BOARD MEETING DATE: March 4, 2011 AGENDA NO. 41

REPORT: Annual RECLAIM Audit Report for 2009 Compliance Year

SYNOPSIS: The annual report on the NOx and SOx RECLAIM program is prepared in accordance with Rule 2015 - Backstop Provisions. The report assesses emission reductions, availability of RECLAIM Trading Credits (RTCs) and their average annual prices, job impacts, compliance issues, and other measures of performance for the sixteenth year of this program. In addition, recent trends in trading future year RTCs are analyzed and presented in this report. Further, a list of facilities that did not reconcile their emissions for Compliance Year 2009 is included with the report.

COMMITTEE: Stationary Source, February 18, 2011, Recommended for Board Consideration of Approval

RECOMMENDED ACTION:
Approve the attached annual report.

Barry R. Wallerstein, D.Env.
Executive Officer

MN:DL

Background

The Board adopted the RECLAIM program on October 15, 1993, to provide a more flexible compliance program than command and control for subject facilities, which represent AQMD's largest emitters of NOx and SOx pollutants. Although RECLAIM was developed as an alternative to command and control, it was designed to meet all state and federal clean air program requirements and a variety of performance criteria in order to ensure public health protection, air quality improvement, effective enforcement, same or lower implementation costs, and minimal job impacts.

RECLAIM represents a significant departure from traditional command-and-control regulations. Therefore, RECLAIM regulation's Rule 2015 - Backstop Provisions, requires AQMD to conduct annual program audits to assess various aspects of the

program to verify that program objectives are being met. AQMD staff has completed audits of facility records and completed the audit for Compliance Year 2009. Based on audited emissions, RECLAIM met its emissions goals for Compliance Year 2009, as well as for all previous compliance years with the only exception of NOx emissions in Compliance Year 2000, which exceeded programmatic allocations primarily due to the California energy crisis during that period. Audited NOx emissions were 29% less than programmatic NOx allocations and audited SOx emissions were 31% less than programmatic SOx allocations during Compliance Year 2009.

At the September 7, 2007 AQMD Governing Board meeting, the Board approved the "Evaluation and Review of the RECLAIM Program and Assessment of RTC Price Reporting" Report and a new methodology for reporting RTC trade prices and determining average RTC prices. This methodology evaluates price data for trades involving individual discrete years and trades involving blocks of RTCs extending into perpetuity (infinite-year blocks or IYBs), separately. Trade data in the attached Annual RECLAIM Audit Report for calendar year 2010 are based on this methodology.

Audit Findings

The audit of the RECLAIM Program during Compliance Year 2009 and trades of RECLAIM Trading Credits (RTCs) during calendar Year 2010 show that:

- Audited NOx and SOx emissions from RECLAIM facilities were below programmatic allocations.

- The RECLAIM universe consisted of 286 facilities as of June 30, 2009. Two facilities were included into the RECLAIM universe and four RECLAIM facilities shut down between July 1, 2009 and June 30, 2010. Thus, 284 facilities were left in the RECLAIM universe on June 30, 2010. One of the two included RECLAIM facilities opted to join the RECLAIM program, whereas the other facility was created through partial change of operator of an existing RECLAIM facility. Of the four shutdown facilities, one facility shut down after it was sold and its premises were vacated, and another moved its operation to North Carolina citing a strategic business decision. Reasons for shutdown for the remaining two facilities are not known, but both facilities are no longer in operation.

- The vast majority of RECLAIM facilities complied with their Allocations during the 2009 compliance year (96% of NOx facilities and 97% of SOx facilities). Twelve facilities exceeded their NOx allocations and one facility exceeded its SOx allocation during the 2009 compliance year. These exceedances did not impact the sum total of NOx or SOx emissions, each of which stayed below their respective programmatic allocations.

- The RECLAIM program had minimal impact on employment during the 2009 compliance year, which is consistent with previous years. RECLAIM facilities reported an overall net loss of 7,792 jobs, representing 7.33% of their total employment. Among the changes in employment, a combined total of 188 jobs lost due to RECLAIM were reported by two RECLAIM facilities, whereas two jobs gained due to RECLAIM were reported by one other facility. The job losses and job gains information is strictly based on the RECLAIM facilities reported information and AQMD is not able to verify whether or not the reported job impacts from the RECLAIM facilities are real or perceived. However, AQMD staff has reviewed information available to AQMD for one facility which reported a major portion of the jobs lost (168) due to RECLAIM. The facility has been in the RECLAIM program since RECLAIM's inception 16 years ago, reported job losses last year (Compliance Year 2008) of similar magnitude and attributed them to RECLAIM, has had emission decreases at a rate similar to the RECLAIM rate of emission reduction for NOx emissions, had adequate RTC allocations to cover its emissions in each of the last several years, and was not a structural buyer. The facility's reported NOx emissions had a sharper rate of reduction from Compliance Year 2008 to 2009. This is indicative of decreased production during that period since there was no equipment modification reported. However, the facility's NOx emissions remained approximately constant during Compliance Years 2003 through 2008 (although somewhat higher during Compliance Year 2007). Furthermore, the facility held adequate Compliance Year 2009 RTCs to sustain emissions at the Compliance Years 2003 through 2008 (excluding 2007) level during its 2009 compliance year. Therefore, AQMD could not identify any specific reason why the RECLAIM program would have caused the job losses reported by this facility.

- The RTC trading market activity during calendar year 2010 remained slow and comparable to that of calendar year 2009. A total of $990 million in RTCs has been traded since the adoption of RECLAIM, of which $47.6 million occurred in calendar year 2010 (compared to $22.6 million in calendar year 2009), excluding swaps. During calendar year 2010, average annual prices for discrete-year NOx RTCs ranged from $741 per ton for Compliance Year 2009, through $2,367 per ton for Compliance Year 2010, to $8,052 per ton for Compliance Year 2011. The average annual prices for discrete-year SOx RTCs ranged from $451 per ton for Compliance Year 2009 to $1,286 per ton for Compliance Year 2010. There were no Compliance Year 2011 discrete-year SOx RTCs traded in calendar year 2010. The average annual prices of discrete-year NOx and SOx RTCs traded in calendar year 2010 were below the compliance program review threshold of $15,000 per ton established in Rule 2015(b)(6), as well as below the $37,738 per ton for NOx and $27,172 per ton for SOx RTC overall program review thresholds established by the Governing Board pursuant to Health and Safety Code §39616(f). For calendar year 2010, the average annual price for IYB NOx RTCs was $95,761 per ton, and the average annual price for IYB SOx RTCs was $109,219 per ton (compared to $124,567 and $36,550 per ton

for IYB NOx and SOx RTCs in calendar year 2009, respectively). Average annual prices for IYB NOx and SOx RTCs during calendar year 2010 were below the pre-determined program review price thresholds of $566,076 per ton of IYB NOx RTCs and $407,575 per ton of IYB SOx RTCs established by the Governing Board pursuant to Health and Safety Code Section 39616(f). The average annual prices of RTCs traded during calendar years 2009 and 2010 are summarized in Tables 1 and 2 below.

Table 1 – Average Prices for Discrete-Years' RTCs during Calendar Years 2009 and 2010

2009	2010
• $809 per ton for Compliance Year 2008 NOx RTCs • $1,986 per ton for Compliance Year 2009 NOx RTCs • $4,780 per ton for Compliance Year 2010 NOx RTCs • $653 per ton for Compliance Year 2008 SOx RTCs • $1,488 per ton for Compliance Year 2009 SOx RTCs • No Compliance Year 2010 SOx RTCs traded	• $741 per ton for Compliance Year 2009 NOx RTCs • $2,367 per ton for Compliance Year 2010 NOx RTCs • $8,052 per ton for Compliance Year 2011 NOx RTCs • $451 per ton for Compliance Year 2009 SOx RTCs • $1,286 per ton for Compliance Year 2010 SOx RTCs • No Compliance Year 2011 SOx RTCs traded

Table 2 – Average Prices for IYB RTCs during Calendar Years 2009 and 2010

2009	2010
• $124,576 per ton for NOx IYB RTCs • $36,550 per ton for SOx IYB RTCs	• $95,761 per ton for NOx IYB RTCs • $109,219 per ton for SOx IYB RTCs[1]

- The role of investors in the RTC market remains significant. Based on both trading values and volume of trades with price, investor-involved trades constituted the majority of the trades recorded in calendar year 2010. For discrete NOx and SOx trades, 77% and 92% of the value and 66% and 86% of the volume of the respective trades involved investors. For IYB NOx and SOx trades, 32% and 100% of the value and 27% and 100% of the volume of respective trades involved investors. Compared to calendar year 2009, investor RTC holdings of total IYB NOx RTCs remained unchanged at 5.5%, whereas investor RTC holdings of total IYB SOx RTCs decreased from 5.5% to 0.01% over the course of calendar year 2010.

[1] The increase in the IYB SOx RTC price might have been largely influenced by the then-impending rule amendment reducing SOx allocations.

- RECLAIM also met other applicable requirements including adequately meeting the applicable federal offset ratio under New Source Review; having no significant seasonal fluctuation in emissions and no distinct shift in the geographical distribution of emissions; and having no significant increase in health impacts due to toxics, since all RECLAIM facilities are subject to the same requirements for controlling toxic emissions as other non-RECLAIM facilities.

Attachment
Annual RECLAIM Audit Report for the 2009 Compliance Year

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Annual RECLAIM Audit Report for 2009 Compliance Year

March 4, 2011

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

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Speaker of the Assembly
Appointee

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EXECUTIVE OFFICER
Barry R. Wallerstein, D.Env.

TABLE OF CONTENTS

LIST OF ABBREVIATIONS

ACEMS	Alternative Continuous Emissions Monitoring System(s)
APEP	Annual Permit Emissions Program
AQMD	South Coast Air Quality Management District
AQMP	Air Quality Management Plan
BACT	Best Available Control Technology
BARCT	Best Available Retrofit Control Technology
CAA	Clean Air Act
CARB	California Air Resources Board
CCAA	California Clean Air Act
CEQA	California Environmental Quality Act
CEMS	Continuous Emissions Monitoring System(s)
CGA	Cylinder Gas Audit
CPMS	Continuous Process Monitoring System(s)
DAHS	Data Acquisition Handling System
EDR	Electronic Data Reporting
ERC	Emission Reduction Credit
IYB RTC	Infinite-Year Block RECLAIM Trading Credit
LAER	Lowest Achievable Emission Rate
LAP	Laboratory Approval Program
MDP	Missing Data Procedures
MRR	Monitoring, Reporting and Recordkeeping
MSERC	Mobile Source Emission Reduction Credit
NAAQS	National Ambient Air Quality Standard
NNI	No Net Increase
NOx	Oxides of Nitrogen
NSR	New Source Review
QCER	Quarterly Certification of Emissions Report
RACT	Reasonably Available Control Technology
RATA	Relative Accuracy Test Audit
RECLAIM	REgional CLean Air Incentives Market
RTC	RECLAIM Trading Credit
RTU	Remote Terminal Unit
SIP	State Implementation Plan
SOx	Oxides of Sulfur
SSC	Stationary Source Committee
SWG	Standing Working Group
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound
WATERS	Web Access To Electronic Reporting System

EXECUTIVE SUMMARY

Introduction

The South Coast Air Quality Management District (AQMD) Governing Board adopted the REgional CLean Air Incentives Market (RECLAIM) program on October 15, 1993. The RECLAIM program represents a significant departure from traditional command-and-control regulations. RECLAIM's objective is to provide facilities with added flexibility in meeting emissions reduction requirements while lowering the cost of compliance. This is accomplished by establishing facility-specific emissions reduction targets without being prescriptive regarding the method of attaining compliance with the targets. Each facility may determine for itself the most cost-effective approach to reducing emissions, including reducing emissions at the subject facility, and/or purchasing RECLAIM Trading Credits (RTCs) from facilities that operate at emissions levels below their target levels and do not need some of their RTCs, or from other RTC holders.

Rule 2015 - Backstop Provisions includes provisions for annual program audits focusing on specific topics, as well as a one-time comprehensive audit of the program's first three years to ensure that RECLAIM is meeting all state and federal requirements and other performance criteria and to provide backstop measures if the specific criteria is not met. This document constitutes the Rule 2015 annual audit report for Compliance Year 2009 (January 1 through December 31, 2009 for Cycle 1 and July 1, 2009 through June 30, 2010 for Cycle 2 facilities).

Chapter 1: RECLAIM Universe

When RECLAIM was adopted in October 1993, a total of 394 facilities were identified as the initial "universe" of sources subject to the requirements of RECLAIM. From program adoption through June 30, 2009, the overall changes in RECLAIM participants were 116 facilities included into the program, 70 excluded from the program, and 154 facilities ceased operation. Thus, the RECLAIM universe consisted of 286 active facilities on July 1, 2009. From July 1, 2009 through June 30, 2010, two facilities were included into the RECLAIM universe, no facility was excluded, and four facilities shut down and are no longer in the active RECLAIM universe. These changes resulted in a net decrease of two facilities in the universe, bringing the total number of active RECLAIM facilities to 284 by June 30, 2010. All these recent changes occurred within the oxides of nitrogen (NOx) universe and there were no changes to the facilities included in the oxides of sulfur (SOx) universe from July 2009 through June 2010.

Chapter 2: RTC Allocations and Trading

On January 7, 2005, the Governing Board adopted amendments to RECLAIM that resulted in an overall 22.5% reduction in NOx Allocations from 2007 through 2011. For Compliance Year 2009, the cumulative NOx RECLAIM Trading Credit

(RTC) reduction was 17.1% since 2007. On November 5, 2010, the Governing Board adopted further amendments to RECLAIM that will result in an overall reduction of 5.7 tons/day (or 48.4%) in SOx Allocations from 2013 through 2019. Additionally, the Compliance Year 2009 RTC supply decreased by 8.5 tons and 19.5 tons for NOx and SOx, respectively, due to allocation adjustments for clean fuel production pursuant to Rule 2002(c)(12). Therefore, NOx and SOx RTC supplies for Compliance Year 2009 were 10,377 and 4,280 tons, respectively.

The trading market activity was slower during calendar year 2010 compared to calendar year 2009. There were 394 registered RTC transactions compared to 435 registered transactions in calendar year 2009. However, excluding swaps, the total value of $47.6 million traded in calendar year 2010 is much higher than the $22.6 million traded in calendar year 2009. This is mainly due to the increase in value of infinite-year block (IYB) SOx RTCs traded prior to the rule amendment for the SOx RECLAIM program. Since the inception of the RECLAIM program in 1994, a total value of over $990 million has been traded in the RTC trading market, excluding swaps.

The average annual prices of discrete-year NOx RTCs traded during calendar year 2010 ranged from $741 per ton for Compliance Year 2009 RTCs, through $2,367 per ton for Compliance Year 2010, to $8,052 per ton for Compliance Year 2011 RTCs. The average annual prices for discrete-year SOx RTCs traded during the same period ranged from $451 per ton for Compliance Year 2009 RTCs, to $1,286 per ton for RTCs for Compliance Year 2010[1]. In calendar year 2010, the average annual prices for discrete NOx and SOx RTCs for all compliance years remained well below the $15,000 per ton threshold to evaluate and review the compliance aspects of the program set forth by AQMD Rule 2015, as well as the $37,738 per ton of NOx and $27,172 per ton of SOx discrete RTCs pre-determined overall program review thresholds established by the Governing Board pursuant to Health and Safety Code §39616(f).

The average annual price for IYB NOx RTCs traded in calendar year 2010 was $95,761 per ton, and the average annual price for IYB SOx RTCs traded in calendar year 2010 was higher at $109,219 per ton (compared to $124,576 and $36,550 per ton of IYB NOx and SOx RTCs traded in calendar year 2009, respectively). The large increase in the IYB SOx RTC price might have been largely influenced by the then-impending rule amendment for a shave to the SOx RECLAIM program. In calendar year 2010, average annual IYB RTC prices did not exceed the $566,076 per ton of IYB NOx RTCs or the $407,575 per ton of IYB SOx RTCs pre-determined overall program review thresholds established by the Governing Board pursuant to Health and Safety Code §39616(f).

The role of investors in the RTC market remains significant. Based on both trading values and the number of trades with price, investors were involved in a significant portion of the trades recorded in calendar year 2010 (77% and 92% with respect to value and 66% and 86% with respect to volume for discrete NOx and SOx trades, respectively; 32% and 100% with respect to value and 27% and 100% with respect to volume for IYB NOx and SOx trades, respectively). Investors' holdings of IYB NOx RTCs remained unchanged at 5.5% at the end of calendar year 2010 as compared to the end of calendar year 2009; however,

[1] There were no discrete-year 2011 SOx RTCs traded in calendar year 2010.

investor holdings of IYB SOx RTCs decreased to 0.01% at the end of calendar year 2010 from 5.5% at the end of calendar year 2009.

Chapter 3: Emission Reductions Achieved

For Compliance Year 2009, aggregate NOx emissions were below total allocations by 29% and aggregate SOx emissions were below total allocations by 31%. Therefore, based on audited emissions, it can be concluded that RECLAIM has clearly achieved its targeted emission reductions. Finally, no emissions associated with breakdowns were excluded from reconciliation with facility allocations in Compliance Year 2009. Accordingly, no mitigation is necessary to offset excluded emissions due to approved Breakdown Emission Reports.

Chapter 4: New Source Review Activity

The annual program audit assesses New Source Review (NSR) activity from RECLAIM facilities in order to ensure that RECLAIM is complying with federal NSR requirements and state no net increase (NNI) in emissions requirements, while providing flexibility to facilities in managing their operations and allowing new sources into the program. In Compliance Year 2009, two new facilities joined the RECLAIM NOx market, no new facilities joined the RECLAIM SOx market, 22 NOx RECLAIM facilities had NSR NOx emission increases due to expansion or modification, and three existing SOx RECLAIM facilities had NSR SOx emission increases due to expansion or modification. The consistent trend of surplus NOx and SOx RTCs over emissions for the past five years has allowed for expansion and modification by existing facilities. However, it has become apparent that due to full RTC hold requirements for potential to emit for new and modified emission units at the beginning of each compliance year, and the effect of the accumulation of these hold requirements over time, this may not continue to be the case. As a result, potential changes to Rule 2005 are being considered to facilitate expansion and modification of operations by existing RECLAIM facilities while ensuring that all emissions are covered by RTC allocations in compliance with federal NSR emissions offset requirements and state NNI requirements.

RECLAIM is required to comply with federal NSR emissions offset requirements at a 1.2-to-1 offset ratio for NOx emission increases and at least at a 1-to-1 offset ratio for SOx emission increases on a programmatic basis. In Compliance Year 2009, RECLAIM provided an offset ratio of 30-to-1 for NOx, demonstrating federal equivalency. RECLAIM inherently complies with the federally-required 1-to-1 SOx offset ratio for any compliance year provided aggregate SOx emissions under RECLAIM are lower than aggregate SOx allocations for that compliance year. As shown in Chapter 3, there were no programmatic SOx exceedances during Compliance Year 2009, so RECLAIM more than complied with the federally-required offset ratio and further quantification of the SOx offset ratio is unnecessary. Compliance with the federally-required offset ratio also demonstrates compliance with the state NNI requirements for new or modified sources. In addition, RECLAIM requires application of Best Available Control Technology (BACT) for all new or modified sources with emission increases.

Chapter 5: Compliance

There were 286 NOx and 32 SOx active facilities in the RECLAIM program at the start of Compliance Year 2009. During Compliance Year 2009, two facilities were included into the NOx universe and four facilities ceased operations and shutdown. There were no changes in the SOx universe. Of these 288 active NOx RECLAIM facilities during Compliance Year 2009, 276 facilities (96%) complied with their NOx allocations, and all but one of the 32 SOx facilities (97%) complied with their SOx allocations. The 12 NOx facilities that exceeded their NOx allocations had aggregate NOx emissions in excess of their combined NOx allocations by a total of 9.4 tons, whereas, the one SOx facility exceeded its SOx allocation by one pound. These amounts are small compared to the overall allocations for Compliance Year 2009 (0.09% of NOx and much less than 0.01% of SOx allocations). The overall RECLAIM NOx and SOx emission reduction targets and goals were met for Compliance Year 2009 (*i.e.*, aggregate emissions were below aggregate allocations).

Chapter 6: Job Impacts

This chapter compiles data as reported by RECLAIM facilities in their Annual Permit Emissions Program (APEP). The analysis focuses exclusively on job impacts at RECLAIM facilities and if those job impacts were directly attributable to RECLAIM as reported by those facilities. There may be additional effects of the RECLAIM program on the local economy outside of RECLAIM facilities (*e.g.*, generating jobs for consulting firms, source testing firms and CEMS vendors) and also factors other than RECLAIM (*e.g.*, the current economic downturn), that impact the job market. These factors are not evaluated in this report.

According to the Compliance Year 2009 employment survey data gathered from APEP reports, RECLAIM facilities reported a net loss of 7,792 jobs, representing 7.33% of their total employment. The vast majority of these losses were attributed to factors other than RECLAIM. Only three facilities (1% of the active facilities) attributed job impact at their facilities to the RECLAIM program. Four RECLAIM facilities were listed as shutdown during Compliance Year 2009. None of these facilities reported on their APEP report that RECLAIM was a contributing factor in their decision to close. Two facilities (0.70% of the RECLAIM universe) reported a combined loss of 188 jobs (0.19% of total employment) due to RECLAIM, whereas one facility (0.35% of the RECLAIM universe) reported a total of two jobs gained due to RECLAIM. AQMD staff has reviewed information available to AQMD for one facility which reported a major portion of the jobs lost (168) due to RECLAIM. This facility has been in the RECLAIM program since RECLAIM's inception 16 years ago, reported job losses last year (Compliance Year 2008) of similar magnitude and attributed them to RECLAIM, has had emission decreases at a rate similar to the RECLAIM rate of emission reduction for NOx emissions, had adequate RTC allocations to cover its emissions in each of the last several years, and was not a structural buyer. The facility's reported NOx emissions had a sharper rate of reduction from Compliance Year 2008 to 2009. This is indicative of decreased production during that period since there was no equipment modification reported. However, the facility's NOx emissions remained approximately constant during Compliance Years 2003 through 2008 (although somewhat higher during Compliance Year 2007). Furthermore, the facility held adequate Compliance Year 2009 RTCs to sustain emissions at the

Compliance Years 2003 through 2008 (excluding 2007) level during Compliance Year 2009. Therefore, AQMD could not identify any specific reason why the RECLAIM program would have caused the job losses reported by this facility.

