeting.

The Committee considered approval of Carl Moyer Program Year 11 Projects with grant awards over \$100,000. Eight (8) projects were evaluated for a total of 54 engines, with over 160 tons of lifetime emission reductions, and \$2,962,895 in total awards. The Committee recommends Board of Directors' 1) approve Carl Moyer Program Year 11 projects with proposed grant awards over \$100,000; 2) authorize the Executive Officer/APCO to execute all necessary agreements for the recommended Carl Moyer Program Year 11 projects.

The Committee then considered the extension of contracts and a request to reserve \$4.5 million in Mobile Source Incentive Funds for the Vehicle Buy Back Program. Based on an increase of two years in vehicles eligible for the program, its volume has increased by 32% this year. In order to capitalize on this success, the Committee was informed about a complimentary State Bureau of Automotive Repairs (BAR) program, staff monitoring of vehicles retired, and the necessity to extend current contracts.

The Committee recommends that the Board of Directors:

- 1) Authorize the Executive Officer/APCO to execute contract extensions for vehicle scrapping and related services with Environmental Engineering Studies, Inc and Pick-N-Pull, which will distribute, on a reimbursement basis, up to approximately \$4.5 million in Mobile Source Incentive Funds until April 1, 2010, at which time the Air District's Vehicle Buy Back (VBB) program will cease temporarily and be reactivated in the likely event that the California Bureau of Automotive Repair (BAR) program runs out of funding; and
- 2) Allocate an additional \$4.5 million in Mobile Source Incentive Funds (MSIF) to fund the VBB Program during fiscal Year 2009/2010 and increase the VBB Program FY 2009/2010 budget accordingly.

The Committee then considered proposed revisions to three Transportation Fund for Clean Air Regional Fund Projects which had previously been approved by the Board. Staff explained that ranking, scoring and cost effectiveness for the projects need to be changed due to California Air Resources Board regulations and public transit fleet rules, but that the projects continue to meet TFCA cost effectiveness criteria and have good emissions reduction potential.

The Committee recommends that the Board of Directors approve proposed revisions to three (3) Transportation Fund for Clean Air Regional Fund Projects.

The Committee then considered approval of Fiscal Year (FY) 2008/2009 Transportation Fund for Clean Air (TFCA) Expenditures and Effectiveness Report. Expenditures totaled \$7.16 million and reductions in criteria pollutant emissions over project lifetimes totaled 743 tons.

The Committee recommends that the Board of Directors approve Fiscal Year (FY) 2008/2009 Transportation Fund for Clean Air (TFCA) Expenditures and Effectiveness Report.

The Committee then considered proposed revisions to Transportation Fund for Clean Air Regional Fund policies and evaluation criteria for Fiscal Year (FY) 2009/2010, previously approved by the Board on May 6, 2009 for alternative fuel vehicle and infrastructure projects. The Committee discussed how these changes would increase funding opportunities for public entities and how the proposed revisions will streamline and simplify the application process.

The Committee recommends that the Board of Directors approve the proposed revisions for FY 2009/2010 Transportation Fund for Clean Air Regional Fund Policies and Evaluation Criteria.

The next meeting of the Mobile Source Committee is scheduled for Monday, December 7, 2009.

Public Comment:

David Head, Fleet Manager, County of Sonoma, spoke in favor of the report and recommendations of the Committee which will include local government participation for furthering electric vehicle technologies.

Board Action: Director Haggerty made a motion to approve the report and recommendations of the Mobile Source Committee; Director Ross seconded the motion; which carried unanimously.

8. Legislative Committee Meeting

November 12, 2009

Report given by Chairperson T. Bates

The Legislative Committee met on Thursday, November 12, 2009 and approved the Minutes of April 15, 2009.

The Committee received a summary of the 2009 legislative year, which was dominated by California's financial problems. Few bills with air quality benefits became law. On the other hand, all policy bills that the District opposed were also blocked from becoming law. Unfortunately, two trailer bills were passed as part of the budget deal that will be harmful to air quality. One of these delays CARB's off-road diesel regulations by several years, and the second allows Carl Moyer funds to be used to pay for agricultural equipment compliance with air quality regulations.

The Committee judged that while the District-sponsored bill to cut emissions at the Port of Oakland did not move forward (AB 1431 by Assemblymember Jerry Hill) it seems to have had a positive effect by causing the Port to take air quality issues more seriously.

The Committee discussed potential legislative proposals for a 2010 legislative agenda. Specifically, the Committee discussed and requested that staff explore several possible bills:

- Broad reforms to the smog check program;
- Include motorcycles into the smog check program;
- Making changes to air pollution laws dealing with penalties, such as including a cost of living adjustment in the penalty ceilings

The Committee also expressed interest in increasing the District's federal advocacy efforts, including potentially working with the Port of Oakland on obtaining federal funds to cut goods movement emissions. The Committee also directed staff to look at the issue of the District taking positions on ballot measures.

The next meeting of the Legislative Committee is January 14, 2010.

Board Action: Director Bates made a motion to approve the report of the Legislative Committee; Director Dunnigan seconded the motion; which carried unanimously.

9. Public Outreach Committee Meeting

November 13, 2009

Report given by Chairperson M. Ross

The Public Outreach Committee met, without a quorum, on Friday, November 13, 2009, and deferred the minutes of May 7, 2009 and October 15, 2009.

The Committee received a report on Spare the Air focus group findings which re-affirmed the need for broad-based outreach and education, highlighted the critical relationship between employer advocacy and increased carpool/rideshare activity, showcased the need to present motorists with a variety of emissions-reducing behaviors, and validated the importance of messaging.

The Committee then received an update of the Bayview Hunter's Point community dialogue meetings, which were held on July 25th and 30th, with over 80 participants. A request for a Request for Proposals (RFP) for air filtration systems in Bayview will be prepared and recruitment is underway for a Health Officer.

The Committee then received an update and tour of the newly redesigned Spare the Air website and discussed its interactive capabilities.

The next meeting of the Public Outreach Committee is at the call of the Chair.

Board Action: Director Ross made a motion to approve the report of the Public Outreach Committee; Director Klatt seconded the motion; which carried unanimously.

10. Stationary Source Committee Meeting

November 16, 2009

Report given by Vice Chairperson C. Klatt

The Committee met on Monday, November 16, 2009 and approved the minutes of October 19, 2009. The Committee received a status report on the update to the District's CEQA Guidelines and to recommend CEQA Thresholds of Significance. Proposed thresholds of significance include more stringent air quality standards, local impacts of air toxics and fine particulate matter, and address greenhouse gases. The thresholds include stronger criteria for evaluating local impacts and recommend use of more health-protective risk factors in calculating impacts, adding a new threshold for local PM 2.5 impacts, adding a new threshold for cumulative impacts and recommending preparation of local risk reduction plans to provide comprehensive, community-wide approach to reducing impacts from existing and new sources. Today, and again on December 2nd, the Board of Directors will consider thresholds of significance.

The Committee then received an update on proposed amendments to District Regulation 2, Rule 5: New Source Review of Toxic Air Contaminants which would increase the stringency of the standards in the District's jurisdiction by incorporating revised methodologies adopted by OEHHA. The update would also require tracking of emissions in CARE communities. Comment was received from a variety of stakeholders representing business, government and environmental groups.

The Committee discussed the effective date of the proposed amendment and considered extending the effective date to more than 90 days. The Committee suggested amendments be reviewed by the Committee a year after their effective date, to review numeric "bright" line thresholds of 1,100 metric tons/year, and to also confirm the level of authority the District has in the existing source rule.

The Committee deferred discussion and status report on proposed amendments to Regulation 11, Rule 16: Perchloroethylene (PERC) and Synthetic Solvent Dry Cleaning Operations and proposed Amendments to Regulation 8, Rule 50: Polyester Resin Operations.

The next meeting of the Committee is scheduled for Monday, February 15, 2010 at 9:30 a.m.

Board Action: Director Klatt made a motion to approve the report of the Stationary Source Committee; Director Garner seconded the motion; which carried unanimously.

PUBLIC HEARING(S)

- 11. Public Hearing to receive testimony on proposed amendments to the District's California Environmental Quality Act (CEQA) Thresholds of Significance. The hearing will be continued on December 2, 2009 at which time adoption of the proposed amendments will be considered.**

Chairperson Torliatt reviewed the public hearing protocols and confirmed with Mr. Broadbent that the public hearing would be opened, public testimony would be received, and the public hearing would be continued to December 2, 2009.

Director Hosterman cited the significance of the public hearing item, announced her anticipated absence at the December 2, 2009 Board meeting, cited the pending holiday season, and suggested the Board of Directors consider continue the matter to January. Secretary Bates and Directors Garner, Groom, Haggerty and Dunnigan voiced support for Director Hosterman's request.

Chairperson Torliatt suggesting that staff present the item, for the Board to consider the matter after hearing from the public and discussion amongst Directors.

Executive Officer/APCO Jack Broadbent said the District takes its role seriously in quantifying air quality impacts and provided background, stating CEQA guidelines were last updated in 1999 and staff has worked extensively in the update process. The update will provide guidance on how to mitigate greenhouse gases (GHGs) from land use projects which does not exist today, and will provide guidance on toxic air contaminants and ambient air quality standards, especially tighter standards in CARE communities. He encouraged the Board of Directors to take time, be mindful that local city and county planners need guidance and to keep adoption within a reasonable amount of time. He confirmed with Directors that staff has been working with cities and counties' community development directors.

Director of Planning and Research, Henry Hilken, presented the staff report and referred to the one-page summary dated November 2, 2009 which summarizes all of the thresholds. Regarding greenhouse gases, Mr. Hilken acknowledged that guidance is needed for local planning departments, and that as statewide guidance would be desirable. Once the California Air Resources Board (CARB)

adopts statewide guidelines, the Air District considers the thresholds as interim, and will have the ability to revise them.

GHG thresholds are based on AB 32 and Scoping Plan and incorporate threshold options, which he briefly described as: 1) plan based; 2) "bright line" of 1,100 metric tons/year; and 3) efficiency based. There is also a threshold for stationary sources of 10,000 metric tons/year.

Mr. Hilken then described local community risks, hazards and thresholds and referred to a hand-out dated November 18, 2009, stating shading areas indicate revisions from the previous proposal to the current proposal. He noted that revisions made by the Cal/EPA Office of Environmental Health Hazard Assessment (OEHHA) guidelines result in greater health protection, provide increased cancer potency for infants and children, increased breathing rates, and the net result is an estimated cancer risk of two to three times higher than previous methodology.

Mr. Hilken reported that comments were also received from local governments and business about impeding infill development and he briefly discussed the District's proposal for local risk reduction plans. A greater level of health protection can be achieved using lower thresholds, more conservative risk assumptions but could result in difficulty approving common local projects, such as gas stations and back-up generators, which will require new controls on projects through the permitting process.

Mr. Hilken concluded his presentation and said the recommendation is to use more stringent thresholds and health protective risk factors in calculating impacts, add a new threshold for local PM2.5 impacts, add a new threshold for cumulative impact, and recommend the preparation of local risk reduction plans.

Director Comments/Questions:

Directors received explanation and examples from Mr. Hilken of affected businesses, OEHHA guidelines, differences in the previous tiered approach versus the current recommendation which results in added health protectiveness, qualified risk reduction plans which the District will formulate, and the overall effect on allowable cancer risk in the current proposal. Directors confirmed with staff that the GHG threshold for stationary sources at 10,000 metric tons would apply to new or modified projects, District staff have been and will continue to work with agencies on their approved risk reduction plans, and that the effective date of the proposal could change depending upon continuation of the public hearing.

Public Comments:

Gordan Mar, BAEHC, strongly believes the proposed guidelines need to be further strengthened to address pollution disparities and urge the Board to adopt the original proposal for a tiered approach.

Leonard Webster supported a "no project" option in the CEQA guidelines.

Dr. Henry Clark supported a "no project" option in the CEQA guidelines.

Chairperson Torliatt reiterated that the "no project" option is included by default under CEQA which the Board of Directors supports.

Antonio Diaz, PODER/BAEHC, presented a letter signed by 28 organizations and urged the District to adopt stricter revisions to CEQA guidelines.

Tessie Ester, Hunters View Mother Committee, cited the young people in attendance, and invited the Board to visit Hunter's Point.

Marie Harrison, Green Action for Health and Environmental Justice, discussed the work to date with impacted communities, asked for enforcement of rules that are adopted, and suggested the Board of Directors hold their next meeting in an appropriate facility to accommodate more people.

Johnny White, Community Focus, asked for the "no project" option and for the District to take action in enforcing its rules.

Nile Malloy, Communities for a Better Environment, cited significant asthma rates, asked to support land base decisions to offset pollution, said they found indoor pollution to be twice as dangerous, supported BAEHC's request for the original proposal, and suggested more research be done on the proposed 1,000 foot measurement.

Anna Lee, CBE, BAEHC, said CBE has documented over 200 sources of hazards in close proximity to schools, playgrounds, recreation centers, libraries, churches and homes, counted over 11,000 diesel trucks traveling over a four day period in East Oakland and conducted air monitoring of PM2.5 and found unsafe levels of toxics, and urged the Board to consider a more health protective threshold and 24 hour and not average measurements.

Adrienne Bloch, CBE, cited problems with cumulative impacts analyses, said the threshold of 1,000 feet from the proposed source is inadequate and there is no evidence to support it, and urged the Board to make suggested more stringent revisions to the proposed recommendations.

Shawn Lazerow, CBE attorney, spoke regarding the "no project" alternative and the reasoning for such language to be included.

Theresa Faunnul, Hunters View Mothers Committee, said she has been diagnosed with asthma and bronchitis, cited the need to wear goggles due to gas leaks which have become stronger, cited daily nose bleeds and overall health impacts.

Venitta Logan said her 22 month old grandson is getting sicker by the day and she pleaded with the Board to take action and stop making promises.

Dennis Bolt, Western States Petroleum Association, discussed the loss of business and jobs given the current recommendation, opposed the numeric threshold components, and believed that development projects will not become approvable.

Matt Vespa, Center for Biological Diversity, stated that the South Coast Air District has already adopted an identical threshold for stationary sources, there have been no complaints, and it is working. He believed the District proposes a serious and most stringent approach that provides needed guidance to California and allows projects through and meets varying viewpoints. He recommended adoption of thresholds on December 2nd with no delay.

Jackie Kepke, California Wastewater Climate Change Group, asked that biogenic CO₂ not be counted toward the significance threshold, as they do not contribute to climate change and should be viewed separately.

Paul Campos, California Building Industry Association and Home Builders Association of Northern California, supports adoption of GHG thresholds but voiced significant concerns with the substance of staff's proposal and processes, stating that the District would be violating CEQA which prohibits piecemeal and project splitting. He also voiced concern with proper circulation of revisions.

Lucia Cordell, CBE, voiced concerns of impacted communities, cited asthma problems, and pollution traveling from other communities.

Wafau Aborashed, BAEHC and Healthy 880 Communities, echoed comments of CBE speakers, said she knew 15 people who have recently passed away in her neighborhood, and believed land use guidance is needed.

Kendrick Moore, Black America, cited illness growing up in Bayview Hunter's Point and echoed comments of other speakers.

DeSean Atchan said he and his brothers have asthma and cannot play sports, and asked for action in impacted communities.

Deon Taylor, Mother Committee Youth, said he was born with asthma and has a two-year old daughter with asthma and asked for action.

David Schonbrunn, TRANSDEF, supported what has been published and said he is appreciative of the District's leadership, spoke of the need for enforceable measures, asked for mandated, rigorous language, and said thresholds proposed would not accomplish the 2020 goal because it assumes existing development.

Darin Ranelletti, City of Oakland, voiced concern that staff is proposing adoption of the thresholds but not the CEQA guidelines, which would allow their update without returning to the Board of Directors. He recommended convening a short-term stakeholder group to sort through issues and adopt both together.

Bradley Angel, GreenAction and EJAQC, acknowledged and appreciated the work of the District, said staff's proposal struck a balance for impacted communities and business, but not for health, suggested the 1,000 foot radius be expanded and asked for a no more pollution period mandate.

Rosalynn Ruiz, BAEHC, asked for action with results and a plan to reduce cumulative air pollution and attach it to a timeline.

Julie West, American Lung Association, thanked the District for their leadership, encouraged the Board to continue making steps and to quickly adopt the most stringent guidelines as possible.

Rob Simpson believed that the Air District has been systematically ignoring CEQA law and discussed the Russell City permit process.

Gwendolyn Powell, WCTC, said she is a former teacher/administrator and voiced concern with existing industry polluting the air, cited disturbing rates of asthma among children who miss school and thereby receive improper education.

Ken Kloc, BAEHC, asked that the annual average ambient PM2.5 be changed to 24 hour and voiced concern with risk reduction plans and their true effect.

Emily Lee, Chinese Progressive Association and BAEHC, urged support of the Collaborative's protocol and for new rules to be adopted for San Francisco's Portal and Excelsior Districts, which are close to highways and are impacted. She also cited poor health in southeast San Francisco, the lack of nearby hospitals, and requested no new incremental risks be allowed.

Andy Katz, Breathe California, said the guidelines will improve public health, strongly encouraged the strictest adoption and approval within 60 days or less if the public hearing is continued. He asked for a 24 hour PM threshold, felt the 1,000 foot radius is arbitrary and requested it go to at least 2,000 feet or more, and thinks the lead agency should extend its measurement ratio, as well.

Brian Matthews, Alameda County Waste Management Authority, spoke of the Authority's aggressive plan to divert more organics, voiced concerns specific to thresholds regarding odors, noted that many complaints received are from odors from adjacent facilities, and requested amendment to the significance thresholds.

Natalie Gee, Chinese Progressive Association, said she lives in the Portal neighborhood, discussed its diversity and the significant pollution from Highways 101 and 280.

Chairperson Torliatt recommended, and the Board concurred, that the public hearing be continued to December 2, 2009. She reviewed the following issues, which the Board will consider and provide direction on at that time:

1. Consideration for a 24-hour PM2.5 threshold;
2. Consideration of maintaining or changing the 1,000 foot radius;
3. Consideration of biogenic emissions exemption;
4. Clarification on the "no project" option;
5. Determine an effective date for CEQA guidelines to take effect;
6. Further clarification on risk reduction plans and what they may entail;
7. Clarification about the CEQA process and whether the District has complied with CEQA in postings and availability of material.

Directors discussed and requested the following additional considerations:

8. Final adoption to occur January 2010 (Torliatt);
9. Direction to staff to continue to meet with other city and county staff to work through implementation of guidelines (Torliatt);
10. Consideration to add the tiered system versus staff (Torliatt and Daly);
11. Consideration separating out the adoption of significance thresholds and adoption CEQA guidelines (Hosterman);
12. Consideration for revision to indicate "No new net pollution" (Kishimoto);
13. Consideration for threshold standards for "active" construction (Kishimoto);
14. Consideration to differentiate between CEQA guidelines and what the District does with its New Source Rule (Daly);

15. Consideration to add consideration of odors in the CEQA guidelines (Garner);

12. Personnel Committee Meeting Report

November 18, 2009

Chair: C. Groom (for Chairperson H. Brown)

Pursuant to Government Code Section 549567 and 54957.6., the Committee met in Closed Session to conduct performance evaluation of Legal Counsel.

The Personnel Committee met on November 18, 2009 and approved the minutes of March 6, 2009 and May 27, 2009. The Committee met in closed session pursuant to Government Code Section 549567 and 54957.6., to conduct performance evaluation of Legal Counsel. No reportable action was taken. The next meeting of the Personnel Committee is scheduled for Monday, November 23, 2009.

OTHER BUSINESS:

- 13. Report of Executive Officer/APCO:** Mr. Broadbent reported that there is a great deal of interest in the Oakland Port truck situation, said staff is on track to retrofit trucks and he confirmed that there will be many trucks available to service the Port of Oakland.
- 14. Report of the Chairperson – None**
- 15. Time and Place of Next Meeting:** Regular Meeting - Wednesday, December 2, 2009 - 939 Ellis Street, San Francisco, CA 94109
- 16. Adjournment:** The Board of Directors Meeting adjourned at 12:52 a.m.

Lisa Harper
Clerk of the Boards

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Pamela Torliatt and Members
of the Board of Directors

From: Jack P. Broadbent
Executive Officer/APCO

Date: November 18, 2009

Re: Commendations/Proclamations

RECOMMENDED ACTION:

Recognize outgoing Advisory Council Chairperson, Harold M. Brazil, for his leadership on the Advisory Council this past year.

BACKGROUND:

The Advisory Council approved the 2010 Slate of Officers as Chairperson Jeffrey Bramlett, Vice Chairperson Ken Blonski, and Secretary Stan Hayes. Chairperson Torliatt will recognize outgoing Advisory Council Chairperson, Harold M. Brazil.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Approved by: Jack M. Colbourn

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Pamela Torliatt and
Members of the Board of Directors

From: Jack Broadbent
Executive Officer/APCO

Date: November 19, 2009

Re: Consider Revising the Existing Job Classification of Facilities Manager to
Strategic Facilities Planning Manager

RECOMMENDATION:

Approve revising the existing job classification of Facilities Manager to Strategic Facilities Planning Manager.

DISCUSSION

The Air District will benefit by revising the job classification of Facilities Manager to Strategic Facilities Planning Manager. This classification plans, develops, implements, organizes and coordinates the activities related to the Air District's facility management programs including day to day operations. This classification analyzes the performance of the Air District's existing facilities and analyzes options for improved facilities

The Board of Directors' approval of the revised job classification and the attached draft job description is needed in order for the classification to be updated in the classification system.

If approved, the Strategic Facilities Planning Manager job classification will be effective as of the date of Board approval.

BUDGET CONSIDERATION/FINANCIAL IMPACT:

There is no financial impact beyond what is contemplated in the current budget. This recommendation does not create a new position in the budget.

Respectfully Submitted,

Jack Broadbent
Executive Officer/APCO

Approved by: Jack M. Colbourn

STRATEGIC FACILITIES PLANNING MANAGER

DEFINITION

Under general direction, plans, develops, implements, organizes and coordinates the activities related to the District's facility management programs including day to day operations; supervises, reviews and evaluates staff; performs related work as assigned.

DISTINGUISHING CHARACTERISTICS

This single position class manages the staff and activities associated with the District's facility management programs. The position has District-wide responsibility for policy development and implementation of procedures related to the assigned programs. The incumbent is responsible for accomplishing section goals and objectives and for furthering District goals and objectives within general policy guidelines. This class is distinguished from Director of Administrative Services in that the latter has overall managerial responsibility for all financial, business, administrative, and internal service programs for the District.

EXAMPLES OF DUTIES (Illustrative Only)

Analyzes the performance of the District's existing facilities and analyzes options for improved facilities.

Develops and implements goals, objectives, policies, procedures and work standards for the District's facility management programs.

Directs, organizes, assigns, reviews and evaluates the work of assigned staff; selects and trains staff.

Develops the draft annual budget for facility management programs.

Consults with District management and building occupants to identify and address their needs for building maintenance services.

Researches, analyzes, and recommends policy alternatives on a variety of facility management issues, including performing cost analyses and feasibility studies.

Designs and maintains a variety of electronic records relating to the facility management programs, including maintenance schedules, repairs, requests for services, and cost.

Writes and updates written policies and procedures relating to facility management programs.

Develops and monitors service and repair policies, procedures, and standards; prepares a variety of studies and reports and makes appropriate recommendations.

Coordinates building maintenance to assure that District staff or independent contractors conduct such maintenance in accordance with District standards and in a timely manner.

Maintains building security and safety, including key distribution and tracking, coordination of Security Services, and supervision of security guards; acts as point of contact for emergency building needs; coordinates with neighborhood watch groups; may serve on the District's Safety Committee.

**STRATEGIC FACILITIES MANAGER
NOVEMBER 2009
PAGE 2 OF 3**

Works closely with other division representatives to coordinate activities; responds to facility complaints or inquiries in-person or by phone.

Authorizes and oversees the scheduling and implementation of contracted work related to facility management activities; and inspects and approves work upon completion.

Reviews construction specifications and drawings, monitors construction activities, and coordinates construction activities with building occupants to assure communication and to minimize disruption in the District's operations.

Works with appropriate management staff to recommend and execute an effective and efficient space management program, including changes in space assignments within the District offices.

Ensures work and activities performed within the District facilities are in compliance with applicable laws, codes, regulations, and guidelines.

Monitors developments in the areas of energy efficiency, security systems, building and fire code requirements; evaluates their impact and implements policy and procedure changes as needed.

Prepares and maintains a wide variety of written records and reports.

QUALIFICATIONS

Knowledge of:

Administrative and managerial principles and practices, including goal setting and program and budget development and implementation.

Principles and practices of employee supervision, including selection, training, work evaluation and discipline.

Principles and practices of facility management.

Safety regulations, safe work practices, and safety equipment related to the work.

Applicable District, state and federal laws, rules and regulations

Computer applications and software.

Skill in:

Planning, assigning, supervising, reviewing and evaluating the work of assigned staff.

Preparing, developing, and monitoring a budget.

Analyzing operational and administrative problems, evaluating alternatives, and recommending or implementing effective courses of action.

Developing and implementing policies, procedures, work and safety standards, and management controls.

Coordinating work assignments with divisions and outside vendors.

**STRATEGIC FACILITIES MANAGER
NOVEMBER 2009
PAGE 3 OF 3**

Preparing clear and concise records, reports, correspondence and other written materials.

Using computer software applications, including word processing and spreadsheets.

Exercising independent judgment within general policy guidelines.

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

Other Requirements:

Must possess a valid California driver's license.

Education and Experience:

A typical way to obtain the knowledge and skills is:

Equivalent to graduation from a four (4) year college or university with major coursework in business or public administration or a closely related discipline and four (4) years of experience in developing and administering a variety of business services programs such as facilities management or other general administration support programs, of which at least two (2) years were at a supervisory level.

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Pamela Torliatt and Members
of the Board of Directors

From: Jack P. Broadbent
Executive Officer/APCO

Date: November 19, 2009

Re: Approval of Proposed Amendments to the Air District's Administrative Code
Division III - Personnel Policies and Procedures - Section 3 Adding a New
Subsection 3.12 Entitled "Fraud, Misconduct, and Dishonesty in the Workplace"

RECOMMENDED ACTION:

Approve proposed amendments the Air District's Administrative Code, Division III Personnel Policies and Procedures - Section 3 adding a new subsection 3.12 entitled "Fraud, Misconduct, and Dishonesty in the Workplace." Amendments addressing these subjects were recommended by the District's auditors. The proposed new subsection is attached.

BACKGROUND

In accordance with provisions of the Administrative Code governing amendments to the Code, notice of these proposed amendments was given at the Board of Directors regular meeting of November 4, 2009.

DISCUSSION

The Board of Directors will consider approval of proposed amendments to the Air District's Administrative Code to incorporate the recommended provisions.

BUDGET CONSIDERATION/FINANCIAL IMPACT:

None.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Reviewed by: Jack M. Colbourn
Jeff McKay

Attachment: Proposed Amendments to Administrative Code

ADMINISTRATIVE CODE REVISIONS

Amend Division III, “Personnel Policies and Procedures,” by adding a new Section 3.12, entitled “Fraud, Misconduct, and Dishonesty Policy.”

15. Fraud, Misconduct, and Dishonesty in the Workplace.

15.1 It is the policy of the District to prevent, investigate and correct fraud, misconduct and dishonesty in the workplace.

15.2 No employee shall commit fraud or acts of misconduct or dishonesty against the District or in connection with his or her District employment.

15.3 Fraudulent acts and acts of misconduct and dishonesty in District employment include, but are not necessarily limited to, the following:

- Forgery or unauthorized alteration of District financial records, including checks and warrants payable to or by the District;
- Misappropriation of District goods or assets, e.g., furniture, fixtures, equipment, and office supplies;
- Misappropriation of District funds and securities;
- Falsification of employee timesheets or District work reports and products;
- Knowingly false reporting or handling of District funds for financial transactions;
- Having a personal financial interest in any purchase, sale or contract with a vendor or contractor made by the employee in his or her capacity as a District employee;¹
- Unpermitted personal use or receipt of District assets, goods, funds, and services;
- Unauthorized solicitation or acceptance of, gifts, gratuities, or other consideration from contractors, vendors or consultants providing goods or services to the District;
- Solicitation of, asking, acceptance of, or agreement to accept any gratuity, gift or other consideration from someone other than the District for performing District employment;²
- Solicitation of, asking, acceptance of, or agreement to accept a bribe for taking action in one’s capacity as a District employee in a matter that is pending or that may take place;³
- Knowingly unpermitted disclosure of confidential or proprietary District information to non-District persons and entities;
- Intentional or negligent, unpermitted destruction or damage of District goods or assets, e.g., furniture, fixtures, equipment, and office supplies;
- Use of, or being under the influence of, alcohol or illegal drugs in the course of performing District duties and responsibilities; and
- Willful failure to perform the duties and tasks of one’s District employment.

¹ Cal. Government Code section 1090.

² Cal. Penal Code section 70.

³ Cal. Penal Code section 68.

15.4 Retaliation against an employee who reports reasonable suspicion of the existence or occurrence of an act of fraud, misconduct or dishonesty is prohibited.

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson, Pamela Torliatt and Members
of the Board of Directors

From: Jack P. Broadbent
Executive Officer/APCO

Date: November 23, 2009

Re: Report of the Executive Committee Meeting of November 19, 2009

RECOMMENDED ACTION

The Committee recommended Board of Directors' approval of the Joint Policy Committee (JPC) policies regarding SB 375.

BACKGROUND

The Executive Committee met on Thursday, November 19, 2009. The Committee received the following reports and updates:

- A) Quarterly Report of the Hearing Board – July 2009 – September 2009
- B) Update of Survey Results relative to potential relocation of Air District Headquarters
- C) Joint Policy Committee Update
- D) Air District's Role with the Joint Policy Committee (JPC) and Policies Regarding SB 375
- E) EPA Title V Program Evaluation

Attached are the staff reports previously presented in the Executive Committee packet of November 19, 2009.

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

BUDGET CONSIDERATION/FINANCIAL IMPACT

- A) None.
- B) None.
- C) None.
- D) None.

E) None.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Lisa Harper
Reviewed by: Jennifer Chicconi

Attachment(s)

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 Memorandum

TO: Chairperson Pamela Torliatt and Members
 of the Executive Committee

FROM: Chairperson Thomas M. Dailey, M.D., and Members of the Hearing Board

DATE: November 9, 2009

RE: Hearing Board Quarterly Report – JULY, 2009 – SEPTEMBER, 2009

RECOMMENDED ACTION:

This report is provided for information only.

DISCUSSION:

<u>COUNTY/CITY</u>	<u>PARTY/PROCEEDING</u>	<u>REGULATION(S)</u>	<u>STATUS</u>	<u>PERIOD OF VARIANCE</u>	<u>ESTIMATED EXCESS EMISSIONS</u>
Solano/Benicia	BAY AREA COFFEE, INC. (BENICIA) – Emergency Variance – Docket No. 3569 – <i>Application for Emergency Variance from regulation requiring compliance with permit conditions and Volatile Organic Compound Emissions.</i>	2-1-307	Denied	7/15/09 – 7/17/09	===
Contra Costa/Richmond	WEST COUNTY LANDFILL, INC.; WEST CONTRA COSTA SANITARY LANDFILL, INC. (RICHMOND) – Further Hearing for Further Extension of Variance – Docket No. 3552 – <i>Request for Further Extension of Variance from regulation requiring compliance with permit conditions and Volatile Organic Compound Emissions (APCO not opposed).</i>	8-34-113.2, 301.2, 301.3 2-1-307 2-2-112 (Major Facility Review Permit)	Hearing Held; Withdrawn		===

<u>COUNTY/CITY</u>	<u>PARTY/PROCEEDING</u>	<u>REGULATION(S)</u>	<u>STATUS</u>	<u>PERIOD OF VARIANCE</u>	<u>ESTIMATED EXCESS EMISSIONS</u>
Contra Costa/Rodeo	CONOCOPHILLIPS COMPANY (RODEO) – Appeal - Docket No. 3452 – <i>Request for Dismissal from the issuance of a Major Facility Review Permit. (APCO not opposed).</i>	2-1-307 2-6-307 (Major Facility Review Permit)	Withdrawn	6/29/09 – 7/3/09	===
Santa Clara/Gilroy	GILROY ENERGY CENTER, LLC (GILROY) – Emergency Variance – Docket No. 3570 – <i>Application for Emergency Variance from regulation requiring compliance with permit conditions and Volatile Organic Compound Emissions.</i>	2-1-307 (Major Facility Review Permit)	Approved	9/1/09 – 9/30/09	===

NOTE: During the third quarter of 2009, the Hearing Board processed and filed a total of two (2) Emergency Variance applications and one (1) Appeal. A further hearing was held for one (1) Request for Further Extension of Variance (Docket No. 3552) on September 17, 2009 (The applicant withdrew the application for variance less than the required 72 hours' notice). The Hearing Board processed two (2) Orders of Dismissal, and one Order Granting Emergency Variance. A total of \$5,075.10.00 was collected as Hearing Board fees (applications and further hearing) during the third quarter of 2009.

EXCESS EMISSION DETAILS

<u>COMPANY NAME</u>	<u>DOCKET NO.</u>	<u>TOTAL EMISSIONS</u>	<u>TYPES OF EMISSIONS</u>	<u>PER UNIT COST</u>	<u>TOTAL AMT COLLECTED</u>
					\$ 0
				TOTAL COLLECTED:	\$ 0

Respectfully submitted,

Thomas M. Dailey, M.D.
Chair, Hearing Board

Prepared by: Lisa Harper
Reviewed by: Jennifer Chicconi

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Pamela Torliatt and Members
of the Executive Committee

From: Jack P. Broadbent
Executive Officer/APCO

Date: November 18, 2009

Re: Update on Survey Results Relative to Potential Relocation of Air District
Headquarters

RECOMMENDED ACTION

For information only.

BACKGROUND

The Executive Committee at its July 29th meeting, received an overview of the Strategic Facility Planning Process. The Committee received an overview of a revised Request for Proposal for Strategic Facilities Planning issued to include Phase I: Visioning Process and Phase II: Data Gathering. The Strategic Facility Planning process is a multi-phased approach that will be instrumental in determining recommendations for improvements.

DISCUSSION

The Committee will receive an overview of the study process and progress. The overview will include interview and survey results conducted with Executive Management staff, operational staff, the Board of Directors, the Advisory Council and the Hearing Board.

NEXT PHASE

The Air District will issue an RFP for a commercial real estate services broker with a preference towards a firm that specializes in tenant representation only.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO
Prepared by: Mary Ann Okpalaugo
Reviewed by: Jack Colbourn

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Pamela Torliatt and Members
of the Executive Committee

From: Jack P. Broadbent
Executive Officer/APCO

Date: November 4, 2009

Re: Joint Policy Committee Update

RECOMMENDED ACTION:

Receive and file.

DISCUSSION

At the November 19, 2009, meeting of the Executive Committee, Ted Droettboom will provide an update on the activities of the Joint Policy Committee.

BUDGET CONSIDERATION/FINANCIAL IMPACT:

None.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Pamela Torliatt and Members
of the Executive Committee

From: Jack P. Broadbent
Executive Officer/APCO

Date: November 10, 2009

Re: JPC Policies for Implementation of SB375

RECOMMENDED ACTION:

Recommend that the Board of Directors approve the JPC Policies for the Bay Area's Implementation of Senate Bill 375.

BACKGROUND

SB 375 was passed by the State Legislature and signed into law by the Governor on September 30th, 2008. The bill mandates an integrated regional land-use-housing-and-transportation-planning approach to reducing greenhouse gas (GHG) emissions from automobiles and light trucks, principally by reducing vehicle miles traveled (VMT). Within the Bay Area, automobiles and light trucks account for approximately 26% of the region's overall GHG emissions, and approximately 64% of emissions from the transportation sector. The Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC) have key roles in implementing the bill's provisions for the Bay Area, in close collaboration with the Air District and BCDC.

At its meeting on September 18, 2009, the Joint Policy Committee adopted a set of policies designed to guide the process through which the Bay Area's regional agencies will implement SB 375. Also at its September 18 meeting, the JPC referred and recommended the Policies for adoption by its member agencies.

DISCUSSION

Staff will present an overview of the Policies for Implementation of SB 375 adopted by the JPC (attached).

BUDGET CONSIDERATION / FINANCIAL IMPACT:

None.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Abby Young
Reviewed by: Henry Hilken

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Pamela Torliatt and Members
of the Executive Committee

From: Jack P. Broadbent
Executive Officer/APCO

Date: November 4, 2009

Re: EPA Title V Program Evaluation

RECOMMENDED ACTION:

Receive and File.

BACKGROUND

On September 29, 2009, EPA Region IX issued a final report entitled Bay Area Air Quality Management District Title V Operating Permit Program Evaluation. The report contains the findings of a program evaluation that was conducted by EPA staff in 2008, and that consisted of four stages as follows: (1) a questionnaire focusing on Title V program implementation, (2) review of the District's Title V permit files, including copies of permits, statements of basis, permit applications, and correspondence, (3) interviews with District staff, and (4) follow-up and clarification of issues for completion of draft and final reports.

DISCUSSION

The conclusion of the EPA program evaluation is that the District's Title V program has no significant issues that need correction. The report indicates:

“The District benefits from experienced staff and management who successfully implement the title V program. BAAQMD issues title V permits in a timely manner that are well-written and practically enforceable. All emission limits and other applicable requirements are included in the permits, and monitoring is sufficient to determine compliance with the emission limits. The District excels in many aspects of its title V program, including the preparation of statements of basis, the use of its website to publish comprehensive and timely documentation of every title V permitting action, its effective field enforcement program, and on-going evaluations of the effectiveness of its public involvement efforts.”

The major findings from the EPA report also include four items that EPA indicates may be useful towards the District's ongoing efforts for program improvement. Staff is preparing an Action Plan to address these program improvement recommendations, and will provide the Committee with a summary of this at the November 19, 2009 meeting.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Brian Bateman
Reviewed by: Jeffrey McKay

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Pamela Torliatt and Members
of the Board of Directors

From: Jack P. Broadbent
Executive Officer/APCO

Date: November 23, 2009

Re: Report of the Personnel Committee Meeting of November 23, 2009

RECOMMENDED ACTION

Consider Recommending Board of Directors' approval of Candidates and Incumbents for Appointment and Re-Appointment to the Air District's Advisory Council:

- A) Recommend Board of Directors' approval to re-appoint Ken Blonski, Secretary, Regional Park District; Jeffrey Bramlett, Vice Chair, Park & Recreation; Harold Brazil, Chair, Mass Public Transportation; Kraig Kurucz, Industry; Kendal Oku, Organized Labor to the Advisory Council, to two-year terms, effective January 1, 2010 through December 31, 2011; and
- B) Recommend Board of Directors' approval to appoint Gary Lucks to the Advisory Council, Conservation Organization category, for a two-year term of office, effective January 1, 2010 through December 31, 2011;
- C) Re-advertise one vacancy in the Conservation Organization category and conduct outreach to advocacy groups in the recruitment process.

BACKGROUND

The Personnel Committee met on November 23, 2009 to conduct interviews of candidates to fill expired terms of office, consider the appointment of new members and re-appointment of incumbent members to the Air District's Advisory Council.

Based on the Committee's review of candidates' background and responses to interview questions, the Personnel Committee recommended approval of two (2) candidates for appointment to replace the following members who are not seeking re-appointment:

Emily Drennen	Conservation Organization
Karen Licavoli-Farnkopf	Conservation Organization

The Personnel Committee recommended approval of the following five (5) members for re-appointment:

Ken Blonski, Secretary	Regional Park District
------------------------	------------------------

Jeffrey Bramlett, Vice Chair	Park & Recreation
Harold Brazil, Chair	Mass Public Transportation
Kraig Kurucz	Industry
Kendal Oku	Organized Labor

Attached is the staff report submitted to the Personnel Committee for the November 23, 2009 meeting.

Chairperson Brown will provide an oral report of the meeting.

BUDGET CONSIDERATION/FINANCIAL IMPACTS:

None.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Lisa Harper
Reviewed by: Jennifer Chicconi

Attachment(s)

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Harold Brown and
Members of the Personnel Committee

From: Jack P. Broadbent
Executive Officer/APCO

Date: November 17, 2009

Re: Conduct Interviews and Consider Recommending Board of Directors' Approval of
Candidates and Incumbents for Appointment and Re-Appointment to the Air District's
Advisory Council

RECOMMENDED ACTION:

Conduct interviews and consider recommending Board of Directors' approval of candidates and incumbents for appointment and re-appointment to the Air District's Advisory Council.

BACKGROUND:

Pursuant to Section 40261 of the California Health and Safety Code the District is required to maintain an Advisory Council consisting of 20 members. Further, section 40262 requires that the member categories consist of at least three representatives of public health agencies; at least four representatives of private organizations active in conservation or protection of the environment within the bay district; at least one representative of colleges or universities in the state; and at least one representative of each of the following groups within the bay district: regional park district, park and recreation commissions or equivalent agencies of any city, public mass transportation system, agriculture, industry, community planning, transportation, registered professional engineers, general contractors, architects, and organized labor. To the extent that suitable persons cannot be found for each of the specified categories, council members may be appointed from the general public. The new terms would expire on December 31, 2011.

DISCUSSION:

The terms of office for the following categories will expire on December 31, 2009: regional park district, park and recreation, mass public transit, conservation organization (2), industry, and organized labor. Of the seven positions with terms expiring, five incumbents have expressed an interest in re-appointment. After extensive recruitment and outreach efforts, a total of 13 non-incumbents applied.

The Human Resources Office and Executive Office have screened each candidate's experience and education relative to the position for which the candidate applied and has selected three (3) candidates with the most relevant experience to interview with the Personnel Committee under the category of conservation organization. It is recommended that the Committee re-appoint the five incumbents under the categories of regional park district, park and recreation, mass public transit, industry and organized labor.

Interviews of the three non-incumbent candidates will take place on Monday, November 23, 2009 and will begin at 9:30 a.m. The length of each interview will be approximately fifteen minutes. The application materials of the three candidates are included for your review. Incumbent candidates (those seeking re-appointment) will not be scheduled for an interview, but information on their attendance and leadership roles is included for your review.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Lisa Harper
Approved by: Jennifer Chicconi

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Pamela Torliatt
and Members of the Board of Directors

From: Jack P. Broadbent
Executive Officer/APCO

Date: November 23, 2009

Re: Public Hearing to Consider Proposed Amendments to Regulation 8, Rule
50: Polyester Resin Operations, and Adoption of a CEQA Negative
Declaration

RECOMMENDED ACTION

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

- Adopt proposed amendments to Regulation 8, Rule 50: Polyester Resin Operations; and
- Adopt a Negative Declaration pursuant to the California Environmental Quality Act (CEQA) for this rule-making activity.

BACKGROUND

Regulation 8, Rule 50: Polyester Resin Operations (Rule 8-50) regulates volatile organic compound (VOC) emissions from the manufacturing of composite products by setting monomer content limits for resins, by setting VOC content limits for gel coats, and by setting VOC limits for products used to clean equipment associated with the manufacturing of composite products. Emissions are also minimized by requiring particular types of spray equipment to apply resins and gel coats to open molds. Composite products include tools (molds) to make other composite products; watercraft; recreational vehicle bodies; automotive and aerospace parts; bathware products; musical instrument parts; gardening tools; architectural facades; personal computer board parts; pipes; storage tanks and secondary containment for chemicals, sewage and petroleum products. VOCs are a precursor to ozone, and the District is not in attainment of the federal 8-hour or state one-hour or 8-hour ozone standards. The proposed amendments implement Control Measure SS-4 in the 2005 Ozone Strategy.

