



BAY AREA  
AIR QUALITY  
MANAGEMENT  
DISTRICT

BOARD OF DIRECTORS  
STATIONARY SOURCE COMMITTEE MEETING

COMMITTEE MEMBERS

MARK DeSAULNIER –CHAIRPERSON  
ROBERTA COOPER  
MARK ROSS  
MARLAND TOWNSEND  
SHELIA YOUNG

JERRY HILL - VICE CHAIRPERSON  
JULIA MILLER  
JOHN SILVA  
GAYLE UILKEMA

MONDAY  
NOVEMBER 22, 2004  
9:30 A.M.

7<sup>th</sup> FLOOR BOARD ROOM

**AGENDA**

1. **CALL TO ORDER - ROLL CALL**
2. **PUBLIC COMMENT PERIOD** (*Public Comment on Non-Agenda Items Pursuant to Government Code § 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 authority. Speakers will be limited to five (5) minutes each.*
3. **APPROVAL OF MINUTES OF SEPTEMBER 22, 2004**
4. **REPORT ON DISTRICT'S FLARE MONITORING PROGRAM**  

**J. Roggenkamp/4646**  
[jroggenkamp@baaqmd.gov](mailto:jroggenkamp@baaqmd.gov)

*Staff will provide a report on the implementation of Regulation 12, Rule 11: Flare Monitoring at Petroleum Refineries, flare emissions information, and flare control rule development progress.*
5. **RULE DEVELOPMENT EFFORTS FOR 2005**  

**J. Roggenkamp/4646**  
[jroggenkamp@baaqmd.gov](mailto:jroggenkamp@baaqmd.gov)

*Staff will provide a report and a proposed schedule on expected rule development efforts in 2005.*
6. **COMMITTEE MEMBER COMMENTS/OTHER BUSINESS**  
*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)*
7. **TIME AND PLACE OF NEXT MEETING --JANUARY 24, 2005**
8. **ADJOURNMENT**

**Bay Area Air Quality Management District  
939 Ellis Street  
San Francisco, California 94109  
(415) 771-6000**

**DRAFT MINUTES**

Summary of Board of Directors  
Stationary Source Committee Meeting  
9:30 a.m., Monday, September 27, 2004

1. **Call to Order – Roll Call:** Chairperson DeSaulnier called the meeting to order at 9:42 a.m.

**Present:** Mark DeSaulnier, Chairperson; Roberta Cooper, Jerry Hill, Julia Miller, Mark Ross, John Silva (9:43 a.m.), Marland Townsend (9:43 a.m.), Gayle Uilkema, Shelia Young.

**Absent:** None.

**Also Present:** Scott Haggerty (9:48 a.m.).

2. **Public Comment Period:** There were none.

3. **Approval of Minutes of May 24, 2004:** Director Cooper moved approval of the minutes; seconded by Director Hill; carried unanimously without objection.

4. **Status Report on Air District’s Community Air Risk Evaluation (CARE) Program:** *Staff provided the Committee an overview of the District’s CARE program to evaluate and reduce health risks associated with toxic air pollutants in the Bay Area.*

Directors Silva and Townsend arrived at 9:43 a.m.

Eric Stevenson, Air Monitoring Manager, reviewed the Air District’s Community Air Risk Evaluation (CARE) program goals. The goals include evaluating health risk from air toxins and providing health risk information to the communities. The technical goals of the program involve estimating air toxic emissions from mobile, area, and stationary sources; developing a gridded inventory map; and completing a pilot cumulative risk assessment. Mr. Stevenson reviewed the Air District’s air monitoring program.

Director Haggerty arrived at 9:48 a.m.

Some of the successful risk reduction measures in the past include new vehicle standards; clean diesel fuel introduced in 1992; cleaner burning gas in 1996; and mobile, stationary and area source control measures. Mr. Stevenson reviewed the District’s toxic programs. The CARE program elements are: public outreach, a technical foundation, additional air monitoring, risk assessment, targeted action plans, and a legislative and regulatory agenda.