Chapter 7: Air Quality and Public Health Impacts

Audited RECLAIM emissions have been in an overall downward trend since the program's inception. NOx and SOx emissions in Compliance Year 2009 continued their downward trend (reduced by 12% and 11%, respectively, compared to Compliance Year 2008). Quarterly calendar year 2009 NOx emissions ranged from approximately five percent below to three percent above the mean NOx emissions for the year. Quarterly calendar year 2009 SOx emissions ranged from approximately 11% below to 11% above the year's mean SOx emissions. There was no significant shift in seasonal emissions from the winter season to the summer season. Furthermore, based upon analysis of the geographical distribution of Compliance Year 2009 emissions on a quarterly basis, there was no distinct shift in the geographical distribution of emissions.

The California Clean Air Act (CCAA) required a 50% reduction in population exposure to ozone, relative to a baseline averaged over three years (1986 through 1988), by December 31, 2000. Analysis of per capita exposure (the length of time each person is exposed) to ozone in 1998 and 2000 shows that the Basin achieved the December 2000 target for ozone well before the deadline. In fact, Los Angeles County, Orange County, and the South Coast Air Basin overall achieved compliance with the December 2000 target prior to 1994, and Riverside and San Bernardino Counties achieved compliance in 1996. In calendar year 2010, the per capita exposure to ozone continued to be well below the target set for December 2000.

Air toxic health risk is primarily caused by emissions of certain volatile organic compounds (VOCs) and metals, rather than NOx or SOx emissions. RECLAIM facilities are subject to the same air toxic, VOC, and solid and condensable particulate matter regulations as other sources in the Basin. All sources are subject, where appropriate, to the NSR Rule for Toxics (Rule 1401). In addition, sources with NOx or SOx emission increases are required to be equipped with BACT which minimizes to the best extent feasible the health effects of the NOx and SOx emissions. Therefore, it can be concluded that the RECLAIM program creates no increased toxic impact beyond what would have occurred with the rules and control measures RECLAIM subsumed, and therefore poses no increased adverse public health impacts.

INTRODUCTION

The South Coast Air Quality Management District's (AQMD's) REgional CLean Air Incentives Market (RECLAIM) program was adopted in October 1993 and replaced certain command-and-control rules regarding oxides of nitrogen (NOx) and oxides of sulfur (SOx) with a new market incentives program for facilities that meet the inclusion criteria. The goals of RECLAIM are to provide facilities with added flexibility in meeting emissions reduction requirements while lowering the cost of compliance. The RECLAIM program was designed to meet all state and federal clean air program requirements, as well as other performance criteria, such as equivalent air quality improvement, equivalent enforcement, lower implementation costs, lower job impacts, and no adverse public health impacts.

Since RECLAIM represents a significant change from traditional command-and-control regulations, RECLAIM rules include provisions for program audits in order to verify that the RECLAIM objectives are being met. The rules provide for a comprehensive audit of the first three years of program implementation and for annual audits. The audit results are used to help determine whether any program modifications are appropriate. AQMD staff has completed the initial tri-annual audit and each individual annual audit report through the 2008 Compliance Year Audit.

This report presents the annual audit and progress report of RECLAIM's sixteenth compliance year (January 1 through December 31, 2009 for Cycle 1 and July 1, 2009 through June 30, 2010 for Cycle 2 RECLAIM facilities), also known as Compliance Year 2009. As required by Rule 2015(b)(1) – Annual Audits, this audit assesses:

- Emission reductions;
- Per capita exposure to air pollution;
- Facilities permanently ceasing operation of all sources;
- Job impacts;
- Average annual price of each type of RECLAIM Trading Credit (RTC);
- Availability of RTCs;
- Toxic risk reductions;
- New Source Review permitting activity;
- Compliance issues, including a list of facilities that were unable to reconcile emissions for that compliance year;
- Emission trends/seasonal fluctuations;
- Emission control requirement impacts on stationary sources in the program compared to other stationary sources identified in the Air Quality Management Plan (AQMP); and
- Emissions associated with equipment breakdowns.

The annual audit is organized into the following chapters:

1. RECLAIM Universe
   This chapter discusses changes in the universe of RECLAIM sources that occurred from July 1, 2009 through June 30, 2010.
2. RTC Allocations and Trading
   This chapter summarizes changes in emissions allocations in the RECLAIM universe, RTC supply and RTC trading activity, including average annual prices, availability of RTCs, and market participants.
3. Emission Reductions
   This chapter assesses emissions trends and reductions for RECLAIM sources, emissions associated with equipment breakdowns, and emissions control requirement impacts on RECLAIM sources compared to other stationary sources. It also discusses the latest amendments to the RECLAIM program.
4. New Source Review Activity
   This chapter summarizes New Source Review (NSR) activities at RECLAIM facilities.
5. Compliance
   This chapter discusses compliance activities and the compliance status of RECLAIM facilities. It also evaluates the effectiveness of AQMD's compliance program, as well as the monitoring, reporting, and recordkeeping (MRR) protocols for NOx and SOx.
6. Job Impacts
   This chapter addresses job impacts and facilities permanently ceasing operation of all emission sources.
7. Air Quality and Public Health Impacts
   This chapter discusses air quality trends in the South Coast Air Basin, seasonal and geographic emission trends for RECLAIM sources, per capita exposure to air pollution, and the toxic impacts of RECLAIM sources.

CHAPTER 1
RECLAIM UNIVERSE

Summary

When RECLAIM was adopted in October 1993, a total of 394 facilities were identified as the initial "universe" of sources subject to the requirements of RECLAIM. From program adoption through June 30, 2009, the overall changes in RECLAIM participants were 116 facilities included into the program, 70 excluded from the program, and 154 facilities ceased operation. Thus, the RECLAIM universe consisted of 286 active facilities on July 1, 2009. From July 1, 2009 through June 30, 2010, two facilities were included into the RECLAIM universe, no facility was excluded, and four facilities shut down and are no longer in the active RECLAIM universe. These changes resulted in a net decrease of two facilities in the universe, bringing the total number of active RECLAIM facilities to 284 by June 30, 2010. All these recent changes occurred within the oxides of nitrogen (NOx) universe and there were no changes to the facilities included in the oxides of sulfur (SOx) universe from July 2009 through June 2010.

Background

The RECLAIM program replaced the traditional "command-and-control" rules for a defined list of facilities participating in the program (the RECLAIM "Universe"). The criteria for inclusion in the RECLAIM program are specified in Rule 2001 – Applicability. Facilities are generally subject to RECLAIM if they have NOx or SOx emissions greater than or equal to four tons in 1990 or any subsequent year. However, certain facilities are categorically excluded from RECLAIM. The categorically excluded facilities include dry cleaners; restaurants; police and fire fighting facilities; construction and operation of landfill gas control, processing or landfill gas energy facilities; public transit facilities, potable water delivery operations; facilities that converted all sources to operate on electric power prior to October 1993; and facilities, other than electric generating facilities established on or after January 1, 2001, located in the Riverside County portions of the Mojave Desert Air Basin or the Salton Sea Air Basin. Furthermore, other categories of facilities are not automatically included but do have the option to enter the program at their discretion. These categories include electric utilities (exemption only for the SOx program); equipment rental facilities; facilities possessing solely "various locations" permits; schools or universities; portions of facility research operations; ski resorts; prisons; hospitals; publicly-owned municipal waste-to-energy facilities; publically-owned sewage treatment facilities operating with an approved regional growth plan; electrical power generating systems owned and operated by the Cities of Burbank, Glendale, or Pasadena or their successors; facilities on San Clemente Island; agricultural facilities; and electric generating facilities that are new on or after January 1, 2001 and located in the Riverside County portions of the Mojave Desert Air Basin or the Salton Sea Air Basin. An initial universe of 394 RECLAIM facilities was developed using these criteria based on 1990, 1991 and 1992 facility emissions data.

A facility that is not categorically excluded from the program may voluntarily join RECLAIM, regardless of its emission level. Additionally, a facility may be required to enter the RECLAIM universe if:

- It increases its NOx and/or SOx emissions above the four-ton per year threshold; or
- It ceases to belong to an exempt category and its reported NOx and SOx emissions are greater than or equal to four tons per year; or
- It is determined by AQMD staff to meet the applicability requirements of RECLAIM, but was initially misclassified as not subject to RECLAIM.

RECLAIM facilities including those in the initial RECLAIM universe as well as existing facilities that were included in the program (either voluntarily or based on emissions above four tons per year), were issued at the time of joining RECLAIM an annually declining allocation of emission credits ("RECLAIM Trading Credits" or "RTCs") based upon their historic production levels as reported to AQMD in their emission inventory reports (if any). Each RECLAIM facility's RTC holdings constitute an annual emissions budget. RTCs may be bought or sold as the facilities deem appropriate (see Chapter 2 – RTC Allocations and Trading).

RECLAIM facilities that permanently go out of business after January 1, 1994 (Cycle 1) or after July 1, 1994 (Cycle 2) are removed from the active emitting RECLAIM universe, but may retain their RTCs and participate in the trading market.

Universe Changes

The RECLAIM rules include several mechanisms to exclude facilities originally included in the program and to add new facilities. The overall changes to the RECLAIM universe from the date of adoption (October 15, 1993) through the end of Compliance Year 2008 (June 30, 2009) were: the inclusion of 116 facilities (86 facilities that were new or new to RECLAIM and 30 facilities created by partial change of operator of existing RECLAIM facilities), the exclusion of 70 facilities, and the shutdown of 154 facilities. Thus, the net change in the RECLAIM universe during the first 15 compliance years was a decrease from 394 to 286 facilities. From July 2009 through June 30, 2010, two facilities were included, no facility was excluded, and four facilities shut down. These changes brought the total number of facilities in the RECLAIM universe to 284 facilities. These include 252 NOx-only, no SOx-only, and 32 both NOx and SOx RECLAIM facilities. The list of active facilities in the RECLAIM universe as of June 30, 2010 is provided in Appendix A.

Facility Inclusions and Exclusions

Between July 1, 2009 and June 30, 2010, two facilities were added to the RECLAIM universe. One of these facilities was created through partial change of operator of an existing RECLAIM facility. The second facility elected to enter ("opted in") the RECLAIM program. These two facilities and the reasons for their inclusion are listed in Appendix B.

No facility was excluded from the RECLAIM universe during Compliance Year 2009.

Facilities Permanently Ceasing Operations

Four RECLAIM facilities permanently ceased operations between July 1, 2009 and June 30, 2010. One of these facilities shut down as it was sold and its equipment was no longer operating. Strategic business decisions prompted another shutdown facility to move its operation to North Carolina. Reasons for shutdown for the remaining two facilities are not known. One of these two facilities was last inspected in October 2009 and submitted its last Quarterly Certified Emission Report (QCER) in first quarter of Compliance Year 2009. The second facility was last inspected in November of 2009 and submitted its last QCER in the second quarter of Compliance Year 2009. No indication of the impending shut down was noted by the inspectors. Subsequent attempts at contacting facility representatives for both facilities were unsuccessful. AQMD inspectors verified that both facilities were no longer operating. All shutdown facilities were NOx-only facilities. Appendix C lists the shutdown facilities and brief descriptions of the reported reasons for their closures.

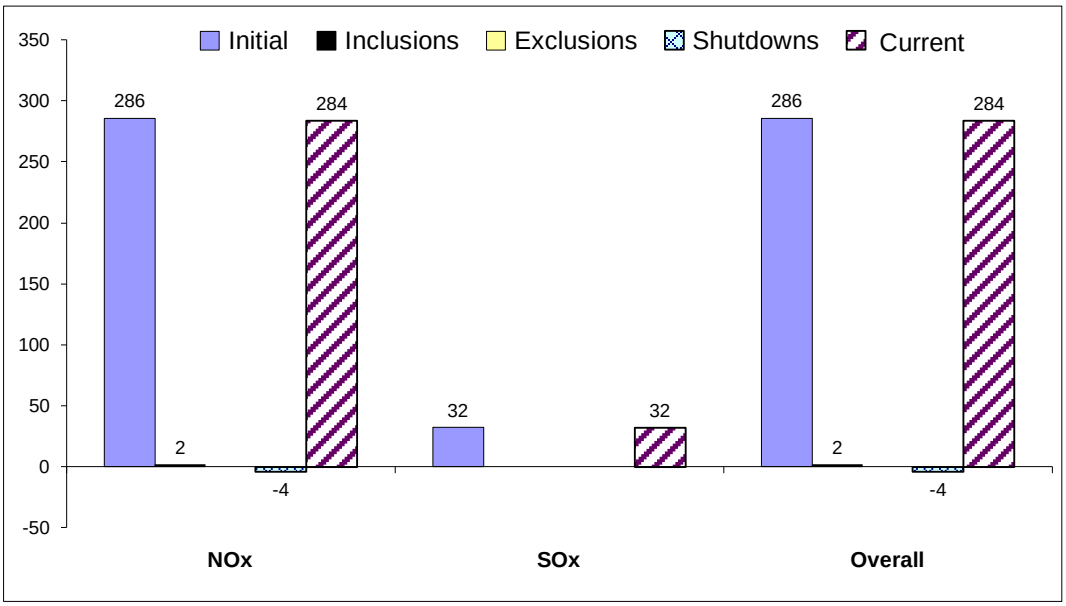
The combination of the above stated inclusions and shutdowns resulted in a net decrease of two facilities in the RECLAIM universe. Table 1-1 summarizes changes in the RECLAIM universe between the start of the program and June 30, 2010. Overall changes to the RECLAIM universe that occurred from July 1, 2009 through June 30, 2010 are illustrated in Figure 1-1.

Table 1-1
RECLAIM Universe Changes

	NOx Facilities	SOx Facilities	Total* Facilities
Universe – October 15, 1993 (Start of Program)	392	41	394
Inclusions—October 15, 1993 through June 30, 2009	116	10	116
Exclusions—October 15, 1993 through June 30, 2009	-69	-4	-70
Shutdowns—October 15, 1993 through June 30, 2009	-153	-15	-154
Universe – June 30, 2009	286	32	286
Inclusions—July 1, 2009 through June 30, 2010	2	0	2
Exclusions—July 1, 2009 through June 30, 2010	0	0	0
Shutdowns—July 1, 2009 through June 30, 2010	-4	0	-4
Universe – June 30, 2010	284	32	284

* Total facilities is not the sum of NOx and SOx facilities due to the overlap of some facilities being in both the NOx and SOx universes.

Figure 1-1
Universe Changes from July 1, 2009 through June 30, 2010



CHAPTER 2
RTC ALLOCATIONS AND TRADING

Summary

On January 7, 2005, the Governing Board adopted amendments to RECLAIM that resulted in an overall 22.5% reduction in NOx Allocations from 2007 through 2011. For Compliance Year 2009, the cumulative NOx RECLAIM Trading Credit (RTC) reduction was 17.1% since 2007. On November 5, 2010, the Governing Board adopted further amendments to RECLAIM that will result in an overall reduction of 5.7 tons/day (or 48.4%) in SOx Allocations from 2013 through 2019. Additionally, the Compliance Year 2009 RTC supply decreased by 8.5 tons and 19.5 tons for NOx and SOx, respectively, due to allocation adjustments for clean fuel production pursuant to Rule 2002(c)(12). Therefore, NOx and SOx RTC supplies for Compliance Year 2009 were 10,377 and 4,280 tons, respectively.

The trading market activity was slower during calendar year 2010 compared to calendar year 2009. There were 394 registered RTC transactions compared to 435 registered transactions in calendar year 2009. However, excluding swaps, the total value of $47.6 million traded in calendar year 2010 is much higher than the $22.6 million traded in calendar year 2009. This is mainly due to the increase in value of infinite-year block (IYB) SOx RTCs traded prior to the rule amendment for the SOx RECLAIM program. Since the inception of the RECLAIM program in 1994, a total value of over $990 million has been traded in the RTC trading market, excluding swaps.

The average annual prices of discrete-year NOx RTCs traded during calendar year 2010 ranged from $741 per ton for Compliance Year 2009 RTCs, through $2,367 per ton for Compliance Year 2010, to $8,052 per ton for Compliance Year 2011 RTCs. The average annual prices for discrete-year SOx RTCs traded during the same period ranged from $451 per ton for Compliance Year 2009 RTCs, to $1,286 per ton for RTCs for Compliance Year 2010[1]. In calendar year 2010, the average annual prices for discrete NOx and SOx RTCs for all compliance years remained well below the $15,000 per ton threshold to evaluate and review the compliance aspects of the program set forth by AQMD Rule 2015, as well as the $37,738 per ton of NOx and $27,172 per ton of SOx discrete RTCs pre-determined overall program review thresholds established by the Governing Board pursuant to Health and Safety Code §39616(f).

The average annual price for IYB NOx RTCs traded in calendar year 2010 was $95,761 per ton, and the average annual price for IYB SOx RTCs traded in calendar year 2010 was higher at $109,219 per ton (compared to $124,576 and $36,550 per ton of IYB NOx and SOx RTCs traded in calendar year 2009, respectively). The large increase in the IYB SOx RTC price might have been largely influenced by the then-impending rule amendment for a shave to the SOx RECLAIM program. In calendar year 2010, average annual IYB RTC prices did not exceed the $566,076 per ton of IYB NOx RTCs or the $407,575 per ton of

[1] There were no discrete-year 2011 SOx RTCs traded in calendar year 2010.

IYB SOx RTCs pre-determined overall program review thresholds established by the Governing Board pursuant to Health and Safety Code §39616(f).

The role of investors in the RTC market remains significant. Based on both trading values and the number of trades with price, investors were involved in a significant portion of the trades recorded in calendar year 2010 (77% and 92% with respect to value and 66% and 86% with respect to volume for discrete NOx and SOx trades, respectively; 32% and 100% with respect to value and 27% and 100% with respect to volume for IYB NOx and SOx trades, respectively). Investors' holdings of IYB NOx RTCs remained unchanged at 5.5% at the end of calendar year 2010 as compared to the end of calendar year 2009; however, investor holdings of IYB SOx RTCs decreased to 0.01% at the end of calendar year 2010 from 5.5% at the end of calendar year 2009.

Background

The AQMD issues each RECLAIM facility emissions allocations for each compliance year, according to the methodology specified in Rule 2002, based on the facility's operational history. These allocations are issued as RTCs, denominated in pounds of NOx or SOx within a specific 12-month period or compliance year. Each RTC may only be used for emissions occurring within the term of that RTC. The RECLAIM program has two staggered compliance cycles—Cycle 1 with a compliance period of January 1 through December 31 of each year, and Cycle 2 with a compliance period of July 1 of each year through June 30 of the following year. Each RECLAIM facility is assigned to either Cycle 1 or Cycle 2 and the RTCs it is issued (if any) have corresponding periods of validity.

The issuance of allocations for future years provides RECLAIM facilities guidance regarding their future emission reduction requirements. Facilities can plan their compliance strategies by reducing actual emissions or securing needed RTCs through trades (or a combination of the two), based on their operational needs.

RECLAIM facilities may acquire through trading RTCs issued for either cycle and apply them to emissions, provided that the RTCs are used for emissions occurring within the RTCs' period of validity and the trades are made during the appropriate time period. RECLAIM facilities have 30 days at the end of each of the first three quarters to reconcile by securing RTCs to cover their quarterly and year-to-date emissions, and 60 days after the end of each compliance year to reconcile their total annual emissions by securing adequate RTCs.

In an effort to achieve additional NOx reductions pursuant to 2003 AQMP Control Measure #2003 CMB-10 – "Additional NOx Reductions for RECLAIM (NOx)" and to comply with requirements for demonstrating Best Available Retrofit Control Technology (BARCT) equivalency under state law, AQMD began the RECLAIM rule amendment process in early 2004. The process included a detailed analysis of control technologies that qualified as BARCT for NOx, and lengthy discussions with stakeholders—including regulated industry, environmental groups, the California Air Resources Board (CARB), and the United States Environmental Protection Agency (USEPA). On January 7, 2005, the Governing Board adopted several changes to the RECLAIM program. Among other amendments, the changes resulted in cumulative reductions of 7.7 tons NOx per day, a more than

20% reduction, from all RECLAIM facilities when fully implemented in Compliance Year 2011 (the reductions are being phased in from 2007 through 2011: 4.0 tons per day in 2007 and an additional 0.925 tons per day in each of the following four years).

Also, in July 2007, AQMD adopted the 2007 AQMP, which serves as the region's attainment demonstration for the annual average PM2.5 standards and included a formal request to extend USEPA's annual average PM2.5 attainment date to 2015. The 2007 AQMP includes Control Measure CMB-02 – "Further SOx Reductions for RECLAIM (SOx)" to address the implementation process to meet the annual average PM2.5 standards. This control measure proposes to further reduce SOx allocations by approximately three tons per day, with the reductions phased in from 2011 to 2014. AQMD started the rule amendment process in February 2008. The process included technical and cost analyses to determine BARCT for categories of SOx sources in RECLAIM. Third party consultants were hired to perform technical analysis of available SOx control technologies. Preliminary analysis indicated that current technology can result in higher emission reductions than the three tons per day level projected in the 2007 AQMP. There have been many stakeholder meetings, three public workshops, two Stationary Source Committee Meetings, and two Refinery Source Committee Meetings. Additionally, California Environmental Quality Act (CEQA), socio-economic and market analyses were performed.

As a result of this process, on November 5, 2010, the Governing Board adopted changes to the RECLAIM program that will result in overall reduction of 5.7 tons SOx per day when fully implemented in 2019 (the reductions are being phased in from 2013 through 2019: 3.0 tons per day in 2013, 4.0 tons per day in years 2014 through 2016, 5.0 tons per day in 2017 and 2018, and a cumulative 5.7 tons per day starting in 2019 and continuing thereafter). This reduction in SOx is an essential part in the South Coast Air Basin's effort in attaining the anticipated federal 24-hour average PM2.5 standard by 2020. These rule amendments also satisfied the requirements for BARCT in accordance with California Health and Safety Code §40440.

Although other chapters in this report present and discuss Compliance Year 2009 data, RTC trading and price data discussed in this chapter are for calendar year 2010.