DISCUSSION

The proposed amendments to Rule 8-50 will reduce monomer content limits for some types of resins, establish monomer content limits for gel coats, reduce VOC content limits for cleaning products and require non-atomizing spray guns for the application of resins to open molds. The new monomer content and VOC limits would become

effective October 1, 2010. The requirement for the non-atomizing spray guns would be effective on October 1, 2011. Other proposed amendments add new definitions and clarify language throughout.

The proposed amendments will reduce VOC emissions by at least 0.46 tons per day, representing approximately a 35 percent reduction in current emissions of VOC. The proposed amendments will also reduce Toxic Air Contaminant (TAC) emissions by 0.37 tons per day because styrene, the most common monomer used in polyester resin operations, is a TAC. The most significant costs of implementation are in two areas of the industry.

Facilities that manufacture cast polymer products will have to pay an extra five cents per pound of resin material to comply with the new monomer content limits. Approximately fifteen facilities that specialize in manufacturing laminated composite products will have to purchase non-atomizing spray systems at a cost of about \$10,000.00 per system. The overall cost effectiveness for the proposed amendments is \$974 per ton VOC reduced.

A socioeconomic analysis by Bay Area Economics of Emeryville, California has found that the costs of the rule would not create significant economic dislocation, loss of jobs, or impact small business. Pursuant to the California Environmental Quality Act (Public Resources Code § 21080(c) and CEQA Guidelines 15070 et seq.), a CEQA analysis has been prepared by Environmental Audit, Inc., of Placentia, California. This analysis concludes that the proposed amendments would not have any significant adverse environmental impacts. A negative declaration pursuant to CEQA is proposed for adoption.

RULE DEVELOPMENT PROCESS

The process to bring this proposal to the Board of Directors has been a comprehensive process involving discussions with composite product suppliers and manufacturers, resin and gel coat suppliers, spray equipment suppliers, cleaning product suppliers and trade associations. District staff also had discussions with other regulatory agencies such as ARB, EPA, and other California air districts. In the development of this proposal, District staff:

- Met with representatives of ten composite manufacturing facilities, one boat repair facility, and two suppliers of resins and gel coats;
- Held meetings and conference calls, and met and corresponded via telephone calls, emails and letters with manufacturers, and manufacturing association representatives;
- Consulted with staff members from the ARB, South Coast AQMD, San Joaquin Valley Unified APCD, Mojave Desert APCD and EPA.
- Developed an economic analysis based on pricing information from composite material suppliers; and the experience of composite product manufacturers in the Bay Area.

- Hosted public workshops to inform and solicit comments from the affected industries and interested public on the proposed amendments to Rule 8-50. A workshop was held at the District office on August 19, 2009, and on August 20, 2009 at the Metropolitan Transportation Commission Auditorium. Stakeholders that attended the workshop included composite product manufacturers and suppliers of resin and gel coats.

Final proposed amendments to Regulation 8, Rule 50, a staff report, a CEQA initial analysis and Negative Declaration, and a socioeconomic analysis were posted for public review and comment on October 29, 2009. Public comments on the proposed amendments, and staff responses, are attached as Appendix A.

BUDGET CONSIDERATIONS/FINANCIAL IMPACTS

None. The District already permits and inspects polyester resin operations and their use gel coats, resins, cleaning products and spray application devices. These amendments will not require additional District resources.

Respectfully submitted,

Jack P. Broadbent
Executive Officer / Air Pollution Control Officer

Prepared by: Will Saltz
Reviewed by: Henry Hilken

Attachments:

Proposed amendments to Regulation 8, Rule 50: Polyester Resin Operations
Staff Report, including Appendices:

- A. Comments and Responses
- B. Socioeconomic Analysis
- C. CEQA Initial Study and Negative Declaration

**REGULATION 8
ORGANIC COMPOUNDS
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**REGULATION 8
ORGANIC COMPOUNDS
RULE 50
POLYESTER RESIN OPERATIONS**

(Adopted December 5, 1990)

8-50-100 GENERAL

8-50-101 Description: The purpose of this Rule is to limit organic compound emissions from the manufacturing, fabrication, rework, repair, and touch-up of composite products using made of polyester resins and gel coat.

~~**8-50-110 Limited Exemption, Touch-up and Repair:** The requirements of Sections 8-50-301 shall not apply to touch-up and repair.~~

8-50-200 DEFINITIONS

~~**8-50-201**~~**24 Air Assisted Airless Spray:** Equipment used to apply materials ~~that uses~~ by means of fluid pressure to atomize coating and air pressure at between 0.1 and 10 psig of air pressure in order to adjust the spray pattern.

~~**8-50-202**~~**23 Airless Spray:** Equipment used to apply materials by use of fluid pressure without atomizing air, including heated airless spray.

~~**8-50-203**~~**27 Approved Emission Control System:** A system for reducing emissions of VOC to the atmosphere, consisting of a control device and a collection system ~~which that~~ achieves the overall abatement efficiency specified in ~~the applicable standards~~ sSection 8-50-303 at all times during operation of the equipment ~~being controlled~~.

(Adopted June 15, 1994)

~~**8-50-204 Boat Manufacturing:** The manufacturing of boat hulls or decks from fiberglass, or the construction of boats from pre-manufactured hulls or decks, or the fabrication of molds to manufacture fiberglass hulls or decks. For the purposes of this rule, a polyester resin operation that manufactures only boat parts, such as hatches, seats, or lockers, or boat trailers, or a polyester resin facility that repairs boats and boat parts, is not considered a boat manufacturing facility.~~

~~**8-50-205**~~**4 Catalystizing Agent:** A substance added to ~~the a~~ resin to initiate or increase the rate of a chemical reaction such as polymerization. Catalyzing agents include, but are not limited to, peroxide initiators, amines, amides, and anhydrides.

~~**8-50-206**~~**2 Cleaning MaterialsProducts:** Materials used to clean hands, tools, molds, application equipment, work area, and other process-related equipment in connection with polyester resin operations.

~~**8-50-207**~~**3 Closed-mold System:** A system of forming ~~objects~~ composite products from ~~polyester resins~~ by placing the composite materials in a confining cavity and applying pressure and/or heat to shape the product. Compression molds, liquid-injection molds, pultrusion (when using closed resin baths, preform, or direct die injection), Resin Transfer Molding and vacuum infusion molding are examples of closed-mold systems.

~~**8-50-208 Composite Materials:** Individual components that, combined, make up the composite product. Composite materials include resins, gel coats, molding compounds, thinners, catalyzing agents, binders, fillers, reinforcement fibers, other reinforcement materials, and any other material added to enhance the properties of the composite product.~~

~~**8-50-209 Composite Products:** For the purposes of this Rule, composite products are products that are fabricated from polyester resins and composite materials.~~

~~**8-50-210 Compression Molding:** A method of forming an object in which composite materials, such as molding compounds, are placed in an open, heated mold cavity. The mold is closed and pressure is applied to force the polyester resin into contact with all mold areas. Heat and pressure are maintained until the material has cured.~~

- ~~8-50-204~~ ~~**Control System:** A control device and collection system designed in accordance with good engineering practices.~~
- ~~8-50-211~~⁰⁵ ~~**Corrosion-Resistant Materials Resin:** Halogenated, furan, bisphenol-A, Vinyl ester, or isophthalic resins used to make products for corrosive or fire retardant services.~~ A resin or composite material used to manufacture a product that is required to meet a corrosion resistant industry standard, as defined in 40 CFR 63.5935, or a food contact industry standard or used to manufacture a product with corrosion resistant end use applications involving continuous or temporary chemical exposure.
- ~~8-50-212~~⁰⁶ ~~**Cross-linking:** The chemical process of joining chemically linking two or more polymer chains together to create a three-dimensional or network polymer.~~
- ~~8-50-213~~²⁵ ~~**Electrostatic Air Spray:** Equipment used to apply materials by charging atomized coating particles that are deposited to a grounded substrate by electrostatic attraction.~~
- ~~8-50-214~~ **Filament Application:** A method of applying resin to an open mold that involves feeding reinforcement fibers through a resin bath and winding the resin-impregnated fibers on a rotating mandrel.
- ~~8-50-215~~ **Filler:** A non-reactive constituent of a composite product. Fillers include hollow glass spheres, fibers, particulates, clays, silicates, talcs, carbonates, carbon black, chalk, titanium dioxide, graphite, molybdenum disulfide, PTFE, barium sulfate, aluminum, and copper, and may impart properties such as color, magnetic, smoothness, lubrication, thermal or electric properties.
- ~~8-50-216~~ **Fire Retardant Resin:** Resin that is used to make composite products specifically designed to be a low flame spread/low smoke product, as defined in 40 CFR 63.5935.
- ~~8-50-217~~⁰⁸ ~~**Gel Coat:** A polyester resin surface coating that provides a cosmetic enhancement and improves resistance to degradation from ultra violet radiation and water or chemical absorption.~~ A pigmented or clear resin material that functions as a surface coating to provide cosmetic enhancement or resistance to degradation, ultraviolet radiation, or water or chemical adsorption.
- ~~8-50-218~~ **High Strength Resin:** Resin used to manufacture composite products requiring a tensile strength of 10,000 psi or more for a minimal casting thickness of one-eighth inch.
- ~~8-50-219~~ **High-Volume Low-Pressure (HVL) Spray:** Equipment used to apply materials by means of a gun which that operates at between 0.1 and 10 psig of air pressure.
- ~~8-50-220~~ **Hopper Spray Gun:** Equipment which uses air pressure and an internal mix atomization process to apply a blend of thick, viscous, crushed or pulverized material mixed with resin or gel coat.
- ~~8-50-221~~⁰⁹ ~~**Inhibitor:** A substance used to slow down or prevent a chemical reaction, such as polymerization.~~
- ~~8-50-222~~ **Injection Molding:** A high-volume method of forming an object by forcing composite material from an external heated chamber through a sprue, runner, or gate into a cavity of a closed mold by means of a pressure gradient.
- ~~8-50-223~~²⁸ ~~**Key System Operating Parameter:** An emission control system operating parameter, such as temperature, flow rate or pressure, that ensures operation of the abatement equipment within manufacturer specifications and compliance with the standard in Section 8-50-303.~~ (Adopted June 15, 1994)
- ~~8-50-224~~ **Lamination Resin:** A resin used to fabricate a composite product made up of layers of reinforcement fibers and resins. Boats hulls, surfboards, and automotive panels are typically made of lamination resins.
- ~~8-50-210~~ ~~**Low-VOC Emission Resin System:** A polyester resin material which contains additives to reduce monomer evaporation loss.~~
- ~~8-50-225~~ **Manual Application:** The application of resin to an open mold using a hand lay-up technique. Components of successive plies of resin-impregnated reinforcement fibers are applied using hand tools such as brushes and rollers.
- ~~8-50-226~~ **Marble Resin:** Resin filled with additives to create a polymer matrix that is cast (poured) over a mold. This cultured marble process is used to fabricate composite products resembling natural stone such as marble, onyx, or granite.

- 8-50-227~~14~~** **Monomer:** ~~A relatively low molecular weight organic compound that combines with itself or other similar compounds to become a polymerized thermosetting resin.~~ A small molecule used as a cross-linking agent. Monomers partially combine with themselves or with other compounds chemically, to become part of a cured resin (polymer). Monomers include, but are not limited to, styrene and methyl methacrylate.
- 8-50-228** **Non-atomizing Mechanical Application:** An application technique, other than a manual application technique, to apply resins or gel coats to molds. Methods include flow coaters, pressure fed rollers, impingement spray, or any other mechanical techniques described in 40 CFR 63.5935.
- 8-50-229** **Open-mold System:** A process of manufacturing composite products by applying composite materials in a one-sided cavity. The product being manufactured is exposed to the ambient air.
- 8-50-230** **Overall Efficiency:** The efficiency of an approved emission control system, measured by the collection system's efficiency multiplied by the destruction efficiency of the control device, expressed as a percentage.
- 8-50-231~~12~~** **Polyester:** ~~A complex polymeric ester containing difunctional acids.~~ A synthetic, long-chain polymeric ester produced mainly by reaction of dibasic acids with dihydric alcohols.
- 8-50-232~~13~~** **Polyester Resin-Material:** ~~Any VOC containing materials used in polyester resin operations which include, but are not limited, to unsaturated polyester resins such as isophthalic, orthophthalic, halogenated, bisphenol-A, vinyl ester, or furan resins; cross-linking agents; catalysts, gel coats, inhibitors, accelerators, promoters, and any other VOC containing materials.~~ A resin used to fabricate composite products. Polyester resins include but are not limited to, unsaturated polyester resins, such as orthophthalic, isophthalic, halogenated, dicyclopentadiene, bisphenol A and furans. For the purposes of this rule, vinyl ester resins are polyester resins.
- 8-50-233~~14~~** **Polyester Resin Operations:** ~~Methods used for the production or rework of product by mixing, pouring, hand laying-up, impregnating, injecting, forming, spraying, and/or curing unsaturated polyester materials with fiberglass, fillers, or any other reinforcement materials and associated clean-up.~~ The fabrication, rework, repair, or touch-up of composite products for commercial, military, or industrial uses by mixing, pouring, manual application, molding, impregnating, injecting, forming, spraying, pultrusion, filament winding, centrifugally casting, or corn-forming with polyester resins.
- 8-50-234~~15~~** **Polymer:** ~~A substance consisting of a large number of chemical groups and which is formed by the chemical linking of monomers.~~ Chemical compounds that consist of a large number of repeating monomers.
- 8-50-235~~16~~** **Polymerize:** Transformation from a liquid to a solid or semi-solid state to achieve desired product physical properties, including hardness.
- 8-50-236** **Primer Gel Coat:** A gel coat that functions as a primer for subsequent coating on the product after it is removed from the mold.
- 8-50-237** **Pultrusion:** A continuous manufacturing process for composite products that have a uniform cross-sectional shape. Continuous strands of fiber-reinforcing material are pulled through a strand-tensioning device into a resin impregnation chamber or bath and then pulled through a shaping die.
- 8-50-238~~07~~** **Fiberglass Reinforcement Fiber:** ~~A fiber similar in appearance to wool or cotton fiber but made from glass.~~ A multifilament material of glass or other fibrous material, such as carbon, boron, metal, kevlar, and amid polymer, that is used to reinforce composite products.
- 8-50-239** **Repair:** ~~The part of the fabrication~~ A process that requires the addition of polyester resin or other composite material to portions of a previously-fabricated product in order to mend minor structural damage ~~immediately following normal fabrication operations.~~
- 8-50-240~~18~~** **Resin:** Any class of organic polymers of natural or synthetic origin used ~~in reinforced products to surround and hold fibers, to encapsulate and bind together reinforcement fibers and/or fillers in the formulation of composite products and is solid or semi-solid in the polymerized state.~~

- 8-50-241 Resin Bath:** A tray or chamber that contains initiated resin for a pultrusion or impregnating process.
- 8-50-242 Solid Surface Resin:** A resin containing fillers and additives that is used to fabricate products that are non-porous and have a homogeneous composition throughout. Solid surface resins are used primarily in the cast polymer segment of the composite industry.
- 8-50-243 Specialty Gel Coat:** A gel coat that is used in conjunction with a composite product that is required to have fire retardant properties, is corrosion-resistant, is a high-strength resin, or is used in a tooling application.
- 8-50-244 Tooling Resin:** Resin used to produce a mold, or a gel coat to form a surface layer on a mold, for the fabrication of a composite product.
- 8-50-245~~19~~ Touch-up:** ~~The portion of the fabrication process~~ The application of resin or gel coat that is necessary to cover minor cosmetic imperfections that occur during fabrication or field installations.
- 8-50-246 Tub/Shower Resin:** Resins used to fabricate tubs, showers, and bathware fixtures.
- 8-50-247~~24~~ Vapor Suppressant:** A substance that is added to resin to minimize the outward diffusion of monomer vapor into the atmosphere.
- 8-50-248 Vinyl Ester Resin:** Resins produced from the esterification of an epoxy with a monocarboxylic acid.
- 8-50-249~~20~~ Volatile Organic Compound (VOC):** Any organic compound (excluding methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates and ammonium carbonate) which that wcould be emitted during use, application, curing or drying of a solvent cleaning product, gel coat, or polyester resin material.
- 220.1 For purposes of calculating the VOC content of a polyester resin material or gel coat, any neither water nor any of the following non-precursor organic compounds:
- acetone
 - parachlorobenzotrifluoride (PCBTF)
 - cyclic, branched or linear completely methylated siloxanes (VMS)
- shall not be considered to be part of the polyester resin material or gel coat.
- 220.2 For the purposes of calculating the VOC content of a solvent cleaning product subject to Section 8-50-305.4, any water and any of the non-precursor organic compounds listed in subsection 8-50-220.1, shall neither be considered part of the material volume of the cleaning product, nor shall be considered to be part of the VOC content of the cleaning product. The following compounds:
- acetone
 - parachlorobenzotrifluoride (PCBTF)
 - cyclic, branched or linear, completely methylated siloxanes (VMS)
- shall not be considered part of the VOC content of the solvent.
- (Amended December 20, 1995; November 6, 1996)
- ~~**8-50-222 Waste Materials:** Materials including, but not limited to, any scrap resulting from cutting and grinding operations, any paper or cloth used for cleaning operations, waste resins, non-polymerized waste resins, and any spent cleaning materials.~~

8-50-300 STANDARDS

- 8-50-301 Process Material Requirements:** Until October 1, 2010, Aa polyester resin operation shall use one or more of the following emission reducing methods except as provided in Section 8-50-304:
- 301.1 Use polyester resin material with a monomer content of no greater than 35 percent by weight.
- 301.2 Use a resin containing vapor suppressant, such that weight loss from VOC emissions do not exceed 60 grams per square meter of exposed surface area during resin polymerization.
- 301.3 Use a closed-mold system.
- Effective October 1, 2010, an owner or operator shall use one or more of the following VOC emission reduction methods:

- 301.4 A closed-mold system,
 301.5 A resin containing vapor suppressant, that prevents weight loss from VOC emissions to no more than 50 grams per square meter of exposed surface area during resin polymerization; or,
 301.6 Except as provided in Section 8-50-301.7, a polyester resin or gel coat in an open mold with a monomer content no greater than the applicable limit specified in Table 1.

<u>TABLE 1</u>	
<u>Gel Coats and Resins</u>	<u>Monomer Percentage by Weight</u>
<u>Gel Coats</u>	
<u>Clear Gel Coats</u>	
<u>Marble Resin Gel Coats</u>	<u>42%</u>
<u>Boat Manufacturing Gel Coats</u>	<u>48%</u>
<u>All Other Clear Gel Coats</u>	<u>44%</u>
<u>Pigmented Gel Coats</u>	
<u>White and Off-White Gel Coats</u>	<u>30%</u>
<u>Non-White Boat Manufacturing Gel Coats</u>	<u>33%</u>
<u>Other Non-White Gel Coats</u>	<u>37%</u>
<u>Primer Gel Coats</u>	<u>28%</u>
<u>Specialty Gel Coats</u>	<u>48%</u>
<u>Resins</u>	
<u>Marble Resins</u>	<u>10% with fillers or 32% without fillers*</u>
<u>Solid Surface Resins</u>	<u>17%</u>
<u>Tub/Shower Resins</u>	<u>24% with fillers or 35% without fillers*</u>
<u>Boat Manufacturing (atomized)</u>	<u>28%</u>
<u>Boat Manufacturing (non-atomized)</u>	<u>35%</u>
<u>Lamination Resins</u>	<u>31% with fillers or 35% without fillers*</u>
<u>Fire Retardant Resins</u>	<u>38%</u>
<u>Corrosion Resistant, High Strength and Tooling Resins</u>	
<u>Non-atomizing Mechanical Application</u>	<u>46%**</u>
<u>Filament Application</u>	<u>42%**</u>
<u>Manual Application</u>	<u>40%**</u>
<u>Other Resins</u>	<u>35%</u>

Monomer percent by weight includes the addition of any VOC-containing materials.

* An owner or operator of a polyester resin operation may meet the monomer content limits by adding filler to a resin to reduce the monomer content to the applicable limit or by using resin with a monomer content that complies with the applicable limit without the addition of fillers.

**If the owner or operator manufactures a composite product by using more than one technology to apply corrosion-resistant, high strength or tooling resins, the highest permissible resin monomer content is the applicable limit.

301.7 Resins and gel coats used to touch up, repair or install a composite product, may have a monomer content limit up to 10% more than the applicable limit set forth in Table 1 provided the resins or gel coats are applied by hand-held atomized spray technologies that operate with a container that is part of the gun with a maximum capacity of 1 quart.

8-50-302 ~~Spraying Operations~~ Application Requirements: A polyester resin operation ~~using spray application equipment~~ shall only apply resins and gel coats to open molds use by one or more of the following ~~spray equipment techniques~~:

302.1 Until October 1, 2011:

1.1 Atomized spray techniques: Airless Spray, Air-assisted Airless Spray, Electrostatic Air Spray, High-~~v~~Volume, Low-pressure Spray;

1.2 Non-atomizing mechanical application techniques;

1.3 Hopper guns;

1.4 Non-spray techniques: Filament Application, Pressure-fed Roller, Resin Impregnation;

1.5 Manual application techniques.

302.2 Effective October 1, 2011, an owner or operator may only apply a resin by the techniques listed in Sections 1.2 through 1.5, above.

302.3 An owner or operator may use a resin to touch up, repair or install a composite product using any of the above application techniques.

8-50-303 Approved Emission Control System Requirements: The requirements of Sections 8-50-301 and 302 shall not apply to polyester resin operations controlled by an emission control system which install and properly operate an approved emission control system that is installed and properly operated, that meets the requirements of Regulation 2, Rule 1 and reduces organic compound emissions by at least 85 percent overall. ~~meets the requirements of Regulation 2, Rule 1, and has an overall efficiency of at least 85 percent overall on a mass basis.~~

(Amended June 15, 1994)

8-50-304 ~~Corrosion-Resistant Materials~~: Until October 1, 2010, Any polyester resin operations using corrosion-resistant materials to manufacture products for corrosive or fire retardant service shall use a polyester resin material with a monomer content of no greater than 50 percent by weight. Effective October 1, 2010, the applicable limit in Section 8-50-301, Table 1 applies.

8-50-305 Surface Preparation and Clean-uping Solvent Products: The requirements of this section shall apply to any polyester resin operation using ~~organic solvent cleaning products~~ for surface preparation and the clean-uping of application equipment, machinery, tools, parts, products, and general working areas.

305.1 A-p Polyester resin operations shall ~~use closed containers for the storage of~~ all ~~polyester~~ resin materials, gel coats, catalysts catalyzing agents, resin thinners, cleaning ~~materials products~~ and any unused VOC-containing materials in closed containers which may only be opened to ~~except when accessed for use their contents.~~

305.2 A-p Polyester resin operations shall use self-closing containers for the disposal of all VOC containing polyester-resin composite materials, cleaning ~~materials products,~~ VOC-containing waste ~~materials,~~ and any other unused VOC containing materials in such a manner as to effectively control VOC emissions to the atmosphere.

305.3 A-p Polyester resin operations shall not use ~~organic compounds cleaning products for the to~~ clean-up-of spray equipment including spray lines unless equipment for collecting the cleaning product material and minimizing their evaporation to the atmosphere is used.

- 305.4 Effective October 1, 2010, A polyester resin operations shall use cleaning materials products that contain no greater than 200 25 grams of VOC per liter of material.
- 305.5 Notwithstanding the provisions of Regulation 8, Rule 16, polyester resin operations may use acetone in a cold cleaner provided the following provisions are complied with:
- 5.1 The cold cleaner and any emission control device associated with the cold cleaner shall be operated and maintained in proper working order.
 - 5.2 The cold cleaner shall be equipped with a self-closing cover, with no visible gaps, that minimizes evaporation.
 - 5.3 The cover must remain closed except when putting parts into or taking parts out of the cleaner.
 - 5.4 All liquid solvent shall be drained back into the container when removing parts.
 - 5.5 The cold cleaner may be used to soak parts, but parts must be wiped, brushed or otherwise worked on outside of the cleaner.
 - 5.6 Leaks shall be repaired before the end of the work day or the cold cleaner shall be drained and shut down until the leak is repaired.
 - 5.7 The cold cleaner shall not be heated.
 - 5.8 Solvent, including waste solvent, shall not be stored or disposed of in a manner that will cause or allow evaporation into the atmosphere.
 - 5.9 Cleaning of porous or absorbent materials in cold cleaners is prohibited.
 - 5.10 A permanent label listing the applicable operating requirements contained in this section, shall be posted in a conspicuous location near the cold cleaner.

- 8-50-306 Equipment Requirements:** All resin baths and wet baths shall be covered to reduce organic compound emissions. Pultrusion operations shall be covered, except as allowed by 40 CFR 63.5830.
- 8-50-307 Gel Coat Requirement:** Until October 1, 2010, A person an owner or operator of a polyester resin operation shall not use a gel coat which that contains more than 250 grams of volatile compounds per liter of coating applied.
- 8-50-308 Prohibition of Specification Requirement:** No person shall solicit, require or specify use of a composite material if such use results in a violation of any of the provisions of this rule. The prohibition of the section shall apply to all oral and written contracts under the terms of which any use of any composite material that is subject to the provisions of this rule is to be used.
- 8-50-309 Compliance Statement Requirement:** The manufacturer of any VOC-containing composite material sold or used in this District shall supply a designation of the percent monomer content by weight or the percent VOC content, as applicable, on data sheets, specification sheets or compliance certifications.

8-50-500 MONITORING AND RECORDS

- 8-50-501 Recordskeeping Requirements:** Any pPolyester resin operations, including touch ups, repairs, and installations performed in the field, shall comply with the following recordkeeping requirements, as applicable:
- 501.1 Maintain a current list of gel coats, resins, resin thinners, catalystcatalyzing agents, and cleaning material products used.
 - 501.2 Maintain a current list of: the weight of VOC (in percent) in the polyester resin materials and the grams of VOC per liter for the cleaning materials.
 - a. the monomer content percent by weight for each polyester resin and gel coat used;
 - b. the VOC content in grams per liter for each cleaning product and VOC-containing material added to a polyester resin and gel coat; and,
 - c. manufacturer's specifications on each type of application equipment used.

- 501.3 For all vapor suppressed resins, maintain a current list of ~~the weight loss (grams per square meter) during resin polymerization, the monomer percentage, and the gel time for each resin~~ certifications from the manufacturers that the resins are vapor-suppressed to meet the applicable standards in this rule.
- 501.4 Maintain records ~~on a daily basis~~ that specify on a daily basis ~~provide the following information as applicable:~~
- a. the type and amount of each of the polyester resin, gel coat, and cleaning products used. If VOC-containing materials (such as resin thinners) are added to a polyester resin or gel coat, the amount of materials added shall be recorded.
 - b. the volume of resin and cleaning materials used for touch-up and repair.
- Alternatively, records may be kept on a monthly basis provided the polyester resin operation is not subject to a daily limit in any District rule or permit. Any violation shall be deemed to have occurred on each operating day of the month.
- 501.5 ~~Such records shall be retained and available for inspection by the APCO for the previous 24-month period. The owner or operator shall retain all records and lists required by this Section and shall make them available for inspection by the APCO upon request, for the previous 36-month period.~~

8-50-502 Approved Emission Control System, Recordkeeping Requirements: ~~Any person operating an approved emission control system to comply with Section 8-50-303 shall record key system operating parameters on a daily basis. Any owner or operator subject to Section 8-50-303 shall:~~

- 502.1 Record on a daily basis the type and amount of all resins, gel coats and cleaning products used.
- 502.2 Record key system operating parameters, as defined in Section 8-50-224, on a daily basis.
- 502.3 Retain and have such records available for inspection by the APCO for the previous 36-month period.

(Adopted June 15, 1994)

8-50-503 Emission Control System Monitoring: Any owner or operator who uses an emission control system which is subject to the provisions of Section 8-50-303 shall install readily visible parametric monitoring devices to monitor the operating parameters of an emission control system at all times during operation.

8-50-600 MANUAL OF PROCEDURES

8-50-601 Analysis of Samples: ~~S~~samples from polyester resin operations shall be analyzed as follows:

- 601.1 Samples of gel coat as specified in Sections 8-50-307 shall be analyzed as prescribed in the Manual of Procedures, Volume III, Method 26.
- 601.2 Samples of cleaning ~~materials~~ products as specified in Section 8-50-305.4 shall be analyzed as prescribed in the Manual of Procedures, Volume III, Method 31 or by South Coast Air Quality Management District Laboratory Method 313-91.
- 601.3 Samples of polyester resin material as specified in Sections 8-50-301 and 304 shall be analyzed as prescribed in the Manual of Procedures, Volume III, Method 23: Determination of Volatile Emissions From Polyester Resins, or Method 39: Determination of Styrene Monomer Content of Polyester Resin Material, or by South Coast Air Quality Management District Laboratory Method 312-91.
- 601.4 Samples containing parachlorobenzotrifluorides shall be analyzed as prescribed in the Manual of Procedures (MOP), Vol. III, Method 41. Samples containing volatile methylsiloxanes shall be analyzed as prescribed in the MOP, Vol. III, Method 43. The quantity of methyl acetate, acetone, parachlorobenzotrifluoride shall be determined by using ASTM Method

D6133-02: "Standard Test Method for Acetone, p-Chlorobenzotrifluoride, Methyl Acetate or t-Butyl Acetate Content of Solventborne and Waterborne Paints, Coatings, Resins, and Raw Materials by Direct Injection Into a Gas Chromatograph."

(Amended November 6, 1996)

8-50-602 Determination of Emissions, Operations with a Control Device: ~~Emissions from polyester resin operations as specified in Section 8-50-303 shall be analyzed as prescribed by any of the following methods: 1) BAAQMD Manual of Procedures, Volume IV, ST-7, 2) EPA Method 25 or 25A. For the purpose of determining abatement device efficiency, any acetone, PCBTF or VMS shall be included as volatile organic compounds. A source shall be considered in violation if the VOC emissions measured by any of the referenced test methods exceed the standards of this rule.~~ Emissions of volatile organic compounds and monomers from polyester resin operations controlled by an emission control system shall be determined as follows:

602.1 Capture efficiency shall be determined as specified in 40 CFR 51, Appendix M, Test Methods 204 – 204F, as applicable.

602.2 Control device destruction efficiency shall be determined as specified in the Manual of Procedures, Volume IV, ST-7 or EPA Method 25 or 25A.

602.3 For the determination of control device destruction efficiency, any non-precursor organic compound specified in Section 8-50-220 shall be included as a volatile organic compound.

602.4 The overall efficiency of an emission control system, expressed as a percentage, shall be calculated according to the following equation:

$$OE = [CE \times DE]/100$$

Where:

OE \equiv Overall efficiency

CE \equiv Capture efficiency

DE \equiv Control device destruction efficiency

602.5 VOC or monomer emissions, as measured by any of the reference test methods, may be used as evidence of exceedances of standards of this rule.

(Amended June 15, 1994; November 6, 1996)

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

Staff Report

Proposed Amendments to BAAQMD Regulation 8, Rule 50: POLYESTER RESIN OPERATIONS



November 2009

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ACKNOWLEDGEMENTS

The following District staff members participated in the development of the proposed amendments to this rule, and deserve recognition for their important contributions:

Gary Lipari – Compliance & Enforcement

Nancy Yee – Engineering

Jeff Robbins – Technical

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STAFF REPORT
Regulation 8, Rule 50: Polyester Resin Operations

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I. Executive Summary

This staff report summarizes information regarding proposed amendments to Bay Area Air Quality Management District (District) Regulation 8, Rule 50: *Polyester Resin Operations*, which limits emissions of volatile organic compounds (VOC) from polyester resin operations during manufacturing and repair of composite products. A composite product is made of polyester resin, gel coats, and reinforcing materials or fillers such as crushed stone to create synthetic marble. Examples of other composite products include tools (molds) to make composite products; watercraft; recreational vehicle bodies; automotive and aerospace parts; bathware products; musical instrument parts; gardening tools; architectural facades; personal computer board parts; pipes; storage tanks and secondary containment for chemicals, sewage and petroleum products.

VOCs contribute to the formation of ground-level ozone, which is the primary ingredient in smog. Ozone is formed from the photochemical reaction of oxides of nitrogen (NO_x) and VOCs. Ozone can result in reduced lung function, increased respiratory symptoms, increased airway hyper-reactivity, and increased airway inflammation. In addition, VOCs can contribute to the secondary formation of particulate matter (PM). Currently, the San Francisco Bay Area is not in attainment of the State air quality standards for ozone and PM, and the Air Resources Board (ARB) has determined that ozone and ozone precursors are sometimes transported from the Bay Area to neighboring air basins. As a result, the District is required to implement all feasible measures to reduce emissions of ozone precursors, including VOCs. The proposed amendments are consistent with limits established in other air districts. The predominant VOC emitted by polyester resin operations is styrene, which is a toxic air contaminant (TAC).

The proposed amendments to this rule will fulfill Control Measure SS 4 of the 2005 Ozone Strategy, which directed the District to examine potential further reduction of VOC from polyester resin operations. The proposed amendments would reduce VOC and TAC emissions by establishing monomer content limits for gel coats, by lowering existing monomer content limits for resins, by requiring the use of non-atomizing spray guns when polyester resins are applied to open molds, and by lowering the VOC content limits for polyester resin and gel coat cleaning products. Currently, Bay Area polyester resin operations emit approximately 1.3 tons per day (TPD) of VOC and 0.8 TPD of TAC into the region's atmosphere.

District staff also proposes a number of other amendments that include the modification of definitions and the addition of several new definitions in order to clarify the scope and applicability of the rule. In addition, staff has corrected and updated other provisions, including modifications to Recordkeeping Requirements (Section 8-50-501) and the Determination of Emissions from Operations with a Control Device (Section 8-50-602).

The proposed amendments for Regulation 8, Rule 50 will reduce VOC emissions by 0.46 tons per day (TPD), approximately a 35% reduction from this source category. TAC emission reductions from resin and gel coat usage will be 0.37 TPD. The estimated emission reductions are mainly attributable to changes in chemistry for resin and gel coat materials, and the use of non-atomizing application technologies. The VOC emission

reduction from cleaning product usage will be 0.09 TPD. Non-atomized applications enhance spray equipment transfer efficiencies, thus reducing VOC and TAC emissions and the amount of overspray waste. The amendments for the controls on polyester resins, gel coats, cleaning products would take effect on October 1, 2010. The amendment for the requirement of non-atomizing spray technology for resins applied to open molds would take effect on October 1, 2011.

The proposed amendments have been found to be cost-effective and a socio-economic analysis has determined that these amendments can be implemented without significant economic dislocation or loss of jobs. A California Environmental Quality Act (CEQA) Initial Study has determined that there are no significant adverse impacts associated with this project.

II. Background

A. Introduction

The District adopted Regulation 8, Rule 50 on December 5, 1990 and amended it three times thereafter. The most recent amendments in 1996 addressed the definition of a VOC, the method of analyzing polyester resin material samples, and the method of determining emissions from polyester resin operations.

Since 2001, the South Coast AQMD has worked with industry association trade groups, polyester resin formulators and composite product manufacturers to develop and conduct testing of lower monomer content resins. As a result, three California air districts have subsequently adopted lower monomer content limits for resins and gel coats.

Rule 50 limits emissions from polyester resin operations in at least three ways. The owner/operator can comply with monomer content limits for uncured resins; the owner/operator can use vapor suppressants that minimize emissions from polyester resin operations; and/or the operator may use a closed mold system to minimize emissions from polyester resin operations. In addition, the rule sets application requirements to limit overspray and has a VOC content limit for gel coats, which is a type of polyester resin that is often applied as the surface of a polyester resin product to provide a smooth, attractive finish.

There are approximately 60 permitted polyester resin operations in the Bay Area that range in size from single-person shops to shops with 10 or more employees. Most facilities have less than 10 employees. Approximately half of the polyester resin operations in the Bay Area specialize in cast polymer operations. A cast polymer resin operation applies polyester resin to a mold to make a casting. Examples of finished castings include shower enclosures and bathroom vanity countertops.

There are several classes of gel coats and resins that are used in the industry. Each class is formulated for specific performance characteristics. In the case of gel coats, their appearance, in addition to performance factors, will determine how and when they are used. Because most Bay Area polyester resin facilities fabricate a narrow range of products, they use a limited variety of resins and gel coats.

B. Composite Products Overview

Products manufactured from polyester resins are termed “composite products.” Finished composite products are composites of polyester resins, gel coats, monomers, catalyzing agents, binders, fillers, promoters, molding compounds, reinforcement fibers, adhesives and other materials and chemicals which are added to a polymer mix. The ingredients in the polymer mix impart desired properties such as a specific appearance and/or performance standard of each cured composite product. Resins and gel coats are applied to molds that are either open or closed which provide the desired shape for finished products.

Components of Polyester Resin Composites

Resins and Monomers

Resins are the backbone of a composite product. Resins polymerize, or react with, other polyester resin molecules to bind fibers and other materials in a composite product, thus allowing the product to tolerate more stress and other forms of tension. Resins also provide a barrier to weather, water or chemicals. Thermosetting resins polymerize when exposed to heat or certain chemicals. Once cured, they cannot be reheated and re-shaped due to the molecular cross-linking process that has occurred, unlike thermoplastic resins that can be reheated and reshaped.

Polyester resins are polymers of ester molecules that are chained together in a particular order called ester linkages. Ester monomers are formulated by the reaction of acid and alcohol molecules. Polyester resins include isophthalic resins, orthophthalic resins, halogenated/clorendic resins, bisphenol-A resins, and furan resins. Polyester resins are used to manufacture a variety of products including but not limited to bathroom cabinet countertops, shower enclosures, automotive body parts, boat hulls, housing for electronic components, aerospace parts, chemically resistant storage tanks, and computer circuit boards.

Other types of thermosetting resins include epoxies, phenolics, polyurethanes, and acrylics. Epoxy resins are typically used to fabricate marine craft parts, automotive parts, electrical composites, appliance parts, and aircraft components. Epoxy resins emit minimal amounts of VOC compared to polyester resins because they contain little to no monomer content. Phenolic resins are used primarily to fabricate products that can meet fire-resistant standards mandated by public transportation and aviation industries. They also are used to fabricate electrical switches, junction boxes, automotive parts, consumer appliance parts, handles for pots and pans, and billiard balls. Phenolic resins emit some VOC but the use of these resins is minimal. Polyurethane resins are used to manufacture products for the home-building industry, the ballistics industry, the sporting goods industry, the automotive industry, and to fabricate products used on highways. Typical polyurethane resin products include hockey sticks, bowling balls, automotive body and seat parts, laboratory equipment parts, highway sign posts, trusses, guardrails and light poles. Polyurethane resins emit little or no VOC. Acrylic resins are used to fabricate composite products requiring superior clarity and optical properties. Acrylic resins are typically used to fabricate lighting fixtures because they are slow-burning and do not

produce harmful smoke or gases in the presence of flame. Acrylic resins are also used as tooling resins because they can withstand exposure to high stress and heat. Acrylic resins contain methyl methacrylate (MMA) monomer and can emit significant amounts of VOC. There is minimal production of composites using acrylic resin in the District.

Vinyl ester resins, which are produced from the esterification of an epoxy with a monocarboxylic acid, are considered a type of polyester resin and are regulated under this rule.

Some thermosetting resins emit VOCs and TACs while others do not. Emissions depend on the resin's monomer type and content. Monomers are small molecules that partially combine with themselves and/or catalyzing agents to form the basic repeating unit of a polymerized resin. Monomers reduce a resin's viscosity and are the integral building blocks in the curing reaction which transforms the resin from a liquid to a solid.

Styrene is by far the most commonly used monomer in composite manufacturing, although many specialty resins and gel coats contain other monomers, such as Methyl Methacrylate (MMA) or vinyl toluene. Styrene and MMA, the second most commonly used monomer, are emitted into the air during the application of resins to molds, while rolling air bubbles out of composite materials, and during the curing phase. Styrene and MMA are TACs, so exposure to these emissions is an air quality concern. Because VOC emissions from composite products consist entirely of monomers, the monomer content of resin is regulated just as VOC content is regulated in coating rules. Polyester resins have the greatest emissions of all thermosetting resins because they are the most widely used and because emissions from polyester resins are the greatest per amount of resin used.

Gel Coats

Similar to thermosetting resins, different gel coats emit VOCs and TACs to varying degrees, depending on the type and amount of monomer on which the gel coat resin is based. Gel coats are modified polyester resins. When a resin and a gel coat are to be applied to a mold, the gel coat is applied first because it becomes the surface layer of the composite product. Gel coats have both decorative and protective features. A gel coat's surface is exposed to a variety of environments, so it must be able to resist UV light, chemicals, heat, discoloration, pock marks, and cracking.

Specialized gel coats, known as tooling gel coats, have high levels of durability and are resistant to heat. They are used to manufacture molds which in turn are used to fabricate composite products. Such gel coats must resist mechanical and thermal stresses encountered during the curing and de-molding processes. A primer gel coat is a specialized gel coat designed to protect the exterior of a composite product that is painted after the product is removed from the mold.

Additives to Resins

Reinforcement Materials

Fiber reinforcement materials (FRM) are used in the manufacturing of composite products to enhance a variety of desirable properties that are of a mechanical and/or structural nature. The desirable properties include tensile strength, tensile modulus (elasticity), flexural strength, flexural modulus, compressive strength, stiffness, fatigue endurance, and elasticity. FRM enhances thermal, protective, and other composite capabilities. FRM does not react with resins; however, they are an integral part of the composite matrix.

FRM includes multi-filaments of glass or other fibrous materials such as carbon, graphite, aramid, boron, metal, silicon carbide, kevlar, and natural fibers. Due to its low price and excellent performance, fiberglass is the most commonly used FRM in the industry; it is available industrially either as mats of woven cloth or as filaments.

Fillers

Fillers are solid, finely divided materials, such as carbon black, titanium dioxide, limestone, talc, mica, silica, clay, and calcium carbonate, as well as short fibers of a variety of materials. They are added to a polymer matrix for various reasons. Sometimes they are added to reduce the overall cost of the product by extending its volume.

Fillers are also added to enhance performance properties of a product. Fillers add a number of desirable properties to composite products, including flame retardation, heat resistance, optical clarity, color, thermal, magnetic or electrical properties, and lubricity.

Catalyzing Agents, Promoters and Inhibitors

Catalyzing agents, often called initiators in the composite industry, initiate monomer cross-linking reactions. Methyl ethyl ketone peroxide and benzoyl peroxide are the most commonly used catalyzing agents.

In order to initiate cross-linking reactions, in some circumstances, fabricators may heat catalysts or resins or add chemicals called promoters (sometimes referred to as “accelerators”). Promoters also affect color, odor, and reactivity with specific catalyzing agents. In the presence of a promoter, catalyzing agents are typically added separately, immediately prior to use.

Inhibitors are used to prolong the shelf life of resins and to adjust the cure rate of thermosetting resins to prevent cracking of thickly layered sections. Inhibitors prevent spontaneous cross-linking.

Suppressants

Suppressants are compounds that migrate to the surface resin to form a layer during the polymerization process, thus decreasing emissions into the ambient air. Consequently,

suppressants are one method of TAC and VOC control. Usually, suppressants are wax compounds.