During discussion it was noted that there would be additional monitoring stations and the grids will be one-kilometer grids cells throughout the Bay Area. Mr. Stevenson noted that an Advisory Committee would review the data that are collected and the location of the additional air monitoring stations will be based on that information. The Committee requested that staff provide a list of the possible members of the Advisory Committee before it is finalized. Director Young stated that there is a perception that an autoclave is an incinerator and requested information the operation of autoclaves.

Jack Broadbent, Executive Officer/APCO, stated that the staff will provide periodic updates to the Committee as the information is received. Mr. Broadbent noted that this study would serve as a technical foundation for the Board to assist in its decision making with respect to programs such as the Carl Moyer Program.

**Committee Action:** None. This report provided for information only.

**5. Proposed Revisions to the Air District's Permit Regulations:** *Staff gave a status report on proposed revisions to the District's permit rule amendments.*

Steve Hill, Air Quality Permit Manager, provided a summary of the proposed revisions to the District's permit regulations. Changes in state law require the District to change the threshold for requiring emission offsets for new and modified sources. Mr. Hill noted that larger facilities provide their own offsets and the District uses a Small Facility Bank (SFB) to provide offsets for smaller facilities. Mr. Hill reviewed the upcoming lower California Air Resources Board (CARB)-required thresholds for offsets. The thresholds would be lowered from 15 tons per year facilities down to 10 tons per year facilities for the larger plants. For those facilities that may obtain offsets from the SFB, the proposal is to go from the range of 15 to 50 tons per year facilities down to a range of 10 to 35 tons per year facilities.

Staff was requested to provide a list of those facilities that use the Small Facility Bank.

Miscellaneous revisions include an obligation to obtain a permit for all crematories, a provision to extend the term of authorities to construct, clarification of requirements for submittal of trade secrets and a provision for certification of compliance with an authority to construct. Mr. Hill stated that there will be a workshop on October 12<sup>th</sup> and that staff intends to bring the revisions to the Board for approval in December 2004. The emission reductions from the revisions are approximately 20 tons per year.

**Committee Action:** None. This report provided for information only.

**6. Proposed Board of Director Notification Procedure for Permit Applications Subject to Public Notice Requirements:** *Staff provided the Committee with a proposed notification procedure that will provide advanced notice to Board members of permit applications for proposed projects that are to undergo public notice.*

Brian Bateman, Director of Engineering, presented the proposed procedures to notify Board members of permit actions requiring public notice. Mr. Bateman stated that the permit applications to be included in the notification procedures would be "Waters Bill" permits and

major new source review permits. The notices to the Board member would be distributed before the public notice went out.

**Committee Action:** Director Young moved the Committee recommend Board approval of the procedure outlined by staff; seconded by Director Hill; carried unanimously without objection.

7. **Committee Member Comments/Other Business:** There were none.
8. **Time and Place of Next Meeting:** 9:30 a.m., Monday, November 22, 2004, 939 Ellis Street, San Francisco, California 94109
9. **Adjournment:** The meeting adjourned at 10:50 a.m.

Mary Romaidis  
Clerk of the Boards

**STATIONARY SOURCE COMMITTEE**

**Follow-Up Items for Staff**

**September 27, 2004**

1. The Committee requested that staff provide a list of the possible members of the Advisory Committee before it is finalized.
2. Director Young requested information on the operation of autoclaves. Completed
3. Staff was requested to provide a list of those facilities that use the Small Facility Bank. Completed.
4. Staff was requested to use plain letterhead when sending out the public notices on permit applications. Completed.

BAY AREA AIR QUALITY MANAGEMENT DISTRICT  
Inter-Office Memorandum

To: Chairperson DeSaulnier and Members  
of the Stationary Source Committee

From: Jean Roggenkamp, Director of Planning & Research

Date: November 15, 2004

Re: Refinery Flare Monitoring Report

RECOMMENDED ACTION:

Receive and file.

BACKGROUND

On June 4, 2003 the Board of Directors adopted Regulation 12, Rule 11: Flare Monitoring at Petroleum Refineries. This new regulation required the refineries to determine vent gas composition, install volumetric flow monitoring instrumentation, install and archive video monitoring of their flares, and submit monthly reports to the District. Staff committed to report to the Board on the implementation of the rule in eighteen months. This report summarizes the implementation of Regulation 12, Rule 11, provides information about flare reports on the District web site, and reports on flare emissions, emissions trends, and progress on flare control rule development.