RTC Allocations and Supply

The methodology for determining RTC allocations is established by Rule 2002. According to the rule, allocations may change when the universe of RECLAIM facilities changes, emissions associated with the production of re-formulated gasoline increase or decrease, or reported historical activity levels are updated. In addition to the allocation, RTCs may be generated by conversion of emissions reduction credits from mobile and area sources pursuant to approved protocols. The total RTC supply in RECLAIM is made up of all RECLAIM facilities' allocations, conversions of Emission Reduction Credits (ERCs) owned by RECLAIM and non-RECLAIM facilities (the window of opportunity to convert ERCs to RTCs other than during the process of a non-RECLAIM facility entering the program closed June 30, 1994), emissions associated with the production of re-formulated gasoline, and conversion of emission reduction credits from mobile

sources and area sources governed pursuant to approved protocols. Changes in the RTC supply during Compliance Year 2009 are discussed below.

Allocations Adjustments Due to Inclusion and Exclusion of Facilities

Allocations for a facility are based on the facility's historical operations, emission reduction requirements under the command-and-control rules subsumed by RECLAIM, AQMP control measures subsumed by RECLAIM, and adjustments for BARCT equivalency. Facilities entering RECLAIM after 1994 are issued allocations according to the same methodology as that used for issuing RTCs to facilities initially included at the beginning of the program. However, allocations issued for these facilities are only applicable for the compliance year upon entry and forward. In addition, these facilities are issued allocations and Non-tradable/Non-usable Credits for Compliance Year 1994 for the sole purpose of establishing their starting allocation to ensure compliance with offset requirements under Rule 2005 - New Source Review for RECLAIM and the trading zone restriction to ensure net ambient air quality improvement within the sensitive zone established by Health and Safety Code §40410.5.[2] One facility opted to join the NOx RECLAIM program during Compliance Year 2009 and no facility was excluded during this compliance year. The opt-in facility did not qualify for any allocation because it is a new facility without any prior operating history. Therefore, no changes to the NOx or SOx RTC supplies occurred as a result of changes to the RECLAIM universe in Compliance Year 2009.

Allocations Adjustments Due to Clean Fuel Production

Rule 2002(c)(12) – Clean Fuel Adjustment to Starting Allocation, provides refineries with RTCs to compensate for their actual emissions increases caused by the production of CARB Phase II reformulated gasoline. The amount of these RTCs is based on actual emissions for the subject compliance year and historical production data. Based on the historical production data submitted, qualifying refineries were issued in 2000 an aggregate baseline of 86.5 tons of NOx and 42.3 tons of SOx for Compliance Year 1999, 101.8 tons of NOx and 41.4 tons of SOx for Compliance Year 2000, and 98.4 tons of NOx and 40.2 tons of SOx for each subsequent Compliance Year. These refineries are required to submit, at the end of each compliance year in their Annual Permit Emissions Program (APEP) report, records to substantiate actual emission increases due solely to the production of reformulated gasoline. If actual emission increases for a subject year are different than the projected amount, the RTCs issued are adjusted accordingly (*i.e.*, excess RTCs issued will be deducted if emissions were less than projected; conversely, additional RTCs will be issued if emissions were higher than projected).

As a result of the amendment to Rule 2002 in January 2005 to further reduce RECLAIM NOx allocations, the NOx historical baseline Clean Fuel Adjustments for Compliance Year 2007 and subsequent years were also reduced by the appropriate shave factors as stated in Rule 2002(f)(1)(A). However, since Rule

[2] These Compliance Year 1994 allocations and Non-tradable/Non-usable Credits are not included in the RTC supply as shown in Figures 2-1 and 2-2 of Chapter 2, and Figures 3-1 and 3-2 of Chapter 3. They are also not included in the "Total NOx RTCs" or "Total SOx RTCs" columns shown in Tables 3-1 and 3-2, respectively, of Chapter 3.

2002(c)(12) entitles these refineries' to a Clean Fuels adjustment based on actual emissions, these refineries' Compliance Years 2007 (11.5 tons), 2008 (14.2 tons) and 2009 (16.8 tons) NOx allocations (affected compliance years for which actual supporting data has been submitted by these refineries) have been re-adjusted to credit back the NOx amounts previously shaved pursuant to Rule 2002(f)(1)(A). For Compliance Year 2009, the overall effect of adjusting NOx allocations to account for actual production and emissions data submitted in APEP reports, as well as crediting back the Rule 2002(f)(1)(A) shave amount, was that a total of 8.5 tons of NOx RTCs and 19.5 tons of SOx RTCs were deducted from refineries' Compliance Year 2009 holdings based on actual production and emissions data submitted in the APEP.

Changes in RTC Allocations Due to Activity Corrections

RECLAIM facilities' allocations are determined by their reported historical activity levels (*e.g.*, fuel usage, material usage, or production). If a facility makes corrections to its reported activity levels, the allocation is adjusted accordingly. There were no changes in RTC allocations due to activity corrections in Compliance Year 2009.

Conversions of Other Types of Emission Reduction Credits

Conversions of Mobile Source Emission Reduction Credits (MSERCs) and other types of emission reductions credits, besides regular stationary source ERCs issued under Regulation XIII – New Source Review, to RTCs are allowed under Rule 2008 – Mobile Source Credits, and several programs under Regulation XVI – Mobile Source Offset Programs and Regulation XXV – Intercredit Trading. Conversion of these credits to RTCs is allowed based on the respective approved protocol specified in each rule. Currently, there are no State Implementation Plan (SIP) approved protocols[3] for conversion of MSERCs to RTCs. As a result, no new RTCs were issued as a result of conversion of other types of emission reduction credits in Compliance Year 2009.

Net Changes in RTC Allocations

The changes to RTC supplies described in the above sections resulted in a net decrease of 8.5 tons of NOx RTCs and a decrease of 19.5 tons of SOx RTCs for Compliance Year 2009. Table 2-1 summarizes the changes in NOx and SOx RTC supplies that occurred in Compliance Year 2009 pursuant to Rule 2002.

[3] Projects may still be implemented under Rules 1610 and 1612, which are not approved under the SIP. Resultant emission reductions can be converted to RTCs.

Table 2-1
Changes in NOx and SOx RTCs Supplies during Compliance Year 2009 (tons/year)

Source	NOx	SOx
Universe changes	0	0
Clean Fuel/Reformulated Gasoline	-8.5	-19.5
Activity corrections	0	0
MSERCs	0	0
Net change	-8.5	-19.5

Note: The data in this table represents the changes that occurred over the course of Compliance Year 2009 to the Compliance Year 2009 aggregate NOx and SOx RTC supplies originally issued pursuant to Rule 2002, not the difference between 2009 aggregate RTC supply and that for any other compliance year.

Figures 2-1 and 2-2 illustrate the total NOx and SOx RTC supplies through the end of Compliance Year 2020.

Figure 2-1
NOx RTC Supply

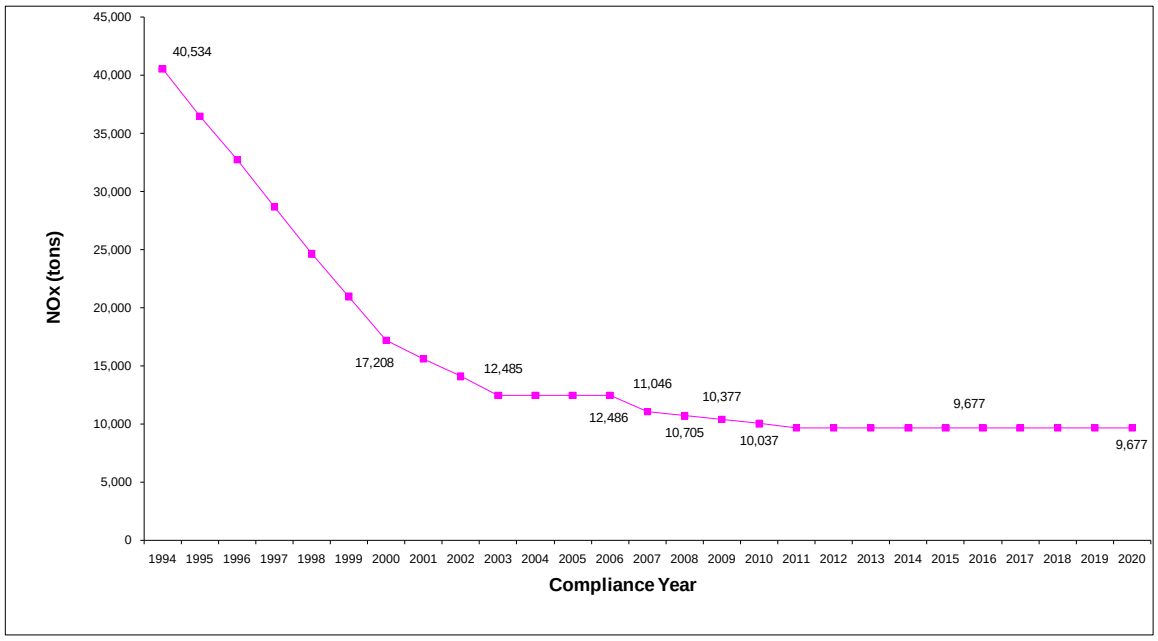
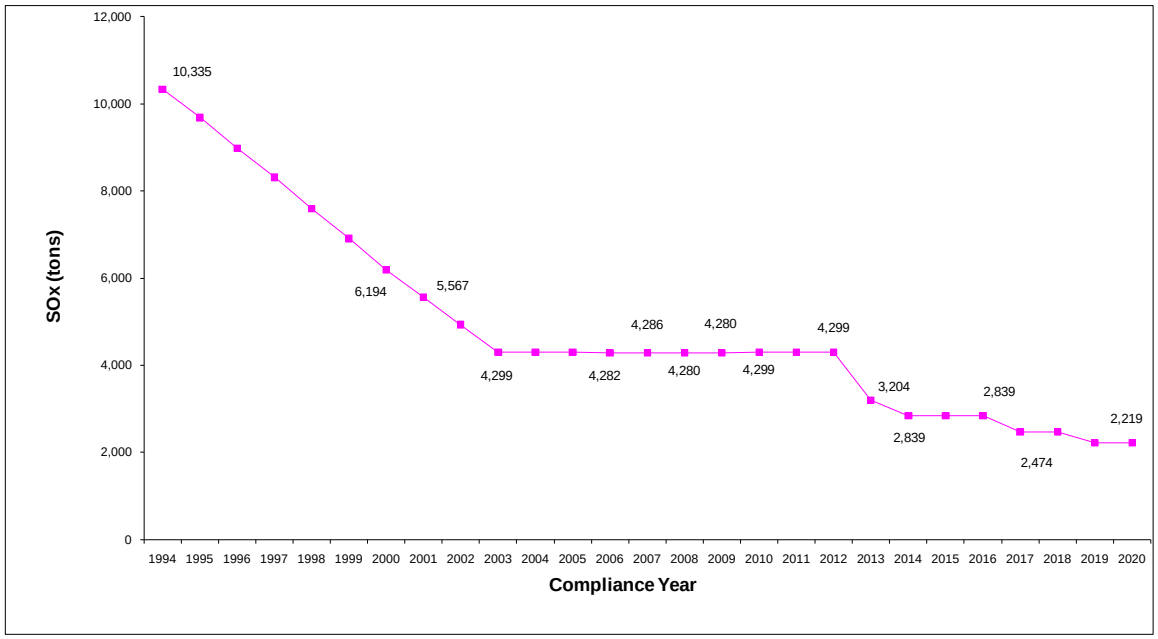


Figure 2-2
SOx RTC Supply



Upcoming Proposal for Credit Generation

AQMD is currently evaluating the adoption of two rules that would generate additional credits. One potential rule would allow generation of emission reduction credits through the control of exhaust emissions from auxiliary engines and/or boilers used on Ocean-Going Vessels while at berth in a commercial marine port (Proposed Rule 2512 – Credit Generation Program for Ocean-Going Vessels at Berth). The other potential rule would allow generation of emission reduction credits through the voluntary repowering of diesel–fueled auxiliary head end power generating units at passenger locomotives with cleaner engines (Proposed Rule 2511 – Credit Generation Program for Locomotive Head End Power Unit Engines). Currently, both proposed rules are scheduled for public hearing in May 2011. Under these two proposals, the resultant credits from both rules would be allowed to be used in the RECLAIM program.

RTC Price Reporting Methodology

On September 7, 2007, the Governing Board approved a new reporting methodology for RTC trades that is more reflective of the market and minimizes the potential for price manipulation. Under this new reporting methodology, trades of specific, discrete-year RTCs are reported to AQMD separately from trades involving blocks of RTCs with a specified start year and continuing into perpetuity (also known as infinite-year blocks or IYBs). Discrete-year trades continue to be reported in terms of dollars per pound and averaged in dollars per ton of RTCs for each discrete compliance year while IYB trade prices are reported separately and as total dollar value for total amount of IYB traded, and averaged as a total dollar value per ton of IYB RTC.

In addition, the new reporting methodology also identified swap trades as having the potential to adversely impact the calculated average annual prices of RTCs, because prices reported for swap trades are based on the agreed upon value of the trade by the participants, and do not involve exchange of funds for the total value agreed upon. Therefore, reported prices for swap trades are excluded from the calculation of average annual RTC price under this new reporting methodology. Further details regarding the new reporting methodology for RTC trades can be found in the report entitled "Evaluation and Review of the RECLAIM Program and Assessment of RTC Price Reporting," dated September 7, 2007.

The Governing Board also established new program review thresholds for IYB trades through Board Resolution No. 07-20. Accordingly, the new program review price thresholds for IYB RTCs (equivalent to 15 times the 1993 thresholds used for discrete trades with CPI adjustments) are $566,076 per ton of NOx RTCs and $407,575 per ton of SOx RTCs in 2010 dollars.

RTC Trading Activity

Overall Trading Activity

The RTC market activity was slower in calendar year 2010 compared to years past (before 2009). The calendar year 2010 trading activity—394 total registered trade transactions (345 NOx trades and 49 SOx trades)—was slightly lower than trading activity in calendar year 2009 (435 total registered trade transactions). These trades included discrete and IYB RTCs traded with prices, discrete and IYB RTC transfers with zero price, and discrete and IYB RTC swap trades. However, excluding swaps, a total value of $47.6 million was traded in calendar year 2010 ($17.3 million for NOx and $30.3 million for SOx) compared to the total value of $22.6 million traded in calendar year 2009 ($18.6 million for NOx and $4.0 million for SOx). This large increase in value traded was due to the increased trading of IYB SOx RTCs (total of $30.2 million). The high value was a combination of larger volume of IYB SOx RTCs traded (10 trades, 227 tons) and higher prices. The large volume and higher prices might have been largely influenced by the then-impending rule amendment of the SOx RECLAIM program. Figure 2-3 shows historical trading values (excluding swaps). Figure 2-4 summarizes overall trading activity (excluding swaps) in calendar year 2010 by pollutant.

RTC transfers with zero price generally occur when a seller transfers or escrows RTCs to a broker, when there is a transfer between facilities under common operator, or when there is a transfer between facilities that have gone through change of operator. Trades with zero price also occur when the trading parties have mutual agreements where one party provides a specific service (*e.g.,* providing steam or other process components) for the second party. In return, the second party will transfer the RTCs necessary to offset emissions generated from the service.

Figure 2-3
Annual Trading Values (Excluding Swaps)

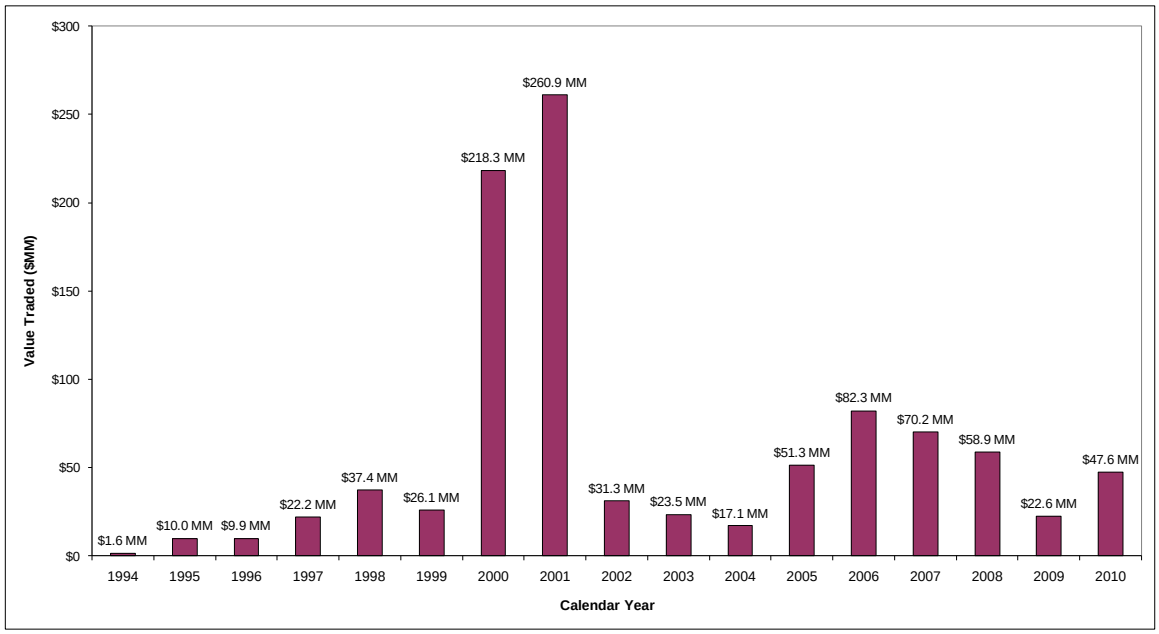
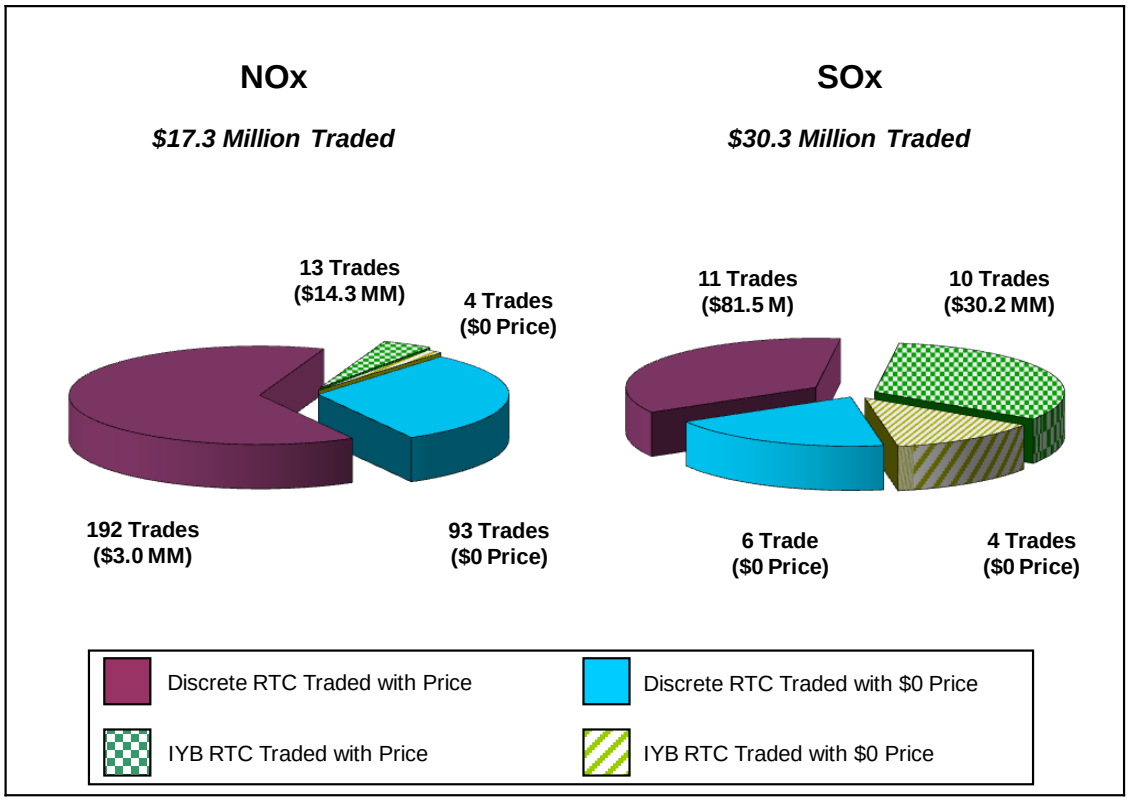


Figure 2-4
Calendar Year 2010 Overall Trading Activity (Excluding Swaps)



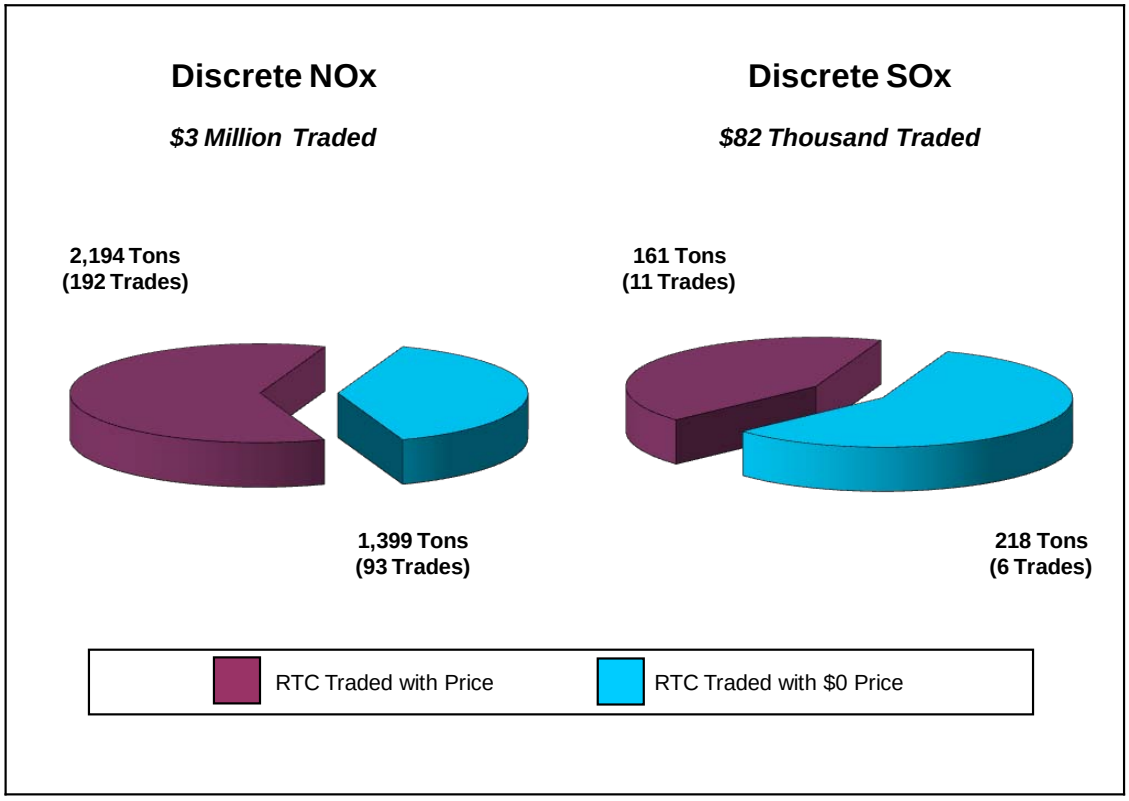
Discrete RTC Trading Activity

In calendar year 2010, there were a total of 285 trades and 17 trades of discrete NOx and SOx RTCs, respectively. Of the 285 discrete NOx trades, 192 were traded with price totaling 2,194 tons in volume and $3 million in value. Of the 17 SOx trades, 11 were traded with price totaling 161 tons in volume and $0.08 million in value. In addition to trades with prices, there were 93 discrete NOx trades of 1,399 tons and 6 discrete SOx trades of 218 tons traded with zero price. In the past years, only discrete RTCs for Compliance Years 2010 and before were traded. However, in calendar year 2010, the market participants started trading discrete RTCs with prices for Compliance Years 2011. Additionally, there were transfers of discrete RTCs for later years at zero price. These transfers occurred between facilities under common ownership for Compliance Year's 2012 to 2017 discrete year NOx RTCs.