Open Mold Applications

Open mold production, the simplest fabrication technique, has been the most prevalent polyester resin composite operation for decades. EPA data suggests that open mold fabrication accounts for approximately 80% of polyester resin emissions nationally. Composite materials can be applied to open molds either manually or via spray technology.

The manual application method, often referred to as a “hand lay-up”, involves a multi-step process. The mold’s surface is treated with a mold release agent in the form of an alcohol or paste wax to facilitate the removal of the cured composite. Next, a catalyzed resin mix is applied over the mold release agent. Before the resin cures, fiber-reinforced materials are applied by hand. Additional resin, catalyst, and reinforced material may then be added. Hand rollers, brushes, or squeegees are used to saturate, to smooth out, and compact each layer of the matrix as it is applied. Figure 1 is an illustration of a manual resin application method. Figure 2 is a photograph of a resin application using a manual method during the fabrication of a canoe.

Figure 1

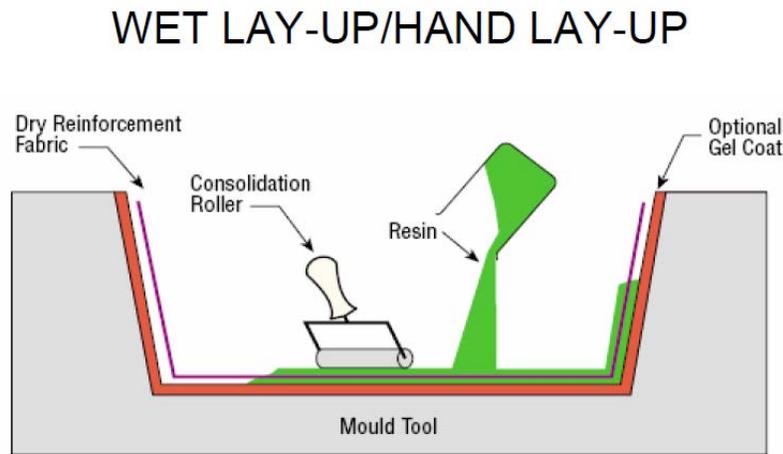


Image from Harveyscomposites.com

Figure 2
CANOE MANUFACTURING MANUAL APPLICATION



Image from Hemlockcanoe.com

Mass Production Open Mold Applications

In addition to the manual application technique described above, composite material fabrication includes the following mass production open mold techniques:

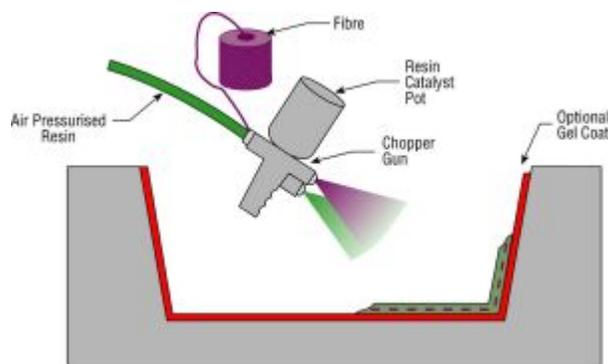
- Continuous Lamination is a fabrication technique that pulls reinforcement material through a resin bath, brings the material (plies) together (sandwiches) between cellophane sheets, and pulls it through a forming die into a curing oven. Squeeze rolls control thickness and resin content as the various plies are brought together. Products made from continuous lamination include wall panels and sheeting.
- Pultrusion Operations continuously pull fiberglass material, which are in the form of strands or mats, through a tension device and immediately immerses them in a resin bath. As they exit the resin bath, the joint glass/resin composite strands are pulled first through a forming die and then through a heated die which cures the composite matrix into a shape. Examples of pultruded products include round tube or round bar fiberglass, square bar or square tube fiberglass, or wide flange beam products.
- Filament Winding Operations are used to manufacture large pipes, storage tanks, and other hollow vessels that may be subject to elevated internal pressure. In this process, continuous fiberglass strands are pulled by a rotating mandrel through a strand-tensioning device into a resin bath. After emerging from the resin bath, uniformly-coated strands are wound onto a mandrel to the shape and pattern required for the finished product. The wound product is then cured in an oven or at room temperature.

Spray Technologies

Similar to the manual application method, spray-up methods also begin by treating an open mold's surface with a release agent. Over the release agent, reinforced material and a predetermined amount of resin and catalyst are applied with a spray gun. Industry representatives state that spray-up methods have several advantages over manual application techniques, including increased production rates, increased uniformity of products, the utilization of a greater variety of molds, and less time to produce a product. Atomization spray technologies separate resin and gel coat liquids into a fine mist by forcing the liquid under high pressure through an orifice, by bombarding a liquid stream with air jets, or by a combination of each technique. The net result is some overspray that reduces the transfer efficiency (percent of material sprayed that adheres to the intended surface) of the material sprayed onto molds, resulting in emissions of VOCs and TACs to the atmosphere. Open mold processes using air-atomized spray technology is the highest emitting method of creating a product. Figure 3 is an illustration of a spray-up method.

Figure 3

Illustration of a Spray-up Method



In order to minimize overspray, Regulation, Rule 50 currently allows only four types of spray gun technologies for the application of composite resins and gel coats.

- Airless Spray, which includes a pump to deliver the resin to the fluid tip at high pressure. As the high-pressure resin stream exits the small fluid tip (orifice), the stream's flow is reduced and the sudden reduction in pressure causes the fluid to atomize into a spray pattern.
- Air-assisted Airless Spray, which is a hybrid of airless and air-atomized spray gun technologies, uses a pump to deliver the resin to the fluid tip (orifice) with much less pressure than an airless gun. Low pressure air improves the resin spray pattern exiting the gun's tip.
- Electrostatic Spray, where an electric charge is imparted to the mold surface and an opposite charge is imparted to the spray droplets, which are attracted to the mold. This technology is rarely used.
- High-volume, Low-pressure Spray, which is similar to air-assisted guns. The spray gun operates with air atomizing pressures of 10 psi or less. High pressure air typical of an air spray gun is replaced by a high volume of low pressure air.

The type of spray gun selected for a given application is based on four primary considerations: how the material is delivered to the gun, how the catalyst is added, how the resin or gel coat is atomized, and the type of mold which is receiving the resin or gel coat.

According to industry sources, non-atomizing spray techniques have been used effectively in other air districts for the application of resins. The net results are enhanced transfer efficiencies and reduced emissions. Details of non-atomizing application techniques are discussed later in this document.

Closed Mold Applications

Closed mold processing methods are those in which all or part of the fabrication takes place in a closed vessel or chamber. Closed molds are used to manufacture products with one or two smooth surfaces or complex shapes. Reinforced glass fibers, carbon fiber reinforced materials, and kevlar fiber reinforced polymers are used in closed mold applications. In the closed mold process, fiber is applied by hand into a mold, the mold is closed, and catalyzed polyester resin is poured or injected into the mold cavity. Resin may be forced into a mold under pressure, drawn in with a vacuum, or a combination of the two.

These following processes are examples of closed mold applications:

- Resin Transfer Molding,
- Vacuum-assisted Resin Transfer Molding,
- Vacuum Bag Molding,
- Resin Film Infusion,
- Compression Molding,
- Reaction Injection Molding,
- Tube Rolling,
- Automated Fiber Placement,
- Automated Tape Laying, and
- Centrifugal Casting.

C. Cleaning Products

Cleaning products are materials used to clean equipment and parts associated with composite operations including operators' hands, tools, rollers, brushes, molds, work area, chopper guns, laminating equipment and other process-related equipment.

Acetone is the preferred cleaning product in the composite industry because it is the most effective product for cleaning cured resins and gel coats from application equipment. According to industry sources, other less flammable cleaning products are used (when possible) to enhance shop safety and to reduce the cost of property insurance. These cleaning products can only be used to clean non-cured composite materials.

Some Bay Area fabricators have had mixed results with aqueous cleaners, that combine water with an organic compound such as dibasic ester. Aqueous cleaners rely on mechanical action (such as brushing) to clean resin from contaminated applicators while

acetone and other solvents clean by dissolving the resin. The resin droplets are wetted by the aqueous cleaner and settle to the bottom of a cleaning tank. Although aqueous cleaners contain few VOCs, they create waste materials, such as the spent liquid solution and under-cured resins, just as acetone cleaners do.

Soy-based cleaning materials are currently in development according to the American Composites Manufacturers Association (ACMA). They can remove cured and uncured resins in an immersion cleaning process. The ACMA considers this an emerging technology with some promise and believes that soy-based cleaners are yet to be fully developed for all polyester resin manufacturing cleaning applications. Staff will work with industry to track the effectiveness of this emerging technology as cleaning product manufacturers endeavor to reformulate low-VOC soy-based cleaners.

D. Controlling VOC Emissions

Control of open molding VOC and TAC emissions can be achieved by pollution prevention and/or capture and control technologies. Pollution prevention involves modifications to the chemistry of the materials and to the application methods to minimize the release of VOCs and TACs at the source. Capture and control reduces emissions through abatement, such as carbon adsorption and incineration. Additionally, operator training and good operating practices can contribute toward significant emissions reductions.

Pollution prevention includes use of the following technologies:

- Non-atomizing Application Technologies
- Low Monomer Resins
- Vapor Suppressants
- Radiation Technology
- Fillers

Non-atomizing Application Technologies

Advancements in resin application technologies allow significant reductions in VOC and TAC emissions. For example, the replacement of atomized spray applications of gel coats and resins with non-atomized applications improves transfer efficiencies and reduces VOC and TAC emission significantly. Non-atomizing applications reduce the over-spray because of their greater transfer efficiency; they minimize the amount of waste; and they control styrene and other monomer emissions in the working area.

The following non-atomizing application technologies can offer significant emission reductions when compared with conventional atomizing application technologies:

- Impingement spray -- is a spray technique which applies resins onto open molds by using specialized fluid tips as the primary means to shape the fluid stream into a fan pattern, without the need of atomization.

- Flow coating -- is a technique in which reinforcement materials are impregnated with resins on an in-line conveyor system. The composite product is cured and trimmed as it passes through various conveyor zones.
- Pressure-fed roller -- is a technique in which fabric rollers, fed with a continuous supply of catalyzed resins through a hose from a mechanical fluid pump, apply resin to a mold.
- Resin impregnation -- is a mechanical application technique that uses a vacuum to draw resin into a mold to uniformly saturate (impregnate) fiber reinforcement material.

U.S. EPA (through its Research Triangle Institute and Comtech, Inc) conducted studies of non-atomizing application technologies and reduced styrene content to prevent pollution. U.S. EPA measured the average styrene emissions concentration (ppm) and percent emissions reduction during the application stage from airless air assist spray guns, flow coaters, and non-atomizing technology systems, and found that the non-atomizing spray systems reduced emissions significantly.

According to the 2008 EPA Control Technique Guidelines for fiberglass boat manufacturing materials, changing both the application method and reducing the monomer content of a resin can significantly reduce VOC emissions. For example, changing from an atomized application of resin with a monomer content with 40% styrene to a resin with 35% styrene content that is applied with non-atomizing technology may achieve a 58% emission reduction.

Low Monomer Resins

One way to minimize the loss of monomer from composite operations is to use resins formulated with less monomer. Low monomer resins can be formulated using non-styrene monomers such as vinyl toluene, which is less volatile when exposed to air. However, reducing the monomer content of the resin presents challenges. Lowering the monomer content typically tends to increase viscosity, which may adversely impact the resin application. Lowering the molecular weight of the resin to reduce its viscosity may also compromise its ability to resist corrosion.

Vapor Suppressants

Another way of reducing emissions is through the use of vapor suppressants, which are typically waxes. VOC emissions occur during three separate phases of a composite open molding process; the application phase, the rollout phase, and the curing phase. During the curing process of a resin, a vapor suppressant forms a layer on the surface of the resin and minimizes the outward diffusion of monomers into the atmosphere. Vapor suppressants may be blended into resin products at the resin-manufacturing site before packaging or shipment to the fabricators, or may be added just prior to fabrication.

Radiation Technology

Ultraviolet (UV) curing resins use a photo-sensitive curing mechanism where UV light serves as the catalyst. The curing process involves the decomposition of a photo-initiator by exposure to UV light. Once exposed, the decomposition produces free radicals, which in turn trigger the polymerization reaction of the resin.

In electron beam (EB) technology, the electron beam translates energy to the resin molecules, breaking the carbon-hydrogen links, thus initiating polymerization. To assess the feasibility of EB technology in curing composite materials, District staff contacted RadTech, the association for the EB and UV industry. A RadTech representative verified that EB technology has improved and is now used to cure some composite materials. Therefore, the use of EB curing technology in the composite industry appears to be a promising technology for some composite applications. Both UV and EB technologies emit VOC during the application step, but almost no VOC during the curing step.

Fillers

Fillers are finely divided materials, which are added to resins to enhance their mechanical properties, extend their volume and lower the cost of fabricating a composite product. According to industry sources, fillers are often added to enhance the fire-retardant performance of a composite product. Although fillers are an integral part of a product, and are not added for the sole purpose of emissions reductions, their use in resin matrices usually results in less resin and monomer content for the product, sometimes reducing emissions.

Cultured marble and cultured granite are cast polymer products which are comprised of approximately 25% polyester resin and 75% filler in the form of crushed stone, natural marble or granite. These marble or granite fillers chemically bond with resins that allow them to be molded into an infinite number of shapes and sizes. Marble and granite fillers are often used for the production of countertops, sinks, tubs, and showers.

Capture and Control Technology

Composite operations have the option of using abatement equipment (add-on controls) to control VOC emissions in lieu of using resin, gel coat and cleaning products which comply with specified VOC and monomer limits. The majority of VOC emissions from resins and gel coats occur in open molding processes which take place in an open shop environment. Some emissions occur in spray booths where gel coat spraying for smaller parts may be done. The volume of air exhausted from an open shop or from spray booths is typically high, and the VOC concentration is typically low. Therefore, due to the large volume of air that must be processed to control a small amount of VOC, it is rarely cost-effective to use add-on controls to reduce VOC emissions. Catalytic and thermal oxidizers are expensive to install, operate and maintain. Because of the wide availability and lower cost of low-monomer VOC content materials and alternative application methods, these materials and methods are used to reduce monomer VOC emissions from manufacturing facilities.

III. Proposed Rule Amendments

The proposed amendments to Regulation 8, Rule 50 will reduce VOC and TAC emissions from the Bay Area's composite manufacturing industry primarily in three ways: (1) by lowering monomer content limits for resins; (2) by establishing monomer content limits for gel coats; and, (3) by requiring the use of non-atomizing spray systems when resins are applied to open molds. In addition, VOC emissions from cleaning products used in the composite manufacturing industry will be reduced by lowering the allowable VOC content. The majority of the VOC emission reductions for this control measure will be achieved by establishing new monomer limits for resins and gel coats and through a requirement to use non-atomizing spray technology.

Monomer Limit Requirements

Presently, Regulation 8, Rule 50 requires that Bay Area polyester resin operations use gel coats, a specialized form of resin, with a maximum VOC content of 250 grams per liter. Polyester resin operations must use resin materials with a maximum monomer content of 35% by weight, except for corrosion-resistant polyester resins which have a monomer content limit of 50%. The polyester resin rules of several California air pollution control districts currently regulate VOC emissions from composite manufacturing operations by limiting monomer content for both resins and gel coats. Staff proposes to define several subcategories of resins and gel coats and to impose specific monomer content limits on these subcategories. Staff has identified studies and field testing that have established maximum monomer content for polyester resin and gel coat subclasses that enable them to work effectively while reducing VOC and TAC emissions. Staff proposes that monomer limits, rather than VOC content limits, apply to gel coats used in Bay Area composite operations. The new monomer limits for Regulation 8, Rule 50 are proposed to become effective on October 1, 2010.

Table 1 lists the proposed limits for resin and gel coat materials.

Table 1
Proposed Monomer Limits for Resin and Gel Coat Materials

<u>Gel Coats and Resins</u>	<u>Monomer Percentage by Weight</u>
<u>Gel Coats</u>	
<u>Clear Gel Coats</u>	
Marble Resin Gel Coats	42%
Boat Manufacturing Gel Coats	48%
All Other Clear Gel Coats	44%
<u>Pigmented Gel Coats</u>	
White and Off-White Gel Coats	30%
Non-White Boat Manufacturing Gel Coats	33%
Other Non-White Gel Coats	37%
Primer Gel Coats	28%
<u>Specialty Gel Coats</u>	48%
<u>Resins</u>	
Marble Resins	10% with fillers or 32% without fillers
Solid Surface Resins	17%
Tub/Shower Resins	24% with fillers or 35% without fillers
Boat Manufacturing (atomized)	28%
Boat Manufacturing (non-atomized)	35%
Lamination Resins	31% with fillers or 35% without fillers
<u>Fire Retardant Resins</u>	38%
<u>Corrosion Resistant, High Strength, and Tooling Resins</u>	
Mechanical (non-atomizing) Application	46%
Filament Application	42%
Manual Application	40%
<u>Other Resins</u>	35%

Monomer percent by weight includes the addition of any VOC-containing materials added.

Spray Technology Requirements

Non-atomizing (fluid impingement) spray guns that effectively apply polyester resins have been available for several years. This spray technology provides the best transfer efficiency in the polyester resin industry. Staff recommends requiring non-atomizing

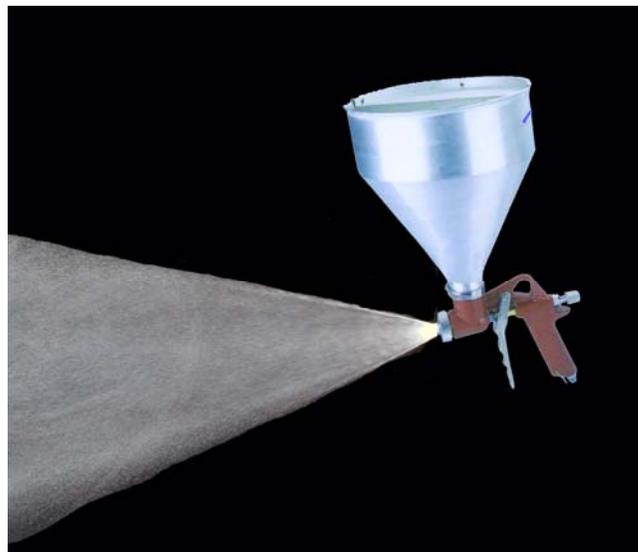
spray guns as the only type of spray application technique allowed for the application of polyester resins to open molds. Staff proposes setting the implementation date for non-atomizing spray guns at October 1, 2011, one year after the new resin and gel coat monomer content limits are effective. This compliance deadline is proposed in response to comments received during the public workshop and review process. Staff also recommends re-naming Section 8-50-302, currently entitled “Spray Operations” to “Application Requirements.”

The proposed amendments do not require that the application of gel coats to open molds use non-atomizing spray guns. A study has shown that there are no significant differences between the VOC emission rates between air-assisted airless and non-atomizing applications when the non-atomizing spray gun is used at a pressure high enough to achieve an acceptable surface quality. Due to the results of that study, other California air districts that had previously required non-atomizing spray application techniques for gel coats have deleted the requirement.

The proposed amendments also allow the use of air spray hopper guns for the application of viscous blends of resin or gel coat to open molds. A hopper gun is an air-atomized spray gun connected to a large upright gravity-fed hopper. The underside of the gun’s nozzle is connected to a specialized hose which is connected to an air compressor. When the gun’s trigger is pressed, it expels the contents from the hopper through the nozzle in a thick, viscous mixture of catalyzed resin (or gel coat) and rock crushed to the consistency of sand in a stream or spray. The hopper gun uses high air pressure (30 psi – 40 psi) but does not atomize the mixture because it is too heavy. Hopper guns are typically used in the composites manufacturing industry to spray mixtures of crushed stone and resin into a mold to create architectural facades. The monomer emissions from hopper guns are minimal compared to other spray guns that use air pressure. Thus, amendments to the rule will allow the use of hopper guns. Figure 4 is a picture of a hopper gun.

Figure 4

Hopper Gun



Wipe Cleaning

Wipe cleaning involves wetting a rag or cloth with solvent or an aqueous solution and wiping an equipment part to free it of contaminants. Currently, the VOC limit for wipe cleaning products used in Bay Area composite operations is 200 grams per liter. Cleaning products that comply with a VOC limit of 25 grams per liter have been used in other California air districts for several years and are effective for certain applications. Other air districts have confirmed that, to date, they have not received complaints from the composite industry about the restriction to use low-VOC products for wipe cleaning. Staff recommends lowering the VOC limit for cleaning products used in Bay Area composite operations from 200 grams per liter to 25 grams per liter. Staff believes this limit is feasible because owners/operators generally rely on acetone (a solvent determined by the EPA to be negligibly photochemically-reactive) which is exempt as a VOC for the majority of their equipment cleaning needs and because cleaning products that meet the 25 gram/liter limit are available.

Cold Cleaning

Cold cleaning refers to soaking a piece of equipment in a solvent or aqueous solution. The solution dissolves cured or partly cured resin so that it can be easily removed by brushing or wiping. Particularly, equipment with inaccessible components or narrow crevices needs to be soaked. Cold cleaning is subject to the provisions of Regulation 8, Rule 16: Solvent Cleaning Operations, which does not exempt acetone or any other solvent. Acetone has a low reactivity but a high evaporation rate, so an exemption for acetone in Rule 16 would create more ozone than regulated, but lower evaporating solvents. Because acetone is the most effective cleaning solvent, industry has requested the District consider amending Rule 50 to allow the use of acetone in cold cleaners. Staff proposes to allow the use of acetone in cold cleaners for the composite industry provided that steps are taken to minimize evaporation. These include use of a self-closing cover and the prohibition of brushing and the wipe cleaning of parts while they are in the cold cleaner. Requirements to minimize evaporation are included in the amendments.

Additional Amendments

To clarify the scope and to enhance the enforceability of Regulation 8, Rule 50, District staff also proposes a number of other changes in the form of modifications and additional amendments. They include:

- an expansion to the rule's description;
- modifications to the section exempting touch-up and repair and the inclusion of a limited exemption for field installation of composite products;
- new and modified definitions throughout;
- enhanced recordkeeping requirements;
- clarification for emission control systems;
- new monitoring requirements for emission control equipment;
- a prohibition of specification section, consistent with other District rules, that makes it a violation to specify the use of non-compliant materials; and,

- o a new compliance statement requirement for manufacturers of resins and gel coats to reflect monomer content.

IV. Emissions and Emission Reductions

A. Emissions Inventory

Total VOC emissions from the Bay Area polyester resin industry are estimated at 1.3 TPD. This figure is derived from the 2005 Base Year inventory, adjusted downward to account for the recent closings of the Hubbel-Lenoir Company and the Isola Corporation, two large sources of polyester resin emissions in the Bay Area. VOC emissions from the application of polyester resin and gel coat are estimated to be 0.8 TPD, roughly half from resin application and half from gel coat application. The VOC emissions from the use of cleaning products for polyester resin operations are estimated to be 0.5 TPD. TAC emissions from polyester resin and gel coat operations are also estimated to be 0.8 TPD because styrene, the monomer which according to industry is typically emitted from polyester resin operations, is both a TAC and a VOC.

B. Emissions Reductions

The calculations for the estimated emission reductions are based on the emission inventories and reports from permitted Bay Area polyester resin operations. For VOC emissions from gel coats, District staff calculated the estimated emission reductions based on the anticipated switch from a maximum allowable VOC content to a maximum allowable monomer content. VOC emission reductions from gel coats with lower monomer content will be 0.12 TPD. For VOC emissions from polyester resins, District staff calculated the estimated emission reductions based on the anticipated reduction of maximum allowable monomer content. Emission reductions will be 0.2 TPD from resins with lower monomer content. After the new monomer content limits are implemented, the VOC and TAC emissions from resin and gel coat monomers will total approximately 0.32 TPD.

The additional VOC emission reduction from resin application operations that must switch to non-atomization spray application equipment is difficult to quantify. The number of facilities that must make the switch is approximately 15. Because most polyester resin facilities in the Bay Area are small facilities, staff assumed one non-atomizing spray system will need to be implemented per facility with the exception of one large facility. Staff conservatively estimates an additional 0.05 TPD in VOC emission reductions from the requirement to use non-atomizing spray systems. The VOC emission reduction from cleaning product usage will be 0.09 TPD. When fully implemented, the amendments to Regulation, Rule 50 will result in a total VOC emission reduction of 0.46 TPD and a TAC emission reduction of 0.37 TPD.

V. Economic Impacts

A. Compliance Costs

The proposed amendments have costs associated in three areas.

1. Higher Resin and Gel Coat Costs: According to several composite product distributors in the Bay Area, the cost to operators to purchase gel coats and resins that have been reformulated with less monomer content will increase by approximately 5 cents per pound of material. District staff has confirmed that for the past couple of years, a majority of facilities in the region that are “laminators”, or not cast polymer operations, are already using resins that comply with the proposed monomer limits. Thus, they will not incur any additional costs to be in compliance with the proposed resin limits. For the same reasons, gel coat users, with the exception of clear marble resin gel coats, are also not going to incur any additional costs to be in compliance.

Bay Area cast polymer fabricators will be switching from clear marble resin gel coats that currently have a maximum monomer content of 44% to a maximum monomer content of 42%, which has yet to be formulated for the Bay Area’s industry. Industry assures staff that it can be formulated successfully. The cost for cast polymer fabricators to make the switch, which represents approximately 50% of the Bay Area’s polyester resin industry, is a 5 cent increase from a price list of \$2.28 to \$2.33 per pound of material.

Table 2 illustrates the increase in cost for resins and gel coats for operators who have not switched to lower monomer materials.

Table 2 - Prices for Gel Coats and Resins, Current and Future*

	Current List Pricing	Estimated Pricing
Clear Gel Coats		
Marble Resin	\$2.28/lb	\$2.33/lb
Other Resin	\$4.00/lb	\$4.05/lb
Boat Manufacturing	\$4.00/lb	\$4.05/lb
Pigmented Gel Coats		
White and Off-White	\$3.54/lb	\$3.59/lb
Non-White Boat Manufacturing	\$4.00/lb	\$4.05/lb
Other Non-White	\$5.73/lb	\$5.78/lb
Primer	\$3.65/lb	\$3.70/lb
Specialty Gel Coats	\$4.25/lb	\$4.30/lb
Resin Materials		
Marble Resins	\$2.23/lb	\$2.28/lb
Solid Surface Resins	\$2.25/lb	\$2.30/lb
Tub/Shower Resins	\$2.25/lb	\$2.30/lb
Boat Manufacturing (atomized)	\$2.29/lb	\$2.34/lb
Boat Manufacturing (non-atomized)	\$2.29/lb	\$2.34/lb
Lamination Resins	\$2.29/lb	\$2.34/lb
Fire Retardant Resins	\$2.44/lb	\$2.49/lb
Corrosion Resistant and/or High Strength Resins		
Mechanical (non-atomizing)	\$3.47/lb	\$3.52/lb
Filament Winding Application	\$3.47/lb	\$3.52/lb
Manual Application	\$3.47/lb	\$3.52/lb
Other Resins	\$3.40/lb	\$3.45/lb

*Maximum estimated increased cost. Some operations have already switched to materials that meet the proposed limits.

2. Cost for Non-atomizing Spray System: Industry sources indicate that the cost for a new, basic non-atomizing spray system ranges from \$9,000.00 to \$11,000.00 per system. It includes a spray gun, pump, hoses, and a cart. Staff has identified only one facility that might need more than one non-atomizing spray gun. The cost estimates include the costs of the new equipment and the costs for installation, maintenance and operations.

3. Cost for Low-VOC Cleaning Products: The costs for low-VOC cleaning products that will comply with the recommended VOC limit of 25 grams per liter are negligible because the technology isn't new. Some industry representatives have indicated that petroleum-based cleaning products that meet the current VOC limit of 200 grams per liter cost more than non-petroleum-based, low-VOC cleaning products.

B. Cost Effectiveness

District staff analyzed the cost-effectiveness for the proposed resin and gel coat monomer limits. In doing so, staff multiplied the costs from Table 2 by each facility's throughput, considering that an estimated 75% of the cast polymer sold in the Bay Area is already in compliance with the future monomer content limits. The cost of using higher priced resins and gel coats throughout the Bay Area polyester resin industry is expected to be \$102,000 per year. Expected emission reductions are 116 tons per year (TPY). This results in a cost-effectiveness of \$874 per ton of VOC emissions reduced for this requirement.

Staff also analyzed the cost-effectiveness for the proposed adoption for the requirement of non-atomizing spray application systems for the polyester resin industry. Only the shops that apply resins to open molds with spray guns will be subject to this requirement. This represents approximately half of the composite manufacturing industry in the Bay Area. The cost to purchase a non-atomizing system is approximately \$10,000. Assuming each shop will purchase one system, the yearly overall cost (including operations and maintenance) is \$1,393 per facility (amortized over 10 years at 7% interest). Staff has estimated that there are potentially 15 facilities in the Bay Area that might be subject to this requirement, but from an analysis of the permits, one shop may need to purchase two systems. Thus, the total yearly cost (industry-wide) to purchase 16 non-atomizing systems is \$22,288. Non-atomizing systems will achieve a yearly VOC emissions reduction of 13 TPY. The cost effectiveness for industry to comply with this requirement is \$1,714 per ton of VOC reduction. The cost effectiveness for the combined requirements is \$974 per ton VOC reduced.

C. Socioeconomic Impacts

Section 40728.5 of the California 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." Bay Area Economics of Emeryville, California has prepared a socioeconomic analysis of the proposed amendments to Regulation 8, Rule 50. In order to assess the maximum potential impact of the October 1, 2011 requirement for polyester resin operations to use non-atomizing spray systems for the application of resin to open molds, it was assumed that a total of fifteen Bay Area facilities would be required to purchase a total of sixteen non-atomizing spray systems. The analysis concludes that the proposed amendments would not have a significant economic impact or cause regional job loss. District staff have reviewed and accepted this analysis. The socioeconomic analysis is attached as Appendix B.

D. Incremental Cost Analysis

Health and Safety Code Section 40920.6 requires an air district to assess the incremental cost-effectiveness analysis for a regulation that identifies more than one control option to meet the same emission reduction objectives. Incremental cost-effectiveness is defined as the difference in costs divided by the difference in emission reductions between one level of control and the next. As discussed above, the cost-effectiveness of the requirement to use lower monomer content resins and gel coats is \$874 per ton of VOC reduced and the cost of the next increment, to use non-atomizing spray equipment, is \$1714 per ton of VOC reduced. These are, individually and in aggregate, very cost-effective controls.

VI. Environmental Impacts

A. California Environmental Quality Act

Pursuant to the California Environmental Quality Act, the District has caused an initial study for the proposed amendments to Regulation 8, Rule 50 to be prepared by Environmental Audit, of Placentia, CA. The assessment concludes that the proposed amendments would not result in adverse environmental impacts. A copy of the study and draft Negative Declaration is provided in the appendix of this staff report. The study and draft Negative Declaration will be circulated for comment prior to the public hearing.

B. Greenhouse Gas Emissions

In June, 2005, the District's Board of Directors adopted a resolution that recognizes the link between global climate change and localized air pollution impacts. Climate change, or global warming, is the process whereby emissions of anthropogenic pollutants, together with other naturally-occurring gases, absorb infrared radiation in the atmosphere, leading to increases in the overall average global temperature.

While carbon dioxide (CO₂) is the largest contributor to global warming, methane, halogenated carbon compounds, nitrous oxide, and other greenhouse gas (GHG) species also contribute to climate change. Gases in the atmosphere can contribute to the greenhouse effect both directly and indirectly. Direct effects occur when the gas itself is a GHG. While there is relative agreement on how to account for these direct effects of GHG emissions, accounting for indirect effects is more problematic. Indirect effects occur when chemical transformations of the original compound produce other GHGs, when a gas influences the atmospheric lifetimes of methane, and/or when a gas affects atmospheric processes that alter the radiative balance of the Earth (e.g., affect cloud formation).

VOCs have some direct global warming effects; however, they may also be considered greenhouse gases due to their indirect effects. VOCs react chemically in the atmosphere to increase concentrations of ozone and may prolong the life of methane. This effect is not well quantified. Consequently, global warming not only exacerbates ozone formation, but ozone formation exacerbates global warming because ozone absorbs

infrared radiation. Consequently, reducing VOCs to make progress towards meeting California air quality standards for ozone will help reduce global warming.

Adoption and implementation of the proposed amendments to Rule 8-50 should not result in any adverse impact on the emissions of greenhouse gases. The proposed methods of control include the reduction of monomer content for various polyester resins and establishing monomer content limits for gel coats and lowering the VOC limits for products which clean equipment used in polyester resin and gel coat operations. The requirement to use non-atomizing spray equipment should reduce the amount of resin used to some extent, resulting in a small net reduction of GHGs from the use of resins to manufacture composite products.

Abatement equipment can be used to control emissions; however, staff is not aware of any operations in the Bay Area that utilize abatement equipment. Consequently, there would be no increase in energy demand to implement these amendments and, therefore, the proposal is neutral with respect to the generation of greenhouse gases.

VII. Regulatory Impacts

A. California Health and Safety Code 40727.2 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.

US EPA has promulgated a Control Techniques Guideline (CTG) and National Emission Standard for Hazardous Air Pollutants (NESHAP) for polyester resin operations that are associated with boat manufacturing (63 CFR Subpart VVV). A CTG is a guideline for states to use to develop State Implementation Plans; non-attainment areas' rules must be at least as stringent as the standards called out in the CTG. A NESHAP is a national standard that affects hazardous air pollutants. It has the force of law regardless of the District's action. Both of these documents specifically target the boat building industry. The NESHAP sets monomer limits for boat building operations at major sources, those that emit 10 tons per year of any hazardous air pollutant or 25 tons per year of all hazardous air pollutants combined. The NESHAP also contains recordkeeping requirements, reporting requirements, alternative compliance options and other requirements for operations like solvent cleaning and abatement device operations. Although there are some boat repair facilities in the Bay Area, there are no manufacturers that qualify as major sources, so there are no conflicts between the federal standards and the District's. The CTG, which is advisory, does contain some standards that appear to be more stringent than those in the proposed amendments to Rule 50. Specifically, for tooling resins used in boat manufacturing, the CTG recommends a monomer content limit of 39%. The District's proposed limit of 46% monomer limit is higher, but the CTG does not apply to any Bay Area sources. The CTG is for boat building, and specifically states that it is only applicable to boat manufacturers who emit at least 15 lbs of VOC emissions per day (about 2.7 tons/year) and does not apply to boat

parts, boat trailers or other polyester resin products, unless part of boat manufacturing. The CTG also exempts tooling resins and gel coats that are less than 1% of the total resin and gel coat used in a facility. Molds used to produce boats are open molds; the application is by hand or by spray technology. The molds are not subject to the heat, pressure and stress that closed molds and molds used for other products are sometimes subject to. Consequently, not only is the CTG not applicable to any Bay Area sources, the monomer limits in the CTG are not feasible to apply to non-boat building operations.

The EPA has also promulgated a NESHAP for polyester resin operations other than boat building operations (63 CFR Subpart WWWW). This NESHAP also only applies to major sources, of which there are none in the Bay Area. Subpart WWWW requires that some operations reduce TAC emissions by certain percentages, allows a monomer content as an alternative and provides emission averaging provisions. It also provides emission limits in terms of pounds TAC emissions per ton of resin for some types of operation such as open molding and specifies measurement methods and default emission factors to determine compliance with those limits. It also specifies work practice standards, such as keeping containers of resin and monomer covered, consistent with provisions in District rules.

Although the NESHAP does not apply to any District facilities, using the default emission factors indicates that the monomer content limits in the proposed amendments are at least as stringent as the limits in the federal rules.

Adoption of amendments to Regulation 8, Rule 50, would not conflict with any existing federal or District requirement. The District does not have any other rules that are applicable to polyester resin operations except those of general applicability such as Regulation 2, Rule 1: Permits.

VIII. Rule Development Process

District staff, including internal stakeholders from the Planning, Legal, Technical, Engineering, and the Compliance and Enforcement Divisions developed proposed amendments and documented rationale for them in the Regulation 8, Rule 50 workshop report. The proposals were based on several site visits to composite manufacturing facilities in the Bay Area; staff reports and regulations in the South Coast and Mojave Desert air districts; email and phone conversations with staff from both air districts; email exchange and telephone discussions with manufacturers and distributors of composite manufacturing products; phone conversations with manufacturers of cleaning products; email, phone conversations, and meeting with representatives of the ACMA were conducted to discuss technical issues, monomer limits, VOC limits, health effects, and future trends in the composite manufacturing industry.

Sources of technical and economic information include the American Composites Manufacturing Association (ACMA), Ashland Chemical, Interplastic Inc., Reichold Corp., North American Composites, Kreysler and Associates, R. A. Jenson Manufacturing, B&P Inc., Maier Racing Enterprises, Peterson Products, ITW Industrial Finishing/Binks/DeVilbiss, and the Western Fiberglass Company.

A workshop notice was posted on the District's web site on August 3, 2009, and the notice was mailed to 60 Bay Area businesses that conduct polyester resin operations. A public workshop was conducted at the District offices on August 19, 2009 and the second was held in Oakland in the evening on August 20, 2009 to solicit comments on the draft amendments. Twelve parties attended the workshops. A document which included written comments from the ACMA, two composite material distributors, and one manufacturing facility were submitted to staff following the July 2009 workshops. A meeting was held on September 1, 2009 with the parties who contributed to the written comments.

Comments were made with regard to the proposed 40% monomer content limit for clear marble resin gel coats, the financial impact of the requirement for non-atomizing spray technology on the laminating end of the composite industry; and on the use of an acetone cold cleaner. Staff met with three industry representatives two weeks later to discuss their comments.

Gel coats with lower monomer contents react differently in manufacturing locations with cooler temperatures. Because much of the year ambient temperatures are cool in the Bay Area, tiny air bubbles can be entrapped in gel coats during polymerization, an effect known as porosity. Porosity occurs when a cold gel coat is applied to a mold or when a warm gel coat is applied to a cold mold. Porosity damages the appearance of the composite product resulting in a hazy or opaque appearance. According to the Bay Area composite industry, when ambient shop temperatures are cool, the only way to prevent porosity on gel coat surfaces is to warm both the gel coat and the molds to which they are applied. Molds can be kept warm by warming the rooms where the composite fabrication takes place. However, staff does not believe the extra cost for the minor emission reduction is warranted. For this reason, staff recommends adopting a 42% monomer content limit for clear gel coat marble resins instead of the 40% monomer content limits that exist in southern California air districts.

Staff discussed the fundamental impact of using non-atomizing spray technologies with operators. There are approximately 15 facilities that may need to purchase equipment – cast polymer product manufacturers are not affected, nor are operations that apply gel coats. In discussions after the workshop, operators agreed that an additional year to implement the technology would allay their concerns about the capital expenditure during the recent economic situation. Staff recommends that this requirement become effective on October 1, 2011.

Staff also discussed the use of acetone in cold cleaners for polyester resin operators. The proposed amendments allow the use of acetone, provided evaporation is minimized as specified in Section 8-50-305.5.

A written comment from EPA Region 9 office asked whether or not the proposed monomer content limits for gel coats (expressed as % monomer) were an emission reduction from the current VOC standard of 250 grams per liter. Staff was able to show, through emission factors developed jointly by the ACMA and EPA, that the emissions from the proposed limits are substantially lower, and verified this with samples collected in Bay Area facilities and analyzed by the District's laboratory staff.

In addition, staff received comments related to definitions and language throughout the rule. Staff reviewed and considered all comments and revised the proposal as appropriate.

Final proposed amendments, along with this staff report, draft CEQA initial study and negative declaration, the socioeconomic analysis and notice of public hearing were posted on October 29. Comments on the final proposal and staff responses are included in Appendix A.

IX. Conclusions

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

- Necessary to protect public health by reducing ozone precursors to meet the commitment of Control Measure SS 4 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 amended rule 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 California air 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 and the provisions of the California Health and Safety sections 40000 and 40702.

The proposed Rule amendments have met all legal noticing requirements, have been discussed with the regulated community and other interested parties, and reflect the input and comments of many affected and interested parties. District staff recommends adoption of proposed amendments to Regulation 8, Rule 50: Polyester Resin Operations; and adoption of the CEQA Negative Declaration.

X. References

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27. U.S. Environmental Protection Agency: 63 CFR Subpart VVVV.
28. U.S. Environmental Protection Agency: 63 CFR Subpart WWWW.
29. U.S. Environmental Protection Agency: Control Techniques Guidelines for Fiberglass Boat Manufacturing Materials, 2008.

Appendix A

Written Comments and Responses

WRITTEN COMMENTS AND RESPONSES

Comments were received from the following:

- **American Composites Manufacturers Association:** Emailed letter, November 9, 2009

Catalyzing Agent

Comment: Section 8-50-205 uses the term “catalyzing agent” instead of the technically correct “initiating agent”.

Response: “Catalyzing agent” is well understood by both affected facilities and District staff. Most polyester resin operations use initiators to begin the polymerization process. However, other chemicals such as accelerators and catalysts can be also used to enhance polymerization reactions. Because initiators are one of the several chemical materials used in the polymerization process, Regulation 8, Rule 50 classifies them all under the general term of catalyzing agents.

Touch-up and Repair

Comment: For “touch-up and repair” in Section 8-50-301.7, some companies hand-apply small amount of paste made from mixing resin, monomer and fillers. These pastes need to have high monomer content to allow the material to “bite” into the cured laminate. Also, the “10%” allowance is not clear. Does it mean that a 40% monomer limit in Table 1 would allow resin used for touch-up or repair to have a 40.4% limit or a 50% limit? This section should be modified to read:

Pastes made using any combination of resin, filler, and/or monomer can be used for touch-up and repair provided they are manually applied. Hand-held atomized spray technologies that operate with a container that is part of the gun with a maximum capacity of 1 quart, may be used for resins and gel coats provided that these materials have no more than 10% in excess of the applicable limit set forth in Table 1 for touch-up and repair; for example, a limit of 40% Table 1 would allow material with a maximum monomer content of 50%.

Response: The proposed amendments do not preclude the application of paste by hand for touch-up and repair. For a 40% monomer limit, the limit for touch-up and repair would be 50%. This will be addressed in a compliance advisory sent to be sent to industry as a reminder of the upcoming standards before the effective date.

Gel Coats and VOC Limits

Comment: Section 8-50-307 says “Shall not use a gel coat that contains more than 250 grams of volatile compounds per liter of coating applied.” The composite industry does not report the VOC of gel coats on this basis. This should be put into a percent monomer content basis.

Response: The current standard for gel coats is a VOC limit that has been in effect since 1990. Industry as a whole has been in compliance with this VOC limit. On October 1, 2010, a monomer content limit will go into effect instead of the VOC limit.

Atomized Application for Resins

Comment: Sections 8-50-302.2 indicates that after October 1, 2011, sources cannot use atomized application for resins. This contradicts Table 1 which allows atomized application of boat resins.

Response: The compliance date for the requirement of non-atomizing technology for the application of boat manufacturing resins to open molds goes into affect one year after the compliance date for the monomer content limit (28%) for such resins. Thus, from October 1, 2010, until October 1, 2011, boat manufacturing resins with a monomer content limit of 28% can be applied to open molds with spray atomization technology, as allowed in the rule. It should be noted that boat manufacturing with polyester resin material does not appear to exist in the Bay Area.

Need to Clarify Prohibition of Atomized Application of Resins versus Gel Coats

Comment: Language in Section 8-50-302.2 prohibits atomized spraying of resin after October 1, 2011. Because the definition of gel coat includes the term “resin material”, it could be confusing to industry. The rule needs to clarify that the atomized application of gel coats will be allowed.