IMPLEMENTATION OF FLARE MONITORING REQUIREMENTS

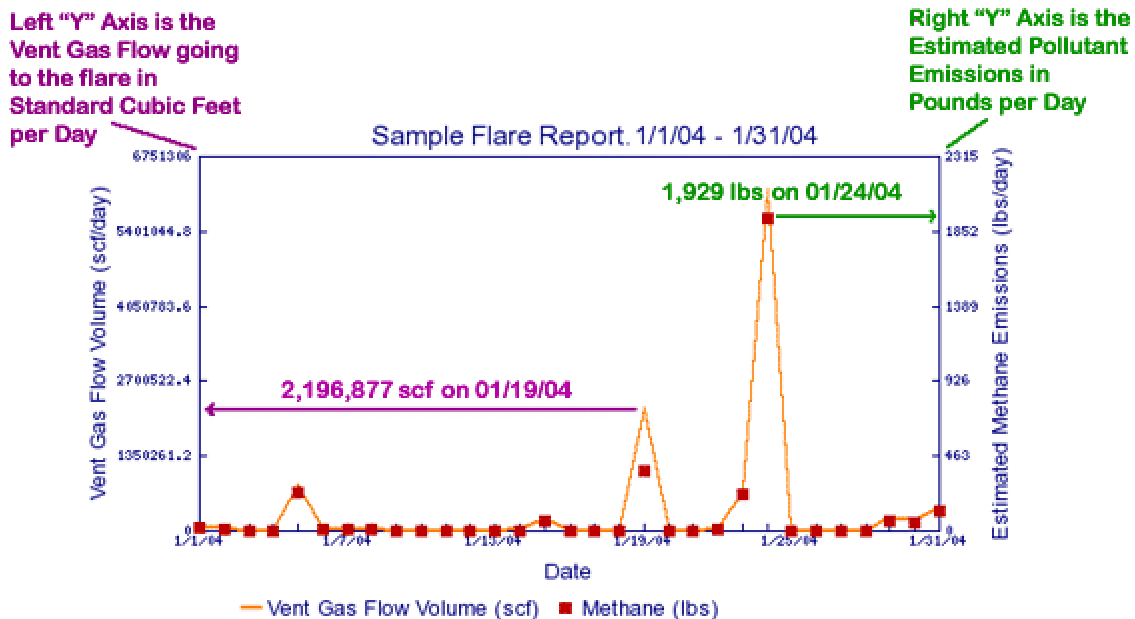
Under the provisions of Regulation 12, Rule 11, the refineries were required to submit monthly reports to the District, sample vent gas composition on each day on which flaring occurs, install new flow meters and video cameras, implement a more prescriptive sampling protocol, verify accuracy of flow meters, subscribe to limits on monitor downtime, and meet a specified accuracy requirement for flow meters. To date, the refineries have met all the effective dates.

In September 2003, the refineries were required to sample the vent gases going to each flare, or flare system for those with multiple flares connected in series, once per day whenever the flare was in use. Most of the refineries had started the required sampling several months prior to the requirement deadline. On December 1, 2003, the refineries were required to install flow-monitoring instrumentation on any flare currently in use. All the refineries installed the required equipment on time, using overtime in some cases, to meet the deadline. The data from these installations are reported to the District on a monthly basis. Staff reviews the data, and posts it and a graphical representation of the flow and emissions data on the District's web site.

## WEB BASED FLARE INFORMATION

In response to public interest in having real-time video broadcasting of flare images, the rule contains a requirement that the refineries implement video monitoring, store the images for five years, and submit monthly copies to the District. The Board further directed staff to continue to work on the technical issues related to web casting, such as hosting, compatibility, liability and enforcement issues, and referred the issue to the Stationary Source Committee. Based on staff's research into these issues and given the limited number (2) of public records request for images, staff has implemented a much lower cost, lower technology alternative to live web streaming videos that will provide the public with information about flare operations.