Discrete NOx RTC trades with price in 2010 increased in total quantity traded and total value when compared to trades in 2009. The quantity of discrete NOx RTCs traded with price increased from 1,699 tons in calendar year 2009 to 2,194 tons in calendar year 2010 and the total value of discrete NOx RTCs traded increased from $1.9 million in calendar year 2009 to $3 million in calendar year 2010. The overall quantity of discrete NOx RTCs increased from 3,271 tons

traded in calendar year 2009 to 3,593 tons in calendar year 2010. Discrete SOx RTC trades with price in 2010 showed a significant decrease in both quantities traded and total value. The quantity traded with price decreased from 378 tons to 161 tons and the value of discrete SOx RTCs traded decreased from $0.3 million to $0.08 million from calendar year 2009 to 2010, respectively. The overall quantity of discrete SOx RTCs declined from 933 tons to 379 tons. Figure 2-5 illustrates the trading activity of discrete RTCs (excluding swaps) for calendar year 2010.

Figure 2-5
Calendar Year 2010 Trading Activity for Discrete RTCs (Excluding Swaps)



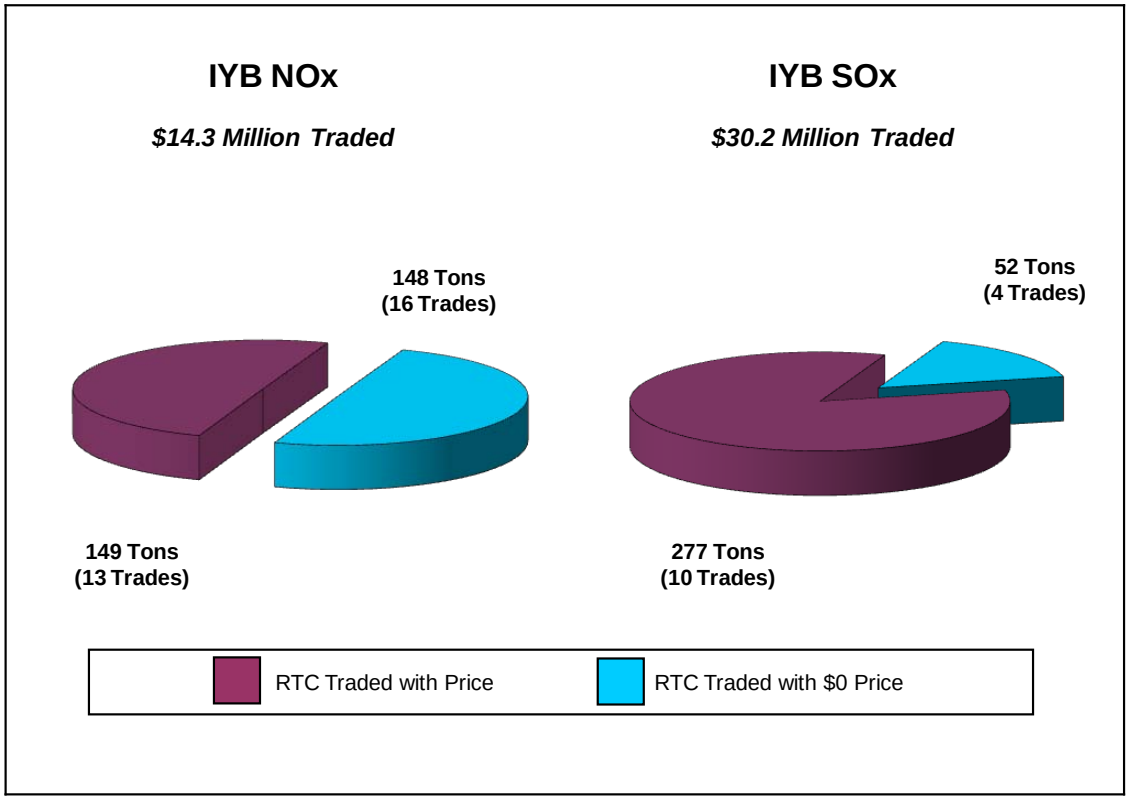
IYB RTC Trading Activity

IYB RTCs include RTCs valid for a certain specified start year and continuing into perpetuity. In 2010, there were 29 IYB NOx trades and 14 IYB SOx trades. All of these IYB trades include 2010, 2011, or 2012 as the start year. Of the 29 IYB NOx trades, 13 trades were with price totaling 149 tons at $14.3 million (compared to 14 trades with price totaling 134 tons at $16.7 million in 2009). This represents a 23% drop in the 2010 average price for IYB NOx RTCs from the average price of 2009.

There were 10 IYB SOx RTC trades in calendar year 2010 with price totaling 277 tons which was significantly higher than the 4 trades with price totaling 100 tons

traded in calendar year 2009. Moreover, the total value of these IYB SOx trades ($30.2 million) was much higher than the total value in 2009 ($3.7 million), reflecting an almost 200% increase in average price for IYB SOx RTCs in calendar year 2010. This increase may have been caused by the then-anticipated rule amendment to the SOx RECLAIM program. In addition to trades with prices, there were also 16 IYB NOx trades totaling 148 tons and four IYB SOx trades totaling 52 tons traded with zero price. Figure 2-6 illustrates the calendar year 2010 IYB RTC trading activity excluding swap trades.

Figure 2-6
Calendar Year 2010 Trading Activity for IYB RTCs (Excluding Swaps)



Trade data presented in this report, including historical data prior to 2001, are compiled strictly according to the new reporting methodology approved by the Governing Board in 2007. Swap information and details of discrete and IYB trades were not required to be provided by trade participants prior to the amendment of Rule 2007 – Trading Requirements in May 2001. In compiling data for calendar years 1994 through part of 2001, any trade registration involving infinite-year RTCs was considered as a single IYB trade and swap trades were assumed to be nonexistent. Trading activity since inception of the RECLAIM program is illustrated in Figures 2-7 through 2-10 (discrete NOx trades, discrete SOx trades, IYB NOx trades, and IYB SOx trades, respectively) based on the new trade reporting methodology.

Figure 2-7
Discrete NOx RTCs Trades (Excluding Swaps)

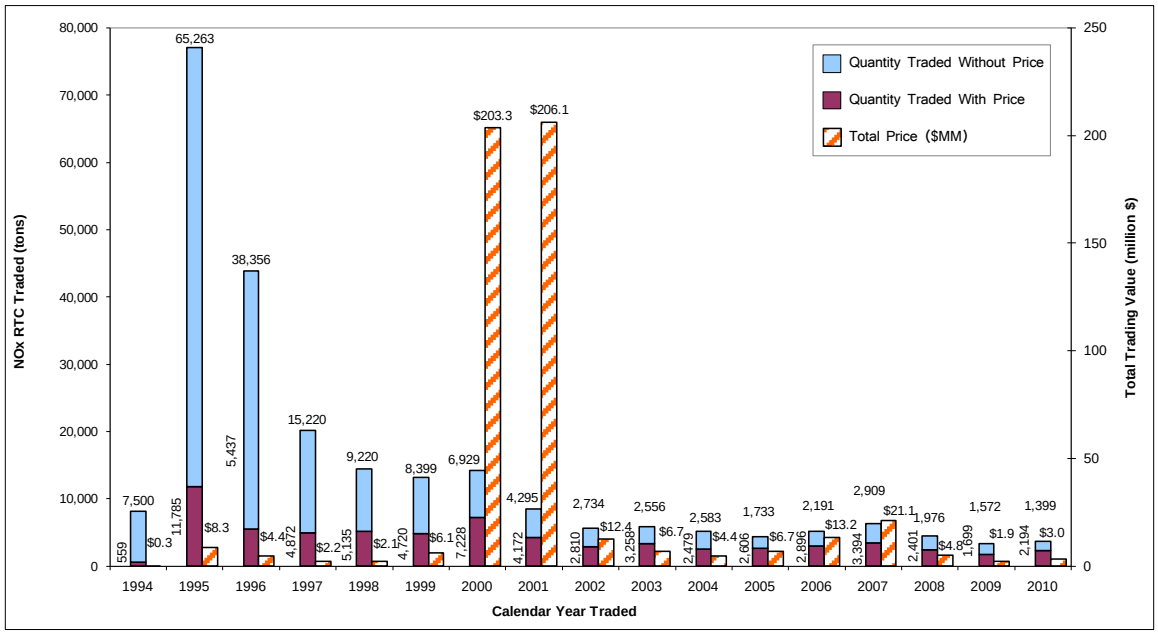


Figure 2-8
Discrete SOx RTCs Trades (Excluding Swaps)

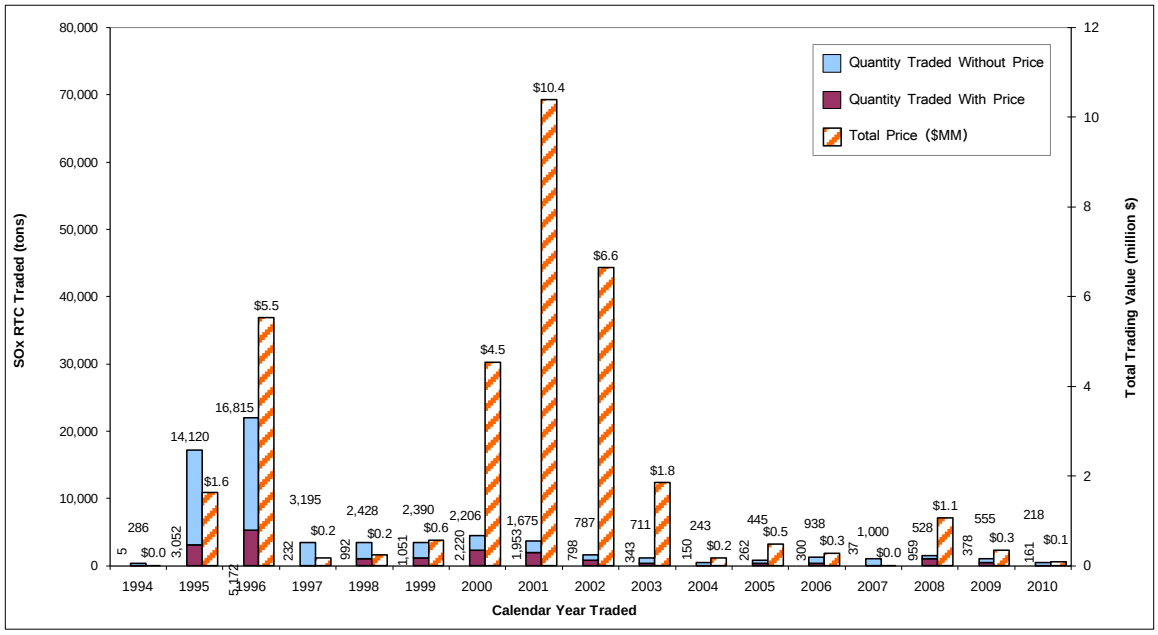


Figure 2-9
IYB NOx RTCs Trades (Excluding Swaps)

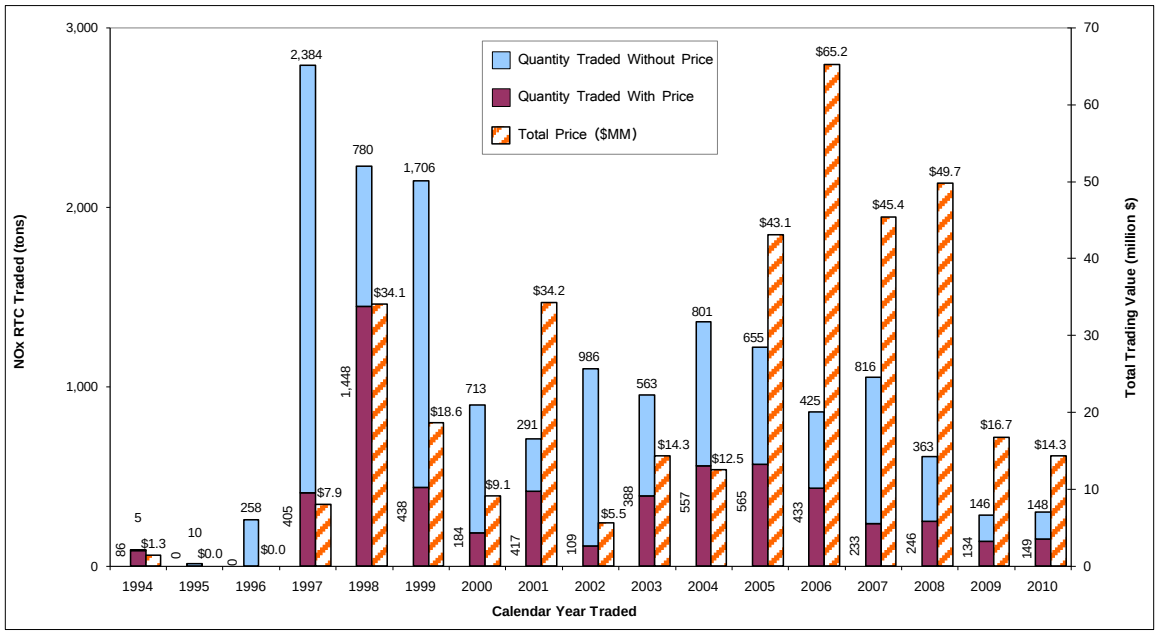
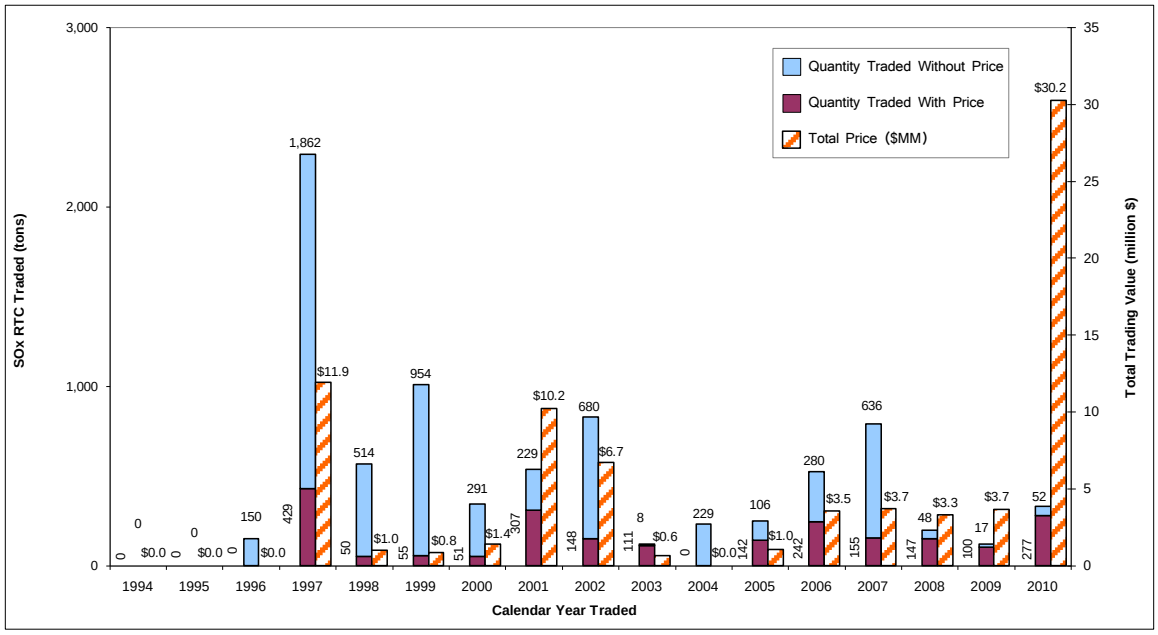


Figure 2-10
IYB SOx RTCs Trades (Excluding Swaps)



Swap Trades

In addition to traditional trades of RTCs for a price, RTC swaps also occurred between the trading partners. There were swaps of RTCs with different zones, cycles, expiration years, and pollutants in 2010. Nine of the NOx RTC swaps in calendar year 2010 involved IYB RTCs. In some cases, swaps involved a combination of RTCs and cash payment as a premium. Trading parties swapping RTCs were required to report the agreed upon price of RTCs for each trade even though, with the exception of the above-described premiums, no money was actually exchanged. Over $10.6 million in total value was reported from RTCs that were swapped in 2010. The swap values are based on the prices reported on the RTC trade registrations. Since RTC swap trades occur when two trading partners exchange RTCs, values reported on both trades involved in the exchange are included in the calculation of the total value reported. However, in cases where commodities other than RTCs are involved in the swap, these commodity values are not included in the above reported total value. (For example, in the case of a swap of NOx RTCs valued at $10,000 for another set of RTCs valued at $8,000 together with a premium of $2,000, the value of such a swap would have been reported at $18,000 under Table 2-2).

For calendar years that have swap transactions with large values (*e.g.*, 2009) the inclusion of swap transactions in the average trade price calculations would result in calculated average annual prices dominated by swap transactions, and therefore, may not be representative of market prices actually paid for RTCs. Under the Governing Board-approved price reporting methodology, prices of swap trades are likewise excluded from analysis of average trade prices because the values of the swap trades are solely based upon prices agreed upon between trading partners and do not reflect actual funds transferred. Tables 2-2 and 2-3 present the calendar years 2001 through 2010 RTC swaps for NOx and SOx, respectively.

Table 2-2
NOx Registrations Involving Swaps

Calendar Year	NOx									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Total Value ($ millions)	$24.29	$14.31	$7.70	$3.74	$3.89	$7.29	$4.14	$8.41	$55.76	$3.73
IYB RTC Swapped with Price (tons)	6	64	70	0	19	15	0	4	394	18
Discrete RTC Swapped with Price (tons)	612	1,702	1,198	1,730	885	1,106	820	1,946	1,188	929
Number of Swap Registrations with Price	71	94	64	90	53	49	43	48	37	25
Total Number of Swap Registrations	78	94	64	90	53	49	49	50	42	31

Table 2-3
SOx Registrations Involving Swaps

Calendar Year	SOx									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Total Value ($ millions)	$1.53	$6.11	$5.88	$0.39	$2.16	$0.02	$0.00	$0.40	$3.63	$6.89
IYB RTC Swapped with Price (tons)	18	27	21	0	44	0	0	0	55	79
Discrete RTC Swapped with Price (tons)	240	408	656	162	228	24	0	197	401	417
Number of Swap Registrations with Price	3	30	32	13	13	2	0	5	9	16
Total Number of Swap Registrations	4	30	32	13	13	2	0	8	10	18

RTC Trade Prices

Discrete-Year RTC Prices

In calendar year 2010, the average annual prices for discrete-year NOx RTCs were $741 per ton for Compliance Year 2009, $2,367 per ton for Compliance Year 2010, and $8,052 per ton for Compliance Year 2011. The average annual prices for discrete-year SOx RTCs were $451 per ton for Compliance Year 2009 and $1,286 per ton for Compliance Year 2010[4]. Figures 2-11 and 2-12 present the average annual prices for discrete-year NOx and SOx RTCs during calendar years 2002 through 2010, respectively. Note that prices for any Compliance Year RTC may also be shown for the following calendar year, since the price for a Compliance Year RTC is based on sales of both Cycle 1 RTCs expiring in December of that year as well as Cycle 2 RTCs expiring in June of the following year. Furthermore, Cycle 1 RTCs expiring in December may be traded during the 60-day reconciliation period following the expiration date, which extends to the next calendar year.

Investors were involved in a significant proportion of discrete-year RTC trades in calendar year 2010. They were involved with 77% with respect to value and 66% with respect to volume for discrete-year NOx RTCs and 92% with respect to value and 86% with respect to volume for discrete-year SOx RTCs.