Response: Staff believes the language regarding the requirement for non-atomizing application technology is clear. The Regulation 8, Rule 50 has always differentiated between resins and gel coats. Staff has communicated with operators from several facilities in the Bay Area regarding this requirement. Operators understood that the proposed requirement pertained to resin application to open molds, not to gel coat application to open molds. This issue was highlighted during the rule workshop.

Regarding Sections 8-50-301.7 and 302.2, after a rule has been amended, but before the amendments go into affect, it is a common practice to send out one or more compliance advisories to clarify, advise, and put the requirements of the rule into plain language. Staff will send out a compliance advisory to address the issues identified, but does not believe changes in the language of the rule are warranted.

Appendix B

Socioeconomic Analysis

bae



**FINAL Socio-Economic Impact Study:
Proposed Amendment to Regulation 8, Rule 50
Polyester Resin Operations**

Submitted to:
Bay Area Air Quality Management District

October 14, 2009

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Executive Summary

The Bay Area Air Quality Management District (BAAQMD) regulates emissions from volatile organic compounds (VOC) associated with unsaturated polyester resin operations during the manufacturing and repair of composite products through Regulation 8, Rule 50: Polyester Resin Operations (Regulation 8-50). Currently, the BAAQMD is proposing to amend Regulation 8-50 to reduce VOC emissions through gel coat monomer limits, polyester monomer limits, lower VOC limits on polyester resin cleaning products, and VOC limits on vinyl ester resin cleaning products. The proposed Amendment would add and clarify definitions, and allow only the use of non-atomizing spray guns when spray guns are used to apply polyester and vinyl ester resins to open molds.

Socio-Economic Impacts

In order to estimate the economic impacts of amending Rule 8-50 on the affected industries, this report compares the industry's annualized compliance costs with its profit ratios. The analysis uses data from the BAAQMD, US Census County Business Patterns, the IRS, and Dun and Bradstreet, a private data vendor.

Economic Profile of Affected Industries

The BAAQMD identifies the following industries as affected by the proposed amendments to reduce emissions of Volatile Organic Compounds (VOCs) by reducing the monomer content and VOC limits on polyester resins: Plastics Material and Resin Manufacturing (NAICS 325211), Custom Compounding of Purchased Resins (NAICS 325991), Other Plastics Product Manufacturing (NAICS 32619), Ship and Boat Building (NAICS 3366), Bare Printed Circuit Board Manufacturing (NAICS 334412), Aircraft Manufacturing (NAICS 336411), Military Armored Vehicle, Tank, and Tank Component Manufacturing (NAICS 336992), Wood Kitchen Cabinet and Countertop Manufacturing (NAICS 337110), Musical Instrument Manufacturing (NAICS 339992), All Other Home Furnishing Stores (NAICS 442299), Marinas (NAICS 713930), Automotive Body, Paint, and Interior Repair and Maintenance (NAICS 811121), and All Other Automotive Repair and Maintenance (NAICS 811198). According to the 2007 NAICS County Business Patterns, there are approximately 2,250 firms that could be associated with polyester resin manufacturing and repair in the region; however, BAAQMD records identify approximately 60 firms in the Bay Area that would be subject to the proposed amendment. In addition, BAAQMD staff contacted polyester resin suppliers who verified that there are approximately 60 regional manufacturing and repair firms that use polyester resins.

In order to maintain confidentiality of firm sales and profit data, this report uses three larger industry classes to analyze the economic impacts of the proposed rule: Furniture and Fixture Manufacturing and Repair, Transportation Manufacturing and Repair, and Electrical Equipment Manufacturing and Repair.

Economic Impacts to Affected Industries

Furniture and Fixture Manufacturing and Repair. IRS data indicate that firms in the furniture and

fixture manufacturing and repair sector, which include some of the affected industries, earn 6.4 percent profits on total revenue. For the 31 firms that use polyester resins and gel coats, and will have to comply with the amended regulations, the total profits are \$1.7 million. Compliance costs associated with amending Rule 8-50 were calculated based on data provided by the BAAQMD and California Air Resources Board (ARB), as well as the IRS and Dun & Bradstreet. The total annualized compliance costs will be approximately \$109,170. Dividing the compliance costs (\$109,170) by annual profits of firms that will have to comply with the amended rules (\$1.7 million) shows that the proposed Rule will result in a 6.5 percent reduction in firm profits, which is below the ARB's 10 percent threshold used to determine cost burden.

Transportation Manufacturing and Repair. IRS data indicate that firms in the transportation manufacturing and repair sector, which includes some of the affected industries, earn 3.4 percent profits on total revenue. For the 18 firms that use polyester resins and gel coats, and will have to comply with the amended regulations, the total profits are \$157,550. Compliance costs associated with amending Rule 8-50 were calculated based on data provided by the BAAQMD and California Air Resources Board (ARB), as well as the IRS and Dun & Bradstreet. The total annualized compliance costs will be approximately \$11,080. Dividing the compliance costs (\$11,080) by annual profits of firms that will have to comply with the amended rules (\$157,550 million) shows that the proposed Rule will result in a 7.0 percent reduction in firm profits, which is below the ARB's 10 percent threshold used to determine cost burden.

Electrical Equipment Manufacturing and Repair. IRS data indicate that firms in the transportation manufacturing and repair sector, which includes some of the affected industries, earn 9.6 percent profits on total revenue. For the 11 firms that use polyester resins and gel coats, and will have to comply with the amended regulations, the total profits are \$670.7 million. Compliance costs associated with amending Rule 8-50 were calculated based on data provided by the BAAQMD and California Air Resources Board (ARB), as well as the IRS and Dun & Bradstreet. The total annualized compliance costs will be approximately \$14,320. Dividing the compliance costs (\$14,320) by annual profits of firms that will have to comply with the amended rules (\$670.7 million) shows that the proposed Rule will result in a 6.5 percent reduction in firm profits, which is below the ARB's 10 percent threshold used to determine cost burden.

Economic Impacts to Consumers

Although the impacts to the industry are not significantly high, consumers will likely bear a portion of the cost burden. Since customers indirectly purchase polyester resins when purchasing cabinets, furniture, and other household fixtures, they will likely incur higher costs for the goods they purchase that require marble resin gel coats. However, as there are currently products on the market in compliance with the proposed amendment on other resin monomer levels, in order to remain competitive, manufacturers may not be able to pass all of these costs on to the consumers and would likely need to absorb some of the associated costs.

Regional Employment, Indirect, and Induced Impacts

Since on average, the proposed amendment to Rule 8-50 would not result in significant economic impacts to firms within the affected industries, and consumers will likely bear some portion of the cost burden, the

proposed amendment would not impact affected industry or regional employment.

Impacts to Small Businesses

Using the California Government Code 14835's definition of a small business, approximately 98 percent of all affected firms are small businesses. However, as this analysis projects that compliance costs are small enough not to significantly impact profitability, amending Rule 8-50 would not adversely impact small businesses.

Description of Proposed Rule

Since 1990, the Bay Area Air Quality Management District (BAAQMD) has regulated emissions from volatile organic compounds (VOC) associated with unsaturated polyester resin operations during the manufacturing and repair of composite products through Regulation 8, Rule 50: Polyester Resin Operations (Regulation 8-50). Regulation 8-50, which has been amended three times since its adoption, limits the amount of styrene monomer in uncured resins, requires the uses of emissions minimizing vapor suppressants, or requires the use of a closed-mold system.¹ Polyester resins are used in the manufacture and repair of the following products: recreational and commercial watercraft, recreational vehicle bodies, automotive vehicle bodies and interior parts, commercial and military aircraft parts, bathware products, architectural products, personal computer board parts, pipelines, and storage tanks for the sewage treatment industry and secondary containment for gasoline fuel dispensing components.²

BAAQMD proposes to amend Regulation 8-50 to reduce VOC emissions through gel coat monomer limits, polyester monomer limits, lower VOC limits on polyester resin cleaning products, and VOC limits on vinyl ester resin cleaning products. The proposed Amendment would add and clarify definitions, and bring Bay Area polyester monomer limits into alignment with other California Air Districts' limits. Finally, the Amendment would “clarify the permissible methods for applying polyester resins to open molds, and allow only the use of non-atomizing spray guns when spray guns are used to apply polyester and vinyl ester resins to open molds.”³ The proposed monomer limits for resin and gel coat materials are presented in Table 1.

¹ BAAQMD. Bay Area 2005 Ozone Strategy Control Measure SS-4 BAAQMD Regulation 8, Rule 50: Polyester Resin Operations, Workshop Report. August 2009.

² Ibid.

³ Ibid.

Table 1: Proposed Monomer Limits for Resin and Gel Coat Materials

Gel Coats and Resin Materials	Monomer Percentage by Weight as Applied
Gel Coats	
Clear Gel Coats	
Marble Resin Gel Coats	42%
Boat Manufacturing Gel Coats	48%
All Other Clear Gel Coats	44%
Pigmented Gel Coats	
White and Off-White Gel Coats	30%
Non-White Boat Manufacturing Gel Coats	33%
Other Non-White Gel Coats	37%
Primer Gel Coats	28%
Specialty Gel Coats	48%
Resins	
	10% with fillers or 32%
Marble Resins	without fillers (a)
Solid Surface Resins	17%
	24% with fillers or 35%
Tub/Shower Resins	without fillers (a)
Boat Manufacturing (atomized)	28%
Boat Manufacturing (non-atomized)	35%
	31% with fillers or 35%
Lamination Resins	without fillers (a)
Fire Retardant Resins	38%
Corrosion Resistant, High Strength, and Tooling Resins	
Non-atomizing Mechanical Application	46%
Filament Application	42%
Manual Application	40%
Other Resins	35%

Note:

(a) As supplied by manufacturers

Sources: BAAQMD; BAE, 2009.

These amendments would fulfill Bay Area 2005 Ozone Strategy Control Measure SS-4, and manufacturers would need to begin producing compliant products by October 1, 2010. Currently, VOC emissions from the application of resins and gel coats in composite operations in the Bay Area total 0.8 tons per day (tpd). In addition, the polyester resin operations also emit approximately 0.8 tpd of Toxic Air Contaminants (TAC) because styrene, a monomer that is typically used in polyester resin operations, is a TAC. The use of cleaning products associated with resin and gel coat operations contribute an additional 0.5 tpd of VOC. The proposed amendments to Rule 8-50 would achieve a reduction in VOC emissions of 0.46 tpd or about 35 percent of the Bay Area's polyester resin related emissions.

Regional Trends

This section provides background information on the demographic and economic trends for the San Francisco Bay Area, which represents the BAAQMD’s District. The San Francisco Bay Area includes Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma Counties. Regional trends are compared to statewide demographic and economic patterns since 2000, in order to show the region’s unique characteristics relative to the State.

Regional Demographic Trends

Table 2 shows the population and household trends for the nine county Bay Area and California between 2000 and 2009. During this time, the Bay Area’s population increased by 8.9 percent, compared to 13.3 percent in California. Likewise, the number of Bay Area households grew by 7.7 percent, compared to a 10.7 percent statewide increase.

Table 2: Population and Household Trends, 2000-2009

Bay Area (a)	2000	2009 (est.)	Percent Change 2000-2009
Population	6,640,974	7,230,189	8.9%
Households	2,466,020	2,656,487	7.7%
Average Household Size	2.69	2.72	
California			
Population	33,051,896	37,432,601	13.3%
Households	11,502,871	12,733,414	10.7%
Average Household Size	2.87	2.94	

Note:

(a) Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma Counties.

Sources: California, Department of Finance, 2009; BAE 2009.

The slower growth in the Bay Area is related to its relatively built out environment, compared to the state overall. While Central Valley locations, such as the Sacramento region, experienced large increases in the number of housing units, the Bay Area, which was relatively built out before the housing boom, only experienced moderate increases in housing units.

Regional Economic Trends

In the five-year period between the third quarters of 2003 and 2008, the Bay Area's economic base grew by 3.9 percent, increasing from 3.21 million jobs to 3.34 million jobs. This growth was somewhat slower than growth for the State, which grew by 4.7 percent during the same time period.

The three largest private (non-government) sectors in the Bay Area's economy are Manufacturing; Retail Trade; and Professional, Scientific & Technical Services, each of which constituted approximately 10 percent of the region's total jobs in 2008. Over the five-year period the Manufacturing sector lost five percent of its jobs, while the Retail Trade sector was relatively stagnant, losing one percent of its jobs. However, during this period, the Professional, Scientific, and Technical Services sector grew by 24 percent.

Statewide, the Manufacturing sector declined by eight percent while Retail Trade and Professional, Scientific, and Technical Services grew by three and 19 percent, respectively. Overall, the Bay Area's economic base reflects the state's base, sharing a similar distribution of employment across sectors. Table 3 shows the jobs by sector in 2003 and 2008. Most of the industries that would be affected by the proposed change to Regulation 8-50 belong to the Manufacturing sector, while repair jobs are categorized under Other Services. While manufacturing represents a relatively large portion of the region's job base, employment within this sector contracted between 2003 and 2008.

Table 3: Jobs by Sector, 2003-2008 (a)

Industry Sector	Bay Area					California				
	2003 (b)		2008 (c)		% Change 2003-2008	2003 (b)		2008 (c)		% Change 2003-2008
	Jobs	% Total	Jobs	% Total		Jobs	% Total	Jobs	% Total	
Agriculture, Forestry, Fishing and Hunting	17,710	1%	18,725	1%	6%	377,944	3%	392,535	3%	4%
Mining	1,744	0%	973	0%	-44%	20,406	0%	26,340	0%	29%
Construction	177,987	6%	178,147	5%	0%	784,565	5%	782,505	5%	0%
Manufacturing	361,948	11%	343,673	10%	-5%	1,532,004	10%	1,414,511	9%	-8%
Utilities	4,639	0%	5,498	0%	19%	55,239	0%	58,493	0%	6%
Wholesale Trade	91,775	3%	116,686	3%	27%	645,987	4%	705,159	5%	9%
Retail Trade	335,893	10%	333,990	10%	-1%	1,588,998	11%	1,635,570	11%	3%
Transportation and Warehousing	51,995	2%	54,032	2%	4%	406,254	3%	430,029	3%	6%
Information	117,546	4%	114,937	3%	-2%	471,860	3%	467,870	3%	-1%
Finance and Insurance	150,174	5%	136,692	4%	-9%	610,777	4%	571,945	4%	-6%
Real Estate and Rental and Leasing	61,693	2%	58,086	2%	-6%	273,325	2%	274,806	2%	1%
Professional, Scientific, and Technical Services	277,412	9%	344,565	10%	24%	909,716	6%	1,079,097	7%	19%
Management of Companies and Enterprises	67,779	2%	60,908	2%	-10%	255,557	2%	205,632	1%	-20%
Administrative and Waste Services	177,198	6%	185,002	6%	4%	931,115	6%	945,574	6%	2%
Educational Services	63,905	2%	76,018	2%	19%	227,601	2%	271,970	2%	19%
Health Care and Social Assistance	283,259	9%	305,578	9%	8%	1,269,614	9%	1,407,845	9%	11%
Arts, Entertainment, and Recreation	48,740	2%	59,821	2%	23%	235,375	2%	252,856	2%	7%
Accommodation and Food Services	252,693	8%	219,673	7%	-13%	1,161,169	8%	1,308,555	8%	13%
Other Services, except Public Administration	137,155	4%	156,866	5%	14%	641,046	4%	738,330	5%	15%
Unclassified	342	0%	11,901	0%	3380%	48,534	0%	72,511	0%	49%
Government (d)	445,545	14%	448,109	13%	1%	2,360,572	16%	2,456,041	16%	4%
Subtotal	3,127,132	97%	3,229,880	97%	3.3%	14,807,658	100%	15,498,174	100%	4.7%
Additional Suppressed/Confidential Employment (e)	85,993	3%	109,612	3%		-2	0%	1	0%	
Total, All Employment	3,213,125	100%	3,339,492	100%	3.9%	14,807,656	100%	15,498,175	100%	4.7%

Notes:

(a) Includes all wage and salary employment covered by unemployment insurance.

(b) Represents annual employment for 2003.

(c) Represents annual employment for 2008.

(d) Government employment includes workers in all local, state and Federal sectors, not just public administration. For example, all public school staff are in the Government category.

(e) Employment for some industries were suppressed by EDD due to the small number of firms reporting in the industry for a given jurisdiction.

Sources: California Employment Development Department, 2009; BAE, 2009.

Affected Industries

Affected industries primarily consist of furniture and fixture manufacturing, auto repair, plastics and resin manufacturing, ship and boat building and repair, aircraft manufacturing and repair, military vehicle manufacturing, musical instrument manufacturing, and bare printed circuit board manufacturing.

According to the US Census, the Bay Area had 2,250 firms classified in these industries in 2007. These firms accounted for a significant number of jobs in the Bay Area, totaling over 28,120 jobs (See Table 4). Furniture stores hold the greatest concentration of affected jobs, with approximately 8,230 jobs in 2007. However, as not all firms in these categories engage in manufacturing and repair using polyester resins, only some would be affected. BAAQMD staff estimate that only 60 firms in the Bay Area would be affected.

Table 4: Profile of Affected Industries, 2007

NAICS	Industry Description	Employment (a)	Number of Establishments by Size of Workforce							Total
			1-4	5-9	10-19	20-49	50-99	100-249	250+	
325211	Plastics Material and Resin Manufacturing	264	3	1	1	1	4	0	0	10
325991	Custom Compounding of Purchased Resins	(a)	3	2	2	1	1	0	0	9
32619	Other Plastics Product Manufacturing	5,312	36	21	25	30	21	10	3	146
327999	All Other Miscellaneous Nonmetallic Mineral Product Manufacturing	58	5	1	1	2	1	0	0	10
3366	Ship and Boat Building	128	11	3	4	1	1	1	0	21
334412	Bare Printed Circuit Board Manufacturing	3754	15	11	4	16	10	10	2	68
336411	Aircraft Manufacturing	(a)	1	0	1	0	0	0	1	3
336992	Military Armored Vehicle, Tank, and Tank Component Manufacturing	(a)	0	0	0	0	0	0	1	1
337110	Wood Kitchen Cabinet and Countertop Manufacturing	2,208	127	61	26	19	8	1	0	242
339992	Musical Instrument Manufacturing	68	9	3	3	1	0	1	0	17
442299	All Other Home Furnishings Stores	8,227	222	134	112	58	37	7	0	570
713930	Marinas	510	33	20	17	5	0	1	0	76
811121	Automotive Body, Paint, and Interior Repair and Maintenance	7,325	390	246	173	85	3	0	0	897
811198	All Other Automotive Repair and Maintenance	<u>161</u>	<u>152</u>	<u>19</u>	<u>0</u>	<u>5</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>176</u>
	Affected Industries Total	28,015 0	1,007	522	369	224	86	31	7	2,246

Note:

(a) Some employment is suppressed and is not included in the total.

Sources: US Census; BAE, 2009.

Socio-Economic Impacts

This section discusses the methodology, economic profile of the affected industry, annualized compliance costs, and estimates of the economic impacts associated with the proposed amendment to Rule 8-50.

Methodology

In order to estimate the economic impacts of amending Rule 8-50 on the affected industry, this report compares the affected industry's annualized compliance costs with its profit ratios. The analysis uses data from the BAAQMD, US Census County Business Patterns, the IRS, and Dun and Bradstreet, a private data vendor.

The BAAQMD identifies the following industries as affected by the proposed amendments to reduce emissions of Volatile Organic Compounds (VOCs) by reducing the monomer content and VOC limits on polyester resins: Plastics Material and Resin Manufacturing (NAICS 325211), Custom Compounding of Purchased Resins (NAICS 325991), Other Plastics Product Manufacturing (NAICS 32619), Ship and Boat Building (NAICS 3366), Bare Printed Circuit Board Manufacturing (NAICS 334412), Aircraft Manufacturing (NAICS 336411), Military Armored Vehicle, Tank, and Tank Component Manufacturing (NAICS 336992), Wood Kitchen Cabinet and Countertop Manufacturing (NAICS 337110), Musical Instrument Manufacturing (NAICS 339992), All Other Home Furnishing Stores (NAICS 442299), Marinas (NAICS 713930), Automotive Body, Paint, and Interior Repair and Maintenance (NAICS 811121), and All Other Automotive Repair and Maintenance (NAICS 811198). According to the 2007 NAICS County Business Patterns, there are approximately 2,250 firms that could be associated with polyester resin manufacturing and repair in the region; however, BAAQMD records identify approximately 60 firms in the Bay Area that would be subject to the proposed amendment. In addition, BAAQMD staff contacted polyester resin suppliers who verified that there are approximately 60 regional manufacturing and repair firms that use polyester resins.

In order to maintain confidentiality of firm sales and profit data, this report uses three larger industry classes to analyze the economic impacts of the proposed rule. Firms engaged in manufacturing or repairing materials for use in fixtures, furniture, or infrastructure are categorized into the Furniture and Fixture Manufacturing and Repair class and account for 31 firms or approximately 52 percent of total affected firms. Firms engaged in manufacturing or repairing modes of transportation (e.g., airplanes, cars, trains, etc.) are classified into the Transportation Manufacturing and Repair class and represent approximately 29 percent of total affected firms, while firms engaged in the manufacture or repair of electronics (e.g., circuit boards, etc.) are classified as Electrical Equipment Manufacturing and Repair firms and account for the remaining 19 percent of total affected firms.

Economic Profile of Affected Industries

Table 5 shows the average sales and number of employees for each class of affected industries. According to Dun & Bradstreet data, the average firm in the Furniture and Fixture Manufacturing sector has approximately eight employees and average annual sales of approximately \$834,660. The average firm in the Transportation Manufacturing and Repair sectors has three employees and average annual sales of approximately \$265,460, while the average firm in the Electrical Equipment Manufacturing and Repair sector has an average of 176 employees and \$620.2 million.

Table 5: Sales of Affected Industries, 2008

Sector/# of Employees	Number of Businesses	Avg. Annual Annual Sales	Average # of Employees	Total Sales	Total Employees
FURNITURE AND FIXTURE MANUFACTURING (a)					
1-4	20	\$194,358	2	\$3,878,389	37
5-9	5	\$812,308	7	\$3,975,904	36
10-19	2	\$1,461,150	12	\$2,750,660	23
20-49	3	\$3,025,000	27	\$9,111,446	82
50-99	1	\$6,366,667	60	\$6,366,667	60
100-249	0	\$0	0	\$0	0
250+	0	\$34,800,000	252	\$0	0
Total	31	\$834,658	8	\$26,083,064	239
TRANSPORTATION MANUFACTURING AND REPAIR (b)					
1-4	12	\$165,645	2	\$1,987,746	26
5-9	2	\$517,031	6	\$1,034,063	12
10-19	1	\$1,623,750	13	\$1,623,750	13
20-49	0	\$2,216,154	24	\$0	0
50-99	0	\$0	0	\$0	0
100-249	0	\$34,000,000	100	\$0	0
250+	0	\$2,000,000	1,614	\$0	0
Total	18	\$265,460	3	\$4,645,558	51
ELECTRICAL EQUIPMENT MANUFACTURING AND REPAIR (c)					
1-4	4	\$190,571	2	\$762,286	7
5-9	1	\$1,401,429	7	\$1,401,429	7
10-19	2	\$3,175,000	14	\$6,350,000	29
20-49	2	\$4,492,225	27	\$8,984,450	54
50-99	0	\$6,200,000	50	\$0	0
100-249	0	\$18,144,073	126	\$0	0
250+	1	\$6,959,550,000	1,880	\$6,959,550,000	1880
Total	11	\$620,182,059	176	\$6,977,048,165	1,977

Notes:

(a) Includes all affected NAICS codes related to furniture and fixture manufacturing and repair, including: 325211, 325991, 32619, 327999, 337110, and 442299.

(b) Includes all affected NAICS codes related to transportation manufacturing, including: 3366, 336411, 336992, 713930, 811121, 811198.

(c) Includes all affected NAICS codes related to electrical equipment manufacturing, including: 334412

Sources: US Census; Dun and Bradstreet; BAAQMD; BAE, 2009.

The majority of affected firms (36 out of the total 60, or 60 percent) are small businesses, employing

between one and four employees. For these firms, the average number of employees is two and the average annual sales are calculated to be \$184,360.

Based on IRS data on total sales and net income for the various categories of affected firms, firms average between a 3.4 and 9.6 percent rate of return on total sales. Table 6 presents the average profits for affected of varying sizes based on an average rate of return per major affected category (e.g., furniture and fixtures, transportation, etc.).

Table 6: Profits of Affected Industries

Sector/# of Employees	Number of Businesses	Average Annual Sales	Avg. Return on Sales	Avg. Profits Per Firm	Total Profits
FURNITURE AND FIXTURE MANUFACTURING					
1-4	20	\$194,358	6.4%	\$12,468	\$248,798
5-9	5	\$812,308	6.4%	\$52,109	\$255,053
10-19	2	\$1,461,150	6.4%	\$93,733	\$176,454
20-49	3	\$3,025,000	6.4%	\$194,053	\$584,497
50-99	1	\$6,366,667	6.4%	\$408,420	\$408,420
100-249	0	\$0	6.4%	\$0	\$0
250+	0	\$34,800,000	6.4%	\$2,232,413	\$0
Total	31	\$26,083,064		\$2,993,197	\$1,673,223
TRANSPORTATION MANUFACTURING AND REPAIR					
1-4	12	\$165,645	3.4%	\$5,618	\$67,411
5-9	2	\$517,031	3.4%	\$17,534	\$35,068
10-19	1	\$1,623,750	3.4%	\$55,067	\$55,067
20-49	0	\$2,216,154	3.4%	\$75,157	\$0
50-99	0	\$0	3.4%	\$0	\$0
100-249	0	\$34,000,000	3.4%	\$1,153,052	\$0
250+	0	\$2,000,000	3.4%	\$67,827	\$0
Total	18	\$4,645,558		\$1,374,254	\$157,546
ELECTRICAL EQUIPMENT MANUFACTURING AND REPAIR					
1-4	4	\$190,571	9.6%	\$18,319	\$73,276
5-9	1	\$1,401,429	9.6%	\$134,714	\$134,714
10-19	2	\$3,175,000	9.6%	\$305,202	\$610,403
20-49	2	\$4,492,225	9.6%	\$431,822	\$863,644
50-99	0	\$6,200,000	9.6%	\$595,984	\$0
100-249	0	\$18,144,073	9.6%	\$1,744,126	\$0
250+	1	\$6,959,550,000	9.6%	\$668,997,106	\$668,997,106
Total	11	\$6,977,048,165		\$672,227,273	\$670,679,143

Sources: US Census; Dunn and Bradstreet; IRS; BAAQMD; BAE, 2009.

As Table 6 shows, affected firms have estimated annual net profits that generally ranging from \$5,600 to \$431,800 depending on the firm's industry and size, with one large firm estimated to have net profits of approximately \$670 million annually. Total annual profits from all smaller affected businesses (less than 100 employees) equals approximately \$3.5 million. When the one large firm is also included, total annual profits for all affected businesses equals \$672.5 million.⁴

⁴ It should be noted that since profit ratios come from the IRS, these profit rates represent the profit rate on net taxable income after depreciating capital equipment and writing down bad debt.

Description of Compliance Costs

There are several methodologies to determine the compliance costs associated with amending Rule 8-50. The BAAQMD's Workshop Report specifies that there are a few different ways that different businesses can comply with the new regulation, including switching to lower content gel coats and resins. In addition, firms that use resin coatings can also modify their spray guns.

Ongoing Costs

BAAQMD staff estimate that 80 to 90 percent of all affected firms with the exception of those that use marble resin gel coats are currently in compliance with the proposed monomer limits. For those firms that need to switch to lower monomer gel coats and resins, BAAQMD staff estimate that the cost of switching will be approximately \$0.05 per pound of material switched. Using existing throughput estimates, the annual ongoing implementation costs would range between nine dollars and \$24,970 per firm. Firms in the Furniture and Fixture Manufacturing and Repair sector would have the highest annual ongoing costs, while smaller firms in the Electrical Equipment Manufacturing and Repair sector would have the lowest.

The analysis uses data from BAAQMD to assume that 31 percent of materials in the Furniture and Fixture Manufacturing and Repair sector would not be in compliance with the proposed amendment, including 7.5 percent of materials that are clear gel coats and 25 percent of other resins that would need to be replaced with a lower monomer content version. The analysis assumes that 100 percent of materials used by the other sectors would need to be replaced.

Capital Costs

In addition, firms that use resins will be required to comply with the proposed non-atomizing spray gun requirement, which requires firms to use more efficient spray gun technologies that result in reduced emissions and enhanced transfer efficiencies of applying resin to a mold. BAAQMD staff estimate that about one half of the affected firms use resins and would be subject to the proposed capital requirement. In total, the affected firms would purchase 16 spray guns. Those firms that purchase non-atomizing spray gun equipment will also incur capital compliance costs. BAAQMD estimates that the capital costs for purchasing new spray equipment will cost approximately \$10,000 per spray gun system. This analysis assumes that capitalization of new equipment will occur over the first 10 years, and that annual operating and maintenance costs would be an additional \$393 per year. Thus, the annualized costs of new spray equipment would be approximately \$1,393.

Total Compliance Costs

The total compliance costs for the 60 complying regional firms were calculated by multiplying the number of businesses times their average annual pounds of high monomer material used times the average annual incremental cost per pound of material. This total is then added to the total annualized capital costs, in this case the additional costs of 16 new non-atomizing spray gun systems.

Table 7 presents a detailed estimate of the compliance costs to firms in each of the affected industries using the methodology described above. As Table 7 shows, the total annualized compliance costs to

manufacturing firms would be approximately \$130,390.

Table 7: Annualized Compliance Costs

Sector/# of Employees	Number of Businesses	Avg. Annual lbs. of Materials	Cost per lb. of Material	Annualized Ongoing Costs Per Firm	Annualized Capital Costs Per Gun (a)	Number of Guns	Total Annual Costs
FURNITURE AND FIXTURE MANUFACTURING							
1-4	20	15,551	\$0.05	\$778	\$1,393	1	\$17,037
5-9	5	61,478	\$0.05	\$3,074	\$1,393	1	\$16,521
10-19	2	101,567	\$0.05	\$5,078	\$1,393	1	\$10,498
20-49	3	227,902	\$0.05	\$11,395	\$1,393	2	\$37,689
50-99	1	499,511	\$0.05	\$24,976	\$1,393	2	\$27,425
100-249	0	0	\$0.05	\$0	\$1,393	0	\$0
250+	0	2,097,945	\$0.05	\$104,897	\$1,393	0	\$0
Total	31	1,988,389				7	\$109,170
TRANSPORTATION MANUFACTURING AND REPAIR							
1-4	12	2,287	\$0.05	\$114	\$1,393	3	\$5,581
5-9	2	6,588	\$0.05	\$329	\$1,393	1	\$2,680
10-19	1	13,868	\$0.05	\$693	\$1,393	2	\$2,821
20-49	0	25,727	\$0.05	\$1,286	\$1,393	0	\$0
50-99	0	0	\$0.05	\$0	\$1,393	0	\$0
100-249	0	107,195	\$0.05	\$5,360	\$1,393	0	\$0
250+	0	1,730,135	\$0.05	\$86,507	\$1,393	0	\$0
Total	18	54,483				6	\$11,082
ELECTRICAL EQUIPMENT MANUFACTURING AND REPAIR							
1-4	4	183	\$0.05	\$9	\$1,393	0	\$52
5-9	1	747	\$0.05	\$37	\$1,393	0	\$53
10-19	2	1,462	\$0.05	\$73	\$1,393	0	\$206
20-49	2	2,769	\$0.05	\$138	\$1,393	0	\$391
50-99	0	5,128	\$0.05	\$256	\$1,393	0	\$0
100-249	0	12,889	\$0.05	\$644	\$1,393	0	\$0
250+	1	192,820	\$0.05	\$9,641	\$1,393	3	\$13,615
Total	11	202,761				3	\$14,317

Note:

(a) Assumes one new non-atomizing spray gun system costs \$10,000, and will be capitalized over ten years. Operations and maintenance will cost an additional \$393 per year, for a total annualized cost of \$1,393.

Sources: BAAQMD; BAE, 2009.

Affected Industry Economic Impact analysis

In order to determine the impacts of facilities of various sizes, this analysis uses average revenue estimates from Dun & Bradstreet, in conjunction with IRS profit ratios, to determine whether the estimated annualized compliance costs would result in profit losses of 10 percent or more. The California Air Resources Board (ARB) uses the 10 percent threshold as a proxy for burden, where profit losses greater than 10 percent indicate a potential for significant adverse economic impacts. Table 8 shows the annualized compliance costs as a share of total profits. This analysis estimates compliance costs using the ARB's methodology.

Table 8: Total Annualized Compliance Costs as a Share of Total Profits

Sector/# of Employees	Number of Businesses	Total Sales	Total Profits	Total Annualized Compliance Costs	Compliance Costs as a Share of Annual Profits
FURNITURE AND FIXTURE MANUFACTURING					
1-4	20	\$3,878,389	\$248,798	\$17,037	6.8%
5-9	5	\$3,975,904	\$255,053	\$16,521	6.5%
10-19	2	\$2,750,660	\$176,454	\$10,498	5.9%
20-49	3	\$9,111,446	\$584,497	\$37,689	6.4%
50-99	1	\$6,366,667	\$408,420	\$27,425	6.7%
100-249	0	\$0	\$0	\$0	0.0%
250+	0	\$0	\$0	\$0	0.0%
Total	31	\$26,083,064	\$1,673,223	\$109,170	6.5%
TRANSPORTATION MANUFACTURING AND REPAIR					
1-4	12	\$1,987,746	\$67,411	\$5,581	8.3%
5-9	2	\$1,034,063	\$35,068	\$2,680	7.6%
10-19	1	\$1,623,750	\$55,067	\$2,821	5.1%
20-49	0	\$0	\$0	\$0	0.0%
50-99	0	\$0	\$0	\$0	0.0%
100-249	0	\$0	\$0	\$0	0.0%
250+	0	\$0	\$0	\$0	0.0%
Total	18	\$4,645,558	\$157,546	\$11,082	7.0%
ELECTRICAL EQUIPMENT MANUFACTURING AND REPAIR					
1-4	4	\$762,286	\$73,276	\$52	0.1%
5-9	1	\$1,401,429	\$134,714	\$53	0.0%
10-19	2	\$6,350,000	\$610,403	\$206	0.0%
20-49	2	\$8,984,450	\$863,644	\$391	0.0%
50-99	0	\$0	\$0	\$0	0.0%
100-249	0	\$0	\$0	\$0	0.0%
250+	1	\$6,959,550,000	\$668,997,106	\$13,615	0.0%
Total	11	\$6,977,048,165	\$670,679,143	\$14,317	0.0%

Sources: BAAQMD; BAE, 2009.

Overall, annualized compliance costs represent between 0.0 and 8.3 percent of profits for all firms. Compliance costs are lowest for Electrical Equipment Manufacturing and Repair businesses, averaging 0.0 percent of profits and are highest for Transportation Manufacture and Repair businesses averaging 7.0

percent of profits. For all business and sectors, compliance costs are well below the 10 percent threshold.

Consumer Impacts

Consumers indirectly purchase most polymer resins when they purchase cabinets, furniture, bathroom sinks, other household furniture and fixture products, computers, and auto body repair services. As marble resin gel coats don't yet exist that meet the proposed monomer level, manufacturers using marble resin gel coats would be able to pass along 100 percent of their cost increases to consumers through higher furniture and fixture prices. However, as 75 percent of other resins are currently compliant with the proposed other resin monomer limits there are already compliant products on the market; thus, firms using other resins won't likely be able to pass all of the cost increases along to consumers and remain competitive. Therefore, manufacturers that use marble resin gel coats would likely be able to pass cost increases on to customers, while manufacturers that use other resins would likely need to absorb some portion of their costs.

Affected Industry and Regional Employment Impacts

Since on average, the proposed Rule amendment would not result in significant economic impacts to firms within the affected industries, and consumers could bear some portion compliance cost burden, amending the Rule would not impact the affected industry or regional employment.

Regional Indirect and Induced Impacts

Indirect and induced impacts refer to regional multiplier effects of increasing or decreasing regional economic activity. If the Rule were to significantly impact local businesses, any closures would result in direct regional economic losses. Firms would no longer buy goods from local suppliers, thereby resulting in reduced indirect impacts, or business-to-business expenditures. In addition, firms would no longer employ regional residents, resulting in reduced induced impacts, or household spending.

However, since the proposed amendment to the Rule is not expected to result in significant direct impacts, its adoption would not result in any indirect or induced impacts either.

Impact on Small Businesses

According to California Government Code 14835, a small business is any business that meets the following requirements:

- 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 annual gross receipts of \$10 million or less over the previous three tax years, or
 - A manufacturer with 100 or fewer employees.

Using these definitions, approximately 98 percent of all affected firms are small businesses. As shown in Table 8, this analysis finds that firms with lower revenues would not experience higher impacts on return on profits as a result of the proposed amendment to the rule.

Appendix C

California Environmental Quality Act Initial Analysis and Negative Declaration

**Initial Study/Negative Declaration for the
Amendments to Bay Area Air Quality
Management District Regulation 8, Rule 50:
Polyester Resin Operations**

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CHAPTER 1

INTRODUCTION

PURPOSE OF THIS DOCUMENT

This Negative Declaration assesses the environmental impacts of the proposed adoption of amendments to Regulation 8, Rule 50 (Regulation 8-50) – Polyester Resin Operations – by the Bay Area Air Quality Management District (BAAQMD or District). This assessment is required by the California Environmental Quality Act (CEQA) and complies with the state CEQA Guidelines (Title 14 California Code of Regulations §15000 et seq.). A Negative Declaration serves as an informational document to be used in the decision-making process for a public agency that intends to carry out a project; it does not recommend approval or denial of the project analyzed in the document. The BAAQMD is the lead agency under CEQA and must consider the impacts of the proposed rule amendments when determining whether to adopt them. The BAAQMD has prepared this Negative Declaration because no significant adverse impacts are expected to result from the proposed rule amendments.

SCOPE OF THIS DOCUMENT

This document evaluates the potential impacts of the proposed amendments on the following resource areas:

- aesthetics,
- agricultural resources,
- air quality,
- biological resources,
- cultural resources,
- geology and soils,
- hazards and hazardous materials,
- hydrology and water quality,
- land use planning,
- mineral resources,

- noise,
- population and housing,
- public services,
- recreation,
- transportation and traffic, and
- utilities and service systems.

IMPACT TERMINOLOGY

The following terminology is used in this Negative Declaration to describe the levels of significance of impacts that would result from the proposed rule amendments:

- An impact is considered beneficial when the analysis concludes that the project would have a positive effect on a particular resource.
- A conclusion of no impact is appropriate when the analysis concludes that there would be no impact on a particular resource from the proposed project.
- An impact is considered less than significant if the analysis concludes that an impact on a particular resource topic would not be significant (i.e., would not exceed certain criteria or thresholds established by BAAQMD). Impacts are frequently considered less than significant when the changes are minor relative to the size of the available resource base or would not change an existing resource.
- An impact is considered less than significant with mitigation incorporated if the analysis concludes that an impact on a particular resource topic would be significant (i.e., would exceed certain criteria or guidelines established by BAAQMD), but would be reduced to a less than significant level through the implementation of mitigation measures.

ORGANIZATION OF THIS DOCUMENT

The content and format of this document, described below, are designed to meet the requirements of CEQA.

- Chapter 1, “Introduction,” identifies the purpose, scope, and terminology of the document.
- Chapter 2, “Description of the Proposed Rule,” provides background information of Regulation 8-50, describes the proposed rule amendments, and describes the area and facilities that would be affected by the amendments.

- Chapter 3, “Environmental Checklist,” presents the checklist responses for each resource topic. This chapter includes a brief setting description for each resource area and identifies the impact of the proposed rule amendments on the resources topics listed in the checklist.
- Chapter 4, “References Cited,” identifies all printed references and personal communications cited in this report.

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CHAPTER 2

DESCRIPTION OF THE PROPOSED RULE

BACKGROUND

The Bay Area Air Quality Management District (District or BAAQMD) regulates emissions of volatile organic compounds (VOC) from polyester resin operations during manufacturing and repair of composite products through limits contained in Regulation 8, Rule 50: Polyester Resin Operations (Regulation 8-50). The District is proposing amendments to Regulation 8-50 to reduce emissions of VOCs by reducing the VOC content requirements for polyester resin operations. The proposed amendments would apply to polyester resins, gel coats, cleaning products and vinyl ester resins (included with polyester resin) in the manufacturing of composite products. The District committed to updating this regulation in Control Measure SS-4 in the District's 2005 Ozone Strategy. Additionally, polyester resin operations also emit toxic air contaminations (TACs), which predominantly consist of styrene.

Control of VOC emissions from polyester resin operations is primarily the responsibility of the BAAQMD in the Bay Area. Currently, Bay Area polyester resin businesses that have permits to operate and are subject to Regulation 8-50 emit 1.3 tons per day (TPD) of VOC into the region's atmosphere from the application of resins and gel coats in composite operations. The District estimates that TAC emissions from polyester resin operations are approximately 0.8 TPD because styrene is the typical monomer used in polyester resin operations. Styrene is both TAC and a VOC. An additional 0.5 TPD of VOC is emitted from the use of cleaning products associated with resin and gel coat operations.

BAAQMD estimates the proposed amendments to Regulation 8-50 will result in a reduction of VOC emissions of approximately 0.46 TPD from polyester resin operations. The estimated VOC emission reductions are attributable to changes in chemistry for resin and gel coat materials, and the use of non-atomizing application technologies. Reductions in resin and gel coat monomer content will reduce VOC and TAC emissions. Furthermore, non-atomized applications enhance spray equipment transfer efficiencies, thus reducing VOC and TAC emissions and the amount of overspray waste. In addition, the proposed amendments to VOC limits for cleaning products will reduce emissions. The amendments for the controls on polyester resins, gel coats, cleaning products and vinyl ester resin operations would take effect on October 1, 2010.

VOCs contribute to the formation of ground-level ozone, which is the principal ingredient in smog. The Bay Area is not in compliance with State and federal ozone standards, and has committed to implement all feasible measures to reduce emissions of

ozone precursors, including VOC. Regulation 8-50 regulates VOC emissions from polyester resin operations by setting standards for the amount of VOCs that can be used in the surface preparation, coatings application, and cleanup for the manufacture and repair of composite materials. Polyester resins and other composite materials are used to manufacture and repair recreational and commercial watercraft; recreational vehicle bodies; automotive vehicle bodies and interior parts; commercial and military aircraft parts; bathware products; architectural products; personal computer board parts; pipelines; and storage tanks for the sewage treatment industry and secondary containment for gasoline fuel dispensing components.

The District adopted Regulation 8, Rule 50 on December 5, 1990 and amended it three times thereafter. The most recent amendments in 1996 addressed the definition of a VOC, the method of analyzing polyester resin material samples, and the method of determining emissions from polyester resin operations.

Rule 50 limits emissions from polyester resin operations in at least three ways. The owner/operator can comply with monomer content limits for uncured resins; the owner/operator can use vapor suppressants that minimize emissions from polyester resin operations; and/or the operator may use a closed mold system to minimize emissions from polyester resin operations. In addition, the rule sets application requirements to limit overspray and has a VOC content limit for gel coats, which is a type of polyester resin that is often applied as the surface of a polyester resin product to provide a smooth, attractive finish.