This alternative has been termed "the text based solution". It consists of a downloadable spreadsheet and graphical representation of vent gas flow and emissions including methane, non-methane organics, and sulfur dioxide as contained in the refinery submitted monthly report. These postings are located on the District's web site at <http://www.baaqmd.gov/enf/flares/>. A sample of the graphical representation is shown below.

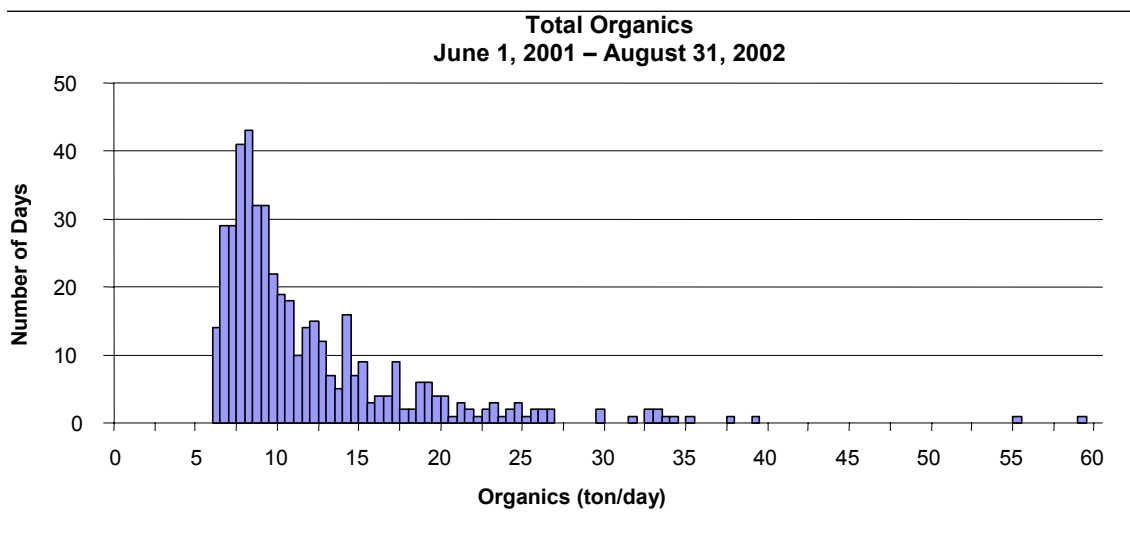


## CHARACTERIZING FLARE EMISSIONS

When the District staff evaluates the emissions from an air pollution source category, emissions are expressed on a daily basis (such as tons per day). This is an *average daily emission* expressed on an *annual* basis. For large, intermittent emission sources such as refinery flares, estimating and characterizing average daily emissions can be quite challenging. Emissions from flares are not directly measured. They are estimated from quantities of vent gas sent to flares, concentrations of pollutants in the vent gas and combustion efficiencies. Until the adoption of the flare monitoring rule, Bay Area refineries were not required to measure the quantities of vent gases sent to their flare

systems. Engineering assumptions had to be made to estimate emissions based on limited information.

In addition to the difficulty in estimating emissions, flare emissions vary significantly on a day-to-day basis. For example, refinery process unit startups and shutdowns can result in vent gas being sent to a flare, but occur very infrequently. Major refining units at a petroleum refinery can go as long as five years between startup and shutdown events. Operating condition upsets or unforeseen circumstances also may result in large volumes of vent gas being sent to a flare. These situations are impossible to predict and may occur at any time. Because actual flare emissions can vary significantly, a daily average expressed on an annual basis may not be a good characterization of flare emissions on any given day. The distribution of daily total organic emissions from refinery flares for the time period June 1, 2001 through August 31, 2002<sup>1</sup> is illustrated in the graph below.



## FLARE EMISSIONS AND EMISSION TRENDS

Emissions from refinery flares prior to adoption of the flare monitoring rule were addressed in the December 2002 Technical Assessment Document (TAD). In order to develop emission information for the TAD, refineries were requested to submit the flow and composition data of their flare systems for the period of January 1, 2001 to August 31, 2002. At that time, some refinery systems had no monitoring in place; some had fairly new ultrasonic monitoring systems. To compensate for the wide-variation in information, staff used engineering estimates and determined, from the information submitted, that emissions from flares were approximately 22 tons/day<sup>2</sup> total organic compounds.