[4] There were no discrete-year 2011 SOx RTCs traded in calendar year 2010

Figure 2-11
Average Annual Prices for Discrete-Year NOx RTCs during Calendar Years 2002 through 2010

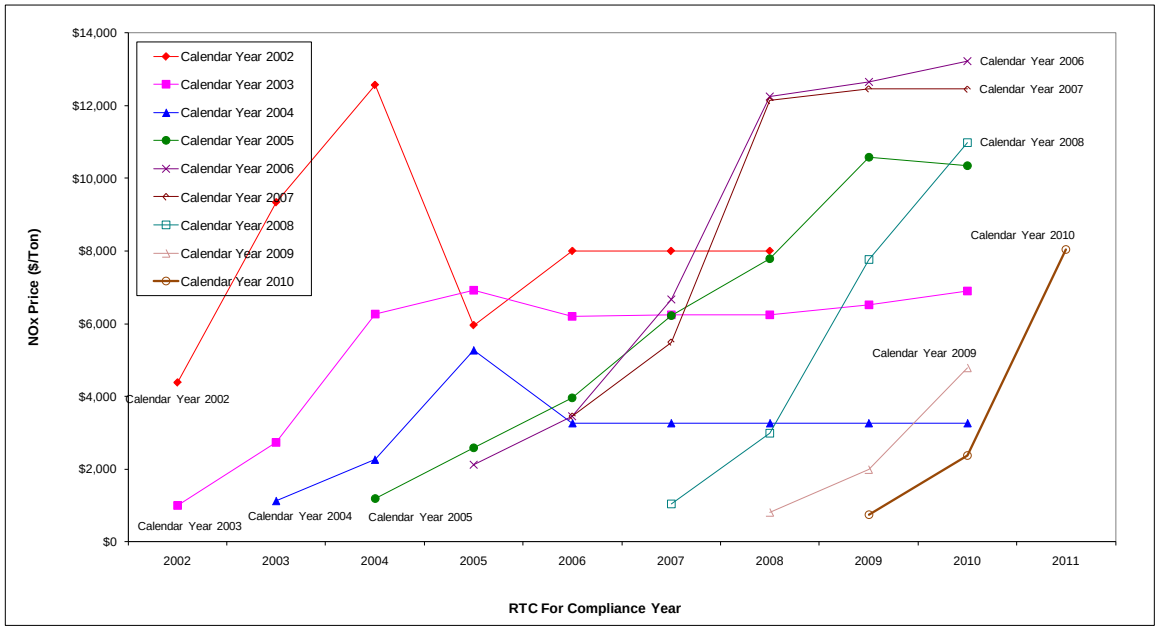
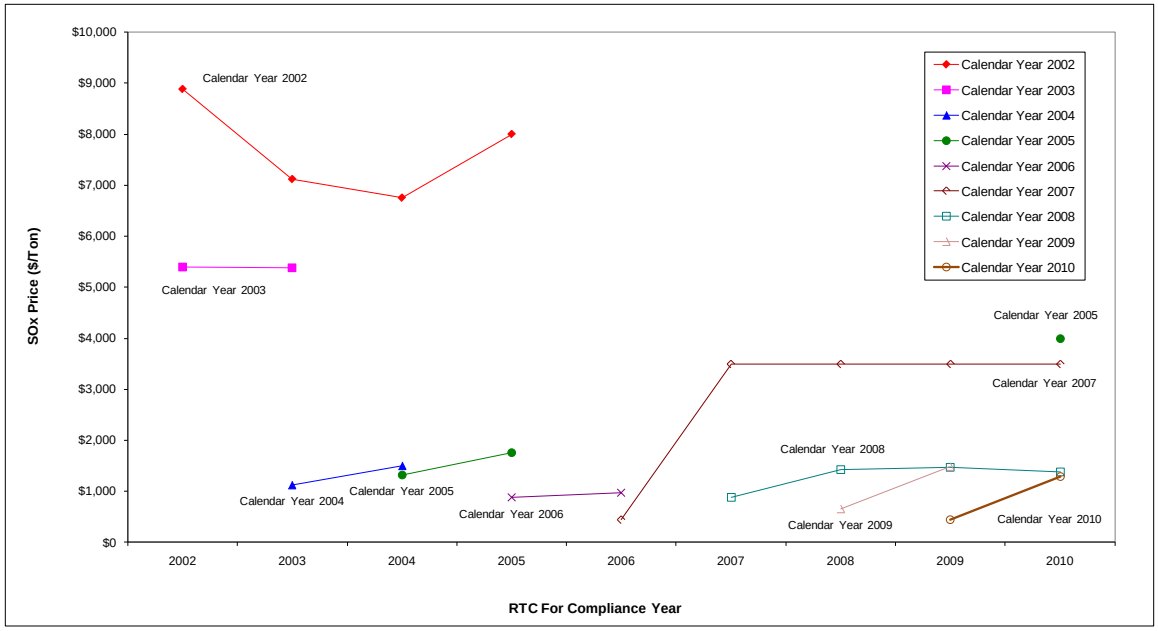


Figure 2-12
Average Annual Prices for Discrete-Year SOx RTCs during Calendar Years 2002 through 2010



Twelve-Month Rolling Average Prices of Compliance Year 2010 NOx RTCs

The Governing Board amended Rule 2002(f) in January 2005 to reduce Compliance Year 2007 and beyond NOx RTC holdings by 22.5% over five years (11.7% in 2007 and an additional 2.7 % in each of the years 2008 through 2011), to convert the 10.8% adjustment applied over years 2008 through 2011 to Non-tradable/Non-usable RTCs, and to issue them to the parties that held the RTCs prior to conversion. These amendments also directed the Executive Officer to calculate the 12-month rolling average price of NOx RTCs ("rolling average price") "for all trades for the current compliance year" excluding "RTC transactions reported at no price." Pursuant to the RTC price reporting and averaging methodology approved by the Governing Board in September 2007, "swap" transactions (the exchange of RTCs for other RTCs or for other emissions credits) were also excluded from the calculation of rolling average prices. In the event that this rolling average price exceeds $15,000 per ton, the Executive Officer is required to report the rolling average price to the Governing Board. If the Governing Board determines that the rolling average price exceeds $15,000 per ton, AQMD is required to review the compliance aspects of the RECLAIM program and the Governing Board may direct the Executive Officer to convert the annual incremental Non-tradable/Non-usable RTCs (2.7%) back to active, tradable RTCs valid for the compliance year in which Cycle 1 facilities are operating at the time the finding is made. In its resolution amending Rule 2002(f), the Governing Board directed the Executive Officer to report the NOx RTC 12-month rolling average price data to the Stationary Source Committee (SSC) at least quarterly. Such reports have been prepared by AQMD staff and submitted the SSC on a quarterly basis, accordingly. To date the twelve-month rolling average prices have not exceeded the $15,000 per ton threshold.

As shown in Table 2-4, the twelve-month rolling average prices of Compliance Year 2010 NOx RTCs have generally been declining since January 2010 and have not exceeded the $15,000 per ton threshold specified in Rule 2002(f). Therefore, it was not necessary for the Executive Officer to report the rolling average price to the Governing Board or for the Governing Board to require a compliance audit and consider reinstating the incremental NOx RTC adjustment for Compliance Year 2010. For Compliance Year 2009 NOx RTCs, the same findings were true and were included in the last RECLAIM Annual Audit Report submitted to the Governing Board in March 2010.

Table 2-4
Twelve-Month Rolling Average Prices of Compliance Year 2010 NOx RTCs

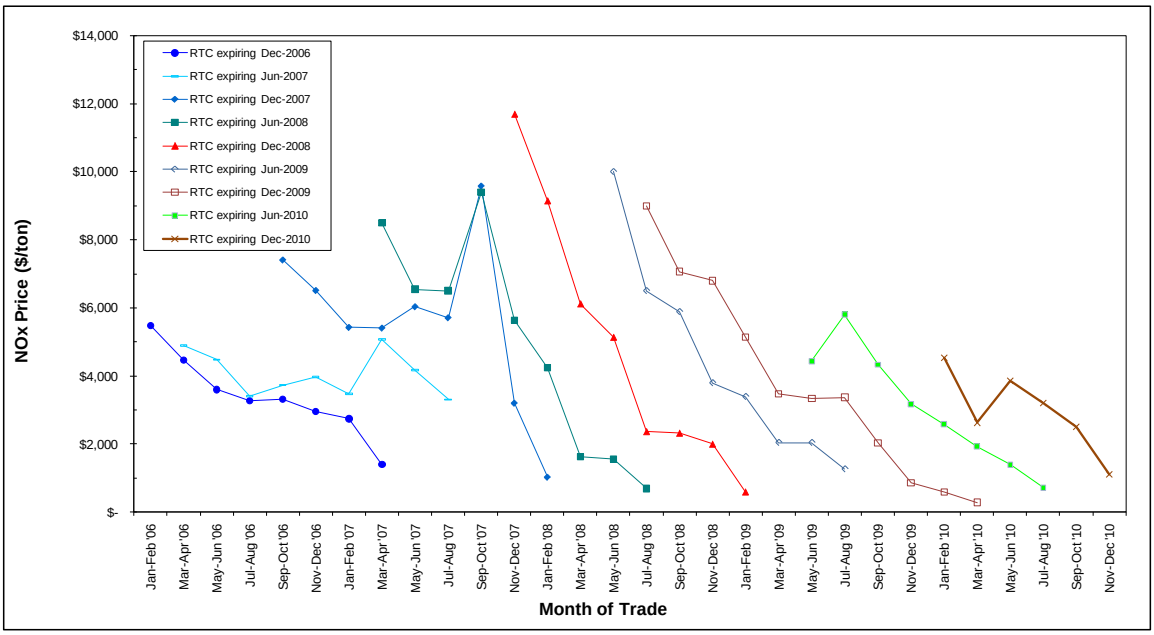
Reporting Month	12-Month Period	Average Price
January 2010	January through December 2009	$4,780 per ton
February 2010	February 2009 through January 2010	$4,462 per ton
March 2010	March 2009 through February 2010	$4,534 per ton
April 2010	April 2009 through March 2010	$4,542 per ton
May 2010	May 2009 through April 2010	$4,038 per ton
June 2010	June 2009 through May 2010	$4,090 per ton
July 2010	July 2009 through June 2010	$4,094 per ton
August 2010	August 2009 through July 2010	$4,025 per ton
September 2010	September 2009 through August 2010	$3,655 per ton
October 2010	October 2009 through September 2010	$3,596 per ton
November 2010	November 2009 through October 2010	$3,367 per ton
December 2010	December 2009 through November 2010	$3,351 per ton
January 2011	January through December 2010	$2,367 per ton

Average Price for NOx RTCs Nearing Expiration

Generally, RTC prices decrease as their expiration dates approach. RTC prices are usually lowest during the 60 day-period following their expiration date during which facilities are allowed to trade to reconcile by securing RTCs to cover their emissions. This general trend has been repeated every year since 1994 except for Compliance Years 2000 and 2001 (during the California energy crisis), when NOx RTC prices increased as the expiration dates approached because the power plants NOx emissions increased significantly and there was a shortage of NOx RTCs. In calendar year 2010, prices for NOx RTCs that expired within the same calendar year followed the general trend of RTC prices declining over the course of the Compliance Year.

The bi-monthly average price for these near-expiration NOx RTCs is shown in Figure 2-13 to illustrate the general price trend for these RTCs. The general declining trend of RTC prices nearing expiration indicates that there was an adequate supply to meet RTC demand during the final reconciliation period following the end of the compliance years. A similar analysis is not performed for the price of SOx RTCs nearing expiration because there are not enough SOx trades over the course of the year to yield meaningful data, however SOx RTC prices have generally followed the same trends.

Figure 2-13
Bi-Monthly Average Price for NOx RTCs near Expiration



Note: A limited set of data points are used for clarity.

IYB RTC Prices

The average annual price for IYB NOx RTCs traded in calendar year 2010 is $95,761 per ton, which is significantly lower than the average annual price of $124,576 per ton traded in calendar year 2009. The average annual price for IYB SOx RTCs in calendar year 2010 is $109,219 per ton, substantially higher than the $36,550 per ton traded in calendar year 2009. This increase in IYB SOx RTC price and trading activity may have been caused by the anticipation of the rule amendment to the SOx RECLAIM program. Data regarding IYB RTCs traded with price (excluding swap trades) for NOx and SOx RTCs and their average annual prices since 1994 are summarized in Tables 2-5 and 2-6, respectively. In calendar year 2010, the average annual IYB RTC prices did not exceed the $566,076 per ton of NOx RTCs or the $407,575 per ton of SOx RTCs program review thresholds established by the Governing Board pursuant to California Health and Safety Code §39616(f).

Investors were again involved in a significant proportion of IYB trades in calendar year 2010. They were involved with 32% with respect to value and 27% with respect to volume for IYB NOx RTCs. Investors were involved either as buyer or seller in each IYB SOX RTCs trade (100% for both value and volume). A more detailed discussion of investor participation is presented later in this chapter.

Table 2-5
IYB NOx Pricing (Excluding Swap Registrations)

Calendar Year	Total Reported Value ($MM)	IYB RTC Traded with Price (tons)	Number of IYB Registrations With Price	Average Price ($/ton)
1994*	$1.3	85.7	1	$15,623
1995*	$0.0	0	0	N/A
1996*	$0.0	0	0	N/A
1997*	$7.9	404.6	9	$19,602
1998*	$34.1	1,447.6	23	$23,534
1999*	$18.6	438.3	19	$42,437
2000*	$9.1	184.2	15	$49,340
2001*	$34.2	416.9	25	$82,013
2002	$5.5	109.5	31	$50,686
2003	$14.3	388.3	28	$36,797
2004	$12.5	557.0	52	$22,481
2005	$43.1	565.3	71	$76,197
2006	$65.2	432.9	50	$150,665
2007	$45.4	233.5	25	$194,369
2008	$49.7	245.6	27	$202,402
2009	$16.7	134.2	14	$124,576
2010	$14.3	149.0	13	$95,761

* No information regarding swap trades is available for trades occurring in 1994 through 2001.

Table 2-6
IYB SOx Pricing (Excluding Swap Registrations)

Calendar Year	Total Reported Value ($MM)	IYB RTC Traded with Price (tons)	Number of IYB Registrations With Price	Average Price ($/ton)
1994*	$0.0	0	0	N/A
1995*	$0.0	0	0	N/A
1996*	$0.0	0	0	N/A
1997*	$11.9	429.2	7	$27,738
1998*	$1.0	50.0	1	$19,360
1999*	$0.8	55.0	3	$14,946
2000*	$1.4	50.6	5	$27,028
2001*	$10.2	306.8	8	$33,288
2002	$6.7	147.5	5	$45,343
2003	$0.6	110.9	1	$5,680
2004	$0.0	0.0	0	N/A
2005	$1.0	141.5	3	$7,409
2006	$3.5	241.7	12	$14,585
2007	$3.7	155.2	5	$23,848
2008	$3.3	146.8	5	$22,479
2009	$3.7	100.0	4	$36,550
2010	$30.2	277.0	10	$109,219

* No information regarding swap trades is available for trades occurring in 1994 through 2001.

Market Participants

RECLAIM market participants have traditionally included RECLAIM facilities, brokers, commodity traders, and private investors. Starting in calendar year 2004, mutual funds joined the traditional participants in RTC trades. Market participation expanded further in 2006, when foreign investors started participating in RTC trades.

RECLAIM facilities are the original sources and users of RTCs. They usually sell their surplus RTCs by the end of the compliance year or when they have a long-term decrease in emissions. Brokers match buyers and sellers, and usually do not purchase or own RTCs. Commodity traders and private investors actually invest in and own RTCs and seek profit by trading them. Three mutual funds and two foreign entities are registered with AQMD for the purpose of trading RTCs. The three mutual funds are controlled by a common fund manager. These three mutual funds held 2.5% (239 tons) of the total IYB NOx RTCs and 5.4% (233 tons) of the total IYB SOx RTCs as of the end of calendar year 2009. During calendar year 2010, the three funds sold all of their IYB SOx RTCs. There was no trading activity for IYB NOx RTCs in these three accounts during this same period. For discussion in this report, "investors" include everyone who holds RTCs and is not a RECLAIM facility permit holder or a broker.

Investors' Participation

Commodity traders, mutual funds, and private investors invest in and own RTCs and seek profit by trading them. Investors' involvement in discrete NOx and SOx trades registered with price in calendar year 2010 is illustrated in Figures 2-14 and 2-15. In compiling data for these two figures, staff removed brokers' involvement[5]. Figure 2-14 is based on total value of discrete NOx and SOx RTCs traded, and shows that investors were involved in 77% and 92%, respectively, of the NOx and SOx trades reported by value. Figure 2-15 is based on discrete volume traded with price and shows that investors were involved in 66% and 86% of the NOx and SOx trades, respectively. Figures 2-16 and 2-17 provide similar data for both IYB NOx and SOx trades, and show that investors were involved in 32% of IYB NOx trades and 100% of IYB SOx trades on a reported value basis, and 27% of IYB NOx and 100% of IYB SOx trades on the basis of the number of pounds traded with price. As of the end of calendar year 2010, investors holding of IYB NOx RTCs remained unchanged from the end of calendar year 2009 at 5.5%. However, they decreased their holding of IYB SOx RTCs substantially to 0.01% from 5.5% at the end of calendar year 2009.

[5] The established convention for registering broker-involved RTC trades is to do so in two sequential steps: first from the seller to the broker, then from the broker to the buyer. However, to avoid double counting of brokered trades in this analysis, they are treated as if each brokered trade had been registered from the seller to the buyer in a single step. Trades reported without price are excluded from this analysis because they typically represent RTC exchanges between facilities under common ownership and trades associated with changes of facility operator, and are therefore, not reflective of market behavior.

Figure 2-14
Investor-Involved Discrete NOx and SOx Trades Based on Value Traded

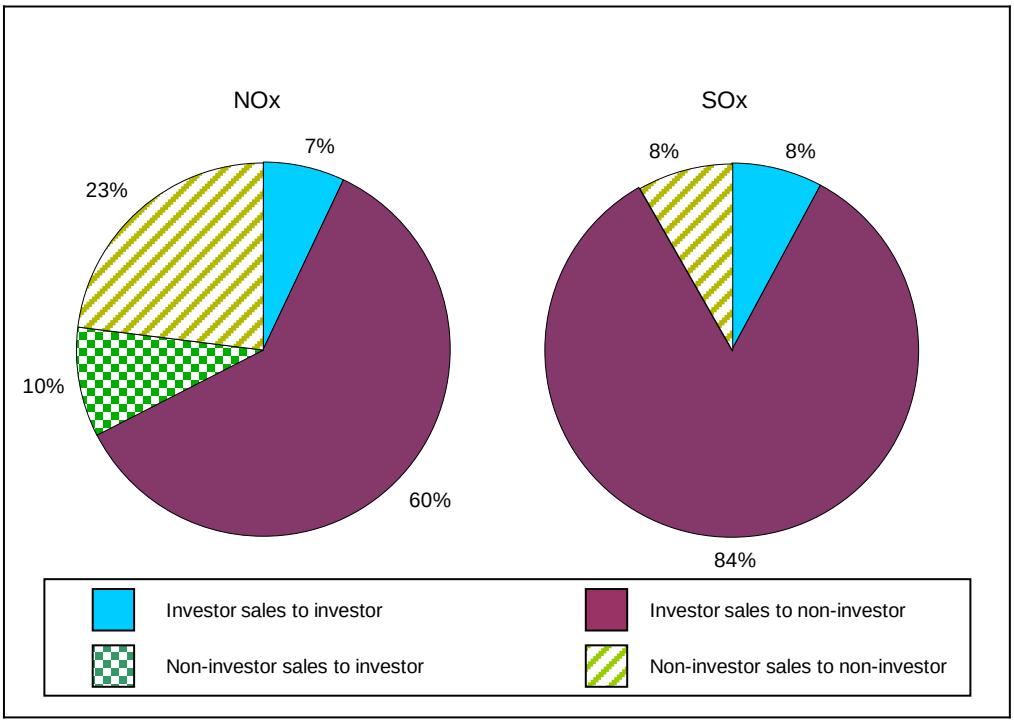


Figure 2-15
Investor-Involved Discrete NOx and SOx Trades Based on Volume Traded with Price