There are approximately 60 permitted polyester resin operations in the Bay Area that range in size from single-person shops to shops with 10 or more employees. Most facilities have less than 10 employees. Approximately half of the polyester resin operations in the Bay Area specialize in cast polymer operations. A cast polymer resin operation applies polyester resin to a mold to make a casting. Examples of finished castings include shower enclosures and bathroom vanity countertops.

COMPOSITE PRODUCTS OVERVIEW

Products manufactured by polyester resins are termed “composite products.” Finished products are composites of polyester resins, monomers, catalyzing agents, fillers, reinforcement fibers, or other materials and other chemicals and materials to impart desired properties to the finished product. Polyester resin operations fabricate and repair composite products by applying gel coats and/or resins mixed with reinforcement and other materials to molds, which provide the desired shape for finished products.

COMPONENTS OF POLYESTER RESIN COMPOSITES

Resins and Monomers

Resins are the backbone of a composite product. Resins polymerize, or react with, other polyester resin molecules to bind fibers and other materials in a composite product, thus

allowing the product to tolerate more stress and other forms of tension. Resins also provide a barrier to weather, water or chemicals. Thermosetting resins polymerize when exposed to heat or certain chemicals. Once cured, they cannot be reheated and re-shaped due to the molecular cross-linking process that has occurred, unlike thermoplastic resins that can be reheated and reshaped.

Polyester resins are polymers of ester molecules that are chained together in a particular order called ester linkages. Ester monomers are formulated by the reaction of acid and alcohol molecules. Polyester resins include isophthalic resins, orthophthalic resins halogenated/clorendic resins, bisphenol-A resins, and furan resins.

Other types of thermosetting resins include epoxies, phenolics, polyurethanes, and acrylics. Epoxy resins are typically used to fabricate marine craft parts, automotive parts, electrical composites, appliance parts, and aircraft components. Epoxy resins emit minimal amounts of VOC compared to polyester resins because they contain little to no monomer content. Phenolic resins are used primarily to fabricate products that can meet fire-resistant standards mandated by public transportation and aviation industries. They also are used to fabricate electrical switches, junction boxes, automotive parts, consumer appliance parts, handles for pots and pans, and billiard balls. Phenolic resins emit some VOC but the use of these resins is minimal. Polyurethane resins are used to manufacture products for the home-building industry, the ballistics industry, the sporting goods industry, the automotive industry, and to fabricate products used on highways. Typical polyurethane resin products include hockey sticks, bowling balls, automotive body and seat parts, laboratory equipment parts, highway sign posts, trusses, guardrails and light poles. Polyurethane resins emit little or no VOC. Acrylic resins are used to fabricate composite products requiring superior clarity and optical properties. Acrylic resins are typically used to fabricate lighting fixtures because they are slow-burning and do not produce harmful smoke or gases in the presence of flame. Acrylic resins are also used as tooling resins because they can withstand exposure to high stress and heat. Acrylic resins contain methyl methacrylate (MMA) monomer and can emit significant amounts of VOC. There is minimal production of composites using acrylic resin in the District.

Vinyl ester resins, which are produced from the esterification of an epoxy with a monocarboxylic acid, are considered a type of polyester resin and are regulated under this rule.

Some thermosetting resins emit VOCs and TACs while others do not. Emissions depend on the resin's monomer type and content. Monomers are small molecules that partially combine with themselves and/or catalyzing agents to form the basic repeating unit of a polymerized resin. Monomers reduce a resin's viscosity and are the integral building blocks in the curing reaction which transforms the resin from a liquid to a solid.

Styrene is by far the most commonly used monomer in composite manufacturing, although many specialty resins and gel coats contain other monomers, such as Methyl Methacrylate (MMA) or vinyl toluene. Styrene and MMA, the second most commonly used monomer, are emitted into the air during the application of resins to molds, while

rolling air bubbles out of composite materials, and during the curing phase. Styrene and MMA are TACs, so exposure to these emissions is an air quality concern. Because VOC emissions from composite products consist entirely of monomers, the monomer content of resin is regulated just as VOC content is regulated in coating rules. Polyester resins have the greatest emissions of all thermosetting resins because they are the most widely used and because emissions from polyester resins are the greatest per amount of resin used.

Gel Coats

Similar to thermosetting resins, different gel coats emit VOCs and HAPs to varying degrees, depending on the type and amount of monomer the gel coat resin is based on. Gel coats are modified polyester resins. When a resin and a gel coat are to be applied to a mold, the gel coat is applied first because it becomes the surface layer of the composite product. Gel coats have both decorative and protective features. A gel coat's surface is exposed to a variety of environments, so it must be able to resist UV light, chemicals, heat, discoloration, pock marks, and cracking.

Specialized gel coats, known as tooling gel coats, have high levels of durability and are resistant to heat. They are used to manufacture molds which in turn are used to fabricate composite products. Such gel coats must resist mechanical and thermal stresses encountered during the curing and de-molding processes. A primer gel coat is a specialized gel coat designed to protect the exterior of a composite product that is painted after the product is removed from the mold.

ADDITIVES TO RESINS

Reinforcement Materials

Fiber reinforcement materials (FRM) are used in the manufacturing of composite products to enhance a variety of desirable properties that are of a mechanical and/or structural nature. The desirable properties include tensile strength, tensile modulus (elasticity), flexural strength, flexural modulus, compressive strength, stiffness, fatigue endurance, and elasticity. FRM enhances thermal, protective, and other composite capabilities. FRM does not react with resins; however, they are an integral part of the composite matrix.

FRM include multi-filaments of glass or other fibrous materials such as carbon, graphite, aramid, boron, metal, silicon carbide, kevlar, and natural fibers. Due to its low price and excellent performance, fiberglass is the most commonly used FRM in the industry; available industrially either as mats of woven cloth or as filaments.

Fillers

Fillers are solid, finely divided materials, such as carbon black, titanium dioxide, limestone, talc, mica, silica, clay, and calcium carbonate, as well as short fibers of a

variety of materials. They are added to a polymer matrix for various reasons. Sometimes they are added to reduce the overall cost of the product by extending its volume.

Fillers are also added to enhance performance properties of a product. Fillers add a number of desirable properties to composite products, including flame retardation, heat resistance, optical clarity, color, thermal, magnetic or electrical properties, and lubricity.

Catalyzing Agents, Promoters and Inhibitors

Catalyzing agents, often called initiators in the composite industry, initiate monomer cross-linking reactions. Methyl ethyl ketone peroxide and benzoyl peroxide are the most commonly used catalyzing agents.

In order to initiate cross-linking reactions, in some circumstances, fabricators may heat catalysts or resins or add chemicals called promoters (sometimes referred to as “accelerators”). Promoters also affect color, odor, and reactivity with specific catalyzing agents. In the presence of a promoter, catalyzing agents are typically added separately, immediately prior to use.

Inhibitors are used to prolong the shelf life of resins and to adjust the cure rate of thermosetting resins to prevent cracking of thickly layered sections. Inhibitors prevent spontaneous cross-linking.

Suppressants

Suppressants are compounds that migrate to the surface resin to form a layer during the polymerization process, thus decreasing emissions into the ambient air. Consequently, suppressants are one method of HAP and VOC control. Usually, suppressants are wax compounds.

OPEN MOLD APPLICATIONS

Open mold production, the simplest fabrication technique, has been the most prevalent polyester resin composite operation for decades. EPA data suggests that open mold fabrication accounts for approximately 80% of polyester resin emissions nationally. Composite materials can be applied to open molds either manually or via spray technology.

The manual application method, often referred to as a “hand lay-up”, involves a multi-step process. The mold’s surface is treated with a mold release agent in the form of an alcohol or paste wax to facilitate the removal of the cured composite. Next, a catalyzed resin mix is applied over the mold release agent. Before the resin cures, fiber-reinforced materials are applied by hand. Additional resin, catalyst, and reinforced material may then be added. Hand rollers, brushes, or squeegees are used to saturate, to smooth out, and compact each layer of the matrix as it is applied.

MASS PRODUCTION OPEN MOLD APPLICATIONS

In addition to the manual application technique described above, composite material fabrication includes the following mass production open mold techniques:

- Continuous Lamination is a fabrication technique that pulls reinforcement material through a resin bath, brings the material (plies) together (sandwiches) between cellophane sheets, and pulls it through a forming die into a curing oven. Squeeze rolls control thickness and resin content as the various plies are brought together. Products made from continuous lamination include wall panels and sheeting.
- Pultrusion Operations continuously pull fiberglass material, which are in the form of strands or mats, through a tension device and immediately immerses them in a resin bath. As they exit the resin bath, the joint glass/resin composite strands are pulled first through a forming die and then through a heated die which cures the composite matrix into a shape. Examples of pultruded products include round tube or round bar fiberglass, square bar or square tube fiberglass, or wide flange beam products.
- Filament Winding Operations are used to manufacture large pipes, storage tanks, and other hollow vessels that may be subject to elevated internal pressure. In this process, continuous fiberglass strands are pulled by a rotating mandrel through a strand-tensioning device into a resin bath. After emerging from the resin bath, uniformly-coated strands are wound onto a mandrel to the shape and pattern required for the finished product. The wound product is then cured in an oven or at room temperature.

SPRAY TECHNOLOGIES

Similar to the hand lay-up method, spray-up methods also begin by treating an open mold's surface with a release agent. Over the release agent, reinforced material and a predetermined amount of resin and catalyst are applied with a spray gun. Industry representatives state that spray-up methods have several advantages over hand lay-up techniques, including increased production rates, increased uniformity of products, the utilization of a greater variety of molds, and less time to produce a product. Atomization spray technologies separate resin and gel coat liquids into a fine mist by forcing the liquid under high pressure through an orifice, by bombarding a liquid stream with air jets, or by a combination of each technique. The net result is some overspray that reduces the transfer efficiency (percent of material sprayed that adheres to the intended surface) of the material sprayed onto molds, resulting in emissions of VOCs and HAPs to the atmosphere. Open mold processes using air-atomized spray technology is the highest emitting method of creating a product.

In order to minimize this overspray, the current Regulation, Rule 50 allows only four types of spray gun technologies for the application of composite resins and gel coats.

- Airless Spray, which includes a pump to deliver the resin to the fluid tip at high pressure. As the high-pressure resin stream exits the small fluid tip (orifice), the

stream's flow is reduced and the sudden reduction in pressure causes the fluid to atomize into a spray pattern.

- Air-assisted Airless Spray, which is a hybrid of airless and air-atomized spray gun technologies, uses a pump to deliver the resin to the fluid tip (orifice) with much less pressure than an airless gun. Low pressure air improves the resin spray pattern exiting the gun's tip.
- Electrostatic Spray, where an electric charge is imparted to the mold surface and an opposite charge is imparted to the spray droplets, which are attracted to the mold. This technology is rarely used.
- High-volume, Low-pressure Spray, which is similar to air-assisted guns. They operate with air atomizing pressures of 10 psi or less. High pressure air typical of an air spray gun is replaced by a high volume of low pressure air.

The type of spray gun selected for a given application is based on four primary considerations: how the material is delivered to the gun, how the catalyst is added, how the resin or gel coat is atomized, and the type of mold which is receiving the resin or gel coat.

According to industry sources, non-atomizing spray techniques have been used effectively in other air districts for the application of resins. The net results are enhanced transfer efficiencies and reduced emissions. Details of non-atomizing application techniques are discussed later in this document.

CLOSED MOLD APPLICATIONS

Closed mold processing methods are those in which all or part of the fabrication takes place in a closed vessel or chamber. Closed molds are used to manufacture products with one or two smooth surfaces or complex shapes. Reinforced glass fibers, carbon fiber reinforced materials, and kevlar fiber reinforced polymers are used in closed mold applications. In the closed mold process, fiber is applied by hand into a mold, the mold is closed, and catalyzed polyester resin is poured or injected into the mold cavity. Resin may be forced into a mold under pressure, drawn in with a vacuum, or a combination of the two.

These following processes are examples of closed mold applications:

- Resin Transfer Molding,
- Vacuum-assisted Resin Transfer Molding,
- Vacuum Bag Molding,
- Resin Film Infusion,
- Compression Molding,
- Reaction Injection Molding,
- Tube Rolling,
- Automated Fiber Placement,
- Automated Tape Laying, and
- Centrifugal Casting.

CLEANING PRODUCTS

Cleaning products are materials used to clean equipment and parts associated with composite operations including operators' hands, tools, rollers, brushes, molds, work area, chopper guns, laminating equipment and other process-related equipment.

Acetone is the preferred cleaning product in the composite industry because it is the most effective product for cleaning cured resins and gel coats from application equipment. According to industry sources, other less flammable cleaning products are used (when possible) to enhance shop safety and to reduce the cost of property insurance. These cleaning products can only be used to clean non-cured composite materials.

Some Bay Area fabricators have had mixed results with aqueous cleaners, that combine water with an organic compound such as dibasic ester. Aqueous cleaners rely on mechanical action (such as brushing) to clean resin from contaminated applicators while acetone and other solvents clean by dissolving the resin. The resin droplets are wetted by the aqueous cleaner and settle to the bottom of a cleaning tank. Although aqueous cleaners contain few VOCs, they create waste materials, such as the spent liquid solution and under-cured resins, just as acetone cleaners do.

Soy-based cleaning materials are currently in development according to the American Composites Manufacturing Association (ACMA). They can remove cured and uncured resins in an immersion cleaning process. The ACMA considers this an emerging technology with some promise and believes that soy-based cleaners are yet to be fully developed for all polyester resin manufacturing cleaning applications. Staff will work with industry to track the effectiveness of this emerging technology as cleaning product manufacturers endeavor to reformulate low-VOC soy-based cleaners.

OBJECTIVES

BAAQMD is proposing amendments to polyester resin operations meeting a commitment to update Regulation 8-50 in Control Measure SS-4 as part of the District's 2005 Ozone Strategy. The proposed amendments to Regulation 8-50 are aimed at further reducing VOC emissions in the Bay Area by reducing the VOC content requirements for polyester resin operations. The Bay Area is a non-attainment area for the state one-hour ozone and eight-hour standards and federal eight-hour ozone standard. The proposed amendments are expected to result in a reduction in VOC and TAC emissions from this source category.

PROPOSED AMENDMENTS

The proposed amendments to Regulation 8, Rule 50 that will reduce VOC and HAP emissions from the Bay Area’s composite manufacturing industry primarily in three ways: (1) by lowering monomer content limits for resins; (2) by establishing monomer content limits for gel coats; and, (3) by requiring the use of non-atomizing spray systems when resins are applied to open molds. In addition, VOC emissions from cleaning products used in the composite manufacturing industry will be reduced by lowering the allowable VOC content. The majority of the VOC emission reductions for this control measure will be achieved by establishing new monomer limits for resins and gel coats and through a requirement to use non-atomizing spray technology.

MONOMER LIMIT REQUIREMENTS

Presently, Regulation 8, Rule 50 requires that Bay Area polyester resin operations use gel coats, a specialized form of resin, with a maximum VOC content of 250 grams per liter. Polyester resin operations must use resin materials with a maximum monomer content of 35% by weight, except for corrosion-resistant polyester resins which have a monomer content limit of 50%. The polyester resin rules of several California air pollution control districts currently regulate VOC emissions from composite manufacturing operations by limiting monomer content for both resins and gel coats. Staff proposes to define several subcategories of resins and gel coats and to impose specific monomer content limits on these subcategories. Staff has identified studies and field testing that have established maximum monomer content for polyester resin and gel coat subclasses that enable them to work effectively while reducing VOC and HAP emissions. Staff proposes that monomer limits, rather than VOC content limits, apply to gel coats used in Bay Area composite operations. The new monomer limits for Regulation 8, Rule 50 are proposed to become effective on October 1, 2010 (see Table 2-1).

**TABLE 2-1
Proposed Monomer Limits for Resin and Gel Coat Materials**

Gel Coats and Resin Materials	Monomer Percentage by Weight as Applied
Gel Coat Materials	
Clear Gel Coats	
Marble Resin	42%
Boat Manufacturing Resins	48%
Other Resins (all other “clear gel coat” resins)	44%
Pigmented Gel Coats	
White and Off-White Gel Coats	30%
Non-White Boat Manufacturing Gel Coats	33%
Other Non-White Gel Coats	37%
Primer Gel Coats	28%
Specialty Gel Coats	48%

Resin Materials	
Marble Resins	10% with fillers or 32% without fillers
Solid Surface Resins	17%
Tub/Shower Resins	24% with fillers or 35% without fillers
Boat Manufacturing (atomized)	28%
Boat Manufacturing (non-atomized)	35%
Laminated Resins	31% with fillers or 35% without fillers
Fire Retardant Resins	38%
Corrosion Resistant, High Strength and Tooling Resins	
Mechanical (non-atomizing)	46%
Filament application	42%
Manual application	40%
Other Resins (non “clear gel coat” resins)	35%

Monomer percent by weight includes the addition of any VOC-containing materials.

SPRAY TECHNOLOGY REQUIREMENTS

Non-atomizing (fluid impingement) spray guns that effectively apply polyester resins have been available for several years. This spray technology provides the best transfer efficiency in the polyester resin industry. Staff recommends requiring non-atomizing spray guns as the only type of spray application technique allowed for the application of polyester resins to open molds. Staff proposes setting the implementation date for non-atomizing spray guns at October 1, 2011, one year after the new resin and gel coat monomer content limits are effective. This compliance deadline is proposed in response to comments received during the public workshop and review process. Staff also recommends re-naming Section 8-50-302, currently entitled “Spray Operations” to “Application Requirements.”

The proposed amendments do not require that the application of gel coats to open molds to use non-atomizing spray guns. A study has shown that there are no significant differences between the VOC emission rates between air-assisted airless and non-atomizing applications when the non-atomizing spray gun is used at a pressure high enough to achieve an acceptable surface quality. Due to the results of that study, other California air districts that had previously required non-atomizing spray application techniques for gel coats have deleted the requirement.

The proposed amendments also allow the use of air spray hopper guns for the application of viscous blends of resin or gel coat to open molds. A hopper gun is an air-atomized spray gun connected to a large upright gravity-fed hopper. The underside of the gun’s nozzle is connected to a specialized hose which is connected to an air compressor. When the gun’s trigger is pressed, it expels the contents from the hopper through the nozzle in a

thick, viscous mixture of catalyzed resin (or gel coat) and rock crushed to the consistency of sand in a stream or spray. The hopper gun uses high air pressure (30 psi – 40 psi) but does not atomize the mixture because it is too heavy. Hopper guns are typically used in the composites manufacturing industry to spray mixtures of crushed stone and resin into a mold to create architectural facades. The monomer emissions from hopper guns are minimal compared to other spray guns that use air pressure. Thus, amendments to the rule will allow the use of hopper guns.

WIPE CLEANING

Wipe cleaning involves wetting a rag or cloth with solvent or an aqueous solution and wiping an equipment part to free it of contaminants. Currently, the VOC limit for wipe cleaning products used in Bay Area composite operations is 200 grams per liter. Cleaning products that comply with a VOC limit of 25 grams per liter have been used in other California air districts for several years and are effective for certain applications. Other air districts have confirmed that, to date, they have not received complaints from the composite industry about the restriction to use low-VOC products for wipe cleaning. Staff recommends lowering the VOC limit for cleaning products used in Bay Area composite operations from 200 grams per liter to 25 grams per liter. Staff believes this limit is feasible because owners/operators generally rely on acetone (a solvent determined by the EPA to be negligibly photochemically-reactive) which is exempt as a VOC for the majority of their equipment cleaning needs and because cleaning products that meet the 25 gram/liter limit are available.

COLD CLEANING

Cold cleaning refers to soaking a piece of equipment in a solvent or aqueous solution. The solution dissolves cured or partly cured resin so that it can be easily removed by brushing or wiping. Particularly, equipment with inaccessible components or narrow crevices needs to be soaked. Cold cleaning is subject to the provisions of Regulation 8, Rule 16: Solvent Cleaning Operations, which does not exempt acetone or any other solvent. Acetone has a low reactivity but a high evaporation rate, so an exemption for acetone in Rule 16 would create more ozone than regulated, but lower evaporating solvents. Because acetone is the most effective cleaning solvent, industry has requested the District consider amending Rule 50 to allow the use of acetone in cold cleaners. Staff proposes to allow the use of acetone in cold cleaners for the composite industry provided that steps are taken to minimize evaporation. These include use of a self-closing cover and the prohibition of brushing and wipe cleaning parts while they are in the cold cleaner.

ADDITIONAL AMENDMENTS

To clarify the scope and to enhance the enforceability of Regulation 8, Rule 50, District staff also proposes a number of other changes in the form of modifications and additional amendments. They include:

- an expansion to the rule's description;

- modifications to the section exempting touch-up and repair and the inclusion of a limited exemption for field installation of composite products;
- new and modified definitions throughout;
- enhanced recordkeeping requirements;
- clarification for emission control systems;
- new monitoring requirements for emission control equipment;
- a prohibition of specification section, consistent with other District rules, that makes it a violation to specify the use of non-compliant materials; and,
- a new compliance statement requirement for manufacturers of resins and gel coats to reflect monomer content.

EMISSIONS REDUCTIONS

Total VOC emissions from the Bay Area polyester resin industry are estimated at 1.3 TPD. This figure is derived from the 2005 Base Year inventory, adjusted downward to account for the recent closings of the Hubbel-Lenoir Company and the Isola Corporation, two large sources of polyester resin emissions in the Bay Area. VOC emissions from the application of polyester resin and gel coat are estimated to be 0.8 TPD, roughly half from resin application and half from gel coat application. The VOC emissions from the use of cleaning products for polyester resin operations are estimated to be 0.5 TPD. TAC emissions from polyester resin and gel coat operations are also estimated to be 0.8 TPD because styrene, the monomer which according to industry is typically emitted from polyester resin operations, is both a TAC and a VOC.

The calculations for the estimated emission reductions are based on the emission inventories and reports from permitted Bay Area polyester resin operations. For VOC emissions from gel coats, District staff calculated the estimated emission reductions based on the anticipated switch from a maximum allowable VOC content to a maximum allowable monomer content. VOC emission reductions from gel coats with lower monomer content will be 0.12 TPD. For VOC emissions from polyester resins, District staff calculated the estimated emission reductions based on the anticipated reduction of maximum allowable monomer content. Emission reductions will be 0.2 TPD from resins with lower monomer content. After the new monomer content limits are implemented, the VOC and TAC emissions from resin and gel coat monomers will total approximately 0.32 TPD.

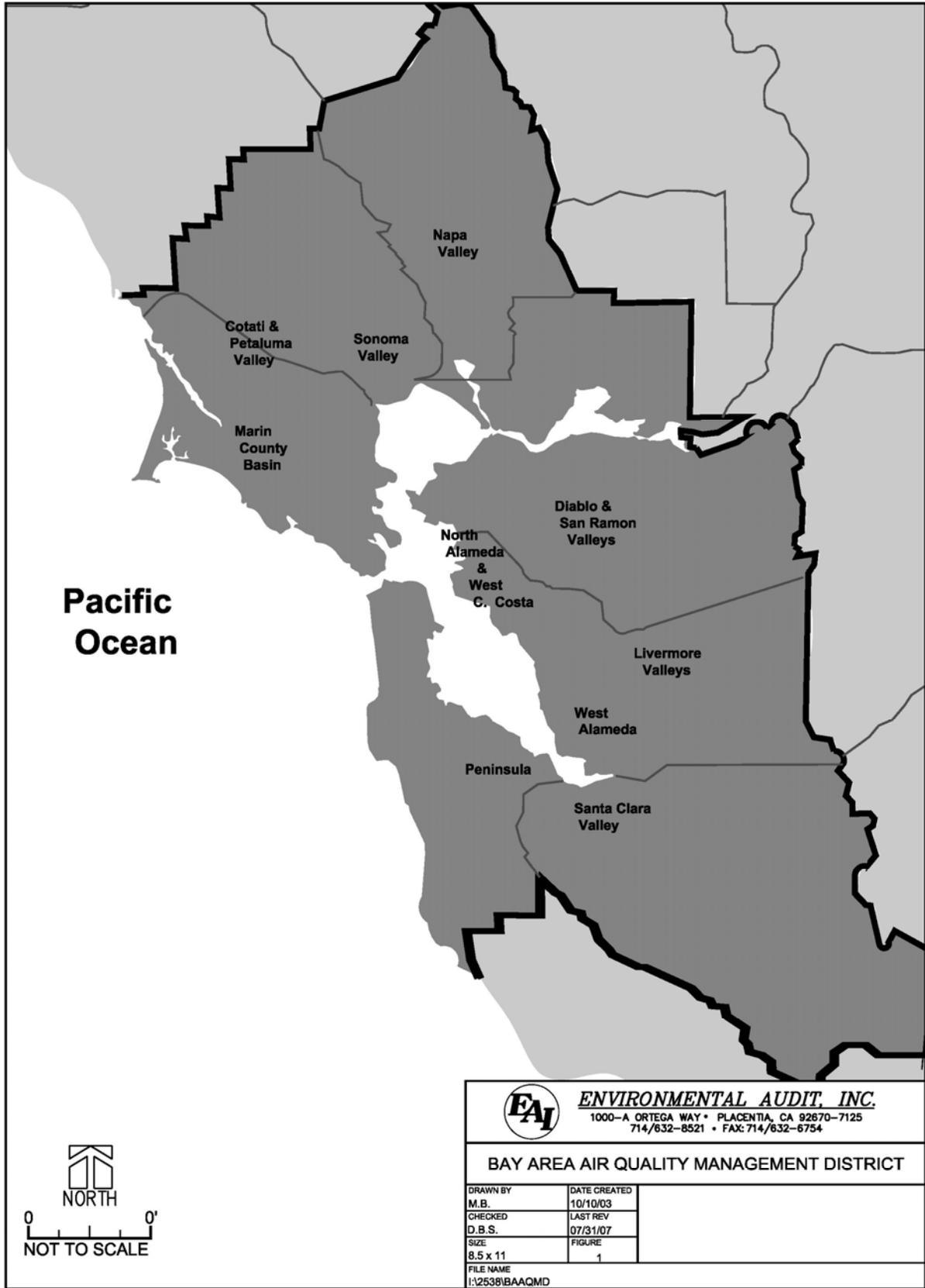
The additional VOC emission reduction from resin application operations that must switch to non-atomization spray application equipment is difficult to quantify. The number of facilities that must make the switch is approximately 15. Because most polyester resin facilities in the Bay Area are small facilities, staff assumed one non-atomizing spray system will need to be implemented per facility with the exception of one large facility. Staff conservatively estimates an additional 0.05 TPD in VOC emission reductions from the requirement to use non-atomizing spray systems. The VOC emission reduction from cleaning product usage will be 0.09 TPD. When fully implemented, the amendments to Regulation, Rule 50 will result in a total VOC emission reduction of 0.46 TPD and a TAC emission reduction of 0.37 TPD.

AFFECTED AREA

The proposed rule amendments would apply to facilities and operations under 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 BAAQMD (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 Amendments to Polyester Resin Operations. |
| 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: | William Thomas Saltz, Air Quality Specialist
415-749-4698 or wsaltz@baaqmd.gov |
| 4. Project Location: | This rule amendment 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: | These rule amendments apply to polyester resin operations within the District. Polyester resin operations generally are located in commercial or industrial areas. |
| 7. Zoning | These rule amendments apply to polyester resin operations within the District. Polyester resin operations generally are located in commercial or industrial 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.

- Aesthetics
- Agriculture Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Geology/Soils
- Hazards & Hazardous Materials
- Hydrology/Water Quality
- Land Use/Planning
- Mineral Resources
- Noise
- Population/Housing
- Public Services
- Recreation
- Transportation/Traffic
- Utilities/Service Systems
- 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.

The proposed rule amendments affect polyester resin operations in at least three ways, by reducing the allowable monomer content for various polyester resins and by establishing monomer content limits for gel coats; by lowering the VOC limits for cleaning products used in composite operations; and by requiring the use of non-atomizing spray guns. These types of facilities and equipment are most often found in commercial or industrial areas. Scenic highways or corridors may be, but are not commonly located, near commercial or industrial areas.

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 amendments to Regulation 8-50 do not require any changes in the physical environment that would obstruct any scenic vistas or views of interest to the public. Additionally, no major changes to existing polyester resin operations outside of existing facilities, are expected. The proposed amendments to Regulation 8-50 are not expected to produce any physical changes because the amendments are only expected to reduce the monomer content for various polyester resins, lower the VOC limits for cleaning products used in composite operations, and require the use of non-atomizing spray guns at polyester resin operations in the Bay Area. Air pollution control equipment can be used to control emissions. However, there are no known polyester resin facilities that currently use such equipment and no use of such equipment will likely occur. Therefore, no major construction activities are expected. Changes to operations (e.g., non-atomizing spray guns) would occur within the confines of existing facilities so no significant adverse impacts to visual resources such as scenic views or vistas are expected.

The proposed amendments are not expected to require the construction of any major new structures, and are not expected to result in any adverse aesthetic impacts. Implementation of the proposed amendments would not require equipment that would be visible as the amendments primarily impose further limits on existing polyester resin operations. Compliance with the proposed rule amendments are expected through the use of reformulated products. Products that comply with the monomer limits and VOC limits have been implemented in other air districts in California. It is generally more cost effective to comply with reformulated products than through the construction of add on control devices. Therefore, while the proposed rule amendments would continue to allow compliance through the use of add on control equipment, such equipment is not expected to be used for compliance purposes.

The proposed amendments to Regulation 8-50 would also not require any new sources of light or glare as they do not require construction of any new buildings or facilities.

Based upon these considerations, no significant adverse aesthetic impacts are expected from the implementation of the amendments to Regulation 8-50.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
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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 polyester resin operations affected by the proposed rule amendments are primarily located in commercial or industrial areas of the BAAQMD.

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 amendments to Regulation 8-50 would further reduce VOC emissions from polyester resin operations throughout the Bay Area. The proposed amendments are not expected to require the construction of any major new equipment and would not require any additional construction activities. The existing polyester resin operations are generally located in industrial and commercial areas. No construction activities are expected, as compliance with the amendments would be achieved by the use of reformulated product rather than the use of add-on control equipment. Therefore, the proposed amendments would not require the conversion of agricultural land for other uses.

Based upon these considerations, no significant adverse impacts to agricultural resources are expected from the implementation of the proposed rule amendments.

	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 tule 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 associated health effects are summarized in Table 3-1. The BAAQMD monitors levels of various criteria pollutants at 25 monitoring stations. The 2008 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 oxides (NO_x), and sulfur oxides (SO_x). The Air District is unclassified for the federal 24-hour PM₁₀ standard. Unclassified means that the monitoring data were incomplete and at the time of designations did not support a designation of attainment or non-attainment. However, the Air District does not comply with the State 24-hour PM₁₀ standard.

The 2008 air quality data from the BAAQMD monitoring stations are presented in Table 3-2. All monitoring stations were below the State standard and federal ambient air quality standards for CO, NO₂, and SO₂. The Bay Area is designated as a non-attainment area for the federal and state 8-hour ozone standards. The State 8-hour standard was exceeded on 20 days in 2008 in the Air District, most frequently in the Eastern District (Bethel Island, Livermore, Concord, and Benecia) (see Table 3-2). The federal 8-hour standard was exceeded on 12 days in 2008.

All monitoring stations were in compliance with the federal PM₁₀ standards. The California PM₁₀ standards were exceeded on five days in 2008, most frequently in the Eastern District (Bethel Island). The area under the jurisdiction of the BAAQMD exceeded the federal PM_{2.5} standard on 12 days in 2008, most frequently in Vallejo and San Jose (see Table 3-2).

TABLE 3-1

Federal and State Ambient Air Quality Standards

	STATE STANDARD	FEDERAL PRIMARY STANDARD	MOST RELEVANT EFFECTS
AIR POLLUTANT	CONCENTRATION/ AVERAGING TIME	CONCENTRATION/ AVERAGING TIME	
Ozone	0.09 ppm, 1-hr. avg. > 0.070 ppm, 8-hr	0.075 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 , annarithmetic 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 2008**

MONITORING STATIONS	Ozone						CARBON MONOXIDE			NITROGEN DIOXIDE			SULFUR DIOXIDE			PM10				PM2.5				
	Max 1-Hr	Cal 1-Hr Days	Max 8-Hr	Nat. 8-Hr Days	Cal 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
NORTH COUNTIES	(ppb)		(ppb)				(ppm)			(ppb)			(ppb)			(µg/m ³)				(µg/m ³)			(µg/m ³)	
Napa	107	1	77	2	2	61	3.2	1.8	0	64	10	0	--	--	--	21.6	50	0	0	--	--	--	--	--
San Rafael	85	0	69	0	0	50	1.8	1.1	0	56	13	0	--	--	--	18.6	41	0	0	--	--	--	--	--
Santa Rosa*	76	0	64	0	0	51	3.5	1.5	0	49	11	0	--	--	--	*	*	*	*	30.8	0	30.4	8.6	8.4
Vallejo*	109	1	75	0	3	60	2.7	2.3	0	67	10	0	4	1.2	0	*	*	*	*	50.0	7	36.4	9.9	9.8
COAST & CENTRAL BAY																								
Berkley*	53	0	49	0	0	*	2.8	1.7	0	55	14	0	4	13	0	22.5	44	0	0	--	--	--	--	--
Oakland*	86	0	64	0	0	*	3.0	1.6	0	70	15	0	--	--	--	--	--	--	--	30.1	0	*	9.5	*
Richmond	--	--	--	--	--	--	--	--	--	--	--	--	8	1.5	0	--	--	--	--	--	--	--	--	--
San Francisco	82	0	66	0	0	46	5.7	2.3	0	62	16	0	5	1.5	0	22.0	41	0	0	29.4	0	26.3	9.8	9.4
San Pablo	84	0	63	0	0	50	2.5	1.3	0	67	12	0	4	1.4	0	20.9	44	0	0	--	--	--	--	--
EASTERN DISTRICT																								
Benicia*	123	2	86	3	7	*	1.0	0.8	0	38	7	0	5	1.6	0	18.1	52	0	1	--	--	--	--	--
Bethel Island	109	4	90	4	10	76	1.5	1.1	0	41	7	0	4	1.4	0	24.1	77	0	3	--	--	--	--	--
Concord	119	3	88	6	8	78	1.6	1.1	0	50	10	0	4	1.2	0	17.5	51	0	1	60.3	3	34.6	9.3	9.0
Crockett	--	--	--	--	--	--	--	--	--	--	--	--	13	2.1	0	--	--	--	--	--	--	--	--	--
Fairfield	116	2	90	1	2	68	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Livermore*	141	5	110	6	8	81	2.4	1.4	0	58	13	0	--	--	--	*	*	*	*	38.6	2	36.2	10.1	9.6
Martinez	--	--	--	--	--	--	--	--	--	--	--	--	6	1.7	0	--	--	--	--	--	--	--	--	--
Pittsburg*	106	1	83	1	2	71	2.8	1.4	0	56	10	0	6	1.8	0	*	*	*	*	--	--	--	--	--
SOUTH CENTRAL BAY																								
Fremont*	112	1	78	1	3	61	1.9	1.4	0	62	14	0	--	--	--	*	*	*	*	28.6	0	28.8	9.4	9.5
Hayward	114	1	86	1	3	63	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Redwood City*	82	0	69	0	0	53	4.3	1.9	0	69	14	0	--	--	--	*	*	*	*	27.9	0	29.3	9.1	9.0
San Leandro	96	1	68	0	0	55	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SANTA CLARA VALLEY																								
Gilroy*	103	1	79	1	4	73	--	--	--	--	--	--	--	--	--	--	--	--	--	25.5	0	*	--	--
Los Gatos	122	2	97	2	6	72	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
San Jose Central	118	1	80	2	3	65	3.3	2.5	0	80	17	0	--	--	--	23.4	57	0	1	41.9	5	35.8	11.5	11.0
San Martin	123	2	77	2	5	76	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sunnyvale	93	0	76	1	2	60	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Bay Area Days over Standard		9		12	20				0			0			0			0	5		12			

*Station Information: PM_{2.5} monitoring at Gilroy began Mar. 1, 2007, three-year average statistics not available. Benicia and Berkeley sites opened in 2007, Apr. 1 and Dec. 13 respectively; no three-year ozone statistics available. Oakland site opened Nov. 1, 2007, no three-year ozone or PM_{2.5} statistics available. PM₁₀ monitoring was discontinued on June 30, 2008 at Fremont, Livermore, Pittsburg, Redwood City, Santa Rosa, and Vallejo, statistics no longer available. SO₂ monitoring was discontinued at San Francisco Dec. 31, 2008
(ppb) = parts per billion (ppm) = parts per million, (µg/m³) = micrograms per cubic meter

TABLE 3-3
Ten-Year Bay Area Air Quality Summary
(days over standard)

Year	Ozone			Carbon Monoxide				Nitrogen Dioxide	Sulfur Dioxide		PM10		PM2.5
	8-Hr	1-Hr	8-Hr	1-Hr		8-Hr		1-Hr	24-Hr		24-Hr*		24-Hr**
	Nat.	Cal.	Cal.	Nat.	Cal.	Nat.	Cal.	Cal.	Nat.	Cal.	Nat.	Cal.	Nat.
1999	9	20	--	0	0	0	0	0	0	0	0	12	--
2000	4	12	--	0	0	0	0	0	0	0	0	7	1
2001	7	15	--	0	0	0	0	0	0	0	0	10	5
2002	7	16	--	0	0	0	0	0	0	0	0	6	7
2003	7	19	--	0	0	0	0	0	0	0	0	6	0
2004	0	7	--	0	0	0	0	0	0	0	0	7	1
2005	1	9	9	0	0	0	0	0	0	0	0	6	0
2006	12	18	22	0	0	0	0	0	0	0	0	15	10
2007	1	4	9	0	0	0	0	0	0	0	0	4	14
2008	12	9	20	0	0	0	0	0	0	0	0	5	12

* PM10 is sampled every sixth day – actual days over standard can be estimated to be six times the numbers listed.
 ** On Dec. 17, 2006, the U.S. EPA implemented a more stringent national 24-hour PM2.5 standard – revising it from 5 g/m3 to 25 g/m3. PM2.5 exceedance days for 2006 and 2007 reflect the new standard.

Toxic Air Contaminants

Table 3-4 (BAAQMD, 2007) contains a summary of ambient air toxics monitoring data of toxic air contaminants (TACs) measured at monitoring stations in the Bay Area by the District in 2003. One of the primary health risks of concern due to exposure to TACs is the risk of contracting cancer. Styrene, identified as a TAC, is the prevalent monomer currently used in composite manufacturing.

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.

TABLE 3-4

Summary of 2003 BAAQMD Ambient Air Toxics Monitoring Data

Compound	LOD (ppb) ⁽¹⁾	% of Samples < LOD ⁽²⁾	Max. Conc. (ppb) ⁽³⁾	Min. Conc. (ppb) ⁽⁴⁾	Mean Conc. (ppb) ⁽⁵⁾
Acetone	0.30	0	121.4	0.6	6.80
Benzene	0.10	1.78	2.4	0.5	0.401
1,3-butadiene	0.15	75.7	0.89	0.075	0.12
Carbon tetrachloride	0.01	0	0.16	0.09	0.108
Chloroform	0.02	62.5	1.47	0.01	0.024
Ethylbenzene	0.10	44.2	0.90	0.05	0.135
Ethylene dibromide	0.02	100	0.01	0.01	0.01
Ethylene dichloride	0.10	100	0.05	0.05	0.05
Methylene chloride	0.50	82.9	3.40	0.25	0.356
Methyl ethyl ketone	0.20	7.7	5.80	0.1	0.496
Metyl tert-butyl ether	0.30	32.9	4.80	0.15	0.532
Perchloroethylene	0.01	42.4	0.28	0.005	0.026
Toluene	0.10	0.2	6.0	0.05	1.062
1,1,1-Trichloroethane	0.05	72.3	2.47	0.025	0.084
Trichloroethylene	0.05	93.8	0.33	0.025	0.029
Trichlorofluoromethane	0.01	0	.046	0.18	0.266
1,1,2-trichlorotrifluoroethane	0.01	0	1.16	0.06	0.077
Vinyl chloride	0.30	100	0.15	0.15	0.15
m/p-xylene	0.10	2.8	3.40	0.05	0.535
o-xylene	0.10	27.9	1.30	0.05	0.186

NOTES: Table 3-4 summarizes the results of the BAAQMD gaseous toxic air contaminant monitoring network for the year 2003. These data represent monitoring results at 19 of the 20 separate sites at which samples were collected. Data from the Fort Cronkhite "clean-air" background site was not included. Data from the Oakland-Davie Stadium site was available from January through March.

- (1) "LOD" is the limit of detection of the analytical method used.
- (2) "% of samples < LOD" is the percent of the total number of air samples collected in 2003 that had pollutant concentrations less than the LOD.
- (3) "Maximum Conc." is the highest daily concentration measured at any of the 19 monitoring sites.
- (4) "Minimum Conc." is the lowest daily concentration measured at any of the 19 monitoring sites.
- (5) "Mean Conc." is the arithmetic average of the air samples collected in 2003 at the 19 monitoring sites. In calculating the mean, samples with concentrations less than the LOD were assumed to be equal to one half the LOD concentration.

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 per 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 TACs 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.

Greenhouse Gas Emissions

In June 2005, Governor Arnold Schwarzenegger signed Executive Order S-3-05, which established GHG emissions reduction targets for the state, as well as a process to ensure that the targets are met. As a result of this executive order, the California Climate Action Team (CAT), led by the Secretary of the California State Environmental Protection Agency (CalEPA), was formed. The CAT published its report in March 2006, in which it laid out several recommendations and strategies for reducing GHG emissions and reaching the targets established in the Executive Order. The greenhouse gas targets are:

- By 2010, reduce to 2000 emission levels;
- By 2020, reduce to 1990 emission levels; and,
- By 2050, reduce to 80 percent below 1990 levels.

In September 2006, Governor Schwarzenegger signed California's Global Warming Solutions Act of 2006 (AB32). AB32 required CARB to:

- Establish a statewide GHG emissions cap for 2020, based on 1990 emissions, by January 1, 2008;
- Adopt mandatory reporting rules for significant sources of GHG emissions by January 1, 2008;
- Adopt an emissions reduction plan by January 1, 2009, indicating how emissions reductions will be achieved via regulations, market mechanisms, and other actions; and,
- Adopt regulations to achieve the maximum technologically feasible and cost-effective reductions of GHGs by January 1, 2011.

SB1368, a companion bill to AB32, requires the CPUC and the CEC to establish GHG emission performance standards for the generation of electricity, whether generated inside the State, or generated outside, and then imported into California. SB1368 provides a mechanism for reducing the emissions of electricity providers, thereby assisting CARB to meet its mandate under AB32.

SB97, passed in August 2007, is designed to work in conjunction with CEQA and AB32. SB97 requires the California Office of Planning and Research (OPR) to prepare and develop guidelines for the mitigation of GHG emissions or the effects thereof, including but not limited to, effects associated with transportation and energy consumption. These guidelines were required to be transmitted to the Resources Agency by July 1, 2009 and to be certified and adopted by January 1, 2010. The OPR and the Resources Agency shall periodically update these guidelines to incorporate new information or criteria established by CARB pursuant to AB32. SB97 will apply to any EIR, negative declaration,

mitigated negative declaration, or other document required by CEQA, prepared for a limited number of types of projects. SB 97 will be automatically repealed January 1, 2010.