<sup>1</sup> Part of the study period used for the Technical Assessment Document

<sup>2</sup> Assumptions used for that estimate are: 1) emissions are averaged per day of flare use, 2) a hydrocarbon molecular weight of 44, 3) a flare gas composition of 75% hydrocarbon, and 4) a destruction efficiency of 98%, except at 90% for those gases with a lower heating value less than 300btu.



Since the TAD was published, the refineries have submitted several modifications to their original data submittals and have met with District staff on numerous occasions to clarify their data re-submittals. After evaluating the data re-submittals and developing refinery-specific gas composition and hydrocarbon molecular weight estimates<sup>3</sup>, staff has revised the emission estimate from flares, on an daily average basis, to approximately 8 tons/day of total organic compounds (5 tons/day of reactive, or non-methane organic compounds) and 20 tons/day of SO<sub>x</sub>. The daily emissions ranged, during that time period, from 2.5 to 55 tons/day of total organic compounds, and from 6 to 55 tons/day SO<sub>x</sub>.

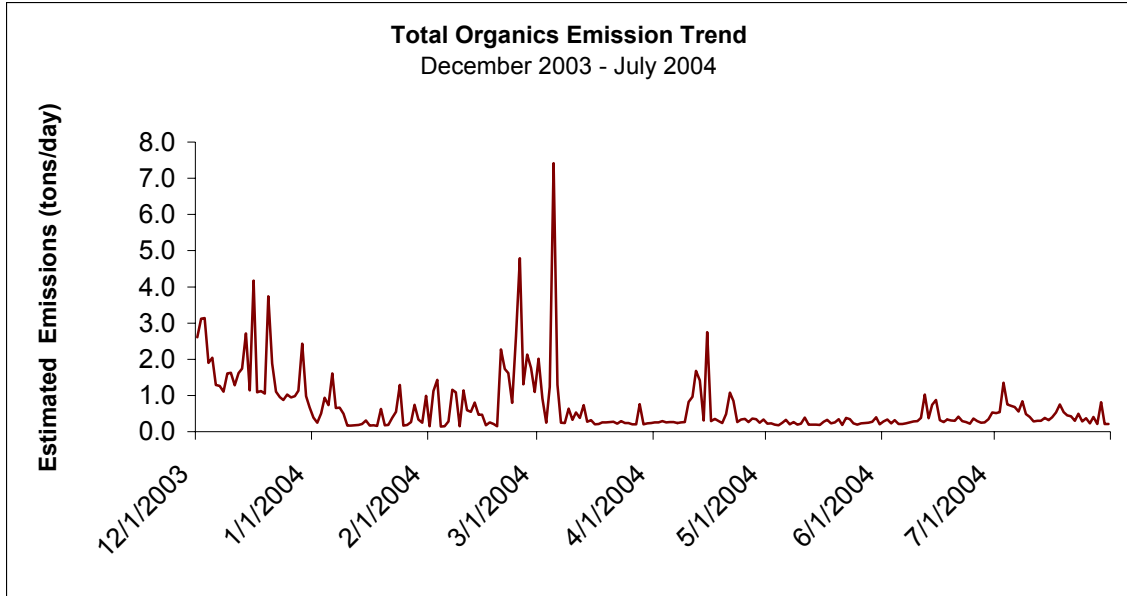
Also during this time period, the Tesoro Refinery was in the process of installing fuel gas compressors to recover hydrocarbons previously sent to the flare. Tesoro added an additional 8 million standard cubic feet of recovery capability for their flare system. This project significantly reduced the volume of gases flared, and represents a majority of the reduction in emissions. Additionally, all the refineries instituted programs to reduce flaring. Measures implemented include improvements in gas compressor reliability, extending the amount of time between scheduled major maintenance activities, source reduction efforts and better management of flare gas systems.

With the implementation of the requirements in Regulation 12, Rule 11, the quality and quantity of data has improved. Verifiable hourly flow measurements and vent gas compositions are now used to estimate emissions. Staff are currently analyzing the data submitted by the refineries since December 2003. Regulation 12, Rule 11 required accurate flow monitoring devices be installed by December 2003, hourly flow data be submitted starting in January 2004, and monthly reports be submitted within 30 days of the end of each month. Based on the monthly reports (December 1, 2003 to July 31, 2004), the daily total organic emissions ranged from 0.14 tons/day to 7.41 tons/day, with a daily average of 0.69 tons/day for this short time frame.