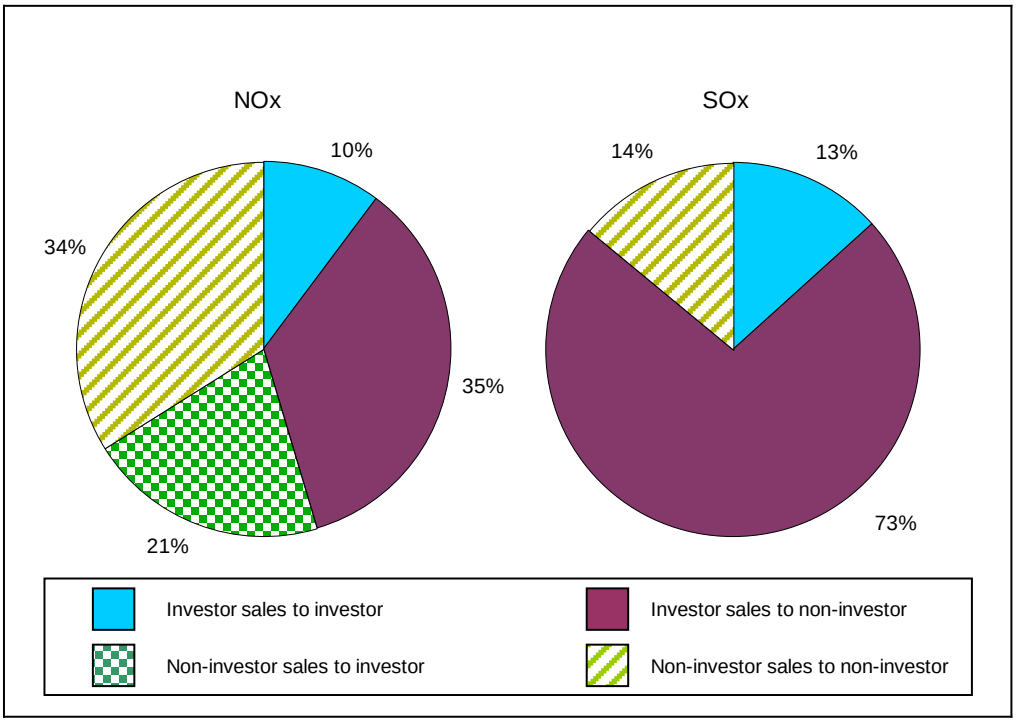


Figure 2-16
Investor-Involved IYB NOx and SOx Trades Based on Value Traded

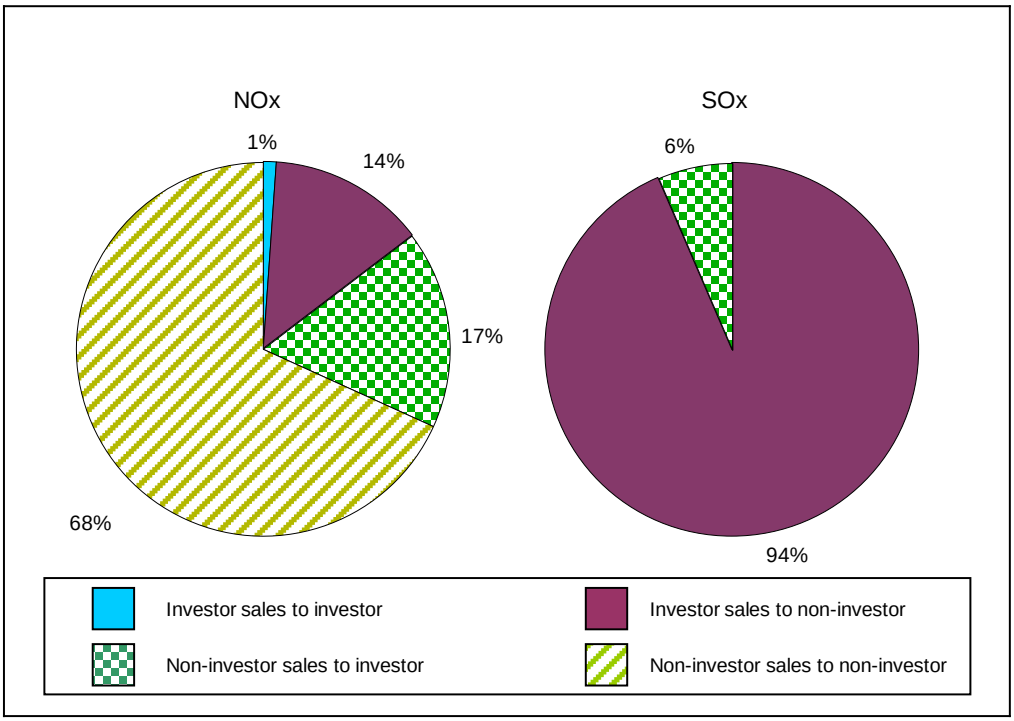
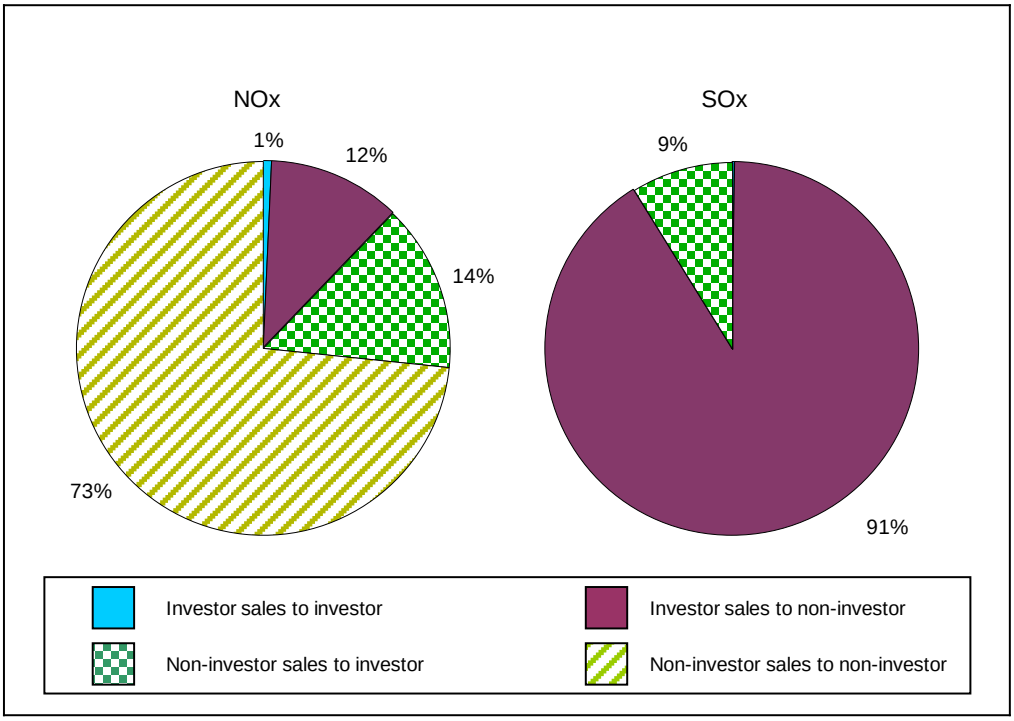


Figure 2-17
Investor-Involved IYB NOx and SOx Trades Based on Volume Traded with Price



The supply of IYB RTCs available for sale has been mainly from facilities that have permanently shut down. In past years, investors have purchased IYB RTCs from RECLAIM facilities that were shutting down. However, the four RECLAIM facilities that shut down during Compliance Year 2009 (refer to Chapter 1) held a total of 3.2 tons of IYB NOx RTCs. None of this amount was sold to investors, 2.1 tons were sold to other RECLAIM facilities and the remaining 1.1 tons have expired and not been sold or transferred.

Investors' Impacts on RTC Market

Theoretically, the role of investors in this market is to provide capital for installing air pollution control equipment that costs less than the market value of credits. In addition, investors can also improve price competitiveness. This market theory may not fully apply to RECLAIM due to the uniqueness of the program in that RECLAIM facility operators have no substitute for RTCs, and pollution controls cannot be implemented within a short time period. That is, there is no alternative source of credits available to RECLAIM facilities when RTC prices increase (they do not have the option to switch to another source of credits when RTCs become expensive). Therefore, they may be at the mercy of owners of surplus or investor-owned RTCs in the short term, particularly during times of rapid price increases, as evidenced in 2000 and 2001 during the California energy crisis.

To put investors' holdings in context, RECLAIM facilities have generally held back approximately 10% of their allocations each compliance year as a margin to ensure that they did not inadvertently find themselves exceeding (failing to reconcile by securing sufficient RTCs to cover their emissions) their allocations if their reported emissions were increased as the result of any problems or errors discovered by AQMD annual audits. For Compliance Year 2009, the total RECLAIM NOx emissions were 7,317 tons. However, like Compliance Year 2008, Compliance Year 2009 spans a period marked by a depressed economy with low production at many manufacturing facilities and thus low emissions compared to historical levels. If the economy were to improve, total RECLAIM NOx emissions would likely approach recent historical levels. RECLAIM NOx emissions as recent as Compliance Year 2007 totaled 8,794 tons. If emissions were to remain constant at that 2007 level, the NOx RTC surplus in 2011 would be 883 tons (9% of allocation)[6], which is less than the traditional 10% compliance margin. Therefore, the current aggregate investors' holdings of 5.5% of NOx RTCs valid for Compliance Year 2011 and beyond (IYB RTCs) have the potential to result in a sellers' market.

While it can be argued that the holding of IYB NOx RTCs by investors as a group is still small relative to the total supply of IYB NOx RTCs (5.5% overall), there is no clear basis to estimate the level of IYB RTCs available for sale by non-investors or the extent of additional emissions reductions that will be achieved in calendar year 2011 and beyond. IYB RTCs represent an even more critical aspect of the program because these streams of RTCs are sought after to support growth at new or existing facilities. Accordingly, active facilities are less likely to sell their future year RTCs as IYB. As a result, new RECLAIM facilities

[6] Assuming emissions in 2011 stay at Compliance Year 2009 level, the NOx RTC surplus would be at 24.4% [(9,677 - 7,317)/9,677].

or facilities with emissions increases are potentially at the mercy of investors holding IYB RTCs. Moreover, investors may have the potential for greater market influence if the recent rise in investor-held IYB NOx RTCs continues.

On the other hand, overall emissions in RECLAIM will certainly change from now through 2011, and can be affected by various factors including installation of more emission control equipment, production changes, and shifts in industry sectors and in the economy in general. In January 2005, AQMD identified cost-effective control opportunities outside the power producing industry that would amount to 3.7 tons per day of additional NOx reductions based on historical production rates. The significance of investors' holdings will certainly depend on the ability of RECLAIM facilities to generate adequate emissions reductions in time to dampen the effect of a sellers' market that may exist if demand surges in a short period of time, as it did during the California energy crisis of 2000-2001. Proposals to generate emission reduction credits from sources outside of RECLAIM (*i.e.*, mobile and area sources) can also dampen sudden price increases. Nonetheless, AQMD staff remains concerned about investor participation and is evaluating ways to ensure that such participation does not adversely impact the RECLAIM program.

Other Types of RTC Transactions and Uses

Another type of RTC trade, besides traditional trading and swapping activities, is a trade involving the contingent right (option) to buy or sell RTCs. In those transactions, one party pays a premium for the right to purchase or sell RTCs owned by the other party at a pre-determined price within a certain time period. Until RTCs are transferred from seller to buyer, prices for options are not reported, because the seller is not paid for the actual RTCs, but only for the right to purchase or sell the RTCs at a future date. These rights may or may not be actually exercised. RTC traders are obligated to report options to the AQMD within five days of reaching an agreement. These reports are posted on the AQMD website. There was no trade involving the contingent right (option) to buy or sell RTCs in calendar year 2010.

As in prior years, RTCs were used in other programs during calendar year 2010. RTCs were surrendered to mitigate impacts from construction projects under the California Environmental Quality Act. RTCs were also surrendered to satisfy variance conditions and in settlements with the AQMD. In calendar year 2010, a total of 37.1 tons of NOx RTCs and less than 0.01 tons of SOx RTCs were surrendered to mitigate impacts from construction projects and to satisfy variance conditions. These consisted solely of discrete year RTCs. The majority of these RTCs were retired to satisfy excess emissions under variance conditions.

CHAPTER 3
EMISSION REDUCTIONS ACHIEVED

Summary

For Compliance Year 2009, aggregate NOx emissions were below total allocations by 29% and aggregate SOx emissions were below total allocations by 31%. Therefore, based on audited emissions, it can be concluded that RECLAIM has clearly achieved its targeted emission reductions. Finally, no emissions associated with breakdowns were excluded from reconciliation with facility allocations in Compliance Year 2009. Accordingly, no mitigation is necessary to offset excluded emissions due to approved Breakdown Emission Reports.

Background

One of the major objectives of the annual RECLAIM program audits is to assess whether RECLAIM is achieving its targeted emission reductions. The annual allocations issued to RECLAIM facilities reflect required emission reductions under the subsumed command-and-control rules and control measures. In January 2005, the Board adopted an amendment to Rule 2002 to further reduce RECLAIM NOx allocations to implement the latest BARCT. The adopted NOx allocation reductions are to be phased in during Compliance Years 2007 through 2011. These changes will result in cumulative NOx allocation reductions of 22.5% from all RECLAIM facilities when fully implemented in Compliance Year 2011, with the biggest single-year reduction of 11.7% in Compliance Year 2007.

At the time previous annual audit reports were prepared, full audits of all facility records for all prior years had not been completed. Consequently, those annual audit reports were based on a mixture of both audited as well as reported emissions (APEP report and/or QCERs) data when fully audited emissions were not available. These emission data were not updated in subsequent audit reports to reflect additional completed audits. In the Compliance Year 2007 Annual Audit Report (March 2009), staff committed to updating all years' emissions (back to Compliance Year 1994) with audited data. The Compliance Year 2008 annual report updated emissions data for previous compliance years with audited data. Similarly, all emissions data presented in this annual audit report are compiled from audited facility emissions.

Emissions Audit Process

Since the inception of the RECLAIM program, AQMD has conducted regular audits of the emissions data submitted by RECLAIM facilities to ensure the integrity and reliability of facility reported data. The process begins when each facility submits a comprehensive APEP report within sixty days of the end of each compliance year. AQMD staff initially conducts a preliminary review of the APEP reports to assess the completeness and accuracy of reported emissions and compliance with allocations. If it is determined that a facility's APEP-reported emissions are in excess of its quarterly or year-to-date allocations, enforcement action is taken. The audit process is then implemented, including

field inspections to check the equipment, monitoring devices, and operational records, as well as review of recorded data and calculations to verify accuracy of emission reports submitted during the course of the year (daily, monthly, quarterly, and annual submitted reports).

Common findings from these audits reveal that some facilities made errors in quantifying their emissions such as arithmetic errors, use of inappropriate emission factors or adjustment factors (*e.g.*, pressure correction factors and bias adjustment factors), use of emission calculation methodologies not allowed under the rules, or inappropriate use of Missing Data Procedures (MDP). Other common mistakes include reporting non-RECLAIM emissions and excluding reportable emissions. AQMD staff adjusts the APEP-reported emissions based on audit results, as necessary, to correct such errors. Whenever AQMD staff finds discrepancies, they discuss the findings with the facility operators, and provide the operators an opportunity to review changes resulting from facility audits and to present additional data or arguments in support of the data stated in their APEP reports. This rigorous audit process, although resource intensive, reinforces RECLAIM's emissions monitoring and reporting requirements and enhances the validity and reliability of the reported emissions data. The audited emissions are used to determine if a facility complied with its allocations. The most recent five compliance years' audited emissions for each facility are posted on the AQMD's web page after the audits are completed.

As mentioned previously, this annual audit report reflects up-to-date audited NOx and SOx emissions data. However, staff is currently working with four facilities to resolve outstanding issues involving emission calculations performed by computers that need further analysis. The impact of this analysis is not expected to change the overall findings related to RECLAIM program's aggregate compliance. Any necessary adjustments for these four facilities, however, will be reflected in next year's annual RECLAIM audit report.

Emission Trends and Analysis

RECLAIM achieves its emission reduction goals on an aggregate basis by ensuring that annual emissions in total are below allocations. It is important to understand that the RECLAIM program is successful at achieving these emission reduction goals even when some individual RECLAIM facilities exceed their RTC account balances, provided aggregate RECLAIM emissions do not exceed aggregate RTCs issued. Therefore, aggregate NOx or SOx emissions from all RECLAIM sources are the basis for determining whether the programmatic emission reduction goals for that emittant are met each year. In aggregating emissions from RECLAIM facilities, audited emissions are used in the Annual RECLAIM Report for that Compliance Year. Issues related to five facilities' Compliance Year 2008 NOx emissions were resolved and staff updated Table 3-1 to reflect a net decrease in Compliance Year 2008's aggregate NOx emissions of 13 tons. Table 3-1 and Figure 3-1 show aggregate NOx emissions based on audited emission data for Compliance Years 1994 through 2009.

Table 3-1 and Figure 3-1 show that, programmatically, there were excess NOx RTCs remaining after accounting for fully audited NOx emissions for every compliance year since 1994, except for Compliance Year 2000 when NOx emissions exceeded the total RTC allocations for that year due to the California

energy crisis. Even though there was a programmatic reduction to Compliance Year 2009 NOx holdings as part of the January 2005 rule amendments, Compliance Year 2009 NOx emissions still achieved aggregate RECLAIM emission reduction goals and were below the total allocations by 29%. Given the fact that there were programmatic reductions in NOx allocations starting with Compliance Year 2007 yet the percentage of leftover NOx RTCs in the program remains at 20% or higher for the last five compliance years, including Compliance Year 2009. There may be other forces at play to cause such results in addition to actual emission reductions implemented through the application of air pollution control systems by RECLAIM facilities. Potentially, the effects of the nation's economic downturn and slow recovery over the last couple of years may also be a contributor to lower aggregate NOx and SOx emissions in the RECLAIM universe. Whether this development has short term or long lasting impacts is yet to be seen.

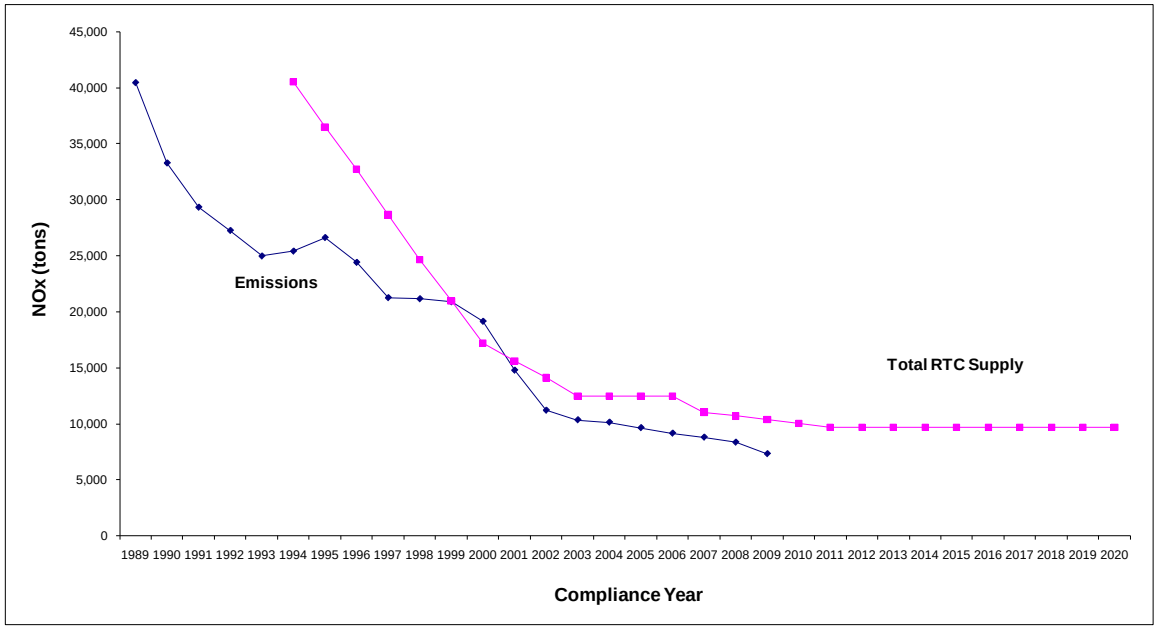
Table 3-1
Annual NOx Emissions for Compliance Years 1994 through 2009

Compliance Year	Audited Annual NOx Emissions[1] (tons)	Audited Annual NOx Emissions Change from 1994 (%)	Total NOx RTCs[2] (tons)	NOx RTCs Left Over (tons)	NOx RTCs Left Over (%)
1994	25,420	0%	40,534	15,114	37%
1995	26,632	4.8%	36,484	9,852	27%
1996	24,414	-4.0%	32,742	8,328	25%
1997	21,258	-16%	28,657	7,399	26%
1998	21,158	-17%	24,651	3,493	14%
1999	20,889	-18%	20,968	79	0.38%
2000	19,148	-25%	17,208	-1,940	-11%
2001	14,779	-42%	15,617	838	5.4%
2002	11,201	-56%	14,111	2,910	21%
2003	10,342	-59%	12,485	2,143	17%
2004	10,134	-60%	12,477	2,343	19%
2005	9,642	-62%	12,484	2,842	23%
2006	9,152	-64%	12,486	3,334	27%
2007	8,794	-65%	11,046	2,252	20%
2008	8,346	-67%	10,705	2,359	22%
2009	7,317	-71%	10,377	3,060	29%

[1] The RECLAIM universe is divided into two cycles with compliance schedules staggered by six months. Compliance years for Cycle 1 facilities run from January 1 through December 31 and Cycle 2 compliance years are from July 1 through June 30.

[2] Total RTCs = Allocations + Converted ERCs.

Figure 3-1
NOx Emissions and Available RTCs



Similar to Table 3-1 and Figure 3-1 for NOx, Table 3-2 presents aggregate annual SOx emissions data for each compliance year based on audited emissions, and Figure 3-2 compares these audited aggregate annual SOx emissions with the aggregate annual SOx RTC supply. Furthermore, after resolving outstanding issues related to two facilities' Compliance Year 2008 SOx emissions, staff updated Table 3-2 to reflect a net decrease in Compliance Year 2008's aggregate SOx emissions of 47 tons. As shown in Table 3-2 and Figure 3-2, RECLAIM facilities have not exceeded their SOx allocations on an aggregate basis in any Compliance Year since program inception. For Compliance Year 2009, SOx emissions were below total allocations by 31%. Similar to NOx RTC leftovers, the SOx RTC leftovers for the last two compliance years remains in excess of 20%. The data indicates that RECLAIM met its programmatic SOx emission reduction goals and demonstrated equivalency in SOx emission reductions compared to the subsumed command-and-control rules and control measures. Based on updated emissions taken from audited data, annual SOx emissions have followed a general downward trend, except for slight increases in Compliance Years 1997, 2005, and 2007 compared to their respective previous year.

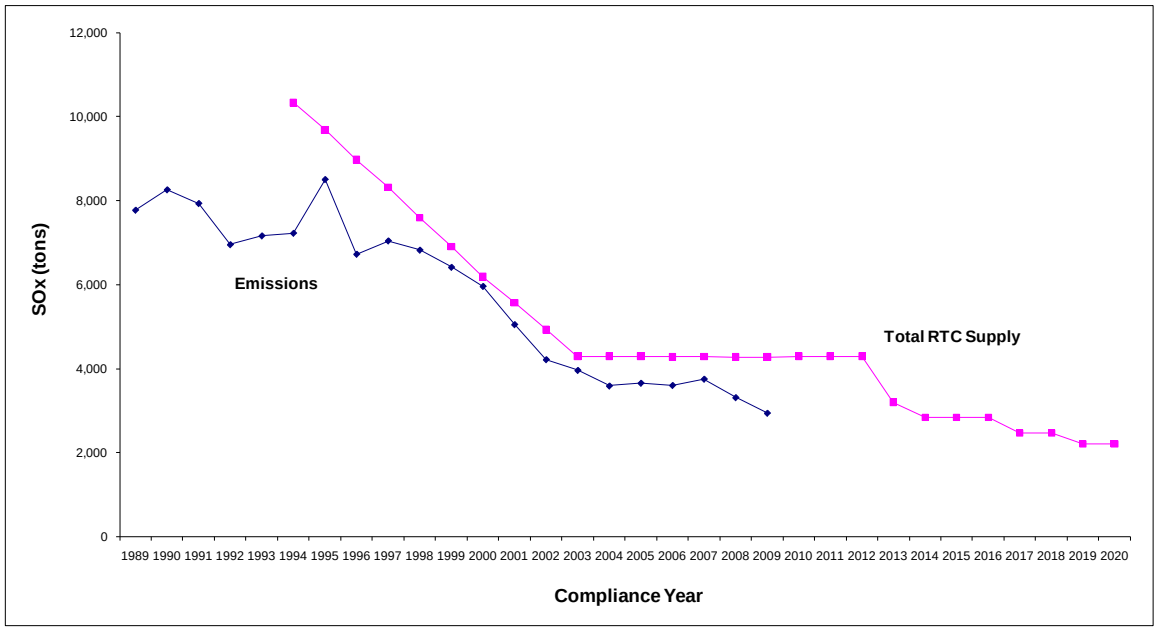
Table 3-2
Annual SOx Emissions for Compliance Years 1994 through 2009

Compliance Year	Audited Annual SOx Emissions[1] (tons)	Audited Annual SOx Emissions Change from 1994 (%)	Total SOx RTCs[2] (tons)	SOx RTCs Left Over (tons)	SOx RTCs Left Over (%)
1994	7,230	0%	10,335	3,105	30%
1995	8,508	18%	9,685	1,177	12%
1996	6,731	-6.9%	8,976	2,245	25%
1997	7,048	-2.5%	8,317	1,269	15%
1998	6,829	-5.5%	7,592	763	10%
1999	6,420	-11%	6,911	491	7.1%
2000	5,966	-17%	6,194	228	3.7%
2001	5,056	-30%	5,567	511	9.2%
2002	4,223	-42%	4,932	709	14%
2003	3,968	-45%	4,299	331	7.7%
2004	3,597	-50%	4,299	702	16%
2005	3,663	-49%	4,300	637	15%
2006	3,610	-50%	4,282	672	16%
2007	3,759	-48%	4,286	527	12%
2008	3,319	-54%	4,280	961	22%
2009	2,949	-59%	4,280	1,331	31%

[1] The RECLAIM universe is divided into two cycles with compliance schedules staggered by six months. Compliance years for Cycle 1 facilities run from January 1 through December 31 and Cycle 2 compliance years are from July 1 through June 30.