Discussion of Impacts

III a. The objectives of the proposed rule amendments are to reduce VOC emissions from polyester resin operations in the Bay Area. The proposed amendments would reduce VOC emissions from facilities that manufacture polyester resin products within the jurisdiction of the BAAQMD. Consequently, the proposed rule amendments are expected to reduce exposure to VOCs in the region and reduce ozone formation, providing overall health benefits. The proposed amendments to Regulation 8-50 would implement Control Measure SS-4 in the 2005 Ozone Strategy, the most recent air quality planning strategy for the Bay Area, and is consistent with that plan. Therefore, the proposed rule amendments are not expected to conflict with an Air Quality Plan, but instead would further the objectives of the 2005 Ozone Strategy, ultimately reducing ozone concentrations in the Bay Area.

III b and f. The proposed amendments to Regulation 8-50 are expected to reduce VOC emissions from polyester ester resin operations. There are approximately 60 permitted polyester resin operations in the Bay Area that range in size from single-person shops to shops with 10 or more employees. Polyester resin operations that have permits to operate and are subject to Regulation 8-50 emit 1.3 tons per day (TPD) of VOCs. Approximately half of the VOC emissions are from resin application while the other half are from gel coat application.

The proposed amendments to Rule 8-50 are expected to result in reduction in VOC emissions of approximately 0.46 TPD from permitted polyester resin and vinyl resin operations. The estimated VOC emission reductions are attributable to changes in chemistry for resin and gel coat materials, and the use of non-atomizing application technologies. VOC emission reductions from the amendment of VOC limits for related cleaning and surface preparation operations are negligible. Reductions in resin and gel coat monomer content will reduce VOC and toxic air contaminant emissions. Furthermore, non-atomized applications enhance spray equipment transfer efficiencies, thus reducing VOC and toxic air contaminants emissions and the amount of overspray. The BAAQMD staff estimated an additional 0.04 TPD of VOC emissions and from the use of non-atomized spray equipment. When fully implemented, the amendments to Regulation 8-50 will result in a total VOC emission reduction of 0.46 TPD and a reduction in toxic air contaminants of 0.37 TPD providing a beneficial impact on air quality.

Since the affected facilities would be able to implement the amendments to Regulation 8-50 without installing new equipment or modifying or building new facilities, no additional construction emissions are expected as a result of the proposed rule amendments. The proposed rule amendments are not expected to alter or increase the construction emissions from new facilities nor will the proposed project provide an incentive to construct new polyester resin operations. Any new facilities would likely be required to undergo a siting review and approval by the local cities or counties (with or without the proposed rule amendments).

Based on the preceding analysis of potential secondary air quality impacts from implementing the proposed amendments to Regulation 8-50, it is concluded that the overall air quality effects will be a VOC emission reduction. Therefore, based on the significance criteria, no significant impacts are expected due to implementation of the proposed amendments.

III c. CEQA Guidelines indicate that cumulative impacts of a project shall be discussed when the project's incremental effect is cumulatively considerable, as defined in CEQA Guidelines §15065(c). The overall impact of the proposed rule amendments is a decrease in VOC emissions. Therefore, the cumulative air quality impacts of the proposed rule amendments are expected to be beneficial.

The proposed rule amendments are not expected to result in an increase in greenhouse gas (GHG) emissions. GHG emissions are largely generated by the combustion of conventional hydrocarbon fuel that results in the release of energy as bonds between carbon and hydrogen are broken and reformed with oxygen to create water vapor and the carbon dioxide (CO₂). Greenhouse gases, which alter the amount of heat, or infrared radiation, that can escape the Earth's surface, have been linked to a gradual warming of the Earth's surface and lower atmosphere. In the United States, the largest source of greenhouse gas emissions is from fossil fuel combustion, which accounted for approximately 81 percent of greenhouse emissions in 1996 (CARB, 2006a). CO₂ is not commonly used or generated in the polyester resin operations. The proposed amendments would reduce/establish monomer content limits, lower VOC limits for cleaning products used in composite operations; and require the use of non-atomizing spray guns. The proposed amendments are not expected to require the combustion of additional fuel nor increase the generation of GHG emissions. No increase in the use or production of polyester resins is expected due the proposed amendments to Regulation 8-50. Therefore, the proposed rule amendments are not expected to result in an increase in GHG emissions.

III d. The proposed amendments are expected to lead to a reduction in VOCs and reduced exposure to sensitive populations. Facilities are expected to comply with the proposed amendments to Regulation 8-50 by reducing the monomer content of polyester resins and gel coats and using non-atomizing spray guns. Styrene is the most commonly used monomer in composite manufacturing, although many specialty resins and gel coats contain monomers, such a vinyl toluene or methyl methacrylate. Styrene and other monomers are emitted into the air when resins are applied to molds, when air bubbles are rolled out of the composite materials, and during the curing phase. Styrene is a toxic air contaminant (TAC).

The proposed amendments to Rule 8-50 are expected to result in reduction in TACs (styrene) primarily due to the reduced monomer content of the polyester resins. Reductions in resin and gel coat monomer content will reduce VOC and TAC emissions. Furthermore, non-atomized applications enhance spray equipment transfer efficiencies, thus reducing VOC and TAC emissions and the amount of overspray. When fully implemented, the amendments to Regulation 8-50 are expected to result in a reduction in TAC emissions (styrene) of 0.37 TPD providing a beneficial impact on air quality and health risk impacts related to exposure to TACs (primarily styrene).

III e. The proposed amendments are not expected to result in an increase in odors. The proposed amendments to Regulation 8-50 are expected to reduce VOC and TAC emissions (primarily styrene) from polyester resin operations. The use of materials with lower monomer content is expected to generate less VOC emissions and ultimately reduce the potential for odor impacts. Therefore, no significantly adverse incremental odor impacts are expected due to the proposed rule amendments.

Based upon these considerations, no significant adverse air quality impacts are expected from the implementation of the proposed rule amendments. In fact, the proposed rule amendments are expected

to provide beneficial air quality impacts by reducing VOC emissions and ultimately reducing ozone formation.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
IV. BIOLOGICAL RESOURCES. Would the project:				
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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.?	<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. A wide variety of biological resources are located within the Bay Area.

The entire area under the jurisdiction of the BAAQMD is affected by the proposed rule amendments, and is located within 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. A majority of the affected areas have been graded to develop various commercial or residential structures. Native vegetation, other than landscape vegetation, has generally been removed from areas to minimize safety and fire hazards. Any new development would fall under the requirements of the City or County General Plans.

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 amendments which would apply to polyester resin operations which are primarily located in industrial and commercial areas, which generally lack native vegetation. The proposed amendments are not expected to require the construction of any major new facilities and would not require construction activities outside of existing facilities. Most areas where polyester resin operations are located have typically been graded and developed, and biological resources, with the exception of landscape species, have generally been removed. Implementation of the proposed amendments to Regulation 8-50 would reduce the monomer content of polyester resins through reformulation. The amendments to Regulation 8-50 would not require development outside of existing areas and would not impact any native biological resources.

Based upon these considerations, no significant adverse impacts to biological resources are expected from the implementation of the proposed rule amendments.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
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 a 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 polyester resin operations affected by the proposed rule amendments to Regulation 8-50 are primarily located in industrial and commercial areas of the BAAQMD which have been graded and developed.

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 amendments that would apply to polyester resin operations. There are existing laws designed to protect and mitigate potential impacts to cultural resources. Amendments to Regulation 8-50 are not expected to affect archeological or cultural sites because the proposed amendments would not require any construction activities. Existing facilities are predominately located within industrial and commercial areas and have been graded and developed. No new construction would be required outside of the existing facility boundaries due to the adoption of the proposed amendments to Regulation 8-50. As a result, no significant adverse impacts to cultural resources are expected due to the proposed amendments to Regulation 8-50.

Based upon these considerations, no significant adverse impacts to cultural resources are expected from the implementation of the proposed rule amendments.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
VI. GEOLOGY AND SOILS.				
Would the project:				
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 groundshaking?	<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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<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 polyester resin operations affected by the proposed rule amendments are located throughout the area within the jurisdiction of the BAAQMD.

The Bay Area is 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 major construction activities would be required as a result of adopting the proposed amendments to Regulation 8-50, as the proposed amendments would require reduced monomer content limits in polyester resin operations, reduce VOC limits on cleaning products, and the use of non-atomizing spray guns. No construction activities are required to install non-atomizing spray guns. The proposed amendments will have no effects on geophysical formations in the District as no new structures would need to be constructed. Polyester resin operations would not change substantially from current practices, i.e., people will not be exposed to adverse geological effects greater than what currently exists. No significant adverse impacts from seismic hazards are expected since no new major development is required to implement the proposed amendments to Regulation 8-50.

VII b. The proposed amendments to Regulation 8-50 do not require major construction activities such as grading or trenching, so existing geophysical conditions will be unaffected. Since no major development will be required as a result of the proposed amendments, no major soil disturbance activities are expected. Therefore, lowering the monomer content of resins and the VOC content of cleaning solvents would not result in soil erosion or the loss of topsoil, as no major construction activities would be required.

VII c – e. The proposed amendments to Regulation 8-50 are not expected to require major new development. Since affected facilities already exist, no additional structures would be constructed on a geologic unit or soil that is unstable, or that would become unstable, or potentially result in onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse. Likewise, no structure would 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. Compliance with the Uniform Building Code would minimize the impacts associated with existing geological hazards. Major construction activities would not be required and 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 significant adverse impacts to geology and soils are expected due to the proposed amendments to Regulation 8-50.

Based upon these considerations, no significant geology and soils impacts are expected from the implementation of the proposed rule amendments.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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 wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Setting

The affected polyester resin facilities handle and process measurable quantities of flammable, hazardous, and acutely hazardous materials. Accidents involving these substances can result in worker or public exposure to fire, heat, blast from an explosion, or airborne exposure to hazardous substances.

Hazards are related to the risks of fire, explosions, or releases of hazardous substances in the event of accident or upset conditions. Hazards are thus related to the production, use, storage, and transport of hazardous materials. Industrial production and processing facilities are potential sites for hazardous materials. Some facilities produce hazardous materials as their end product, while others use such materials as an input to their production processes. Examples of hazardous materials used by consumers include fuels, paints, paint thinner, nail polish, and solvents. Hazardous materials may be stored at facilities producing such materials and at facilities where hazardous materials are part of the production processes. Storage refers to the bulk handling of hazardous materials before and after they are transported to the general geographical area of use. Currently, hazardous materials are transported throughout the Bay Area in great quantities via all modes of transportation including rail, highway, water, air, and pipeline.

The potential hazards associated with handling such materials are a function of the materials being processed, processing systems, and procedures used to operate and maintain the facilities where they exist. The hazards that are likely to exist are identified by the physical and chemical properties of the materials being handled and their process conditions, including the following events.

- Torch fires (gas and liquefied gas releases), flash fires (liquefied gas releases), pool fires, and vapor cloud explosions (gas and liquefied gas releases): The rupture of a storage tank or vessel containing a flammable gaseous material (like propane), without immediate ignition, can result in a vapor cloud explosion. The “worst-case” upset would be a release that produces a large aerosol cloud with flammable properties. If the flammable cloud does not ignite after dispersion, the cloud would simply dissipate. If the flammable cloud were to ignite during the release, a flash fire or vapor cloud explosion could occur. If the flammable cloud were to ignite immediately upon release, a torch fire would ensue.
- Thermal Radiation: Thermal radiation is the heat generated by a fire and the potential impacts associated with exposure. Exposure to thermal radiation would result in burns, the severity of which would depend on the intensity of the fire, the duration of exposure, and the distance of an individual to the fire.
- Explosion/Overpressure: Process vessels containing flammable explosive vapors and potential ignition sources are present at many types of industrial facilities. Explosions may occur if the flammable/explosive vapors came into contact with an ignition source. An explosion could cause impacts to individuals and structures in the area due to overpressure.

Regulatory Background

The use, storage and transport of hazardous materials are subject to numerous laws and regulations at all levels of government. The most relevant existing hazardous materials laws and regulations include hazardous materials management planning, hazardous materials transportation, hazardous materials worker safety requirements, hazardous waste handling requirements, and emergency response to hazardous materials and waste incidents. There are many federal and state rules and regulations that facilities handling hazardous materials 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.

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.

Affected facilities that store materials are required to have a Spill Prevention Control and Countermeasures (SPCC) Plan per the requirements of 40 CFR, Section 112. The SPCC is designed to prevent spills from on-site facilities and includes requirements for secondary containment, provides emergency response procedures, establishes training requirements, and so forth.

The Hazardous Materials Transportation (HMT) Act is the federal legislation that regulates transportation of hazardous materials. The primary regulatory authorities are the U.S. Department of Transportation, the Federal Highway Administration, and the Federal Railroad Administration. The HMT Act requires that carriers report accidental releases of hazardous materials to the U.S. Department of Transportation at the earliest practical moment (49 CFR Subchapter C). The California Department of Transportation (Caltrans) sets standards for trucks in California. The regulations are enforced by the California Highway Patrol.

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 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.

Contra Costa County has adopted an industrial safety ordinance that addresses the human factors that lead to accidents. The ordinance requires stationary sources to develop a written human factors program that considers human factors as part of process hazards analyses, incident investigations, training, operating procedures, among others.

Discussion of Impacts

VII a - c. It is expected that the proposed amendments to Regulation 8-50 will lead to a reduction in VOC emissions from polyester resin operations. Polyester resin operations already use materials that contain toxic and hazardous materials, such as styrene, and acetone, which currently require solvent and waste transport services. There are no provisions in the proposed amendments that would increase the total amount of polyester resins or cleaning products currently used by affected facilities. Acetone is currently the most common cleaning agent and is still expected to be the most common cleaning product used for equipment cleaning needs after implementation of the proposed amendments.

Polyester resin operations are not expected to change from current practice and, thus, the amount of solvents used or transported is not expected to change. As the production and use of polyester resins is not expected to change as a result of implementing Regulation 8-50, no additional transport of the solvents is expected and, thus, no new hazards to the public will be created through transport, use, or disposal of hazardous materials. As a result, the proposed amendments are not expected to increase the probability of a hazardous material release. Local fire department and OSHA regulations coupled with standard operating practices ensure that conditions are in place to protect against hazard impacts. Therefore, no significant impacts on hazards are expected.

VII d. No impacts on hazardous material sites are anticipated from the proposed rule amendments that would apply to polyester resin operations. Some of the affected areas may be located on the hazardous materials sites list pursuant to Government Code Section 65962.5. However, the proposed rule amendments would have no effect on hazardous materials nor would the amendment create a significant hazard to the public or environment. Polyester resin operations already exist and are primarily located and operated within the confines of industrial and commercial facilities. The proposed rule amendments neither require, nor are likely to result in, activities that would affect 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 amendments, which would apply to polyester resin operations. The existing equipment and operations are primarily located within the confines of existing industrial and commercial facilities. Once the proposed amendments are implemented, facilities would be expected to comply by using reformulated materials that limit monomer content. These changes are expected to be made within the confines of the existing facilities. No development outside of existing facilities is expected to be required by the proposed amendments to Regulation 8-50. Therefore, no significant adverse hazards impacts to an airport land use plan or to a private air strip are expected.

VII g. No significant impacts on emergency response plans are anticipated from the proposed rule amendments. The proposed amendments are not expected to affect or interfere with a user's ability to comply with all adopted emergency response plans and emergency evacuation plans because the proposed amendments are not expected to require construction of any major structures or features that

could impede the execution of emergency response or emergency evacuation plans. Additionally, Health and Safety Code §25506 specifically requires all businesses handling hazardous materials to submit a business emergency response plan to assist local administering agencies in the emergency release, or threatened release, of a hazardous material.

In general, every county or city and all facilities using a minimum amount of hazardous materials are required to formulate detailed contingency plans to eliminate, or at least minimize, the possibility and effect of fires, explosion, or spills. In cooperation with California Office of Emergency Services, local jurisdictions have enacted ordinances that set standards for area and business emergency response plans. These requirements include immediate notification, mitigation of an actual or threatened release of a hazardous material, and evacuation of the emergency area. Therefore, no significant adverse impacts on emergency response plans are expected.

VII h. No increase in hazards related to wildfires are anticipated from the proposed rule amendments. Polyester resin operations affected by the proposed amendments already exist and are primarily located and operate within the confines of existing industrial and commercial. The proposed amendments would not result in construction activities outside the boundaries of the existing facilities. No increase in exposure to wildfires will occur due to the proposed amendments to Regulation 8-50.

Based upon these considerations, no significant adverse hazards and hazardous materials impacts are expected from the implementation of the proposed rule amendments.

	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:

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 stormwater 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.

Polyester resin operations affected by the proposed rule amendments are primarily located in industrial and commercial areas within the Bay Area. 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 Bay Area is 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 (SWRCB), 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, which implements the state's responsibilities under the Federal Clean Water Act but also establishes state wastewater discharge requirements. The Regional Water Quality Control Board (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 RWQCB.

In response to the Federal Act, the State Water Resources Control Board (SWRCB) 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, which have been updated in 2005 as the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California. 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 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 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, dichlorodiphenyltrichloroethane (DDT), diazinon, dieldrin, dioxin and furan compounds, mercury, nickel, polychlorinated biphenyls (PCBs), and selenium.

Discussion of Impacts

VIII a - f. No significant adverse impacts on hydrology/water quality resources are anticipated from the proposed amendments to Regulation 8-50, which would apply to polyester resin operations within the Bay Area. Lowering the monomer content of resins and the VOC content limit of cleaning products at affected facilities will have no direct or indirect impact on hydrology and water quality because the reformulation of the resins and cleaning products is not expected to change the current composite operation practices or alter the formulations to be more detrimental to water quality. Polyester resin operations are not large consumers of water or generators of wastewater discharge and the proposed amendments would not increase the amount of water used or wastewater generated at polyester resin operations. Cleaning solvents are generally used for cleanup purposes as opposed to water.

The SWRCB and nine RWQCBs are responsible for protecting surface and groundwater supplies in California, regulating waste disposal, and requiring cleanup of hazardous conditions (California Water §§13000 - 13999.16). In particular, the SWRCB establishes water-related policies and approves water quality control plans, which are implemented and enforced by the RWQCBs. These agencies also regulate discharges to State waters through federal NPDES permits. Discharges to publicly owned treatment works (POTW) are regulated through federal pretreatment requirements enforced by the POTWs. Polyester resin operations that generate wastewater would have existing wastewater discharge permits.

The proposed amendments to Regulation 8-50 are not expected to adversely impact water quality since no increase in water use or wastewater discharge is expected to be required. Water resources impacts are considered significant if they cause changes in the course of water movements or of drainage or surface runoff patterns; substantially degrade water quality; deplete water resources; significantly increase toxic inflow to public wastewater treatment facilities; or interfere with groundwater recharge efforts.

No major construction activities are expected due to the adoption of the proposed amendments to Regulation 8-50 so no increase in paved areas are expected. Further, no increase in storm water runoff is expected. The proposed amendments are not expected to require additional construction activities. No significant adverse hydrology and water quality impacts are anticipated from implementation of the proposed amendments.

VIII g – i. The polyester operations affected by the proposed rule amendments are located primarily within industrial and commercial areas of the BAAQMD. No major construction activities are expected due to the adoption of the proposed amendments to Regulation 8-50. Commercial and industrial areas, including polyester resin operations, are generally located to avoid flood zone areas and other areas subject to flooding. The proposed amendments are not expected to require additional construction activities, 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. The polyester resin operations affected by the proposed rule amendments are primarily located within industrial and commercial areas of the BAAQMD. No major construction activities are expected due to the adoption of the proposed amendments to Regulation 8-50. The proposed amendments are 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.

Based upon these considerations, no significant adverse hydrology and water quality impacts are expected from the implementation of the proposed rule amendments.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
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 polyester resin operations affected by the proposed rule amendments are primarily located within industrial and commercial areas of the BAAQMD.

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. No provisions of the proposed amendments to Regulation 8-50 would directly affect applicable land use plans, zoning ordinances, habitat conservation, or natural community conservation plans. Polyester resin operations are expected to comply with Regulation 8-50 by reducing monomer content in materials, lowering the VOC limits of cleaning produces, and using non-atomizing spray guns. These changes are expected to occur within the confines of existing commercial and industrial facilities. No construction activities outside of the confines of existing facilities are expected to be required due to the adoption of the proposed amendments to Regulation 8-50, so no impacts on land use are expected. Polyester resin operations located in the District are not expected to need additional land to continue current operations or require rezoning to comply with the proposed rule amendments.

Based upon these considerations, no significant adverse impacts to land use are expected due to the proposed rule amendments.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
X. MINERAL RESOURCES. Would the project:				
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 polyester resin operations affected by the proposed rule amendments are located within industrial and commercial areas of the BAAQMD.

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. The proposed rule amendments are not associated with 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. The proposed amendments are designed to reduce emissions associated with polyester resin operations, and would not typically require mineral resources to reformulate compliant products. Therefore, no impacts on mineral resources are expected.

Based upon these considerations, significantly adverse impacts to mineral resources are not expected from the implementation of the proposed amendments to Regulation 8-50.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
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 groundborne vibration or groundborne 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?	<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 polyester resin operations affected by the proposed rule amendments are primarily located within industrial and commercial areas of the BAAQMD.

Regulatory Background

Noise issues related to construction and operational 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-d. The polyester resin operations affected by the proposed rule amendments already exist and the District has no indication that they have not complied with existing relevant local community noise standards and ordinances. Polyester resin operations affected by the proposed rule amendments would be required to use resins with a lower monomer content, use cleaning products with lower VOC content, and use non-atomizing spray guns. The District has no indication that the rule amendments would affect continuing compliance. No major construction activities would be required due to the adoption of the proposed amendments to Regulation 8-50 so that no noise impacts associated with the use of construction equipment and construction-related traffic are expected.

Implementation of the proposed amendments is not expected to produce noise in excess of current operations at existing polyester resin operations. In general, the primary noise sources at existing facilities manufacturing polyester resin products are generated by vehicular traffic, spray equipment, and heavy equipment, such as fork lifts and trucks. It is expected that facilities affected by the proposed amendments to Regulation 8-50 will comply with all existing noise control laws or ordinances. Further, OSHA and Cal/OSHA have established noise standards to protect worker health. Additionally, compliance with amendments to Regulation 8-50 is not expected to create significant noise impacts as the use of resin with a lower monomer content and cleaning products with lower VOC content will not affect noise levels from existing operations. The use of non-atomizing spray guns are expected to have similar or lower noise levels than other types of application equipment. Therefore, no adverse significant impacts to noise are expected due to the proposed project.

XI. e-f. Though some of the facilities affected by the proposed project may be located at sites within an airport land use plan, or within two miles of a public airport, the proposed amendments to Rule 8-50 would not expose people residing or working in the project area to the same degree of excessive noise levels associated with airplanes. Compliance with amendments to Regulation 8-50 will not affect noise levels from polyester resin operations as facilities would continue to use the same or similar equipment. All noise producing equipment must comply with local noise ordinances and applicable OSHA or Cal/OSHA workplace noise reduction requirements. Based upon the above considerations, significant noise impacts are not expected from the implementation of the proposed project.

Based upon these considerations, significant noise impacts are not expected from the implementation of the proposed rule amendments.

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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 polyester resin operations affected by the proposed rule amendments are primarily located in industrial and commercial areas within the jurisdiction of the BAAQMD.

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. No major construction activities are expected due to implementation of the proposed amendments. The minor facility modifications that may be required by the proposed amendments can be completed within the existing polyester resin facilities in the Bay Area. Further, it is not expected that the minor facility modifications, e.g., new spray guns, will require new employees at the affected facilities. Human population within the jurisdiction of the BAAQMD is anticipated to grow regardless of implementing the amendments to Regulation 8-50. As a result, the proposed project is not anticipated to generate any significant adverse effects, either direct or indirect, on population growth or population distribution in the Bay Area.

XII b-c. Because the proposed project would include minor modifications and/or changes at existing facilities located in the Bay Area, the proposed project is not expected to result in the creation of any

industry that would affect population growth, directly or indirectly induce the construction of single- or multiple-family units, or require the displacement of people or housing elsewhere in the Bay Area.

Based upon these considerations, significant population and housing impacts are not expected from the implementation of the proposed rule amendments.

	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 type="checkbox"/>	<input checked="" 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 polyester resin operations affected by the proposed rule amendments are located throughout the area within the jurisdiction of the BAAQMD, primarily in industrial and commercial areas.

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. The proposed amendments will require the use of resin with a lower monomer content, cleaning products with lower VOC content, and non-atomizing spray guns, but all modifications would occur

within the confines of the existing facilities. The proposed amendments would not impact existing security and, therefore, are not expected to impact police services or require additional police protection.

The proposed amendments to Regulation 8-50 are not expected to require new or additional fire fighting resources. It is more likely that the proposed amendments will result in the use of less hazardous and flammable materials (less monomer in resins and reduced VOC content in cleaning products) compared to current materials (resins and cleaning materials), resulting in a reduction in the need for fire fighting services. Fire protection services are generally provided by city and county fire departments with some cities contracting with the county for services. Local fire departments function as the first responding emergency team in the event of a fire or release of hazardous materials. Additionally, resin and cleaning materials compliant with the proposed amendments to Regulation 8-50 are not expected to cause significant adverse human health impacts, so accidental release scenarios would be expected to pose a lower risk to the public and less need for emergency responders. Therefore, the proposed amendments are not expected to significantly increase the need or demand for additional fire protection services above current levels.

As noted in the “Population and Housing” discussion above, the proposed project is not expected to induce population growth in any way because the existing polyester resin operations (e.g., workforce) are expected to be sufficient to accommodate any modifications or conversions that may be necessary at affected facilities and the use of reformulated resins and cleaning products is not expected to require additional employees. Therefore, there will be no increase in local population and thus no impacts are expected to local schools or parks.

Based upon these considerations, significant public services impacts are not expected from the implementation of the proposed rule amendments.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
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 polyester resin operations affected by the proposed rule amendments are primarily located in industrial and commercial areas throughout the BAAQMD.

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. As discussed under “Land Use” above, there are no provisions of the proposed project that would affect land use plans, policies, or regulations. Land use and other planning considerations are determined by local governments; no land use or planning requirements will be altered by the proposed amendments to Regulation 8-50 and no increase in population is expected. Further, the proposed amendments would not increase the use of existing neighborhood and regional parks or other recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment because the proposed project is not expected to induce population growth. Therefore, no significant adverse impacts to recreational facilities are expected.

Based upon these considerations, significant recreation impacts are not expected from the implementation of the proposed rule amendments.

	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)? | <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). 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 multi-lane 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.

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 cross 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 restriped 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 state and county level. Planning for interstate highways is generally done by the California Department of Transportation.

Most local counties maintain a transportation agency that has the duties of transportation planning and administration of improvement projects within the county and implements the Transportation Improvement and Growth Management Program, and the congestion management plans (CMPs). The CMP identifies a system of state highways and regionally significant principal arterials and specifies level of service standards for those roadways. The Metropolitan Transportation Commission is the main transportation planning agency in the Bay Area.

Discussion of Impacts

XV a-b. Since no major construction activities are expected as a result of implementing the proposed amendments to Regulation 8-50, no increase in construction-related traffic is expected.

Polyester resin operations are not expected to increase or decrease the amount of resin or cleaning materials used as a result of the proposed rule amendments. Therefore, the number of trucks needed to deliver the materials to the affected facilities should not significantly change from the current number of delivery trucks, and the number of trucks required to distribute products should not change. No additional delivery or disposal trucks are expected to be required due to the proposed rule amendments. The work force at each affected facility is not expected to increase as a result of the proposed amendments. Thus, the traffic impacts associated with the proposed rule amendments are expected to be less than significant.

XV c. Though some of the polyester resin operations that will be affected by the proposed amendments may 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, actions that would be taken to comply with the proposed amendments are not expected to influence or affect air traffic patterns. Further, the reformulation to lower monomer resins and lower VOC content cleaning materials would not be expected to involve air traffic or affect navigable air space in any way. Thus, the proposed amendments would not result in a

change in air traffic patterns including an increase in traffic levels or a change in location that results in substantial safety risks.

XV d - e. The location of each affected facility is expected to be consistent with surrounding land uses and traffic/circulation in the surrounding areas of the affected polyester resin operations. Thus, the proposed amendments are not expected to increase traffic hazards or create incompatible uses at or adjacent to the polyester resin facilities. Since no major construction activities are expected due to the proposed amendments, no increase in construction traffic is expected. The proposed amendments are not expected to require a modification to circulation, thus, no long-term impacts on the traffic circulation system are expected to occur. The proposed amendments do not involve construction of any roadways, so no increase in traffic hazards is expected. Emergency access at each affected facility is not expected to be impacted by the proposed amendments since no major construction activities are required. Further, each affected facility is expected to continue to maintain their existing emergency access and procedures, and emergency access would not be impacted by the proposed rule amendments.

XV f. Since no major construction activities are required due to adoption of the proposed amendments, no significant impact on parking for construction workers is expected. Further, no additional parking is expected to be needed after adoption of the proposed rule amendments because no increase in employees at polyester resin facilities is expected. Therefore, the proposed rule amendments will not result in significant adverse impacts on parking.

XV g. Operational activities resulting from the proposed amendments are not expected to conflict with policies supporting alternative transportation since the proposed amendments do not involve or affect alternative transportation modes (e.g. bicycles or buses).

Based upon these considerations, significant transportation/traffic impacts are not expected from the implementation of the proposed rule amendments.

	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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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 type="checkbox"/>	<input checked="" 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 most 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 polyester resin operations, which is not recycled off-site, is required to be disposed of at a licensed hazardous waste disposal facility. Two such facilities are the Chemical Waste Management Inc. (CWMI) Kettleman Hills facility in Kings 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 maintained within the local jurisdiction.

Discussion of Impacts

XVI a, b, d and e. The operations affected by the proposed rule amendments already exist and are located within the confines of existing polyester resin facilities. The proposed rule amendments are not expected to generate additional wastewater at the affected facilities and no significant impact on water use, wastewater generation, and water quality are expected. See Section VIIIa for further discussion on wastewater impacts.

XVI c. The affected facilities are expected to comply with the proposed amendments by lowering the monomer content in resins and the VOC content in cleaning products, and using non-atomizing spray guns. No major construction activities at the existing facilities would be required as a result of adopting the proposed amendments. Any facility modifications would be expected to occur within the confines of existing facilities. Therefore, the proposed amendments are not expected to alter the existing drainage or require the construction of new storm water drainage facilities. Nor are the proposed amendments 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. Therefore, no significant adverse impacts on storm drainage facilities are expected.

XVI f and g. The proposed rule amendments would not affect the ability of existing facilities to comply with federal, state, and local statutes and regulations related to solid waste. Polyester resin operations are not expected to change as a result of the proposed amendments to Regulation 8-50. The volume of wastes generated by the affected facilities are also not expected to increase as a result of the proposed amendments. As a result, no new solid or hazardous waste will be generated due to the lowering of the monomer content of resins and VOC content of cleaning solvents, or using non-atomizing spray guns in polyester resin operations. The increased use of water-based coatings could have a beneficial impact on

hazardous waste facilities by decreasing the amount of hazardous materials used and disposed of in the manufacturing process. For example, the use of non-atomizing spray guns is expected to reduce the amount of overspray and potentially reduce the amount of waste generated. Therefore, no significant adverse solid waste impacts are expected.

Based upon these considerations no significant adverse utilities and service systems impacts are expected from the implementation of the proposed rule amendments.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
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 amendments do 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 amendments are expected to result in VOC and TAC emission reductions from polyester resin operations, thus providing a beneficial air quality impact and related health effects. As discussed in Section IV, Biological Resources and Section V, Cultural Resources, no significant adverse impacts are expected to biological or cultural resources.

XVII b-c. The proposed amendments are expected to result in emission reductions of VOCs from affected polyester resin operations, thus providing a beneficial air quality impact, improvement in air quality, and reduced health impacts due to reduce exposure to VOC and TAC emissions, and ultimately reduced ozone concentrations. The proposed rule amendments are part of a long-term plan to reduce the potential health impacts associated with exposure to ozone. The proposed rule amendments do not have adverse environmental impacts that are limited individually, but cumulatively considerable when considered in conjunction with other regulatory control projects. The proposed rule amendments are not expected to have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly. In fact, the proposed rule amendments are expected to provide beneficial health impacts by reducing VOC emissions, the formation of ozone, and reducing human exposure to

ozone in the Bay Area. No significant adverse environmental impacts are expected due to implementation of the proposed rule amendments.

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CHAPTER 4

REFERENCES

Bay Area Air Quality Management District (BAAQMD), 2007. Toxic Air Contaminant Control Program Annual Report 2003 Volume I. August 2007.

BAAQMD, 2009. BAAQMD Regulation 8, Rule 50: Polyester Resin Operations Staff Report, October, 2009.

South Coast Air Quality Management District (SCAQMD), 2005. Final Environmental Assessment for Proposed Amended Rule 1162 – Polyester Resin Operations, June 10, 2005.

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BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Torliatt and Members
of the Board of Directors

From: Jack P. Broadbent
Executive Officer/APCO

Date: November 19, 2009

Re: Public Hearing Continued from November 18, 2009 to Receive Testimony
on Proposed Amendments to the District's California Environmental
Quality Act (CEQA) Thresholds of Significance

RECOMMENDED ACTION:

Staff recommends that the Board of Directors continue the public hearing and receive testimony on the proposed CEQA Thresholds of Significance on December 2, 2009, and continue the hearing on January 6, 2010, at which time adoption of the proposed thresholds of significance is recommended.

BACKGROUND

The District's CEQA Guidelines (Guidelines) are developed to assist local jurisdictions and other lead agencies in identifying proposed local land use plans and development projects that may have a significant adverse effect on air quality and public health. The proposed revisions to the existing thresholds of significance include thresholds for construction, project operation, and plan-level emissions of criteria air pollutants, ozone precursors, greenhouse gases, toxic air contaminants, and odors. The Guidelines also provide technical information on impact assessment methodology and mitigation strategies.

DISCUSSION

During Board deliberations and public testimony at the hearing on November 18 several issues were raised regarding the proposed CEQA thresholds of significance. The Board requested that staff respond to issues raised during the discussion. At the Board hearing on December 2 staff will present responses to comments and address requests of Board members.

BUDGET CONSIDERATION/FINANCIAL IMPACTS:

The update to the District's CEQA Guidelines was included in the FYE 2010 budget. Assisting local lead agencies in implementing the Guidelines will require staff resources.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Prepared by: Greg Tholen
Reviewed by: Henry Hilken



BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT

**California Environmental Quality Act
Guidelines Update**

Proposed Thresholds of Significance

November 2, 2009

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Bay Area Air Quality Management District

Proposed Air Quality CEQA Thresholds of Significance

1 INTRODUCTION

Bay Area Air Quality Management District (BAAQMD or Air District) staff analyzed various options for California Environmental Quality Act (CEQA) air quality thresholds of significance for use within BAAQMD's jurisdiction. The analysis and evaluation undertaken by Air District staff is documented in the *Revised Draft Options and Justification Report – California Environmental Quality Act Thresholds of Significance* (Draft Options Report) (BAAQMD October 2009).

Air District staff hosted public workshops in February, April, September and October 2009 at several locations around the Bay Area. In addition, Air District staff met with regional stakeholder groups to discuss and receive input on the threshold options being evaluated. Throughout the course of the public workshops and stakeholder meetings Air District staff received many comments on the various options under consideration. Based on comments received and additional staff analysis, the threshold options and staff-recommended thresholds were further refined. The culmination of this year-long effort is presented in this Report as the Air District staff's proposed air quality thresholds of significance. The proposed thresholds presented herein are intended to replace all of the Air District's currently recommended thresholds. The proposed air quality thresholds of significance are provided in Table 1 at the end of this introduction.

1.1 BAAQMD/CEQA REGULATORY AUTHORITY

The BAAQMD has direct and indirect regulatory authority over sources of air pollution in the San Francisco Bay Area Air Basin (SFBAAB). CEQA requires that public agencies consider the potential adverse environmental impacts of any project that a public agency proposes to carry out, fund or approve. CEQA requires that a lead agency prepare an Environmental Impact Report (EIR) whenever it can be fairly argued (the "fair argument" standard), based on substantial evidence,¹ that a project may have a significant effect² on the environment, even if there is substantial evidence to the contrary (CEQA Guidelines §15064). CEQA requires that the lead agency review not only a project's direct effects on the environment, but also the cumulative impacts of a project and other projects causing related impacts. When the incremental effect of a project is cumulatively considerable,

¹ "Substantial evidence" includes facts, reasonable assumptions predicated upon facts, or expert opinions supported by facts, but does not include argument, speculation, unsubstantiated opinion or narrative, evidence that is clearly inaccurate or erroneous, or evidence of social or economic impacts that do not contribute to, or are not caused by, physical impacts on the environment. Cal. Pub. Res. C. §21080(c); *see also* CEQA Guidelines §15384.

² A "significant effect" on the environment is defined as a "substantial, or potentially substantial, adverse change in the environment." Cal. Pub. Res. C. §21068; *see also* CEQA Guidelines §15382.

the lead agency must discuss the cumulative impacts in an EIR. (CEQA Guidelines §15064).

The “fair argument” standard refers to whether a fair argument can be made that a project may have a significant effect on the environment (*No Oil, Inc. v. City of Los Angeles* (1974) 13 Cal.3d 68, 84). The fair argument standard is generally considered a low threshold requirement for preparation of an EIR. The legal standards reflect a preference for requiring preparation of an EIR and for “resolving doubts in favor of environmental review.” *Meija v. City of Los Angeles* (2005) 130 Cal. App. 4th 322, 332. “The determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on scientific and factual data.” (CEQA Guidelines §15064(b)).

In determining whether a project may have a significant effect on the environment, CEQA Guidelines Section 15064.7 provides that lead agencies may adopt and/or apply “thresholds of significance.” A threshold of significance is “an identifiable quantitative, qualitative or performance level of a particular environmental effect, non-compliance with which means the effect will normally be determined to be significant by the agency and compliance with which means the effect normally will be determined to be less than significant” (CEQA Guidelines §15064.7).

While thresholds of significance give rise to a presumption of insignificance, thresholds are not conclusive, and do not excuse a public agency of the duty to consider evidence that a significant effect may occur under the fair argument standard. *Meija*, 130 Cal. App. 4th at 342. “A public agency cannot apply a threshold of significance or regulatory standard ‘in a way that forecloses the consideration of any other substantial evidence showing there may be a significant effect.’” *Id.* This means that if a public agency is presented with factual information or other substantial evidence establishing a fair argument that a project may have a significant effect on the environment, the agency must prepare an EIR to study those impacts even if the project’s impacts fall below the applicable threshold of significance.

Thresholds of significance must be supported by substantial evidence. This Report provides the substantial evidence in support of the thresholds of significance developed by the BAAQMD. If adopted by the BAAQMD Board of Directors, the Air District will recommend that lead agencies within the nine counties of the BAAQMD’s jurisdiction use the thresholds of significance in this Report when considering the air quality impacts of projects under their consideration.

1.2 JUSTIFICATION FOR UPDATING CEQA THRESHOLDS

Any analysis of environmental impacts under CEQA includes an assessment of the nature and extent of each impact expected to result from the project to determine whether the impact will be treated as significant or less than significant. CEQA gives lead agencies discretion whether to classify a particular environmental impact as significant. Ultimately, formulation of a standard of significance requires the lead agency to make a policy judgment about where the line should be drawn distinguishing adverse impacts it

considers significant from those that are not deemed significant. This judgment must, however, be based on scientific information and other factual data to the extent possible (CEQA Guidelines §15064(b)).

In the sense that advances in science provide new or refined factual data, combined with advances in technology and the gradual improvement or degradation of an environmental resource, the point where an environmental effect is considered significant is fluid over time. Other factors influencing this fluidity include new or revised regulations and standards, and emerging, new areas of concern.

In the ten years since BAAQMD last reviewed its recommended CEQA thresholds of significance for air quality, there have been tremendous changes that affect the quality and management of the air resources in the Bay Area. Traditional criteria air pollutant ambient air quality standards, at both the state and federal levels, have become increasingly more stringent. A new criteria air pollutant standard for PM_{2.5} has been added to federal and state ambient air quality standards. We have found, through technical advances in impact assessment, that toxic air contaminants are not only worse than previously thought from a health perspective, but that certain communities experience high levels of toxic air contaminants, giving rise to new regulations and programs to reduce the significantly elevated levels of ambient toxic air contaminant concentrations in the Bay Area.

In response to the elevated levels of toxic air contaminants in some Bay Area communities, the Air District created the Community Air Risk Evaluation (CARE) Program. Phase 1 of the BAAQMD's CARE program compiled and analyzed a regional emissions inventory of toxic air contaminants (TACs), including emissions from stationary sources, area sources, and on-road and off-road mobile sources. Phase 2 of the CARE Program conducted regional computer modeling of selected TAC species, species which collectively posed the greatest risk to Bay Area residents. In both Phases 1 and 2 demographic data were combined with estimates of TAC emissions and concentrations to identify communities that are disproportionately impacted from high concentrations of TACs.

Another significant issue that affects the quality of life for Bay Area residents is the growing concern with global climate change. In just the past few years, estimates of the global atmospheric temperature and greenhouse gas concentration limits needed to stabilize climate change have been adjusted downward and the impacts of greenhouse gas emissions considered more dire. Previous scientific assessments assumed that limiting global temperature rise to 2-3°C above pre-industrial levels would stabilize greenhouse gas concentrations in the range of 450-550 parts per million (ppm) of carbon dioxide-equivalent (CO₂e). Now the science indicates that a temperature rise of 2°C would not prevent dangerous interference with the climate system. Recent scientific assessments suggest that global temperature rise should be kept below 2°C by stabilizing greenhouse gas concentrations below 350 ppm CO₂e, a significant reduction from the current level of 385 ppm CO₂e.

Bay Area AQMD Proposed Air Quality CEQA Thresholds of Significance
November 2, 2009

For the reasons stated above, and to further the goals of other District programs such as encouraging transit-oriented and infill development, BAAQMD has undertaken an effort to review all of its currently-recommended CEQA thresholds, revise them as appropriate, and develop new thresholds where appropriate. The overall goal of this effort is to develop CEQA significance criteria that ensure new development implements appropriate and feasible emission reduction measures to mitigate significant air quality impacts. The Air District's recommended CEQA significance thresholds have been vetted through a public review process and will be presented to the BAAQMD Board of Directors for adoption.