Review of the data indicates that flows of gas to the flares have been reduced by 40 to 60 percent compared to flows during the TAD data period. Again, much of this reduction is due to the installation of additional compressors at one refinery and better management practices at all the refineries. The trend for total organic emissions is shown in the following graph.

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<sup>3</sup> Gas compositions ranged from 1.3% to 85% hydrocarbon, and molecular weight from 20 to 43. The destruction efficiency used was 98%, except at 90% for those gases with a lower heating value less than 300 btu.



FLARE CONTROL RULE PROGRESS

The TAD recommended acquiring verifiable information to determine the need for a flare control regulation. The flare monitoring rule enables staff to obtain quality data. This is similar to the approach used by the South Coast Air Quality Management District, which adopted a flare monitoring rule in 1998 and has recently been directed to start development of a flare control rule.

The Bay Area Air Quality Management staff has started an ambitious flare control strategy development process. Staff has met on numerous occasions with stakeholders. Outreach has included a series of informational meetings for the public to hear about flare systems and the District’s rule development process. Workgroup meetings have been held to discuss technical issues since initiating the study on flares as part of the 2001 Ozone Attainment Plan. Staff has met individually with refiners to identify and resolve site-specific technical issues. These meetings continue with an emphasis on improving the current flare monitoring rule and developing a flare control strategy. Monitoring improvements are likely to include a requirement for continuous monitoring of the vent gas composition and water seal integrity, expansion of the fact finding requirements for significant events, and developing a manual of procedures to standardize reporting requirements. Discussions on flare control strategies have involved a variety of concepts including prohibition of flaring, an emission cap and banking, emission limits, and a minimization plan. Staff anticipates a limited number of workgroup meetings and public workshops remaining prior to bringing a proposed rule to the Stationary Source Committee and the Board of Directors.

Respectfully submitted,

Jean Roggenkamp  
Director of Planning & Research

FORWARDED: \_\_\_\_\_

Prepared by: Alex Ezersky and Dan Belik

Reviewed by: Peter Hess

BAY AREA AIR QUALITY MANAGEMENT DISTRICT  
Inter-Office Memorandum

To: Chairperson DeSaulnier and Members  
of the Stationary Source Committee

From: Jean Roggenkamp, Director of Planning & Research

Date: November 12, 2004

Re: 2005 Rule Development Efforts

RECOMMENDED ACTION:

Receive and file.

BACKGROUND

Each year in December, the Board of Directors receives a proposed regulatory agenda for the upcoming calendar year. The District is required by Health and Safety Code section 40923 to publish a list of regulatory measures scheduled or tentatively scheduled for consideration during the next calendar year. If a measure is not on this list, it may not be brought before the Board, with certain exceptions. Consequently, the annual regulatory agenda contains all rules that *may* come before the Board in the following year, although there is no expectation that all of the rules will be acted upon. The regulatory agenda typically contains about 50 rule and Manual of Procedures entries, significantly more than the number of regulatory amendments actually brought before the Board. The regulatory agenda will be presented for Board approval on December 15, 2004.

DISCUSSION

This report focuses on *expected* rule development activity for 2005. Refinery-related rules will continue to be District rule development priorities, along with adoption of proposed Regulation 2, Rule 5: New Source Review of Toxic Air Contaminants. Staff is currently working on developing regulatory proposals for several refinery-related stationary source categories. In addition to these priorities, rule development activities will include other ozone control measures, new source review, further study measures, and particulate control measures.

District staff is obligated under a settlement agreement<sup>1</sup> to propose regulatory amendments for the refinery-related further study measures from the 2001 Ozone Attainment Plan by December 31, 2005, or provide a technical review and report to the Board on why regulatory amendments are not recommended. These further study measures are: 1) Refinery blowdown systems, 2) Marine vessel tank activities, 3)

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<sup>1</sup> Settlement of San Francisco Superior Court Case no. 323849 between Communities for a Better Environment, Transportation Solutions Defense and Education Fund, Bay Area Air Quality Management District and Metropolitan Transportation Commission.