[2] Total RTCs = Allocations + Converted ERCs.

Figure 3-2
SOx Emissions and Available RTCs



Comparison to Command-and-Control Rules

RECLAIM subsumed a number of command-and-control rules[1] and sought to achieve reductions equivalent to these subsumed rules. RECLAIM facilities are exempt from the subsumed rules' requirements that apply to SOx or NOx emissions once the facilities comply with the applicable monitoring requirements of Rules 2011 and 2012, respectively. During Compliance Year 2009, one rule, Regulation IX – Standards of Performance for New Stationary Sources, was amended, which had the potential to impact NOx or SOx sources at RECLAIM facilities. Amended April 3, 2009, Regulation IX incorporated new or amended federal standards by reference. Seven actions enacted by USEPA in 2008, and incorporated by reference, affect facilities with stationary spark ignition internal combustion engines, facilities manufacturing synthetic organic chemicals, and petroleum refineries. These new source performance standards cover new standards for stationary spark ignition internal combustion engines; stay certain standards for equipment leaks of volatile organic compounds (VOCs) in the synthetic organic chemicals manufacturing industry and petroleum refineries; impose new standards for new, modified, or reconstructed process units at petroleum refineries; and provide temporary, interim and unlimited stays for certain provisions of the new standards for petroleum refineries. However, since Regulation IX was not subsumed by RECLAIM rules, the requirements of Regulation IX would apply equally to equipment at facilities under both command and control rules, as well as RECLAIM rules.

[1] See Tables 1 and 2 of Rule 2001.

Program Amendments

There were no new amendments to Regulation XX during Compliance Year 2009. However, in March of 2007, the USEPA issued the "Clean Air Fine Particle Implementation Rule," which required non-attainment areas to meet particulate matter with aerodynamic diameter less than 2.5 microns (PM2.5) standards by 2010. The 2007 AQMP identified NOx and SOx reductions as the two most effective tools in reaching attainment with the PM2.5 standards. Consequently, the 2007 AQMP revision included both a formal request to extend USEPA's PM2.5 attainment date to 2015, and Control Measure CMB-02 ("Further SOx Reductions for RECLAIM"), which estimated that implementation of SOx BARCT could achieve at least three tons per day SOx emission reductions from 2011 to 2014. In order to implement this control measure, AQMD Governing Board adopted amendments to Rule 2002 – Allocations for Oxides of Nitrogen (NOx) and Oxides of Sulfur (SOx) on November 5, 2010. This amendment will result in an overall reduction of 5.7 tons SOx per day when fully implemented in 2019 (the reductions are being phased in from 2013 through 2019: 3.0 tons per day in 2013, 4.0 tons per day in years 2014 through 2016, 5.0 tons per day in 2017 and 2018, and 5.7 tons per day in 2019 and after). More detailed discussion of the amendments to Rule 2002 can be found in Chapter 2 of this report.

Additionally, AQMD is proposing amendments to Rule 2005 – New Source Review for RECLAIM. In response to Governing Board Chairman Burke's "Helping Hand Initiative for 2009", staff has evaluated options to address the requirement under which existing facilities fully offset the maximum annual emissions increase(s) resulting from a new or modified source(s) at the start of the second compliance year, and every compliance year thereafter. A more detailed discussion of this proposal is presented in Chapter 4 of this report.

Backstop Provisions

Rule 2015 requires that AQMD review the RECLAIM program and implement necessary measures to amend it whenever aggregate emissions exceed the aggregate allocations by five percent or more, or whenever the average annual price of RTCs exceeds $15,000 per ton. Compliance Year 2009 aggregate NOx and SOx emissions were both below aggregate allocations as shown in Figures 3-1 and 3-2. At the same time, average annual prices for NOx and SOx RTCs in calendar year 2009 were below $15,000 per ton, as shown in Chapter 2. Therefore, there is no need to initiate a program review.

Breakdowns

Pursuant to Rule 2004(i) – Breakdown Provisions, a facility may request that emissions in excess of normal emission levels due to a breakdown not be counted towards the facility's allocations. In order to qualify for such exclusion, the facility must demonstrate that the excess emissions were the result of a fire or a mechanical or electrical failure caused by circumstances beyond the facility's reasonable control. The facility must also take steps to minimize emissions resulting from the breakdown, and mitigate the excess emissions to the maximum extent feasible. Applications for exclusion of unmitigated breakdown emissions from a facility's total reported annual RECLAIM emissions must be

approved by AQMD in writing. In addition, facilities are required to quantify unmitigated breakdown emissions, for which an exclusion request has been approved, in their APEP report.

As part of the annual audit report, Rule 2015(d)(3) requires AQMD to determine whether excess emissions approved for exclusion from securing RTCs to cover their emissions have been programmatically offset by unused RTCs within the RECLAIM program. If the breakdown emissions exceed the unused RTCs, any excess breakdown emissions must be offset by either: (1) deducting the amount of emissions not programmatically offset from the RTC holdings for the subsequent compliance year from facilities that had unmitigated breakdown emissions, proportional to each facility's contribution to the total amount of unmitigated breakdown emissions; and/or (2) RTCs obtained by the Executive Officer for the compliance year following the completion of the annual audit report in an amount sufficient to offset the unmitigated breakdown emissions.

As shown in Table 3-3, a review of APEP reports for Compliance Year 2009 found that no facilities requested to exclude breakdown emissions from being counted against their allocations. Thus, for Compliance Year 2009, no additional offset are required pursuant to Rule 2015(d)(3).

Table 3-3
Breakdown Emission Comparison for Compliance Year 2009

Emittant	Unmitigated Breakdown Emissions[1] (tons)	Compliance Year 2009 Unused RTCs[2] (tons)
NOx	**0**	**3,060**
SOx	**0**	**1,331**

[1] Data for unmitigated breakdown emissions (not counted against Allocation) as reported under APEP reports.

[2] Unused RTCs = RTC supply – Audited Emissions.

Impact of Changing Universe

As discussed in Chapter 1, changes to the NOx RECLAIM universe from July 1, 2009 to June 30, 2010 were: two facilities were included into RECLAIM, no facilities were excluded, and four facilities ceased operations. Staff conducted an analysis to evaluate the impact on emissions reductions due to these changes in the RECLAIM universe.

Facilities that were in operation prior to October 15, 1993 and are not categorically excluded may choose to enter the program even though they did not initially meet the inclusion criteria. They may also be included by AQMD if their facility-wide emissions increase to four tons or more per year of NOx or SOx or both. When one of these facilities enters the program, they are issued RTC allocations based on their operational history using the same methodology applied to facilities in the initial universe. Overall, inclusions shift the accounting of emissions from the universe of non-RECLAIM sources to the universe of RECLAIM sources without actually changing the overall emissions inventory.

Inclusions also change the rules and requirements that apply to the affected facilities. There were no facilities that were in operation prior to October 15, 1993 that chose to opt-in to the RECLAIM program during Compliance Year 2009 and none were included into the RECLAIM program based on the Rule 2001 threshold of actual NOx and/or SOx emissions greater than or equal to four tons.

Facilities that commenced operation on or after October 15, 1993 as non-RECLAIM facilities can either choose to enter RECLAIM or are included due to actual NOx or SOx emissions in excess of four tons or more per year. These facilities are not issued RTCs based on operational history except for those credits converted and issued based on external offsets provided by the facility. When a newly-constructed facility joins the RECLAIM universe, it is required to obtain sufficient RTCs to offset its NOx or SOx emissions. These RTCs must be obtained through the trading market and are not issued by AQMD to the facility. Such facilities increase the overall demand for the fixed supply of RTCs because they increase total RECLAIM emissions without increasing the total supply of RTCs. There was one newly-constructed NOx-only facility included during Compliance Year 2009.

Additionally, facilities that undergo a partial change of operator may have an impact on emissions, depending on the operating conditions of the facility under the new operator. In terms of allocations, since the partial change of operator results in the splitting of one facility into two facilities, they now share the same "slice of pie." Consequently, facilities that undergo a partial change of operator have no impact on the fixed supply of NOx or SOx RTCs. The one remaining NOx-only facility included into the RECLAIM universe during Compliance Year 2009 resulted from the partial change of operator of an existing RECLAIM facility.

The shutdown of a RECLAIM facility results in a reduction in actual emissions. The shutdown facility retains its RTC holdings, which it may continue to hold as an investment, transfer to another facility under common ownership, or trade on the market. Therefore, although the facility is no longer emitting, its RTCs may be used at another facility. Shutdown facilities have the opposite effect on the RTC market as do new facilities: the overall demand for RTCs is reduced while the supply remains constant. Four NOx-only RECLAIM facilities shut down permanently during Compliance Year 2009.

A facility is excluded from the RECLAIM universe if AQMD staff determines that the facility was included in the program in error. In such cases, both the emissions and the RTCs that were issued to the facility for future years are withdrawn, thereby having a neutral impact on the RTC supply. No facilities were excluded in Compliance Year 2009.

In short, both included facilities, new facilities and facilities that result from a partial change of operator, and shutdown facilities change the demand for RTCs without changing the supply, while exclusions of existing facilities make corresponding changes to both the demand and the supply, thereby mitigating their own impact on the markets and shifting emissions between the RECLAIM and non-RECLAIM universes. Finally, inclusions of existing facilities most likely will affect demand more than supply because even though these facilities are issued RTC allocations based on their operational history, the amount, in many cases, is not enough to offset their current operations.

Compliance Year 2009 NOx and SOx emissions and initial allocations for facilities that were included into the program, were shutdown, or were excluded are summarized in Tables 3-4 and 3-5.

Table 3-4
NOx Emissions Impact from the Changes in Universe (Tons)

Category	Compliance Year 2009 NOx Emissions (tons)	Compliance Year 2009 NOx Initial Allocations (tons)
Shutdown Facilities	0.7	20.2
Excluded Facilities	Not applicable	Not applicable
Included Facilities*	0	0
RECLAIM Universe	7,317	10,377

* Emissions from both included facilities, one opt-in and one created through partial change of operator, have no impact on Compliance Year 2009 emissions because both are Cycle 1 facilities that entered RECLAIM in calendar year 2010.

Table 3-5
SOx Emissions Impact from the Changes in Universe (Tons)

Category	Compliance Year 2009 SOx Emissions (tons)	Compliance Year 2009 SOx Initial Allocations (tons)
Shutdown Facilities	Not applicable	Not applicable
Excluded Facilities	Not applicable	Not applicable
Included Facilities	Not applicable	Not applicable
RECLAIM Universe	2,949	4,280

CHAPTER 4
NEW SOURCE REVIEW ACTIVITY

Summary

The annual program audit assesses New Source Review (NSR) activity from RECLAIM facilities in order to ensure that RECLAIM is complying with federal NSR requirements and state no net increase (NNI) in emissions requirements, while providing flexibility to facilities in managing their operations and allowing new sources into the program. In Compliance Year 2009, two new facilities joined the RECLAIM NOx market, no new facilities joined the RECLAIM SOx market, 22 NOx RECLAIM facilities had NSR NOx emission increases due to expansion or modification, and three existing SOx RECLAIM facilities had NSR SOx emission increases due to expansion or modification. The consistent trend of surplus NOx and SOx RTCs over emissions for the past five years has allowed for expansion and modification by existing facilities. However, it has become apparent that due to full RTC hold requirements for potential to emit for new and modified emission units at the beginning of each compliance year, and the effect of the accumulation of these hold requirements over time, this may not continue to be the case. As a result, potential changes to Rule 2005 are being considered to facilitate expansion and modification of operations by existing RECLAIM facilities while ensuring that all emissions are covered by RTC allocations in compliance with federal NSR emissions offset requirements and state NNI requirements.

RECLAIM is required to comply with federal NSR emissions offset requirements at a 1.2-to-1 offset ratio for NOx emission increases and at least at a 1-to-1 offset ratio for SOx emission increases on a programmatic basis. In Compliance Year 2009, RECLAIM provided an offset ratio of 30-to-1 for NOx, demonstrating federal equivalency. RECLAIM inherently complies with the federally-required 1-to-1 SOx offset ratio for any compliance year provided aggregate SOx emissions under RECLAIM are lower than aggregate SOx allocations for that compliance year. As shown in Chapter 3, there were no programmatic SOx exceedances during Compliance Year 2009, so RECLAIM more than complied with the federally-required offset ratio and further quantification of the SOx offset ratio is unnecessary. Compliance with the federally-required offset ratio also demonstrates compliance with the state NNI requirements for new or modified sources. In addition, RECLAIM requires application of Best Available Control Technology (BACT) for all new or modified sources with emission increases.

Background

Emissions increases from the construction of new or modified stationary sources in non-attainment areas are regulated by both federal NSR and state no net increase (NNI) requirements to ensure that progress toward attainment of ambient air quality standards is not hampered. RECLAIM is designed to comply

with federal NSR and state NNI requirements without hindering a facility's ability to expand or modify its operations[1].

Title 42, United States Code §7511a, paragraph (e), requires major sources in extreme non-attainment areas to offset emission increases of extreme nonattainment pollutants and their precursors at a 1.5-to-1 ratio based on potential to emit. However, if all major sources in the extreme non-attainment area are required to implement federal BACT, a 1.2-to-1 offset ratio may be used. Federal BACT is comparable to California's BARCT. AQMD requires all existing major sources to employ federal BACT/California BARCT and, therefore, is eligible for a 1.2-to-1 offset ratio for ozone precursors (*i.e.*, NOx and VOCs). The federal offset requirement for major SO_2 sources is at least a 1-to-1 ratio, which is lower than the aforementioned 1.2-to-1 ratio. Even though the Basin is in attainment with SOx standards, SOx is a precursor to PM10 which is a nonattainment air pollutant in the Basin. The applicable offset ratio for PM10 is at least 1-to-1, thus, the applicable offset ratio for SOx is 1-to1. Health and Safety Code §40920.5 requires "no net increase in emissions from new or modified stationary sources of nonattainment pollutants or their precursors" (*i.e.*, a 1-to-1 offset ratio on an actual emissions basis). All actual RECLAIM emissions are offset at a 1-to-1 ratio provided there is not a programmatic exceedance of aggregate allocations, thus satisfying the federal offset ratio for SOx and state NNI requirements for both SOx and NOx. Annual RTC allocations follow a programmatic reduction to reflect changes in BARCT and thereby comply with federal and state goals for attainment.

RECLAIM requires California BACT/federal Lowest Achievable Emission Rate (LAER) for new or modified sources with emissions increases of RECLAIM pollutants. This provision complies with both the state and federal requirements regarding control technologies for new or modified sources. In addition to offset and BACT requirements, RECLAIM subjects RTC trades that are conducted to mitigate emissions increases over the sum of the facility's starting allocation and Non-tradable/Non-usable credits to trading zone restrictions to ensure net ambient air quality improvement within the sensitive zone established by Health and Safety Code §40410.5. Furthermore, facilities with actual RECLAIM emissions that exceed their initial allocation by 40 tons per year or more are required to analyze the potential impact of their emissions increases through modeling.

Rule 2005 – New Source Review for RECLAIM requires RECLAIM facilities to provide, prior to the start of operation, sufficient RTCs to offset the annual increase in potential emissions for the first year of operation at a 1-to-1 ratio. After the first year of operation, the same rule also requires RECLAIM facilities to provide sufficient RTCs to offset the annual potential emissions from newly permitted equipment at a 1-to-1 ratio at the commencement of each compliance year. Although RECLAIM allows a 1-to-1 offset ratio for emissions increases, RECLAIM complies with the federal offset requirement by complying with the 1.2-to-1 offset requirement for NOx on an aggregate basis. This annual audit report assesses NSR permitting activities for Compliance Year 2009 to verify that

[1] Federal NSR applies to federal major sources (sources with potential to emit 10 tons of NOx or 100 tons of SOx per year for the South Coast Air Basin) and state NNI requirements apply to all NOx sources and to SOx sources with the potential to emit at least 15 tons per year in the South Coast Air Basin. RECLAIM's NSR provisions apply to all facilities in the program.

programmatic compliance of RECLAIM with federal and state NSR requirements has been maintained.

NSR Activity

Compliance Year 2009 NSR activities were higher than previous compliance years, especially for NOx, likely a result of a concerted effort to issue permits after the permit moratorium[2] was lifted on January 1, 2010 pursuant to Senate Bill 827 (Wright; codified and California Health & Safety Code §40440.13). Once the permit moratorium was lifted, a large number of permits (1,415) that had been on hold were issued in early 2010. While RECLAIM emissions are not subject to Regulation XIII and were not directly subject to the permit moratorium, projects that are subject to RECLAIM NSR are typically combustion sources and also result in emissions of non-RECLAIM air contaminants and so were unable to proceed under the permit moratorium.

Evaluation of NSR data for Compliance Year 2009 shows that RECLAIM facilities expanded or modified their operations while complying with NSR requirements. Two facilities (a partial change of operator and an opt-in) joined the RECLAIM program. During Compliance Year 2009, 22 RECLAIM facilities (11 facilities in each Cycle) experienced a total of 105 tons per year of NOx NSR emission increases due to expansion or modification. Three SOx RECLAIM facilities (1 facility in Cycle 1 and 2 facilities in Cycle 2) experienced a total of 18.3 tons per year of SOx NSR emission increases due to expansion or modification. As in previous years, there were adequate unused RTCs (see Chapter 3) in the RECLAIM universe for use by new entrants into the program and for existing facilities to expand or increase production.

NSR Compliance Demonstration

RECLAIM is designed to programmatically comply with the federal NSR offset requirements. Meeting the NSR requirement (offset ratio of 1.2-to-1 for NOx and at least 1-to-1 for SOx) also demonstrates compliance with the state NNI requirements. Section 173 (c) of the federal Clean Air Act (CAA) states that only emissions reductions beyond the requirements of the CAA, such as federal Reasonably Available Control Technology (RACT), shall be considered creditable as emissions reductions for offset purposes. Since the initial allocations (total RTC supply in Compliance Year 1994) already met federal RACT requirements when the program was initially implemented, any emissions reductions beyond the initial allocations are available for NSR offset purposes until RACT becomes more stringent. The programmatic offset ratio calculations presented in the Annual RECLAIM Audit Reports for Compliance Years 1994 through 2004 relied upon aggregate Compliance Year 1994 allocations as representing RACT. However, staff recognizes that RACT may have become

[2] The permit moratorium resulted from a July 2008 Superior Court of the State of California, County of Los Angeles decision and subsequent November 2008 writ of mandate that prevented AQMD from implementing the portions of its non-RECLAIM NSR regulation (Regulation XIII – New Source Review) that provide exemptions from emissions offset requirements to specified sources and that provide certain other sources emissions offsets from AQMD's Priority Reserve. Under the permit moratorium, no permits could be issued to sources resulting in non-RECLAIM emissions increases of VOC, NOx, SOx, or PM10 unless the operator provided ERCs. However, the state law was changed in 2009 to allow AQMD to resume permitting of such sources for an interim period of time beginning January 1, 2010.

more stringent in the intervening years, so it may no longer be appropriate to calculate the programmatic offset ratio based upon aggregate 1994 allocations. Aggregate allocations for each compliance year represent federal BACT, which is equivalent to local BARCT. Federal BACT is more stringent than federal RACT (*i.e.*, the best available control technology is more stringent than what is reasonably available), so staff started using current allocations (federal BACT) as a surrogate for RACT as the basis for calculating programmatic NOx and SOx offset ratios in the annual audit report for Compliance Year 2005 and is continuing to do so for NOx in this report. This is a more conservative (*i.e.*, more stringent) approach than using actual RACT and is much more conservative than using aggregate Compliance Year 1994 allocations. The advantage of this approach is that, as long as the calculated NOx offset ratio is at least 1.2-to-1, it provides certainty that RECLAIM has complied with federal and state offset requirements without the need to know exactly where RACT lies for RECLAIM facilities. However, if this approach should ever fail to demonstrate that the aggregate NOx offset ratio for any year is at least 1.2-to-1, that will not necessarily mean RECLAIM has not actually complied with the federally required 1.2-to-1 NOx offset ratio. Rather it will indicate that further analysis is required to accurately identify RACT so that the actual offset ratio can be calculated and a compliance determination made.

Provided aggregate RECLAIM emissions do not exceed aggregate allocations, all RECLAIM emissions are offset at a ratio of 1-to-1. This leaves all unused allocations available to provide offsets beyond the 1-to-1 ratio for NSR emission increases. Unused allocations are based on all Cycle 1 and Cycle 2 RTCs of a given compliance year and the aggregate RECLAIM emissions for the selected time period. The NSR emission increase is the sum of emission increases due to permit activities at all RECLAIM facilities during the same compliance year. The aggregate RECLAIM offset ratios are expressed by the following formula:

$$\text{Offset Ratio} = \left(1 + \frac{\text{compliance year's total unused allocations}}{\text{total NSR emission increases}}\right)\text{-to-1}$$

The Compliance Year 2009 NOx programmatic offset ratio calculated from this methodology is 30-to-1:

$$\text{Offset Ratio} = \left(1 + \frac{3{,}060 \text{ tons}}{105.01 \text{ tons}}\right)\text{-to-1}$$

$$= 30 \text{ -to-1}$$

RECLAIM continues to generate sufficient excess emissions reductions to provide greater than 1.2-to-1 offset ratio for NOx emissions, as required by federal law. This compliance with the federal offset requirements is built into the RECLAIM program through annual reductions of the allocations assigned to RECLAIM facilities and the subsequent allocation adjustments adopted by the Governing Board to implement BARCT. On the other hand, the required offset ratio for SOx is 1-to-1. Since RECLAIM facilities are required to secure at a minimum adequate RTCs to cover their actual emissions, the offset ratio is met

automatically provided there is no programmatic exceedance of aggregate SOx allocations for that compliance year. As stated earlier in Chapter 3, there were excess SOx RTCs (1,331 tons) when compared to the total SOx emissions during Compliance Year 2009. Therefore, a separate calculation of the SOx offset ratio is not necessary.