Table 1 – Proposed Air Quality CEQA Thresholds of Significance			
Pollutant	Construction-Related	Operational-Related	
Project-Level			
Criteria Air Pollutants and Precursors (Regional)	Average Daily Emissions (lb/day)	Average Daily Emissions (lb/day)	Maximum Annual Emissions (tpy)
ROG	54	54	10
NO _x	54	54	10
PM ₁₀ (exhaust)	82	82	15
PM _{2.5} (exhaust)	54	54	10
PM ₁₀ /PM _{2.5} (fugitive dust)	Best Management Practices	None	
Local CO	None	9.0 ppm (8-hour average), 20.0 ppm (1-hour average)	
GHGs – Projects other than Stationary Sources	None	Compliance with Qualified Climate Action Plan OR 1,100 MT of CO ₂ e/yr OR 4.6 MT CO ₂ e/SP/yr (residents + employees)	
GHGs –Stationary Sources	None	10,000 MT/yr	
Risks and Hazards (Siting a New Source or Receptor)	Same as Operational Thresholds	Compliance with Qualified Risk Reduction Plan OR Increased cancer risk of >10.0 in a million Increased non-cancer risk of > 1.0 Hazard Index (Chronic or Acute) Ambient PM _{2.5} increase: > 0.3 µg/m ³ annual average <u>Zone of Influence:</u> 1,000-foot radius from fence line of source or receptor	

Bay Area AQMD Proposed Air Quality CEQA Thresholds of Significance
November 2, 2009

Table 1 – Proposed Air Quality CEQA Thresholds of Significance		
Pollutant	Construction-Related	Operational-Related
Risks and Hazards (Cumulative – Source or Receptor)	Same as Operational Thresholds	<p>Compliance with Qualified Risk Reduction Plan OR Cancer: > 100 in a million (from all local sources) Non-cancer: > 1.0 Hazard Index (from all local sources) (Chronic or Acute) <u>PM_{2.5}</u>: > 0.8 µg/m³ annual average (from all local sources)</p> <p><u>Zone of Influence</u>: 1,000-foot radius from fence line of source or receptor</p>
Accidental Release of Acutely Hazardous Air Pollutants	None	Storage or use of acutely hazardous materials locating near receptors or receptors locating near stored or used acutely hazardous materials considered significant
Odors	None	Screening Level Distances and Complaint History
Plan-Level		
Criteria Air Pollutants and Precursors (Regional and Local)	None	<ol style="list-style-type: none"> 1. Consistency with Current Air Quality Plan control measures 2. Projected VMT or vehicle trip increase is less than or equal to projected population increase
GHGs	None	<p>Compliance with Qualified Climate Action Plan (or similar criteria included in a General Plan) OR 6.6 MT CO₂e/ SP/yr (residents + employees)</p>
Risks and Hazards/Odors	None	<ol style="list-style-type: none"> 1. Overlay zones around existing and planned sources of TACs (including adopted Risk Reduction Plan areas) and odors 2. Overlay zones of at least 500 feet (or Air District-approved modeled distance) from all freeways and high volume roadways
Accidental Release of Acutely Hazardous Air Pollutants	None	None
<p>Notes: CEQA = California Environmental Quality Act; CO = carbon monoxide; CO₂e = carbon dioxide equivalent; GHGs = greenhouse gases; lb/day = pounds per day; MT = metric tons; NO_x = oxides of nitrogen; PM_{2.5}= fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM₁₀ = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less; ppm = parts per million; ROG = reactive organic gases; SO₂ = sulfur dioxide; SP = service population; TACs = toxic air contaminants; TBP = toxic best practices; tons/day = tons per day; tpy = tons per year; yr= year; TBD: to be determined.</p>		

2 GREENHOUSE GAS THRESHOLDS

BAAQMD does not currently have an adopted threshold of significance for GHG emissions. BAAQMD currently recommends that lead agencies quantify GHG emissions resulting from new development and apply all feasible mitigation measures to lessen the potentially adverse impacts. One of the primary objectives in updating the current CEQA Guidelines is to identify a GHG significance threshold, analytical methodologies, and mitigation measures to ensure new land use development meets its fair share of the emission reductions needed to address the cumulative environmental impact from GHG emissions. GHG emissions contribute, on a cumulative basis, to the significant adverse environmental impacts of global climate change. As reviewed herein, climate change impacts include an increase in extreme heat days, higher ambient concentrations of air pollutants, sea level rise, impacts to water supply and water quality, public health impacts, impacts to ecosystems, impacts to agriculture, and other environmental impacts. No single land use project could generate enough GHG emissions to noticeably change the global average temperature. The combination of GHG emissions from past, present, and future projects contribute substantially to the phenomenon of global climate change and its associated environmental impacts.

2.2 PROPOSED THRESHOLDS OF SIGNIFICANCE

Project Type	Proposed Thresholds
Land Use Projects	Compliance with Qualified Climate Action Plan OR 1,100 MT of CO ₂ e/yr OR 4.6 MT CO ₂ e/SP/yr* (residents + employees)
Stationary Sources	10,000 MT of CO ₂ e/yr
General Plans	Compliance with Qualified Climate Action Plan (or similar criteria included in a General Plan) OR 6.6 MT CO ₂ e/SP/yr (residents + employees)

* Staff notes that the efficiency-based thresholds should be applied to individual projects with caution. As explained herein, lead agencies may determine that the efficiency-based GHG thresholds for individual land use projects may not be appropriate for very large projects. If there is a fair argument that the project's emissions on a mass level will have a cumulatively considerable impact on the region's GHG emissions, the insignificance presumption afforded to a project that meets an efficiency-based GHG threshold would be overcome.

2.3 JUSTIFICATION AND SUBSTANTIAL EVIDENCE SUPPORTING THRESHOLDS

BAAQMD's approach to developing a threshold of significance for GHG emissions is to identify the emissions level for which a project would not be expected to substantially conflict with existing California legislation adopted to reduce statewide GHG emissions. If a project would generate GHG emissions above the threshold level, it would be

considered to contribute substantially to a cumulative impact, and would be considered significant. If mitigation can be applied to lessen the emissions such that the project meets its share of emission reductions needed to address the cumulative impact, the project would normally be considered less than significant.

As explained in the District's *Revised Draft Options and Justifications Report* (BAAQMD 2009), there are several types of thresholds that may be supported by substantial evidence and be consistent with existing California legislation and policy to reduce statewide GHG emissions. In determining which thresholds to recommend, Staff studied numerous options, relying on reasonable, environmentally conservative assumptions on growth in the land use sector, predicted emissions reductions from statewide regulatory measures and resulting emissions inventories, and the efficacies of GHG mitigation measures. The thresholds recommended herein were chosen based on the substantial evidence that such thresholds represent quantitative and/or qualitative levels of GHG emissions, compliance with which means that the environmental impact of the GHG emissions will normally not be cumulatively considerable under CEQA. Compliance with such thresholds will be part of the solution to the cumulative GHG emissions problem, rather than hinder the state's ability to meet its goals of reduced statewide GHG emissions. Staff notes that it does not believe there is only one threshold for GHG emissions that can be supported by substantial evidence.

GHG CEQA significance thresholds recommended herein are intended to serve as interim levels during the implementation of the AB 32 Scoping Plan and SB 375, which will occur over time. Until AB 32 has been fully implemented in terms of adopted regulations, incentives, and programs and until SB 375 required plans have been fully adopted, or ARB adopts a recommended threshold, the BAAQMD recommends that local agencies in the Bay Area apply the GHG thresholds recommended herein.

If left unchecked, GHG emissions from new land use development in California will result in a cumulatively considerable amount of GHG emissions and a substantial conflict with the State's ability to meet the goals within AB 32. Thus, BAAQMD proposes to adopt interim GHG thresholds for CEQA analysis, which can be used by lead agencies within the Bay Area. This would help lead agencies navigate this dynamic regulatory and technological environment where the field of analysis has remained wide open and inconsistent. BAAQMD's framework for developing a GHG threshold for land development projects that is based on policy and substantial evidence follows.

2.3.1 SCIENTIFIC AND REGULATORY JUSTIFICATION

Climate Science Overview

Prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons, chlorofluorocarbons, and sulfur hexafluoride. Human-caused emissions of these GHGs in excess of natural ambient concentrations are responsible for intensifying the greenhouse effect and have led to a trend of unnatural warming of the earth's climate, known as global climate change or

global warming. It is *extremely unlikely* that global climate change of the past 50 years can be explained without the contribution from human activities (IPCC 2007a).

According to Article 2 of the United Nations Framework Convention on Climate Change (UNFCCC), “Avoiding Dangerous Climate Change” means: “*stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.*” Dangerous climate change defined in the UNFCCC is based on several key indicators including the potential for severe degradation of coral reef systems, disintegration of the West Antarctic Ice Sheet, and shut down of the large-scale, salinity- and thermally-driven circulation of the oceans. (UNFCCC 2009). The global atmospheric concentration of carbon dioxide has increased from a pre-industrial value of about 280 ppm to 379 ppm in 2005 (IPCC 2007a). “Avoiding dangerous climate change” is generally understood to be achieved by stabilizing global average temperatures between 2 and 2.4°C above pre-industrial levels. In order to limit temperature increases to this level, ambient global CO₂ concentrations must stabilize between 350 and 400 ppm (IPCC 2007b).

Executive Order S-3-05

Executive Order S-3-05, which was signed by Governor Schwarzenegger in 2005, proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra’s snowpack, further exacerbate California’s air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the Executive Order established total GHG emission targets. Specifically, emissions are to be reduced to the 2000 level by 2010, the 1990 level by 2020, and to 80 percent below the 1990 level by 2050.

Assembly Bill 32, the California Global Warming Solutions Act of 2006

In September 2006, Governor Arnold Schwarzenegger signed Assembly Bill 32, the California Global Warming Solutions Act of 2006, which set the 2020 greenhouse gas emissions reduction goal into law. AB 32 finds and declares that “Global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California.” AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020, and establishes regulatory, reporting, voluntary, and market mechanisms to achieve quantifiable reductions in GHG emissions to meet the statewide goal.

In December of 2008, ARB adopted its *Climate Change Scoping Plan (Scoping Plan)*, which is the State’s plan to achieve GHG reductions in California, as required by AB 32 (ARB 2008). The Scoping Plan contains strategies California will implement to achieve a reduction of 169 MMT CO₂e emissions, or approximately 28 percent from the state’s projected 2020 emission level of 596 MMT of CO₂e under a business-as-usual scenario (this is a reduction of 42 MMT of CO₂e, or almost 10 percent, from 2002-2004 average emissions), so that the state can return to 1990 emission levels, as required by AB 32.

While the Scoping Plan establishes the policy intent to control numerous GHG sources through regulatory, incentive, and market means, given the early phase of implementation

and the level of control that local CEQA lead agencies have over numerous GHG sources, CEQA is an important and supporting tool in achieving GHG reductions overall in compliance with AB 32. In this spirit, BAAQMD is considering the adoption of thresholds of significance for GHG emissions for stationary source and land use development projects.

Senate Bill 375

Senate Bill (SB) 375, signed in September 2008, aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocation. SB 375 requires Metropolitan Planning Organizations (MPOs) to adopt a Sustainable Communities Strategy (SCS) or Alternative Planning Strategy (APS), which will prescribe land use allocation in that MPO's Regional Transportation Plan (RTP). ARB, in consultation with MPOs, will provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets will be updated every eight years, but can be updated every four years if advancements in emission technologies affect the reduction strategies to achieve the targets. ARB is also charged with reviewing each MPO's SCS or APS for consistency with its assigned targets. If MPOs do not meet the GHG reduction targets, transportation projects would not be eligible for State funding programmed after January 1, 2012. New provisions of CEQA would incentivize qualified projects that are consistent with an approved SCS or APS, categorized as "transit priority projects."

While SB 375 is considered in the development of these thresholds, given that the Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC) development of the SCS for the Bay Area is in its early stages and the ARB GHG reduction target for light duty and passenger vehicles in the Bay Area has not yet been proposed, it is not appropriate from a CEQA perspective to expect SB 375 to completely address the emission reductions needed from this transportation sector in meeting AB 32 goals. In the future, as SB 375 implementation progresses, BAAQMD may need to revisit GHG thresholds.

2.3.2 PROJECT-LEVEL GHG THRESHOLDS

Staff recommends setting GHG significance thresholds based on AB 32 GHG emission reduction goals while taking into consideration emission reduction strategies outlined in ARB's Scoping Plan. Staff proposes two quantitative thresholds for land use projects: a bright line threshold based on a "gap" analysis and an efficiency threshold based on emission levels required to be met in order to achieve AB 32 goals.

Staff also proposes one qualitative threshold for land use projects: if a project complies with a Qualified Climate Action Plan (as defined in Section 2.3.4 below) that addresses the project or a Sustainable Communities Strategy (SCS) or Alternative Planning Strategy (APS) developed pursuant to SB 375 that addresses the project, it would be considered less than significant. As explained in detail in Section 2.3.4 below, compliance with a Qualified Climate Action Plan (or similar adopted policies, ordinances and programs), SCS or APS would provide the evidentiary basis for making CEQA

findings that development consistent with the plan would result in feasible, measureable, and verifiable GHG reductions consistent with broad state goals such that projects approved under qualified Climate Action Plans or equivalent demonstrations would achieve their fair share of GHG emission reductions.

2.3.2.1 LAND USE PROJECTS “GAP-BASED” THRESHOLD

Staff took eight steps in developing this threshold approach, which are summarized here and detailed in the sections that follow. It should be noted that the “gap-based approach” used for threshold development is a conservative approach that focuses on a limited set of state mandates that appear to have the greatest potential to reduce land use development-related GHG emissions at the time of this writing. It is also important to note that over time as the effectiveness of the State’s implementation of AB 32 (and SB 375) progresses, BAAQMD will need to reconsider the extent of GHG reductions needed over and above those from the implementation thereof for the discretionary approval of land use development projects. Although there is an inherent amount of uncertainty in the estimated capture rates (i.e., frequency at which project-generated emissions would exceed a threshold and would be subject to mitigation under CEQA) and the aggregate emission reductions used in the gap analysis, they are based on BAAQMD’s expertise, the best available data, and use conservative assumptions for the amount of emission reductions from legislation in derivation of the gap (e.g., only adopted legislation was relied upon). This approach is intended to attribute an appropriate share of GHG emission reductions necessary to reach AB 32 goals to new land use development projects in BAAQMD’s jurisdiction that are evaluated pursuant to CEQA.

Step 1 Estimate from ARB’s statewide GHG emissions inventory the growth in emissions between 1990 and 2020 attributable to “land use-driven” sectors of the emission inventory as defined by OPR’s guidance document (*CEQA and Climate Change*). Land use-driven emission sectors include Transportation (On-Road Passenger Vehicles; On-Road Heavy Duty), Electric Power (Electricity; Cogeneration), Commercial and Residential (Residential Fuel Use; Commercial Fuel Use) and Recycling and Waste (Domestic Waste Water Treatment).

Result: 1990 GHG emissions were 295.53 MMT CO₂e/yr and projected 2020 business-as-usual GHG emissions would be 400.22 MMT CO₂e/yr; thus a 26.2 percent reduction from statewide land use-driven GHG emissions would be necessary to meet the AB 32 goal of returning to 1990 emission levels by 2020. (See Table 2)

Step 2 Estimate the anticipated GHG emission reductions affecting the same land use-driven emissions inventory sectors associated with adopted statewide regulations identified in the AB 32 Scoping Plan.

Result: Estimated a 23.9 percent reduction can be expected in the land use-driven GHG emissions inventory from adopted Scoping Plan regulations, including AB 1493 (Pavley), LCFS, Heavy/Medium Duty Efficiency, Passenger Vehicle Efficiency, Energy-Efficiency

Measures, Renewable Portfolio Standard, and Solar Roofs. (See Table 3)

Step 3 Determine any short fall or “gap” between the 2020 statewide emission inventory estimates and the anticipated emission reductions from adopted Scoping Plan regulations. This “gap” represents additional GHG emission reductions needed statewide from the land use-driven emissions inventory sectors, which represents new land use development’s share of the emission reductions needed to meet statewide GHG emission reduction goals.

Result: With the 23.9 percent reductions from AB 32 Scoping Measures, there is a “gap” of 2.3 percent in necessary additional GHG emissions reductions to meet AB 32 goals of a 26.2 percent reduction from statewide land use-driven GHG emissions to return to 1990 levels in 2020. (See Table 2)

Step 4 Determine the percent reduction this “gap” represents in the “land use-driven” emissions inventory sectors from BAAQMD’s 2020 GHG emissions inventory. Identify the mass of emission reductions needed in the SFBAAB from land use-driven emissions inventory sectors.

Result: Estimated that a 2.3 percent reduction in BAAQMD’s projected 2020 emissions projections requires emissions reductions of 1.6 MMT CO₂e/yr from the land use-driven sectors. (See Table 4)

Step 5 Assess BAAQMD’s historical CEQA database (2001-2008) to determine the frequency distribution trend of project sizes and types that have been subject to CEQA over the past several years.

Result: Determined historical patterns of residential, commercial and industrial development by ranges of average sizes of each development type. Results were used in Step 6 below to distribute anticipated Bay Area growth among different future project types and sizes.

Step 6 Forecast new land use development for the Bay Area using DOF/EDD population and employment projections and distribute the anticipated growth into appropriate land use types and sizes needed to accommodate the anticipated growth (based on the trend analysis in Step 5 above). Translate the land use development projections into land use categories consistent with those contained in the Urban Emissions Model (URBEMIS).

Result: Based on population and employment projections and the trend analysis from Step 5 above, forecasted approximately 4,000 new development projects, averaging about 400 projects per year through 2020 in the Bay Area.

Step 7 Estimate the amount of GHG emissions from each land use development project type and size using URBEMIS and post-model manual calculation methods (for emissions not included in URBEMIS. Determine the amount of GHG emissions that can reasonably and feasibly be reduced through currently available mitigation measures (“mitigation effectiveness”) for future land use development projects subject to CEQA (based on land use development projections and frequency distribution from Step 6 above).

Result: Based on the information available and on sample URBEMIS calculations, found that mitigation effectiveness of between 25 and 30 percent is feasible.

Step 8 Conduct a sensitivity analysis of the numeric GHG mass emissions threshold needed to achieve the desired emissions reduction (i.e., “gap”) determined in Step 4. This mass emission GHG threshold is that which would be needed to achieve the emission reductions necessary by 2020 to meet the Bay Area’s share of the statewide “gap” needed from the land use-driven emissions inventory sectors.

Result: The results of the sensitivity analysis conducted in Step 8 found that reductions between about 125,000 MT/yr (an aggregate of 1.3 MMT in 2020) and over 200,000 MT/yr (an aggregate of over 2.0 MMT in 2020) were achievable and feasible. A mass emissions threshold of 1,100 MT of CO₂e/yr would result in approximately 59 percent of all projects being above the significance threshold (e.g., this is approximately the operational GHG emissions that would be associated with a 60 residential unit subdivision) and must implement feasible mitigation measures to meet CEQA requirements. With estimated 26 percent mitigation effectiveness, the 1,100 MT threshold would achieve 1.6 MMT CO₂e/yr in GHG emissions reductions.

2.3.2.2 DETAILED BASIS AND ANALYSIS

Derivation of Greenhouse Gas Reduction Goal

To meet the target emissions limit established in AB 32 (equivalent to levels in 1990), total GHG emissions would need to be reduced by approximately 28 percent from projected 2020 forecasts (ARB 2009a). The AB 32 Scoping Plan is ARB’s plan for meeting this mandate (ARB 2008). While the Scoping Plan does not specifically identify GHG emission reductions from the CEQA process for meeting AB 32 derived emission limits, the scoping plan acknowledges that “other strategies to mitigate climate change . . . should also be explored.” The Scoping Plan also acknowledges that “Some of the measures in the plan may deliver more emission reductions than we expect; others less . . . and new ideas and strategies will emerge.” In addition, climate change is considered a significant environmental issue and, therefore, warrants consideration under CEQA. SB 97 represents the State Legislature’s confirmation of this fact, and it directed the Governor’s Office of Planning and Research (OPR) to develop CEQA Guidelines for

evaluation of GHG emissions impacts and recommend mitigation strategies. In response, OPR released the *Technical Advisory: CEQA and Climate Change* (OPR 2008), and has released proposed CEQA guidelines (April 14, 2009) for consideration of GHG emissions. It is known that new land use development must also do its fair share toward achieving AB 32 goals (or, at a minimum, should not hinder the State's progress toward the mandated emission reductions).

Foreseeable Scoping Plan Measures Emission Reductions and Remaining "Gap"

Step 1 of the Gap Analysis entailed estimating from ARB's statewide GHG inventory the growth in emissions between 1990 and 2020 attributable to land use driven sectors of the emissions inventory. As stated above, to meet the requirements set forth in AB 32 (i.e., achieve California's 1990-equivalent GHG emissions levels by 2020) California would need to achieve an approximate 28 percent reduction in emissions across all sectors of the GHG emissions inventory compared with 2020 projections. However, to meet the AB 32 reduction goals in the emissions sectors that are related to land use development (e.g., on-road passenger and heavy-duty motor vehicles, commercial and residential area sources [i.e., natural gas], electricity generation/consumption, wastewater treatment, and water distribution/consumption), staff determined that California would need to achieve an approximate 26 percent reduction in GHG emissions from these land use-driven sectors (ARB 2009a) by 2020 to return to 1990 land use emission levels.

Next, in Step 2 of the Gap Analysis, Staff determined the GHG emission reductions within the land use-driven sectors that are anticipated to occur from implementation of the Scoping Plan measures statewide, which are summarized in Table 2 and described below. Since the GHG emission reductions anticipated with the Scoping Plan were not accounted for in ARB's or BAAQMD's 2020 GHG emissions inventory forecasts (i.e., business as usual), an adjustment was made to include (i.e., give credit for) GHG emission reductions associated with key Scoping Plans measures, such as the Renewable Portfolio Standard, improvements in energy efficiency through periodic updates to Title 24, AB 1493 (Pavley) (which recently received a federal waiver to allow it to be enacted in law), the Low Carbon Fuel Standard (LCFS), and other measures. With reductions from these State regulations (Scoping Plan measures) taken into consideration and accounting for an estimated 23.9% reduction in GHG emissions, in Step 3 of the Gap Analysis Staff determined that the Bay Area would still need to achieve an additional 2.3 percent reduction from projected 2020 GHG emissions to meet the 1990 GHG emissions goal from the land-use driven sectors. This necessary 2.3 percent reduction in projected GHG emissions from the land use sector is the "gap" the Bay Area needs to fill to do its share to meet the AB 32 goals. Refer to the following explanation and Tables 2 through 4 for data used in this analysis.

Because the transportation sector is the largest emissions sector of the state's GHG emissions inventory, it is aggressively targeted in early actions and other priority actions in the Scoping Plan including measures concerning gas mileage (Pavley), fuel carbon intensity (LCFS) and vehicle efficiency measures.

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Table 2 – California 1990, 2002-2004, and 2020 Land Use Sector GHG¹ (MMT CO ₂ e/yr)				
Sector	1990 Emissions	2002-2004 Average	2020 BAU Emissions Projections	% of 2020 Total
Transportation	137.98	168.66	209.06	52%
On-Road Passenger Vehicles	108.95	133.95	160.78	40%
On-Road Heavy Duty	29.03	34.69	48.28	12%
Electric Power	110.63	110.04	140.24	35%
Electricity	95.39	88.97	107.40	27%
Cogeneration ²	15.24	21.07	32.84	8%
Commercial and Residential	44.09	40.96	46.79	12%
Residential Fuel Use	29.66	28.52	32.10	8%
Commercial Fuel Use	14.43	12.45	14.63	4%
Recycling and Waste¹	2.83	3.39	4.19	1%
Domestic Wastewater Treatment	2.83	3.39	4.19	1%
TOTAL GROSS EMISSIONS	295.53	323.05	400.22	
% Reduction Goal from Statewide land use driven sectors (from 2020 levels to reach 1990 levels in these emission inventory sectors)			26.2%	
% Reduction from AB32 Scoping Plan measures applied to land use sectors (see Table 3)			-23.9%	
% Reduction needed statewide beyond Scoping Plan measures (Gap)			2.3%	
Notes: MMT CO ₂ e /yr = million metric tons of carbon dioxide equivalent emissions per year.				
¹ Landfills not included. See text.				
² Cogeneration included due to many different applications for electricity, in some cases provides substantial power for grid use, and because electricity use served by cogeneration is often amenable to efficiency requirements of local land use authorities.				
Sources: Data compiled by EDAW and ICF Jones & Stokes from ARB data.				

Pavley Regulations. The AB 32 Scoping Plan assigns an approximate 20 percent reduction in emissions from passenger vehicles associated with the implementation of AB 1493. The AB 32 Scoping Plan also notes that “AB 32 specifically states that if the Pavley regulations do not remain in effect, ARB shall implement alternative regulations to control mobile sources to achieve equivalent or greater reductions of greenhouse gas emissions (HSC §38590).” Thus, it is reasonable to assume full implementation of AB 1493 standards, or equivalent programs that would be implemented by ARB. While the Obama administration has proposed national CAFE standards that may be equivalent to or even surpass AB 1493, the timing for implementation of the proposed federal standards is uncertain such that development of thresholds based on currently unadopted federal standards would be premature. BAAQMD may need to revisit this methodology as the federal standards come on line, particularly if such standards are more aggressive than that forecast under state law.

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Table 3 – 2020 Land Use Sector GHG Emission Reductions from State Regulations and AB 32 Measures				
Affected Emissions Source	California Legislation	% Reduction from 2020 GHG inventory	End Use Sector (% of Bay Area LU Inventory)	Scaled % Emissions Reduction (credit)
Mobile	AB 1493 (Pavley)	19.7%	On road passenger/light truck transportation (45%)	8.9%
	LCFS	7.2%	On road passenger/light truck transportation (45%)	3.2%
	LCFS	7.2%	On road Heavy/Medium Duty Transportation (5%)	0.4%
	Heavy/Medium Duty Efficiency	2.9%	On road Heavy/Medium Duty Transportation (5%)	0.2%
	Passenger Vehicle Efficiency	2.8%	On road passenger/light truck transportation (45%)	1.3%
Area	Energy-Efficiency Measures	9.5%	Natural gas (Residential, 10%)	1.0%
			Natural gas (Non-residential, 13%)	1.2%
Indirect	Renewable Portfolio Standard	21.0%	Electricity (excluding cogen) (17%)	3.5%
	Energy-Efficiency Measures	15.7%	Electricity (26%)	4.0%
	Solar Roofs	1.5%	Electricity (excluding cogen) (17%)	0.2%
Total credits given to land use-driven emission inventory sectors from Scoping Plan measures				23.9%
Notes: AB = Assembly Bill; LCFS = Low Carbon Fuel Standard; SB = Senate Bill; RPS = Renewable Portfolio Standard Please refer to Appendix D for detailed calculations. Sources: Data compiled by ICF Jones & Stokes.				

LCFS. According to the adopted LCFS rule (CARB, April 2009), the LCFS is expected to result in approximately 10 percent reduction in the carbon intensity of transportation fuels. However, a portion of the emission reductions required from the LCFS would be achieved over the life cycle of transportation fuel production rather than from mobile-source emission factors. Based on CARB’s estimate of nearly 16 MMT reductions in on-road emissions from implementation of the LCFS and comparison to the statewide on-road emissions sector, the LCFS is assumed to result in a 7.2 percent reduction compared to 2020 BAU conditions (CARB 2009e).

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Table 4 – SFBAAB 1990, 2007, and 2020 Land Use Sector GHG Emissions Inventories and Projections (MMT CO₂e/yr)				
Sector	1990 Emissions	2007 Emissions	2020 Emissions Projections	% of 2020 Total ²
Transportation	26.1	30.8	35.7	50%
On-Road Passenger Vehicles	23.0	27.5	32.0	
On-Road Heavy Duty	3.1	3.3	3.7	
Electric Power	25.1	15.2	18.2	26%
Electricity	16.5	9.9	11.8	
Cogeneration	8.6	5.3	6.4	
Commercial and Residential	8.9	15.0	16.8	24%
Residential Fuel Use	5.8	7.0	7.5	
Commercial Fuel Use	3.1	8.0	9.3	
Recycling and Waste¹	0.2	0.4	0.4	1%
Domestic Waste Water Treatment	0.2	0.4	0.4	
TOTAL GROSS EMISSIONS	60.3	61.4	71.1	
SFBAAB's "Fair Share" % Reduction (from 2020 levels to reach 1990 levels) with AB-32 Reductions (from Table 3)			2.3%	
SFBAAB's Equivalent Mass Emissions Land Use Reduction Target at 2020 (MMT CO ₂ e/yr)			1.6	
Notes: MMT CO ₂ e /yr = million metric tons of carbon dioxide equivalent emissions per year; SFBAAB = San Francisco Bay Area Air Basin.				
¹ Landfills not included.				
² Percentages do not sum exactly to 100% in table due to rounding.				
Please refer to Appendix D for detailed calculations.				
Sources: Data compiled by EDAW 2009, ICF Jones & Stokes 2009, BAAQMD 2008.				

Renewable Portfolio Standard, Energy Efficiency and Solar Roofs. Energy efficiency and renewable energy measures from the Scoping Plan were also included in the gap analysis. The Renewable Portfolio Standard (rules) will require the renewable energy portion of the retail electricity portfolio to be 33 percent in 2020. For PG&E, the dominant electricity provider in the Basin, approximately 12 percent of their current portfolio qualifies under the RPS rules and thus the gain by 2020 would be approximately 21 percent. The Scoping Plan also estimates that energy efficiency gains with periodic improvement in building and appliance energy standards and incentives will reach 10 to 15 percent for natural gas and electricity respectively. The final state measure included in this gap analysis is the solar roof initiative, which is estimated to result in reduction of the overall electricity inventory of 1.5 percent.

Landfill emissions are excluded from this analysis. While land use development does generate waste related to both construction and operations, CIWMB has mandatory diversion requirements that will, in all probability, increase over time to promote waste reductions, reuse, and recycle. The Bay Area has relatively high levels of waste diversion and extensive recycling efforts. Further, ARB has established and proposes to increase methane capture requirements for all major landfills. Thus, at this time, landfill emissions

associated with land use development waste generation is not included in the land use sector inventory used to develop this threshold approach.

Industrial stationary sources thresholds were developed separately from the land use threshold development using a market capture approach as described below. However, mobile source and area source emissions, as well as indirect electricity emissions that derive from industrial use are included in the land use inventory above as these particular activities fall within the influence of local land use authorities in terms of the affect on trip generation and energy efficiency.

AB 32 mandates reduction to 1990-equivalent GHG levels by 2020, with foreseeable emission reductions from State regulations and key Scoping Plan measures taken into account, were applied to the land use-driven emission sectors within the SFBAAB (i.e., those that are included in the quantification of emissions from a land use project pursuant to a CEQA analysis [on-road passenger vehicles, commercial and residential natural gas, commercial and residential electricity consumption, and domestic waste water treatment], as directed by OPR in the Technical Advisory: *Climate Change and CEQA* [OPR 2008]). This translates to a 2.3 percent gap in necessary GHG emission reductions by 2020 from these sectors.

2.3.2.3 LAND USE PROJECTS BRIGHT LINE THRESHOLD

In Steps 4 and 5 of the gap analysis, Staff determined that applying a 2.3 percent reduction to these land use emissions sectors in the SFBAAB's GHG emissions inventory would result in an equivalent fair share of 1.6 million metric tons per year (MMT/yr) reductions in GHG emissions from new land use development. As additional regulations and legislation aimed at reducing GHG emissions from land use-related sectors become available in the future, the 1.6 MMT GHG emissions reduction goal may be revisited and recalculated by BAAQMD.

In order to derive the 1.6 MMT "gap," a projected development inventory for the next ten years in the SFBAAB was calculated. (See Table 4 and *Revised Draft Options and Justifications Report* (BAAQMD 2009).) CO₂e emissions were modeled for projected development in the SFBAAB and compiled to estimate the associated GHG emissions inventory. The GHG (i.e., CO₂e) CEQA threshold level was adjusted for projected land use development that would occur within BAAQMD's jurisdiction over the period from 2010 through 2020.

Projects with emissions greater than the threshold would be required to mitigate to the threshold level or reduce project emissions by a percentage (mitigation effectiveness) deemed feasible by the Lead Agency under CEQA compared to a base year condition. The base year condition is defined by an equivalent size and character of project with annual emissions using the defaults in URBEMIS and the California Climate Action Registry's General Reporting Protocol for 2008. By this method, land use project mitigation subject to CEQA would help close the "gap" remaining after application of the key regulations and measures noted above supporting overall AB 32 goals.

This threshold takes into account Steps 1-8 of the gap analysis described above to arrive at a numerical mass emissions threshold. Various mass emissions significance threshold levels (i.e., bright lines) could be chosen based on the mitigation effectiveness and performance anticipated to be achieved per project to meet the aggregate emission reductions of 1.6 MMT needed in the SFBAAB by 2020. (See Table 5 and *Revised Draft Options and Justifications Report* (BAAQMD 2009).) Staff recommends a 1,100 MT CO₂e per year threshold. Choosing a 1,100 MT mass emissions (equivalent to approximately 60 single-family units), significance threshold level would result in about 59 percent of all projects being above the significance threshold and having to implement feasible mitigation measures to meet their CEQA obligations. These projects account for approximately 92 percent of all GHG emissions anticipated to occur between now and 2020 from new land use development in the SFBAAB.

Project applicants and lead agencies could use readily available computer models to estimate a project's GHG emissions, based on project specific attributes, to determine if they are above or below the bright line numeric threshold. With this threshold, projects that are above the threshold level would have to reduce their emissions to below the threshold to be considered less than significant.

Establishing a "bright line" to determine the significance of a project's GHG emission impact provides a level of certainty to lead agencies in determining if a project needs to reduce its GHG emissions through mitigation measures and when an EIR is required.

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Table 5 – Operational GHG Threshold Sensitivity Analysis								
Option	Mitigation Effectiveness Assumptions		Mass Emission Threshold Level (MT CO₂e/yr)	% of Projects Captured (>threshold)	% of Emissions Captured (> threshold)	Emissions Reduction per year (MT/yr)	Aggregate Emissions Reduction (MMT) at 2020	Threshold Project Size Equivalent (single family dwelling units)
	Performance Standards Applied to All Projects with Emissions < Threshold Level	Mitigation Effectiveness Applied to Emissions > Threshold Level						
1A	N/A	30%	975	60%	93%	201,664	2.0	53
1A	N/A	25%	110	96%	100%	200,108	2.0	66
1A	N/A	30%	1,225	21%	67%	159,276	1.6	67
1A	N/A	26%	1,100	59%	92%	159,877	1.6	60
1A	N/A	30%	2,000	14%	61%	143,418	1.4	109
1A	N/A	25%	1,200	58%	92%	136,907	1.4	66
1A	N/A	30%	3,000	10%	56%	127,427	1.3	164
1A	N/A	25%	1,500	20%	67%	127,303	1.3	82
1B	26%	N/A	N/A	100%	100%	208,594	2.1	N/A ¹
1C	5%	30%	1,900	15%	62%	160,073	1.6	104
1C	10%	25%	1,250	21%	67%	159,555	1.6	68
1C	5%	30%	3,000	10%	56%	145,261	1.5	164
1C	10%	25%	2,000	4%	61%	151,410	1.5	109
1C	10%	30%	10,000	2%	33%	125,271	1.3	547

Notes: MMT = million metric tons per year; MT CO₂e/yr = metric tons of carbon dioxide equivalent emissions per year; MT/yr = metric tons per year; N/A = not applicable.
¹ Any project subject to CEQA would trigger this threshold.
Please refer to Appendix E for detailed calculations.
Source: Data modeled by ICF Jones & Stokes.

2.3.2.4 LAND USE PROJECTS EFFICIENCY-BASED THRESHOLD

GHG efficiency metrics can also be utilized as thresholds to assess the GHG efficiency of a project on a per capita basis (residential only projects) or on a “service population” basis (the sum of the number of jobs and the number of residents provided by a project) such that the project will allow for consistency with the goals of AB 32 (i.e., 1990 GHG emissions levels by 2020). GHG efficiency thresholds can be determined by dividing the GHG emissions inventory goal (allowable emissions), by the estimated 2020 population and employment. This method allows highly efficient projects with higher mass emissions to meet the overall reduction goals of AB 32. Staff believes it is more appropriate to base the land use efficiency threshold on the service population metric for the land use-driven emission inventory. This approach is appropriate because the threshold can be applied evenly to all project types (residential or commercial/retail only and mixed use) and uses only the land use emissions inventory that is comprised of all land use projects. Staff will provide the methodology to calculate a project’s GHG emissions in the revised CEQA Guidelines, such as allowing infill projects up to a 50 percent reduction in daily vehicle trips if the reduction can be supported by close proximity to transit and support services or a traffic study prepared for the project.

Table 6 – California 2020 GHG Emissions, Population Projections and GHG Efficiency Thresholds - Land Use Inventory Sectors	
Land Use Sectors Greenhouse Gas Emissions Target	295,530,000
Population	44,135,923
Employment	20,194,661
California Service Population (Population + Employment)	64,330,584
AB 32 Goal GHG emissions (metric tons CO ₂ e)/SP ¹	4.6
Notes: AB = Assembly Bill; CO ₂ e = carbon dioxide equivalent; GHG = greenhouse gas; SP = service population.	
¹ Greenhouse gas efficiency levels were calculated using only the “land use-related” sectors of ARB’s emissions inventory.	
Please refer to Appendix D for detailed calculations.	
Sources: Data compiled by EDAW 2009, ARB 2009a, DOF 2009, EDD 2009, ICF Jones & Stokes 2009.	

Staff proposes a project-level efficiency threshold of 4.6 MT CO₂e/SP, the derivation of which is shown Table 6. This efficiency-based threshold reflects very GHG-efficient projects. As stated previously and below, staff anticipates that significance thresholds (rebuttable presumptions of significance at the project level) will function on an interim basis only until adequate programmatic approaches are in place at the city, county, and regional level that will allow the CEQA streamlining of individual projects. (See Draft CEQA Guidelines, proposed section 15183.5 ["Tiering and Streamlining the Analysis of Greenhouse Gas Emissions"]). In advance of such programmatic approaches, local agencies may wish to apply this efficiency-based recommended threshold with some discretion, taking into account not only the project's efficiency, but also its total GHG emissions. Even where a project is relatively GHG-efficient as compared to other projects, in approving the project, the lead agency is committing to use what is essentially

its GHG "budget" in a given way. Expending this "budget" on the proposed project may affect other development opportunities and associated obligations to mitigate or conflict with other actions that the community may wish to take to reduce its overall GHG emissions after it has conducted its programmatic analysis.

Accordingly, in applying the efficiency-based threshold of 4.6 MT CO₂e/SP, the lead agency might also wish to consider the project's total emissions. Where a project meets the efficiency threshold but would still have very large GHG emissions, the lead agency may wish to consider whether the project's contributions to climate change might still be cumulatively considerable and whether additional changes to the project or mitigation should be required. Staff notes that even where the project may be significant as it relates to climate change, the lead agency may find that the project should nonetheless be approved in light of its benefits; in that case, the lead agency may wish to note the project's efficiency and any innovative design features in the Statement of Overriding Considerations.

2.3.3 PLAN-LEVEL GHG THRESHOLDS

Staff proposes using a two step process for determining the significance of proposed plans and plan amendments for GHG. As discussed above for project-level GHG impacts, Staff is proposing an efficiency threshold to assess plan-level impacts. In addition, as a first step in assessing plan-level impacts, Staff is proposing that agencies that have adopted a qualified climate action plan (or have incorporated similar criteria in their General Plan) and the General Plan or Transportation Plan are consistent with the climate action plan, the General Plan or Transportation Plan would be considered less than significant. Staff believes a programmatic approach to limiting GHG emissions is appropriate at the plan-level. Thus, as projects consistent with the climate action plan are proposed, they may be able to tier off the plan and its environmental analysis.

2.3.3.1 GHG EFFICIENCY METRICS FOR PLANS

For local land use plans, a GHG-efficiency metric (e.g., GHG emissions per unit) would enable comparison of a proposed general plan to its alternatives and to determine if the proposed general plan meets AB 32 emission reduction goals.

AB 32 identifies local governments as essential partners in achieving California's goal to reduce GHG emissions. Local governments have primary authority to plan, zone, approve, and permit how and where land is developed to accommodate population growth and the changing needs of their jurisdiction. ARB has developed the Local Government Operations Protocol and is developing a protocol to estimate community-wide GHG emissions. ARB encourages local governments to use these protocols to track progress in reducing GHG emissions. ARB encourages local governments to institutionalize the community's strategy for reducing its carbon footprint in its general plan. SB 375 creates a process for regional integration of land development patterns and transportation infrastructure planning with the primary goal of reducing GHG emissions from the largest sector of the GHG emission inventory, light duty vehicles.

If the statewide AB 32 GHG emissions reduction context is established, GHG efficiency can be viewed independently from the jurisdiction in which the plan is located. Expressing projected 2020 mass of emissions from land use-related emissions sectors by comparison to a demographic unit (e.g., population and employment) provides evaluation of the GHG efficiency of a project in terms of what emissions are allowable while meeting AB 32 targets.

Two approaches were considered for efficiency metrics. The “service population” (SP) approach would consider efficiency in terms of the GHG emissions compared to the sum of the number of jobs and the number of residents at a point in time. The per capita option would consider efficiency in terms of GHG emissions per resident only. Staff recommends that the efficiency threshold for plans be based on all emission inventory sectors because, unlike land use projects, community-wide or regional plans comprise more than just land use related emissions (e.g. industrial). Further, Staff recommends that plan threshold be based on the service population metric as community-wide plans or regional plans include a mix of residents and employees. The Service Population metric would allow decision makers to compare GHG efficiency of general plan alternatives that vary residential and non-residential development totals, encouraging GHG efficiency through improving jobs/housing balance. This approach would not give preference to communities that accommodate more residential (population-driven) land uses than non-residential (employment driven) land uses which could occur with the per capita approach.

A SP-based GHG efficiency metric was (see Table 7) for the emissions rates at the State level that would accommodate projected growth (as indicated by population and employment growth) under trend forecast conditions, and the emission rates needed to accommodate growth while allowing for consistency with the goals of AB 32 (i.e., 1990 GHG emissions levels by 2020).

Table 7 – California 2020 GHG Emissions, Population Projections and GHG Efficiency Thresholds - All Inventory Sectors	
All Inventory Sectors Greenhouse Gas Emissions Target	426,500,000
Population	44,135,923
Employment	20,194,661
California Service Population (Population + Employment)	64,330,584
AB 32 Goal GHG emissions (metric tons CO ₂ e)/SP ¹	6.6
Notes: AB = Assembly Bill; CO ₂ e = carbon dioxide equivalent; GHG = greenhouse gas; SP = service population.	
¹ Greenhouse gas efficiency levels were calculated using only the “land use-related” sectors of ARB’s emissions inventory.	
Please refer to Appendix D for detailed calculations.	
Sources: Data compiled by EDAW 2009, ARB 2009a, DOF 2009, EDD 2009, ICF Jones & Stokes 2009.	

If a general plan demonstrates, through dividing the emissions inventory projections (MT CO₂e) by the amount of growth that would be accommodated in 2020, that it could meet the GHG efficiency metrics proposed in this section (6.6 MT CO₂e/SP from all emission

sectors, as noted in Table 7), then the amount of GHG emissions associated with the general plan would be considered less than significant, regardless of its size (and magnitude of GHG emissions). In other words, the general plan would accommodate growth in a manner that would not hinder the State's ability to achieve AB 32 goals, and thus, would be less than significant for GHG emissions and their contribution to climate change. The efficiency metric would not penalize well-planned communities that propose a large amount of development. Instead, the SP-based GHG efficiency metric acts to encourage the types of development that BAAQMD and OPR support (i.e., infill and transit-oriented development) because it tends to reduce GHG and other air pollutant emissions overall, rather than discourage large developments for being accompanied by a large mass of GHG emissions. Plans that are more GHG efficient would have no or limited mitigation requirements which would help them complete the CEQA process for General Plans and other plans more readily than plans that promote GHG inefficiencies which will require detailed design of mitigation during the CEQA process and could subject a plan to potential challenge as to whether all feasible mitigation was identified and adopted. This type of threshold can shed light on a well-planned general plan that accommodates a large amount of growth in a GHG-efficient way.