Refinery wastewater systems, 4) Refinery pressure relief devices, and 5) Refinery flare controls. On September 15, 2004, the Board approved amendments to District Regulation 8, Rule 8 that address refinery wastewater systems. Rule development for refinery blowdown systems, marine vessel tank activities, pressure relief devices, and flare controls is underway.

In addition, staff is currently developing a 2004 – 2005 Ozone Strategy that will incorporate ozone planning requirements for both federal and state ozone standards. The draft Ozone Strategy will include a timeline for stationary source control measures. In addition to the refinery measures, staff has projected bringing proposed regulatory amendments before the Board in 2005 for graphic arts operations and stationary gas turbines.

On December 15, 2004, the Board will consider proposed amendments to Regulation 2, Rule 2: New Source Review, along with minor amendments to Regulation 2: Permits, Rule 1: General Requirements and Rule 4: Emissions Banking. Staff anticipates more amendments to Regulation 2, Rule 2 next year to codify changing federal requirements and observe the tenets of SB 288 (Protect California Air Act of 2003, Sher) that requires California districts to ensure that new source review rules remain no less stringent than they were on December 31, 2003. Table 1 outlines the expected schedule for rules to be brought before the Board.

**Table 1: 2005 Regulatory Public Hearing Schedule**

<b>Draft Ozone Strategy Control Measure #</b>	<b>Description</b>	<b>Expected Completion</b>
SS – 9	Reg 8-5, Organic Liquid Storage Tanks	1st quarter
SS – 6	Refinery Flare Controls	1st quarter
N/A	Reg 2-5, Toxics New Source Review	2nd quarter
SS – 10	Reg 8-28, Pressure Relief Devices and Blowdown Systems	2nd quarter
SS – 8	Reg 8-44 and 8-46, Marine Vessel Loading	2nd quarter
SS – 2	Reg 8-20, Graphic Arts Operations	3rd quarter
SS – 14	Reg 9-9, Stationary Gas Turbines	3rd quarter
N/A	Reg 2-2, New Source Review	4th quarter

In addition to rules, further study measures identified in the 2004-05 Ozone Strategy will occupy rule development staff time. Further study measures are measures for which insufficient information is available during the development of the Ozone Strategy to commit to as control measures. A measure may be proposed for further study because of a lack of emissions inventory data on the source targeted, the cost effectiveness of control

may be questionable, or technology to control the source may not have been adequately demonstrated. Staff expects to further analyze and, if appropriate, develop control measures or propose regulatory amendments in 2005 for the source categories in Table 2.

**Table 2: 2005 Further Study Measure Schedule**

<b>Draft Ozone Strategy Further Study #</b>	<b>Description</b>
FS – 3	Commercial Charbroilers
FS – 5	Food Product Manufacturing and Processing
FS – 9	Emissions from Cooling Towers
FS – 11	Vacuum Trucks
FS – 13	Wastewater from Coke Cutting Operations

Two of these further study measures, Commercial Charbroilers and Food Product Manufacturing and Processing, are derived from rules in the South Coast AQMD. The others were suggested by District staff as potentially significant emissions sources at refineries and other operations.

Finally, SB 656 (Sher), adopted in 2003, requires California districts to adopt implementation schedules for measures to reduce particulate matter (PM 10 and PM 2.5) after considering a list of readily available, feasible and cost effective measures compiled by ARB. Each district must select and prioritize measures to address the level and type of PM problems specific to the district. ARB expects to adopt the initial list of measures later this month. The deadline for districts to adopt implementation schedules for a selected set of PM measures is July 31, 2005. The schedule will be developed through a public process and presented to the Board in the second quarter of next year. Development and adoption of regulations from the list will add to rule development work in the next several years.

**BUDGET CONSIDERATION / FINANCIAL IMPACT:**

None.

Respectfully submitted,

Jean Roggenkamp  
Director of Planning & Research

FORWARDED: \_\_\_\_\_

Prepared by: Daniel Belik  
Reviewed by: Peter Hess