When analyzing long-range plans, such as general plans, it is important to note that the planning horizon will often surpass the 2020 timeframe for implementation of AB 32. Executive Order S-3-05 establishes a more aggressive emissions reduction goal for the year 2050 of 80 percent below 1990 emissions levels. The year 2020 should be viewed as a milestone year, and the general plan should not preclude the community from a trajectory toward the 2050 goal. However, the 2020 timeframe is examined in this threshold evaluation because doing so for the 2050 timeframe (with respect to population, employment, and GHG emissions projections) would be too speculative. Advances in technology and policy decisions at the state level will be needed to meet the aggressive 2050 goals. It is beyond the scope of the analysis tools available at this time to examine reasonable emissions reductions that can be achieved through CEQA analysis in the year 2050. As the 2020 timeframe draws nearer, BAAQMD will need to reevaluate the threshold to better represent progress toward 2050 goals.

2.3.4 CLIMATE ACTION PLANS

Finally, many local agencies have already undergone or plan to undergo efforts to create general or other plans that are consistent with AB 32 goals. The District encourages such planning efforts and recognizes that careful upfront planning by local agencies is invaluable to achieving the state's GHG reduction goals. If a project is consistent with an adopted Qualified Climate Action Plan or a Sustainable Communities Strategy (SCS) or Alternative Planning Strategy (APS) developed pursuant to SB 375 that addresses the project's GHG emissions, it can be presumed that the project will not have significant GHG emission impacts. This approach is consistent with CEQA Guidelines Section 15064(h)(3), which provides that a "lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation

program which provides specific requirements that will avoid or substantially lessen the cumulative problem.”

A qualified Climate Action Plan (or similar adopted policies, ordinances and programs) is one that is consistent with all of the AB 32 Scoping Plan measures and goals. The Climate Action Plan should identify a land use design, transportation network, goals, policies and implementation measures that would achieve AB 32 goals. Plans with horizon years beyond 2020 should consider continuing the downward reduction path set by AB 32 and move toward climate stabilization goals established in Executive Order S-3-05.

Qualified Climate Action Plans

A qualified Climate Action Plan adopted by a local jurisdiction should include the following. The District’s revised CEQA Guidelines will provide the methodology to determine if a Climate Action Plan meets these requirements.

- ▶ GHG Inventory for Current Year and Forecast for 2020 (and for 1990 if the reduction goal is based on 1990 emission levels).
- ▶ An adopted GHG Reduction Goal for 2020 for the jurisdiction from all sources (existing and future) which is at least one of the following: 1990 GHG emission levels, 15 percent below 2008 emission levels, or 28 percent below BAU Forecasts for 2020 (if including non-land use sector emissions in the local inventory; otherwise can use 26.2 percent if only including land use sector emissions).
- ▶ Identification of feasible reduction measures to reduce GHG emissions for 2020 to the identified target.
- ▶ Application of relevant reduction measures included in the AB 32 Scoping Plan that are within the jurisdiction of the local land use authority (such as building energy efficiency, etc.).
- ▶ Quantification of the reduction effectiveness of each of the feasible measures identified including disclosure of calculation method and assumptions.
- ▶ Identification of implementation steps and financing mechanisms to achieve the identified goal by 2020.
- ▶ Procedures for monitoring and updating the GHG inventory and reduction measures at least twice before 2020 or at least every five years.
- ▶ Identification of responsible parties for Implementation.
- ▶ Schedule of implementation.
- ▶ Certified CEQA document, or equivalent process (see below).

Local Climate Action Policies, Ordinances and Programs

Air District staff recognizes that many communities in the Bay Area have been proactive in planning for climate change but have not yet developed a stand-alone Climate Action Plan that meets the above criteria. Many cities and counties have adopted climate action policies, ordinances and program that may in fact achieve the goals of a qualified climate action plan. Staff recommends that if a local jurisdiction can demonstrate that its collective set of climate action policies, ordinances and other programs is consistent with AB 32, includes requirements or feasible measures to reduce GHG emissions and achieves one of the following GHG emission reduction goals,³ the AB 32 consistency demonstration should be considered equivalent to a qualified climate action plan:

- ▶ 1990 GHG emission levels,
- ▶ 15 percent below 2008 emission levels, or
- ▶ 28 percent below BAU Forecasts for 2020 (if including non-land use sector emissions in the local inventory; otherwise can use 26.2 percent if only including land use sector emissions).

Sustainable Communities Strategy or Alternative Planning Strategy

A SCS (or APS) adopted pursuant to SB 375 must have the following characteristics:

- ▶ must meet the ARB identified reduction target;
- ▶ must have been adopted by the Metropolitan Planning Organization (MPO); and
- ▶ certification of the EIR for the associated Regional Transportation Plan (RTP) must be completed.

Qualified Climate Action Plans, SCSs or APSs are tied to the AB 32 reduction goals, would promote reductions on a plan level without impeding the implementation of GHG-efficient development, and would recognize the initiative of many Bay Area communities who have already developed or are in the process of developing a GHG reduction plan. The details required above for a qualified Climate Action Plan (or similar adopted policies, ordinances and programs) would provide the evidentiary basis for making CEQA findings that development consistent with the plan would result in feasible, measureable, and verifiable GHG reductions consistent with broad state goals such that projects approved under qualified Climate Action Plans or equivalent demonstrations would achieve their fair share of GHG emission reductions.

³ Lead agencies using consistency with their jurisdiction's climate action policies, ordinances and programs as a measure of significance under CEQA Guidelines section 15064(h)(3) should check to make sure that the policies, ordinances and programs satisfy all of the requirements of that subsection before relying on them in a CEQA analysis.

2.3.5 STATIONARY SOURCE GHG THRESHOLD

Staff's recommended threshold for stationary source GHG emissions is based on estimating the GHG emissions from combustion sources for all permit applications submitted to the Air District in 2005, 2006 and 2007. The analysis is based only on CO₂ emissions from stationary sources, as that would cover the vast majority of the GHG emissions due to stationary combustion sources in the SFBAAB. The estimated CO₂ emissions were calculated for the maximum permitted amount, i.e. emissions that would be emitted if the sources applying for a permit application operate at maximum permitted load and for the total permitted hours. All fuel types are included in the estimates. For boilers burning natural gas, diesel fuel is excluded since it is considered a backup fuel and is used only if natural gas is not available. Emission values are estimated before any offsets (i.e., Emission Reduction Credits) are applied. GHG emissions from mobile sources, electricity use and water delivery associated with the operation of the permitted sources are not included in the estimates.

It is projected that a threshold level of 10,000 metric tons of CO₂e per year would capture approximately 95 percent of all GHG emissions from stationary sources in the SFBAAB. That threshold level was calculated as an average of the combined CO₂ emissions from all stationary source permit applications submitted to the Air District during the three year analysis period.

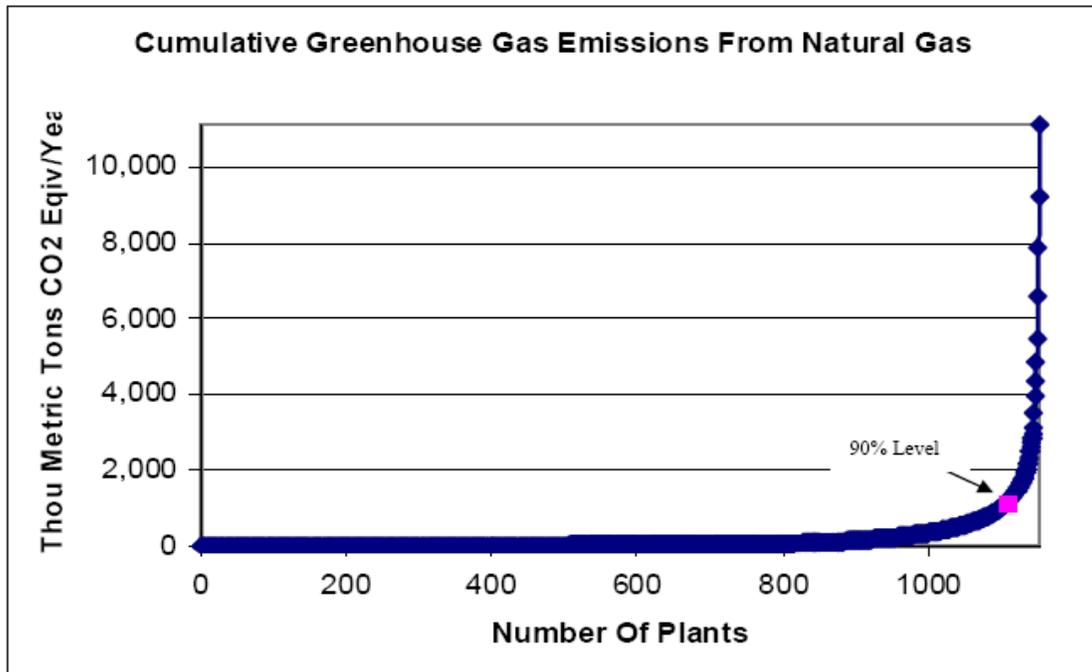


Figure 1 – Natural Gas Combustion Emissions from Stationary Sources in the SFBAAB

Staff recommends this 10,000 MT of CO₂/yr as it would address a broad range of combustion sources and thus provide for a greater amount of GHG reductions to be captured and mitigated through the CEQA process. As documented in the Scoping Plan, in order to achieve statewide reduction targets, emissions reductions need to be obtained through a broad range of sources throughout the California economy and this threshold would achieve this purpose.

This threshold would be considered an interim threshold and Air District staff will reevaluate the threshold as AB 32 Scoping Plan measures such as Cap and Trade are more fully developed at the state level.

2.3.6 SUMMARY OF JUSTIFICATION FOR GHG THRESHOLDS

The bright-line numeric threshold of 1,100 MT CO₂e/yr is a numeric emissions level below which a project's contribution to global climate change would be less than "cumulatively considerable." This emissions rate is equivalent to a project size of approximately 60 single-family dwelling units, and approximately 59 percent of all future projects and 92 percent of all emissions from future projects would exceed this level. For projects that are above this bright-line cutoff level, emissions from these projects would still be less than cumulatively significant if the project as a whole would result in an efficiency of 4.6 MT CO₂e per service population or better for mixed-use projects. Projects with emissions above 1,100 MT CO₂e/yr would therefore still be less than significant if they achieved project efficiencies below these levels. If projects as proposed exceed these levels, they would be required to implement mitigation measures to bring them back below the 1,100 MT CO₂e/yr bright-line cutoff or within the 4.6 MT CO₂e Service Population efficiency threshold. If mitigation did not bring a project back within the threshold requirements, the project would be cumulatively significant and could be approved only with a Statement of Overriding Considerations and a showing that all feasible mitigation measures have been implemented. A projects' GHG emissions would also be less than significant if they comply with a Qualified Climate Action Plan, SCS or APS that applies to the project.

As explained in the preceding analyses of these thresholds, the greenhouse gas emissions from land use projects expected between now and 2020 built in compliance with these thresholds would be approximately 26 percent below BAU 2020 conditions and thus would be consistent with achieving an AB 32 equivalent reduction. The 26 percent reduction from BAU 2020 from new projects built in conformance with these proposed thresholds would achieve an aggregate reduction of approximately 1.6 MMT CO₂e/yr, which is the level of emission reductions from new Bay Area land use sources needed to meet the AB 32 goals, per ARB's Scoping Plan as discussed above.

Projects with greenhouse gas emissions in conformance with these proposed thresholds would therefore not be considered significant for purposes of CEQA. Although the emissions from such projects would add an incremental amount to the overall greenhouse gas emissions that cause global climate change impacts, emissions from projects consistent with these thresholds would not be a "cumulatively considerable" contribution

under CEQA. Such projects would not be “cumulatively considerable” because they would be helping to solve the cumulative problem as a part of the AB 32 process.

California’s response to the problem of global climate change is to reduce greenhouse gas emissions to 1990 levels by 2020 under AB 32 as a near-term measure and ultimately to 80 percent below 1990 levels by 2050 as the long-term solution to stabilizing greenhouse gas concentrations in the atmosphere at a level that will not cause unacceptable climate change impacts. To implement this solution, the Air Resources Board has adopted a Scoping Plan and budgeted emissions reductions that will be needed from all sectors of society in order to reach the interim 2020 target.

The land-use sector in the Bay Area needs to achieve aggregate emission reductions of approximately 1.6 MMT CO₂e/yr from new projects between now and 2020 to achieve this goal, as noted above, and each individual new project will need to achieve its own respective portion of this amount in order for the Bay Area land use sector as a whole to achieve its allocated emissions target. Building all of the new projects expected in the Bay Area between now and 2020 in accordance with the thresholds that District staff are proposing will achieve the overall appropriate share for the land use sector, and building each individual project in accordance with the proposed thresholds will achieve that individual project’s respective portion of the emission reductions needed to implement the AB 32 solution. For these reasons, projects built in conformance with the proposed thresholds will be part of the solution to the cumulative problem, and not part of the continuing problem. They will allow the Bay Area’s land use sector to achieve the emission reductions necessary from that sector for California to implement its solution to the cumulative problem of global climate change. As such, even though such projects will add an incremental amount of greenhouse gas emissions, their incremental contribution will be less than “cumulatively considerable” because they are helping to achieve the cumulative solution, not hindering it. Such projects will therefore not be “significant” for purposes of CEQA. (*See* CEQA Guidelines §15064(h)(1).)

The conclusion that land use projects that comply with these proposed thresholds is also supported by CEQA Guidelines Section 15030(a)(3), which provides that a project’s contribution to a cumulative problem can be less than cumulatively considerable “if the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact.” In the case of greenhouse gas emissions associated with land use projects, achieving the amount of emission reductions below BAU that will be required to achieve the AB 32 goals is the project’s “fair share” of the overall emission reductions needed under ARB’s scoping plan to reach the overall statewide AB 32 emissions levels for 2020. If a project is designed to implement greenhouse gas mitigation measures that achieve a level of reductions consistent with what is required from all new land use projects to achieve the land use sector “budget” – *i.e.*, keeping overall project emissions below 1,100 MT CO₂e/yr or ensuring that project efficiency is better than 4.6 MT CO₂e/service population – then it will be implementing its share of the mitigation measures necessary to alleviate the cumulative impact, as shown in the analyses set forth above.

It is also worth noting that this “fair share” approach is flexible and will allow a project’s significance to be determined by how well it is designed from a greenhouse-gas efficiency standpoint, and not just by the project’s size. For example, a large high-density infill project located in an urban core nearby to public transit and other alternative transportation options, and built using state-of-the-art energy efficiency methods and improvements such as solar panels, as well as all other feasible mitigation measures, would not become significant for greenhouse gas purposes (and thus require a Statement of Overriding Considerations in order to be approved) simply because it happened to be a large project. Projects such as this hypothetical development with low greenhouse-gas emissions per service population are what California will need in the future in order to do its part in achieving a solution to the problem of global climate change. The determination of significance under CEQA should therefore take these factors into account, and staff’s proposed significance thresholds would achieve this important policy goal.

3 COMMUNITY RISK AND HAZARD THRESHOLDS

To address community risk from air toxics, the Air District initiated the Community Air Risk Evaluation (CARE) program in 2004 to identify locations with high levels of risk from ambient toxic air contaminants (TAC) co-located with sensitive populations and use the information to help focus mitigation measures. In the first phase of the CARE program, the Air District developed an inventory of TAC emissions for 2005 and compiled demographic and health indicator data. According to the findings of the Air District’s Community Air Risk Evaluation (CARE) Program, diesel PM—mostly from on and off-road mobile sources—accounts for over 80 percent of the inhalation cancer risk from TACs in the Bay Area.

The Air District applied a regional air quality model using the 2005 emission inventory data to estimate excess cancer risk from ambient concentrations of important TAC species, including diesel PM, 1,3-butadiene, benzene, formaldehyde and acetaldehyde. Priority communities within the Bay Area defined as having higher emitting sources, highest air concentrations, and nearby low income and sensitive populations include the urban core areas of Concord, eastern San Francisco, western Alameda County, Redwood City/East Palo Alto, Richmond/San Pablo, and San Jose (BAAQMD 2006). The highest cancer risk levels from ambient TAC in the Bay Area also tend to occur in the core urban areas, along major roadways and adjacent to freeways. Cancer risks in areas along these major freeways are estimated to range from 200 to over 500 excess cases in a million.

Fifty percent of BAAQMD’s population is estimated to have an ambient background inhalation cancer risk of less than 500 cases in one million. Table 8 presents a summary of percentages of the population exposed to varying levels of cancer risk from ambient TACs. Approximately two percent of the SFBAAB population is exposed to background risk levels of less than 200 excess cases in one million. This is in contrast to the upper percentile ranges where eight percent of the SFBAAB population is exposed to background risk levels of greater than 1,000 excess cases per one million.

Table 8 – Statistical Summary of Population-Weighted Ambient Cancer Risk	
Percentage of Population (Percent below level of ambient risk)	Ambient Cancer Risk (inhalation cancer cases in one million)
92	1,000
90	900
83	800
77	700
63	600
50	500
32	400
13	300
2	200
0	100

Source: Data compiled by EDAW 2009.

3.2 PROPOSED THRESHOLDS OF SIGNIFICANCE

Project Type	Individual Project Threshold	Cumulative Threshold
Construction Land Use (Source and Receptor) Stationary Source	Compliance with Qualified Community Risk Reduction Plan OR Cancer Risk >10 in a million and Non-Cancer Hazard Index >1.0 and $PM_{2.5}$ level > 0.3 $\mu\text{g}/\text{m}^3$ (annual average) <u>Zone of Influence:</u> 1,000-foot radius from fence line of source or receptor	Compliance with Qualified Community Risk Reduction Plan OR Cancer Risk > 100 in a million and Non-cancer Hazard Index > 1.0 and $PM_{2.5}$ level > 0.8 $\mu\text{g}/\text{m}^3$ (annual average) <u>Zone of Influence:</u> 1,000-foot radius from fence line of source or receptor
Accidental Release of Acutely Hazardous Air Pollutants	Storage or use of acutely hazardous materials locating near receptors or receptors locating near stored or used acutely hazardous materials considered significant	
Plans	<u>Identify (Overlay Zones) and include policies to reduce the impacts for:</u> 1. Existing or planned sources of risks and hazards; 2. Community Risk Reduction Plan areas; and 3. 500 feet (or Air District-approved modeled distance) on each side of all freeways and high volume roadways	

3.3 JUSTIFICATION AND SUBSTANTIAL EVIDENCE SUPPORTING THRESHOLDS

The goal of the proposed thresholds is to ensure that no source creates, or receptor endures, a significant adverse impact from any individual project, and that the total of all nearby directly emitted risk and hazard emissions is also not significantly adverse.

A project proposing a new source or receptor would need to assess their impact within 1,000 feet, taking into account both its individual and nearby cumulative sources (i.e. proposed project plus existing and foreseeable future projects). Cumulative sources are the combined total risk values of each individual source within the 1,000-foot evaluation zone. A lead agency is encouraged to enlarge the 1,000-foot radius on a case-by-case basis if an unusually large source of risk or hazard emissions that may affect a proposed project is beyond the recommended radius.

The 1,000 foot distance was selected based on several factors. A summary of research findings in CARB's Land Use Compatibility Handbook (CARB 2005) indicates that traffic-related pollutants were higher than regional levels within approximately 1,000 feet downwind and that differences in health-related effects (such as asthma, bronchitis, reduced lung function, and increased medical visits) could be attributed in part to the proximity to heavy vehicle and truck traffic within 300 to 1,000 feet of receptors. Although CARB has recommended avoiding siting sensitive land uses within 500 feet of a freeway or high-volume urban roads, this approach uses 1,000 feet based on research that has indicated increased health effects in some cases out to as far as 1,000 feet. In the same study, CARB recommended avoiding siting sensitive land uses within 1,000 feet of a distribution center and major rail yard, which supports the use of a 1,000 feet evaluation distance in case such sources may be relevant to a particular project setting. A second consideration is that studies have shown that the concentrations of particulate matter tends to be reduced substantially or can even be indistinguishable from upwind background concentrations a distance 1,000 feet downwind from sources such as freeways or large distribution centers (Zhu et al. 2002, CARB 2005). Finally, a 1,000 foot zone of influence is also supported by Health & Safety Code §42301.6 (Notice for Possible Source Near School).

3.3.1 CONSTRUCTION, LAND USE AND STATIONARY SOURCE RISK AND HAZARD THRESHOLDS

Staff is proposing thresholds based on EPA's guidance for conducting air toxics analyses and making risk management decisions at the facility and community-scale level. The proposed thresholds would apply to both siting new sources and siting new receptors.

The proposed thresholds would consider projects consistent with a qualified Community Risk Reduction Plan (CRRP) adopted by the local jurisdiction that includes enforceable measures to reduce the community risk to acceptable levels to be less than significant.

Proposed development projects that are not consistent with a CRRP that has been adopted for the area where the project is proposed to be located would be considered to have a significant impact.

Projects proposed in areas where a CRRP has not been adopted and the potential exists to expose sensitive receptors or the general public to emissions-related risk in excess of the following thresholds from any source would be considered to have a significant air quality impact:

- ▶ *Increased Cancer Risk to Maximally Exposed Individual (MEI)* - Emissions from a new source or emissions affecting a new receptor would be considered significant where ground-level concentrations of carcinogenic TACs from any source result in an increased cancer risk greater than 10.0 in one million.
- ▶ *Increased Non-Cancer Risk to MEI* – Emissions from a new source or emissions affecting a new receptor would be considered significant where ground-level concentrations of non-carcinogenic TACs result in an increased chronic or acute Hazard Index from any source greater than 1.0.
- ▶ *Increased Ambient Concentration of PM_{2.5}* – Emissions from a new source or emissions affecting a new receptor would be considered significant where ground-level concentrations of PM_{2.5} from any source would result in an average annual increase greater than 0.3 µg/m³.

The conclusion that land use projects that comply with qualified Community Risk Reduction Plans are less than significant is supported by CEQA Guidelines Sections 15030(a)(3) and 15064(h)(3), which provides that a project's contribution to a cumulative problem can be less than cumulatively considerable if the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact.

The 10.0 in one million cancer risk and 1.0 hazard index threshold is supported by EPA's guidance for conducting air toxics analyses and making risk management decisions at the facility and community-scale level which considers a range of acceptable cancer risks from one in a million to one in ten thousand (100 in a million). The guidance considers an acceptable range of cancer risks to be from one in a million to one in ten thousand. In protecting public health with an ample margin of safety, EPA strives to provide maximum feasible protection against risks to health from hazardous air pollutants (HAPs) by limiting risk to a level no higher than the one in ten thousand estimated risk that a person living near a source would be exposed to at the maximum pollutant concentrations for 70 years. This goal is described in the preamble to the benzene National Emissions Standards for Hazardous Air Pollutants (NESHAP) rulemaking (54 Federal Register 38044, September 14, 1989) and is incorporated by Congress for EPA's residual risk program under Clean Air Act (CAA) section 112(f).

The proposed thresholds would be protective of ambient air quality through the inclusion of a PM_{2.5} threshold. Further, by providing an ambient threshold for PM_{2.5}, this approach

would establish a bright line standard concerning particulate exposure that is consistent with EPA permitting requirements for stationary sources. The proposed threshold is an annual average increase in PM_{2.5} emissions of 0.3 µg/m³. This concentration is the U.S. EPA Significant Impact level (SIL) for PM_{2.5}. The SIL is a threshold applied to individual facilities that apply for a permit to emit a regulated pollutant in an area that meets the NAAQS. The state and EPA must determine if emissions from that facility will cause the air quality to worsen. If an individual facility projects an increase in emissions that result in ambient impacts greater than the established SIL, the permit applicant would be required to perform additional analyses to determine if those impacts will be more than the amount of the PSD increment. This analysis would combine the impact of the proposed facility when added on to all other sources in the area.

3.3.1.1 ACCIDENTAL RELEASE OF ACUTELY HAZARDOUS AIR EMISSIONS

The BAAQMD currently recommends, at a minimum, that the lead agency, in consultation with the administering agency of the Risk Management Prevention Program (RMPP), find that any project resulting in receptors being within the Emergency Response Planning Guidelines (ERPG) exposure level 2 for a facility has a significant air quality impact. ERPG exposure level 2 is defined as "the maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to one hour without experiencing or developing irreversible or other serious health effects or symptoms which could impair an individual's ability to take protective action."

Staff proposes continuing with the current threshold for the accidental release of hazardous air pollutants. Staff recommends that agencies consult with the California Emergency Management Agency for the most recent guidelines and regulations for the storage of hazardous materials. Staff proposes that projects using or storing acutely hazardous materials locating near existing receptors, and projects resulting in receptors locating near facilities using or storing acutely hazardous materials be considered significant.

The current Accidental Release/Hazardous Air Emissions threshold of significance could affect all projects, regardless of size, and require mitigation for Accidental Release/Hazardous Air Emissions impacts.

3.3.2 CUMULATIVE RISK AND HAZARD THRESHOLDS

Projects consistent with a qualified CRRP adopted by the local jurisdiction that includes enforceable measures to reduce the community risk to acceptable levels would be considered less than significant.

Proposed development projects that are not consistent with a CRRP that has been adopted for the area where the project is proposed to be located would be considered to have a significant impact.

Projects proposed in areas where a CRRP has not been adopted and the potential to expose sensitive receptors or the general public to emissions-related risk in excess of the

following thresholds from the aggregate of cumulative sources would be considered to have a significant air quality impact.

- ▶ *Increased Cancer Risk to Maximally Exposed Individual (MEI)* - Emissions from a new source or emissions affecting a new receptor would be considered significant where ground-level concentrations of carcinogenic TACs from any source result in an increased cancer risk greater than 100.0 in one million.
- ▶ *Increased Non-Cancer Risk to MEI* – Emissions from a new source or emissions affecting a new receptor would be considered significant where ground-level concentrations of non-carcinogenic TACs result in an increased chronic or acute Hazard Index from any source greater than 1.0.
- ▶ *Increased Ambient Concentration of PM_{2.5}* – Emissions from a new source or emissions affecting a new receptor would be considered significant where ground-level concentrations of PM_{2.5} from any source would result in an average annual increase greater than 0.8 µg/m³.

The significance threshold of 100 in a million increased excess cancer risk and Hazard Index of 1.0 would be applied to the cumulative emissions. The 100 in a million threshold is based on EPA guidance for conducting air toxics analyses and making risk management decisions at the facility and community-scale level. The guidance considers an acceptable range of cancer risks to be from one in a million to one in ten thousand. In protecting public health with an ample margin of safety, EPA strives to provide maximum feasible protection against risks to health from hazardous air pollutants (HAPs) by limiting risk to a level no higher than the one in ten thousand (100 in a million) estimated risk that a person living near a source would be exposed to at the maximum pollutant concentrations for 70 years. This goal is described in the preamble to the benzene National Emissions Standards for Hazardous Air Pollutants (NESHAP) rulemaking (54 Federal Register 38044, September 14, 1989) and is incorporated by Congress for EPA's residual risk program under Clean Air Act (CAA) section 112(f). The 100 in a million excess cancer cases is also consistent with the ambient cancer risk in the most pristine portions of the Bay Area based on the District's recent regional modeling analysis.

The 0.8 µg/m³ threshold is supported by EPA's proposed cumulative PSD threshold for all PM_{2.5} sources and studies that examined the potential health impacts of roadway particles. This threshold level is appropriate for promoting review of emissions sources to prevent deterioration of air quality. Using existing and EPA-proposed environmental standards in this way to establish CEQA thresholds of significance is an appropriate and effective means of promoting consistency in significance determinations and integrating CEQA environmental review activities with other areas of environmental regulation.

The PM_{2.5} concentration level of 0.8 µg/m³ is based on a proposed rule being evaluated by U.S. EPA in developing significant impacts levels (SILs) for prevention of significant deterioration for particulate matter less than 2.5 micrometers (Federal Register 40 CFR Parts 51 and 52, September 21, 2007). EPA is proposing a PSD threshold of 0.8 µg/m³ as

the cumulative threshold for all PM_{2.5} sources. The 0.8 µg/m³ standard was developed by scaling the PM₁₀ SIL values by the ratio of direct PM_{2.5} to direct PM₁₀ emissions. The PM_{2.5}/PM₁₀ emissions ratio is based on the national average derived from the 2001 extrapolation of the EPA's 1999 National Emissions Inventory. The District believes that the 0.80 µg/m³, which is based on direct PM emissions, is more representative of the mixture of PM sources in the Bay Area. In a recent PM study, the Air District found that direct emissions from wood burning and fossil fuel combustion contribute over one-half of annual PM_{2.5} emissions. This threshold is also consistent with the estimated California background level and the estimated background level of the more remote areas of the Bay Area. The rationale for selecting 1,000 feet was explained in the discussion of Option 2 for siting new receptors above.

This threshold is also supported from several medical research studies that have linked near-road pollution exposure to a variety of adverse health outcomes impacting children and adults. One notable study conducted by Dr. Michael Kleinman and colleagues at the EPA-funded Southern California Particle Center studied the potential of roadway particles to aggravate allergic and immune responses in mice. Using mice that were not inherently susceptible, the researchers placed these mice at various distances downwind of State Road 60 and Interstate 5 freeways to test the effect these roadway particles have on their immune system. They found that within 5 meters of the roadway, there was a significant allergic response and elevated production of specific antibodies. At 150 meters (492 feet) and 500 meters (1,640 feet) downwind of the roadway, these effects were not statistically significant.

In another significant study, the University of Washington (Ven Hee et al, 2009) conducted a survey involving 3,827 participants that aimed to determine the effect of residential traffic exposure on two preclinical indicators of heart failure; left ventricular mass index (LVMI), measured by the cardiac magnetic resonance imaging (MRI), and ejection fraction. The studies classified participants based on the distance between their residence and the nearest interstate highway, state or local highway, or major arterial road. Four distance groups were defined: less than 50 meters (165 feet), 50-100 meters, 101-150 meters, and greater than 150 meters. After adjusting for demographics, behavioral, and clinical covariates, the study found that living within 50 meters of a major roadway was associated with a 1.4 g/m² higher LVMI than living more than 150 meters from one. This suggests an association between traffic-related air pollution and increased prevalence of a preclinical predictor of heart failure among people living near roadways.

To quantify the roadway concentrations that are contributing to the health impacts, the Air District modeled the scenario studied by Dr. Kleinman. In Dr. Kleinman's study emissions were estimated for Los Angeles using the EMFAC model. Annual average vehicle traffic data taken from Caltrans was used in the roadway model (CAL3QHCR) to estimate the downwind PM_{2.5} concentrations at 50 meters and 150 meters. Additionally, emissions were assumed to occur from 10:00 a.m. to 2:00 p.m. corresponding to the time in which the mice were exposed during the study. The results of the modeling indicate

that at 150 meters, the downwind concentration is $0.78 \mu\text{g}/\text{m}^3$, which is consistent with the EPA-recommended SIL of $0.8 \mu\text{g}/\text{m}^3$.

3.3.3 PLAN-LEVEL RISK AND HAZARD THRESHOLDS

Staff proposes plan-level thresholds that will encourage a programmatic approach to addressing the overall adverse conditions resulting from risks and hazards that many Bay Area communities experience. By designating overlay zones in land use plans, local land use jurisdictions can take preemptive action before project-level review to reduce the potential for significant exposures to risk and hazard emissions. While this will require more up-front work at the general plan level, in the long-run this approach is a more feasible approach consistent with District and CARB guidance about siting sources and sensitive receptors that is more effective than project by project consideration of effects that often has more limited mitigation opportunities. This approach would also promote more robust cumulative consideration of effects of both existing and future development for the plan-level CEQA analysis as well as subsequent project-level analysis.

For local plans to have a less-than-significant impact with respect to potential risks and hazards, overlay zones would have to be established around existing and proposed land uses that would emit these air pollutants. Overlay zones to avoid risk impacts should be reflected in local plan policies, land use map(s), and implementing ordinances (e.g., zoning ordinance). The overlay zones around existing and future risk sources would be delineated using the quantitative approaches described above for project-level review and the resultant risk buffers would be included in the General Plan (or the EIR for the General Plan) to assist in site planning. BAAQMD will provide guidance as to the methods used to establish the TAC buffers and what standards to be applied for acceptable exposure level in the updated CEQA Guidelines document. Special overlay zones of at least 500 feet (or an appropriate distance determined by modeling and approved by the Air District) on each side of all freeways and high volume roadways would be included in this proposed threshold.

The threshold of significance for plan impacts could affect all plan adoptions and amendments and require mitigation for a plan's air quality impacts. Where sensitive receptors would be exposed above the acceptable exposure level, the plan impacts would be considered significant and mitigation would be required to be imposed either at the plan level (through policy) or at the project level (through project level requirements).

3.3.4 COMMUNITY RISK REDUCTION PLANS

The goal of a Community Risk Reduction Plan would be to bring TAC and $\text{PM}_{2.5}$ concentrations for the entire community covered by the Plan down to acceptable levels as identified by the local jurisdiction and approved by the Air District. This approach provides local agencies a proactive alternative to addressing communities with high levels of risk on a project-by-project approach. This approach is supported by CEQA Guidelines Section 15030(a)(3), which provides that a project's contribution to a cumulative problem can be less than cumulatively considerable "if the project is required

to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact.” This approach is also further supported by CEQA Guidelines Section 15064(h)(3), which provides that a project’s contribution to a cumulative effect is not considerable “if the project will comply with the requirements in a previously approved plan or mitigation program which provides specific requirements that will avoid or substantially lessen the cumulative problem.”

Qualified Community Risk Reduction Plans

A qualified Community Risk Reduction Plan adopted by a local jurisdiction should:

- ▶ Evaluate current and future emissions and concentrations of TACs and PM_{2.5}.
- ▶ Establish risk and exposure reduction targets for the community, including for subareas located near sources of air pollution.
- ▶ Identify measures to reduce exposures.
- ▶ Identify implementation measures to reduce exposures.
- ▶ Includes procedures for monitoring and updating the TAC inventory, modeling and reduction measures, in coordination with Air District staff.
- ▶ Include a certified CEQA document.

4 CRITERIA POLLUTANT THRESHOLDS

4.2 PROPOSED THRESHOLDS OF SIGNIFICANCE

Project Construction	
Pollutant	Average Daily (pounds/day)
ROG (reactive organic gases)	54
NO _x (nitrogen oxides)	54
PM ₁₀ (exhaust) (particulate matter-10 microns)	82
PM _{2.5} (exhaust) (particulate matter-2.5 microns)	54
PM ₁₀ /PM _{2.5} (fugitive dust)	Best Management Practices
Local CO (carbon monoxide)	None

Project Operations		
Pollutant	Average Daily (pounds/day)	Maximum Annual (tons/year)
ROG	54	10
NO _x	54	10
PM ₁₀	82	15
PM _{2.5}	54	10
Local CO	9.0 ppm (8-hour average), 20.0 ppm (1-hour average)	

Plans
<ol style="list-style-type: none"> 1. Consistency with Current Air Quality Plan control measures 2. Projected VMT or vehicle trip increase is less than or equal to projected population increase

4.3 JUSTIFICATION AND SUBSTANTIAL EVIDENCE SUPPORTING THRESHOLDS

4.3.1 PROJECT CONSTRUCTION CRITERIA POLLUTANT THRESHOLDS

Staff proposes criteria pollutant construction thresholds that add significance criteria for exhaust emissions to the existing fugitive dust criteria employed by the Air District. While our current Guidelines considered construction exhaust emissions controlled by the overall air quality plan, the implementation of new and more stringent state and federal standards over the past ten years now warrants additional control of this source of emissions.

The average daily criteria air pollutant and precursor emission levels shown above are recommended as the thresholds of significance for construction activity for exhaust emissions. These thresholds represent the levels above which a project's individual

emissions would result in a considerable contribution (i.e., significant) to the SFBAAB's existing non-attainment air quality conditions and thus establish a nexus to regional air quality impacts that satisfies CEQA requirements for evidence-based determinations of significant impacts.

For fugitive dust emissions, staff recommends following the current best management practices approach which has been a pragmatic and effective approach to the control of fugitive dust emissions. Studies have demonstrated (Western Regional Air Partnership, U.S.EPA) that the application of best management practices at construction sites have significantly controlled fugitive dust emissions. Individual measures have been shown to reduce fugitive dust by anywhere from 30 percent to more than 90 percent. In the aggregate best management practices will substantially reduce fugitive dust emissions from construction sites. These studies support staff's recommendation that projects implementing construction best management practices will reduce fugitive dust emissions to a less than significant level.

4.3.2 PROJECT OPERATION CRITERIA POLLUTANT THRESHOLDS

The proposed thresholds for project operations are the average daily and maximum annual criteria air pollutant and precursor levels shown above. These thresholds are based on the federal BAAQMD Offset Requirements to ozone precursors for which the SFBAAB is designated as a non-attainment area which is an appropriate approach to prevent further deterioration of ambient air quality and thus has nexus and proportionality to prevention of a regionally cumulative significant impact (e.g. worsened status of non-attainment). Despite non-attainment area for state PM₁₀ and pending nonattainment for federal PM_{2.5}, the federal NSR Significant Emission Rate annual limits of 15 and 10 tons per year, respectively, are proposed thresholds as BAAQMD has not established an Offset Requirement limit for PM_{2.5} and the existing limit of 100 tons per year is much less stringent and would not be appropriate in light of our pending nonattainment designation for the federal 24-hour PM_{2.5} standard. These thresholds represent the emission levels above which a project's individual emissions would result in a cumulatively considerable contribution to the SFBAAB's existing air quality conditions. The thresholds would be an evaluation of the incremental contribution of a project to a significant cumulative impact. These threshold levels are well-established in terms of existing regulations as promoting review of emissions sources to prevent cumulative deterioration of air quality. Using existing environmental standards in this way to establish CEQA thresholds of significance under Guidelines section 15067.4 is an appropriate and effective means of promoting consistency in significance determinations and integrating CEQA environmental review activities with other areas of environmental regulation. (*See Communities for a Better Environment v. California Resources Agency* (2002) 103 Cal. App. 4th 98, 111.⁴)

⁴ The Court of Appeal in the *Communities for a Better Environment* case held that existing regulatory standards could not be used as a definitive determination of whether a project would be significant under CEQA where there is substantial evidence to the contrary. Staff's proposed thresholds would not do that. The thresholds are levels at which a project's emissions would normally be significant, but would not be binding on a lead agency if there is contrary evidence in the record.

4.3.3 LOCAL CARBON MONOXIDE THRESHOLDS

The proposed carbon monoxide thresholds are based solely on ambient concentration limits set by the California Clean Air Act for Carbon Monoxide and Appendix G of the State of California CEQA Guidelines.

Since the ambient air quality standards are health-based (i.e., protective of public health), there is substantial evidence (i.e., health studies that the standards are based on) in support of their use as CEQA significance thresholds. The use of the ambient standard would relate directly to the CEQA checklist question. By not using a proxy standard, there would be a definitive bright line about what is or is not a significant impact and that line would be set using a health-based level.

The CAAQS of 20.0 ppm and 9 ppm for 1-hour and 8-hour CO, respectively, would be used as the thresholds of significance for localized concentrations of CO. Carbon monoxide is a directly emitted pollutant with primarily localized adverse effects when concentrations exceed the health based standards established by the California Air Resources Board (ARB).

In addition, Appendix G of the State of California CEQA Guidelines includes the checklist question: Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation? Answering yes to this question would indicate that the project would result in a significant impact under CEQA. The use of the ambient standard would relate directly to this checklist question.

4.3.4 PLAN-LEVEL CRITERIA POLLUTANT THRESHOLDS

This proposed threshold achieves the same goals as the Air District's current approach while alleviating the existing analytical difficulties and the inconsistency of comparing a plan update with AQP growth projections that may be up to several years old. Eliminating the analytical inconsistency provides better nexus and proportionality for evaluating air quality impacts for plans.

Over the years staff has received comments on the difficulties inherent in the current approach regarding the consistency tests for population and VMT growth. First, the population growth estimates used in the most recent AQP can be up to several years older than growth estimates used in a recent plan update, creating an inconsistency in this analysis. Staff recommends that this test of consistency be eliminated because the Air District and local jurisdictions all use regional population growth estimates that are disaggregated to local cities and counties. In addition, the impact to air quality is not necessarily growth but where that growth is located. The second test, rate of increase in vehicle use compared to growth rate, will determine if planned growth will impact air quality. Compact infill development inherently has less vehicle travel and more transit opportunities than suburban sprawl.

Second, the consistency test of comparing the rate of increase in VMT to the rate of increase in population has been problematic at times for practitioners because VMT is not always available with the project analysis. Staff recommends that either the rate of increase in VMT or vehicle trips be compared to the rate of increase in population. Staff also recommends that the growth estimates used in this analysis be for the years covered by the plan. Staff also recommends that the growth estimates be obtained from the Association of Bay Area Governments since the Air District uses ABAG growth estimates for air quality planning purposes.

5 ODOR THRESHOLDS

5.2 PROPOSED THRESHOLDS OF SIGNIFICANCE

Project Operations – Source or Receptor	Plans
<ol style="list-style-type: none"> 1. More than one confirmed complaint per year averaged over a three year period; or 2. More than three unconfirmed complaints per year averaged over a three year period 	Identify (Overlay Zones) and include policies to reduce the impacts of existing or planned sources of odors

5.3 JUSTIFICATION AND SUBSTANTIAL EVIDENCE SUPPORTING THRESHOLDS

Staff proposes continuing the current CEQA significance threshold for odors (based on complaint history). The current approach has proven adaptable to different projects and locations and thus continuation of the current approach with more qualitative guidance is considered an appropriate approach to CEQA evaluation.

Odors are generally considered a nuisance, but can result in a public health concern. Some land uses that are needed to provide services to the population of an area can result in offensive odors, such as filling portable propane tanks or recycling center operations. When a proposed project includes the siting of sensitive receptors in proximity to an existing odor source, or when siting a new source of potential odors, the following qualitative evaluation should be performed.

When determining whether potential for odor impacts exists, it is recommended that Lead Agencies consider the following factors and make a determination based on evidence in each qualitative analysis category:

- ▶ **Distance:** Use the screening-level distances in Table 9.

- ▶ **Wind Direction:** Consider whether sensitive receptors are located upwind or downwind from the source for the most of the year. If odor occurrences associated with the source are seasonal in nature, consider whether sensitive receptors are located downwind during the season in which odor emissions occur.

- ▶ **Complaint History:** Consider whether there is a history of complaints associated with the source. If there is no complaint history associated with a particular source (perhaps because sensitive receptors do not already exist in proximity to the source), consider complaint-history associated with other similar sources in BAAQMD’s jurisdiction with potential to emit the same or similar types of odorous chemicals or compounds, or that accommodate similar types of processes.

- ▶ **Character of Source:** Consider the character of the odor source, for example, the type of odor events according to duration of exposure or averaging time (e.g., continuous release, frequent release events, or infrequent events).

- ▶ **Exposure:** Consider whether the project would result in the exposure of a substantial number of people to odorous emissions.

Table 9 – Screening Distances for Potential Odor Sources	
Type of Operation Project Screening	Distance
Wastewater Treatment Plant	2 miles
Wastewater Pumping Facilities	1 mile
Sanitary Landfill	2 miles
Transfer Station	1 mile
Composting Facility	1 mile
Petroleum Refinery	2 miles
Asphalt Batch Plant	2 miles
Chemical Manufacturing	2 miles
Fiberglass Manufacturing	1 mile
Painting/Coating Operations	1 mile
Rendering Plant	2 miles
Coffee Roaster	1 mile
Food Processing Facility	1 mile
Confined Animal Facility/Feed Lot/Dairy	1 mile
Green Waste and Recycling Operations	1 mile
Coffee Roaster	1 mile

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