BACT and modeling are also required for any RECLAIM facility that installs new equipment or modifies existing sources if the installation or modification results in an increase in emissions of RECLAIM pollutants. Furthermore, the RTC trading zone restrictions in Rule 2005 – New Source Review for RECLAIM, limit trades conducted to offset emission increases over the sum of the facility's starting allocation and Non-tradable/Non-usable credits to ensure net ambient air quality improvement within the sensitive zone, as required by state law.

The result of the review of the NSR activity in Compliance Year 2009 shows that RECLAIM is in compliance with both state NNI and federal NSR requirements. AQMD will continue to monitor NSR activity under RECLAIM in order to assure continued progress toward attainment of ambient air quality standards without hampering economic growth in the Basin.

Modeling Requirements

Rule 2004, as amended in May 2001, requires RECLAIM facilities with actual NOx or SOx emissions exceeding their initial allocation in Compliance Year 1994 by 40 tons per year or more to conduct modeling to analyze the potential impact of the increased emissions. The modeling analysis is required to be submitted within 90 days of the end of the compliance year. For Compliance Year 2009, two RECLAIM facilities were found to be subject to this requirement. The facilities submitted modeling analyses that showed that their NOx emissions complied with the most stringent ambient air quality standard for NOx set forth in Rule 2005, Appendix A.

Possible Amendments to New Source Review for RECLAIM

Chairman Burke of AQMD's Governing Board introduced his "Helping Hand Initiative for 2009" at the January 9, 2009 Board Meeting. One element of this Initiative is to provide enhanced customer service to permit applicants and permit holders, including revising the RTC hold requirement described below to make it less burdensome for facilities while continuing to comply with the requirements of federal NSR and state NNI.

Rule 2005 requires RECLAIM facilities that have had an emissions increase subject to NSR since October 1993, to hold sufficient RTCs at the beginning of each compliance year equal to the increase in its maximum potential emissions. The evaluation of emission increases is performed on a device-by-device basis, so any time a new NOx- or SOx-emitting RECLAIM device is installed it triggers the RTC hold requirement, regardless if the new device is replacing an older device and is lower-emitting than the one being replaced. Therefore, as time goes on, the aggregate quantity of emission increases, and the associated aggregate hold requirement, continues to grow even as aggregate emissions decline. Therefore, there is concern that facilities may find themselves unable to modernize simply because they will not be able to obtain sufficient RTCs to

satisfy the hold requirement at the beginning of a compliance year due to the built-in decreasing allocations, despite the requirement to reconcile all actual emissions from that unit on a quarterly basis and at the end of the compliance year. The RTC hold requirement applies even if the net impact of the facility's modernization effort will be a reduction in RECLAIM emissions. It is also noted that the amount of RTCs required to be held is equal to the maximum potential emission level rather than the anticipated actual emission level. This also creates an artificially high demand for RTCs at the beginning of a compliance year because actual emissions are always less than maximum potential to emit. The held RTCs are not allowed to be traded until either the end of a compliance year, or the end of a quarter if the permit so allows. Generally, the value of RTCs declines as they approach their expiration date. This increases the operating cost of a new lower emitting source without any emission benefits (*i.e.*, the RTCs are required to be held when their cost is higher than the price they can be sold at the end of the holding period). AQMD is initiating the rule amendment process to alleviate the impacts of this RTCs holding requirement for existing facilities that do not emit at a level higher than their starting allocations plus Non-tradable/Non-usable RTCs for Compliance Year 1994 while continuing to satisfy federal emissions offset requirements. It is also intended that the year-to-year hold requirement remains for facilities that did not exist prior to October 1993 and that all RECLAIM facilities must hold adequate RTCs to reconcile with their emissions during a compliance year pursuant to Rule 2004 which is not being altered.

CHAPTER 5
COMPLIANCE

Summary

There were 286 NOx and 32 SOx active facilities in the RECLAIM program at the start of Compliance Year 2009. During Compliance Year 2009, two facilities were included into the NOx universe and four facilities ceased operations and shutdown. There were no changes in the SOx universe. Of these 288 active NOx RECLAIM facilities during Compliance Year 2009, 276 facilities (96%) complied with their NOx allocations, and all but one of the 32 SOx facilities (97%) complied with their SOx allocations. The 12 NOx facilities that exceeded their NOx allocations had aggregate NOx emissions in excess of their combined NOx allocations by a total of 9.4 tons, whereas, the one SOx facility exceeded its SOx allocation by one pound. These amounts are small compared to the overall allocations for Compliance Year 2009 (0.09% of NOx and much less than 0.01% of SOx allocations). The overall RECLAIM NOx and SOx emission reduction targets and goals were met for Compliance Year 2009 (i.e.*, aggregate emissions were below aggregate allocations).*

Background

RECLAIM facilities have the flexibility to choose among compliance options to meet their annual allocations, by trading RTCs, reducing emissions, or a combination of both. However, this flexibility must be supported by standardized emission MRR requirements to ensure the reported emissions are real, quantifiable, and enforceable. As a result, specific and detailed MRR protocols are specified in the RECLAIM regulation to guarantee accurate and verifiable emission reports.

The MRR requirements were designed to provide accurate and up-to-date emission reports. Once facilities install and complete certification of the required monitoring and reporting equipment, they are relieved from command-and-control rule limits and requirements. Mass emissions from RECLAIM facilities are then determined directly by monitoring and reporting equipment for some sources and from data generated by monitoring equipment for others. If monitoring equipment fails to produce quality-assured data or the facility fails to file timely emissions reports, RECLAIM rules require emissions be determined by a rule-prescribed methodology known as Missing Data Procedures. Depending on past performance of the monitoring equipment (*i.e.*, availability of quality-assured data), MDP use a tiered approach to calculate emissions. As availability of quality-assured data increases, the MDP-calculated emissions become more representative of the actual emissions, but when the availability of quality-assured data is low, MDP calculations approach to some extent “worst case” assessments.

Allocation Compliance

Requirements

At the beginning of the RECLAIM program in 1994, each RECLAIM facility received an annual allocation for each compliance year. For an existing facility new to the program, annual allocations are issued according to the same methodology used for those facilities that were included at the start of the program. However, a facility without an operating history prior to 1994 receives no allocation and must purchase enough RTCs to cover the emissions for their operations, except facilities that have provided ERCs to offset emission increases prior to entering RECLAIM. These facilities are issued RTCs equivalent to the amount of offsets provided on an annual basis. Knowing their emission goals, RECLAIM facilities have the flexibility to manage their emissions in order to meet their allocations in the most cost-effective manner. Facilities may buy RTCs to increase their allocations, sell unneeded RTCs, or employ emission control technology to further curtail emissions.

At the end of the reconciliation period for each quarter and each compliance year, a RECLAIM facility must hold sufficient RTCs in its allocation account to cover its quarterly as well as year-to-date emissions for the compliance year. Facilities may buy or sell RTCs at any time during the year in order to ensure that their emissions are covered. In addition, at the end of each compliance year, there is a 60-day reconciliation period during which facilities have a final opportunity to buy or sell RTCs for that compliance year. By the end of each quarterly and annual reconciliation period, each facility is required to certify the emissions for the preceding quarter and compliance year by submitting its QCERs and APEP report, respectively.

Compliance Audit

Since the beginning of the program, AQMD has conducted annual audits of all emission reports submitted by RECLAIM facilities to ensure their integrity and reliability. The audit process includes conducting field inspections to check process equipment, monitoring devices, operational records, and emissions calculations in order to verify emissions reported electronically to AQMD or submitted in QCERs and APEP reports. These inspections revealed that some facilities made errors in quantifying their emissions such as arithmetic errors, used inappropriate emission factors or adjustment factors (*e.g.*, pressure correction factors and bias adjustment factors), used emission calculation methodologies not allowed under the rules, or used MDP inappropriately. Other common mistakes included reporting non-RECLAIM emissions and excluding reportable emissions.

Whenever an audit revealed a facility's emissions to be in excess of its annual allocation, the facility was provided an opportunity to review the audit and to present additional data to further refine audit results. Emissions data are ensured to be valid and reliable through this extensive and rigorous audit process.

Compliance Status

Prior to the Compliance Year 2008 Annual Audit Report, each year's compliance status was based on QCER or APEP data when audited data was not available. In the Compliance Year 2007 Annual RECLAIM Audit Report, staff committed to update and present the compliance status of all years based on the results of AQMD facility audits. As a result of this effort, all compliance data presented in the Compliance Year 2008 annual report forward is based on audited rather than a combination of audited and reported emissions data.

At the beginning of Compliance Year 2009, there were 286 NOx RECLAIM facilities and 32 SOx facilities. As stated in Chapter 1, the only changes to the NOx RECLAIM universe were two facilities were included and four facilities ceased operations during Compliance Year 2009. During this compliance year, a total of 13 RECLAIM facilities failed to reconcile their emissions. Of these 13 facilities, seven facilities failed to secure sufficient RTCs to cover their reported emissions during either the quarterly or annual year-to-date reconciliation periods and confirmed through audits. Additionally, two facilities also failed to secure sufficient RTCs to cover their reported emissions, but audits determined that these facilities had additional reasons for exceedance related to incorrectly calculating fuel usage. Finally, four facilities exceeded their allocations based solely on the audit of the facility. For one audit, the facility exceeded its allocation because non-major source MDP was applied due to invalid fuel usage records. In another audit, the facility exceeded its allocation because the facility failed to account for emissions from three internal combustion engines (classified as Large Sources) for the entire compliance year. The third audit showed the facility exceeded its allocation because the major source Data Acquisition and Handling System (DAHS) was not accounting for emissions from hours during which the source only operated for a portion of the hour. And for the fourth audit, the facility exceeded its allocation because it did not include fuel usage for one month from a process unit in its quarterly emissions calculations. Of these 13 facilities, 12 failed to reconcile their NOx emissions and one facility failed to reconcile their SOx emissions, corresponding to an overall allocation compliance rate of 96% (280 out of 292 facilities) for NOx RECLAIM facilities and 97% (31 out of 32 facilities) for SOx RECLAIM facilities. The amounts of emissions from these facilities in excess of their individual allocations totaled 9.4 tons of NOx and one pound of SOx (0.09% of aggregate NOx and much less than 0.01% of aggregate SOx allocations).

Impact of Missing Data Procedures

MDP was designed to provide a method for determining emissions when an emission monitoring system fails to yield valid emissions. For major sources, these occurrences may be caused by failure of the monitoring systems or of the DAHS. Major sources are also required to use MDP for determining emissions whenever daily emissions reports are not submitted by the applicable deadline. When comparing actual emissions with a facility's use of substituted MDP emissions, the range of MDP emissions can vary from "more representative" to emissions being overstated to reflect a "worst case"[1] scenario. For instance, an MDP "worst case" scenario may occur for major sources that fail to have their

[1] Based on uncontrolled emission factor at maximum rated capacity of the source and 24 hours per day.

Continuous Emission Monitoring System (CEMS) certified in a timely manner, and therefore, have no valid CEMS data that can be used in the substitution. In other cases, where prior CEMS data is available, MDP is applied in tiers depending on the duration of missing data periods and the historical availability of monitoring systems. As the duration of missing data periods gets shorter and the historical availability of monitoring systems gets higher, the substitute data yielded by MDP becomes more representative of actual emissions[2].

In addition to MDP for major sources, RECLAIM rules also define MDP for large sources and process units. These procedures are applicable when a process monitoring device fails or when a facility operator fails to record fuel usage or other monitored data (*e.g.*, hours of operation). The resulting MDP emissions reports are reasonably representative of the actual emissions because averaged or maximum emissions from previous operating periods may be used. However, for extended missing data periods (more than two months for large sources or greater than four quarters for process units) or when emissions data for the preceding year are unavailable, large source and process unit MDP are also based on worst case assumptions.

Based on APEP reports, 103 NOx facilities and 15 SOx facilities used MDP in reporting their annual emissions during Compliance Year 2009. In terms of mass emissions, 7.8% of the total reported NOx emissions and 13.8% of the total reported SOx emissions in the APEP reports were calculated using MDP for Compliance Year 2009. Table 5-1 compares the impact of MDP on reported annual emissions for the last few compliance years and the second compliance year, 1995 (MDP was not fully implemented during Compliance Year 1994).

Table 5-1
MDP Impact on Annual Emissions

	Percent of Reported Emissions Using Substitute Data*							
Emittant	**1995**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**
NOx	23.0% (65/6,070)	4.5% (87/443)	8.3% (106/824)	3.0% (88/359)	2.5% (48/220)	5.6% (78/489)	7.6% (86/625)	7.8% (103/554)
SOx	40.0% (12/3,403)	4.7% (15/181)	10.4% (16/373)	3.6% (15/161)	0.0% (0/0)	7.0% (14/262)	7.5% (9/242)	13.8% (15/403)

* Numbers in parenthesis that are separated by a forward slash represent the number of facilities that reported use of MDP in each compliance year and tons of emissions based on MDP.

Most of the issues associated with CEMS certifications were resolved prior to Compliance Year 1999. Since then, very few facilities have had to submit emissions reports based on the worst case scenario under MDP, which may considerably overstate the actual emissions from major sources. As an example, most facilities that reported emissions using MDP in 1995 did so because they did not have their CEMS certified in time to report actual emissions. Since their CEMS had no prior data, MDP called for an application of the most conservative procedure to calculate substitute data by assuming continuous uncontrolled

[2] Based on averaged emissions during periods before and after the period when data is not available.

operation at the maximum rated capacity of the facility's equipment, regardless of the actual operational level during the missing data periods. As a result, the calculations yielded substitute data that may have been much higher than the actual emissions. In comparison to the 65 NOx facilities implementing MDP in Compliance Year 1995, 103 facilities reported NOx emissions using MDP in Compliance Year 2009. Even though the number of facilities is higher, the percentage of emissions reported using MDP during Compliance Year 2009 is much lower than it was in 1995 (7.8% versus 23%). Additionally, in terms of quantity, NOx emissions in Compliance Year 2009 were less than 10% of that in Compliance Year 1995 (554 tons versus 6,070 tons). Since most CEMS were certified and had been reporting actual emissions by the beginning of Compliance Year 2000, facilities that had to calculate substitute data were able to apply less conservative methods of calculating MDP for systems with high availability and shorter duration of missing data periods. Therefore, the substitute data they calculated for their missing data periods were more likely to be representative of the actual emissions.

It is important to note that portions of annual emissions attributed to MDP include actual emissions from the sources as well as the possibility of overestimated emissions. As shown in Table 5-1, approximately 7.8% of NOx annual emissions were calculated using MDP in Compliance Year 2009. MDP may significantly overestimate emissions from sources that operate intermittently and have low monitoring system availability, and/or lengthy missing data periods. Even though a portion of the 7.8% may be overestimated emissions due to conservative MDP, a significant portion (or possibly all) of it could have been actual emissions from the sources. Unfortunately, the portion that represents the actual emissions cannot be readily estimated because the extent of this effect varies widely, depending on source categories and operating parameters, as well as the tier of MDP applied. As an example, refineries tend to operate at near maximum capacity for 24 hours per day and seven days per week, except for scheduled shutdowns for maintenance and barring major breakdowns or other unforeseeable circumstances. For Compliance Year 2009, a significant portion of NOx MDP emissions data (55%) as well as SOx MDP emissions data (41%) were reported by refineries. Therefore, missing data emissions calculated for such facilities could be more reflective of the actual emissions than those calculated for facilities that do not operate on a continuous basis but, due to low data availability, are required to calculate MDP based upon continuous operation.

Emissions Monitoring

Overview

The reproducibility of reported RECLAIM facility emissions—and thereby the enforceability of the RECLAIM program—is assured through a three-tiered hierarchy of MRR requirements. A facility's equipment falls into an MRR category based on the kind of equipment it is and on the level of emissions produced or potentially produced by the equipment. RECLAIM divides all NOx sources into major sources, large sources, process units, and equipment exempt from obtaining a written permit pursuant to Rule 219. All SOx sources are divided into major sources, process units, and equipment exempt from obtaining

a written permit pursuant to Rule 219. Table 5-2 shows the monitoring requirements applicable to each of these categories.

Table 5-2
Monitoring Requirements for RECLAIM Sources

Source Category	Major Sources (NOx and SOx)	Large Sources (NOx only)	Process Units and Rule 219 Equipment (NOx and SOx)
Monitoring Method	Continuous Emission Monitoring System (CEMS)	Fuel Meter or Continuous Process Monitoring System (CPMS)	Fuel Meter, Timer, or CPMS
Reporting Frequency	Daily	Monthly	Quarterly

Continuous Emission Monitoring System (CEMS)

Requirements

CEMS represent both the most accurate and the most reliable method of calculating emissions because they continuously monitor all of the parameters necessary to directly determine mass emissions of NOx and SOx. They are also the most costly method. These attributes make CEMS the most appropriate method for the largest emission-potential equipment in the RECLAIM universe, major sources, which are relatively few in number but represent a majority of the total emissions from all equipment. Based on emissions reported in the QCERs, 79% of all RECLAIM NOx emissions come from major sources and 97% of all RECLAIM SOx emissions come from major sources.

Alternatives to CEMS, or Alternative Continuous Emission Monitoring System (ACEMS), are allowed under the RECLAIM regulation. These are devices that do not directly monitor NOx or SOx mass emissions; instead, they correlate multiple process parameters to arrive at mass emissions. To be approved for RECLAIM MRR purposes, ACEMS must be determined by the AQMD to be equivalent to CEMS in relative accuracy, reliability, reproducibility, and timeliness.

Compliance Status

By the end of calendar year 1999, almost all facilities that were required to have CEMS had their CEMS certified or provisionally approved. The only remaining uncertified CEMS are for sources that recently became subject to major source reporting requirements and sources that modified their CEMS. It is expected that there will be a few new major sources each year. Therefore, there will continue to be a small number of CEMS in the certification process at any time. There are no longer any CEMS that have been in the certification process for a significant length of time due to unusual technical issues.

Standing Working Group on RECLAIM CEMS Technical Issues

CEMS technical issues, which delayed certification of many CEMS, arose over the course of RECLAIM implementation. To address these issues and further assist facilities in complying with major source monitoring requirements, a Standing Working Group (SWG) on RECLAIM CEMS Technical Issues was formed to provide a forum in which facility representatives, consultants and AQMD staff could discuss and work out technically-sound and reasonable solutions to CEMS issues. In the past, the SWG met quarterly to discuss progress and also bring up new issues. However, since existing issues have been resolved and new issues are infrequent, the SWG currently is only convened as necessary.

Semiannual and Annual Assessments of CEMS

RECLAIM facilities conduct their Relative Accuracy Test Audit (RATA) of certified CEMS using private sector testing laboratories approved under the AQMD Laboratory Approval Program (LAP). These tests are conducted either semiannually or annually, depending on the most recent relative accuracy value (the sum of the average differences and the confidence coefficient) for each source. The interval is annual only when all required relative accuracies obtained during an audit are 7.5% or less (*i.e.*, more accurate).

To verify the quality of CEMS, the RATA report compares the CEMS data to data taken simultaneously, according to approved testing methods (also known as reference methods), by a LAP-approved source testing contractor. The relative accuracy performance requirements for the RATAs are ±20% for pollutant concentration, ±15% for stack flow rate, and ±20% for pollutant mass emission rate (the product of concentration and stack flow rate). The RATAs also determine whether CEMS data must be adjusted for low readings compared to the reference method (bias adjustment factor), and by how much. The RATA presents two pieces of data, the CEMS bias (how much it differs from the reference method on the average) and the CEMS confidence coefficient (how variable that bias or average difference is).

Tables 5-3 and 5-4, respectively, summarize the 2009 and 2010 calendar years' passing rates for RATAs of certified CEMS for NOx and SOx concentration, total sulfur in fuel gas concentrations, stack flow rate (in-stack monitors and F-factor based calculations), and NOx and SOx mass emissions. However, the tables do not include SOx mass emissions calculated from total sulfur analyzer systems because such systems serve numerous devices, and therefore are not suitable for mass emissions-based RATA testing.

Table 5-3
Passing Rates Based on RATAs of Certified CEMS in 2009[1]

Concentration						Stack Flow Rate				Mass Emissions			
NOx		SO_2		Total[2] Sulfur		In-Stack Monitor		F-Factor Based Calc.		NOx		SOx[3]	
No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass
340	100	72	100	17	100	45	100	322	100	340	100	51	100

1. All passing rates calculated from data submitted before January 8, 2010 and may exclude some data from the fourth quarter of calendar year 2009.
2. Includes Cylinder Gas Audit (CGA) tests.
3. Does not include SOx emissions calculated from total sulfur analyzers.

Table 5-4
Passing Rates Based on RATAs of Certified CEMS in 2010[1]

Concentration						Stack Flow Rate				Mass Emissions			
NOx		SO_2		Total[2] Sulfur		In-Stack Monitor		F-Factor Based Calc.		NOx		SOx[3]	
No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass
391	100	79	100	17	100	56	100	354	100	391	100	79	100

1. All passing rates calculated from data submitted before January 11, 2011 and may exclude some data from the fourth quarter of calendar year 2010.
2. Includes Cylinder Gas Audit (CGA) tests.
3. Does not include SOx emissions calculated from total sulfur analyzers.

As indicated in Tables 5-3 and 5-4, the passing rates for NOx/SO_2 concentration, stack flow rate, and mass emissions were high. Since the inception of RECLAIM there have been significant improvements with respect to the availability of reliable calibration gas, the reliability of the reference method, and an understanding of the factors that influence valid total sulfur analyzer data.

Electronic Data Reporting of RATA Results

Facilities operating CEMS under RECLAIM are required to submit RATA results. Traditionally, these results are presented in formal source test reports. AQMD, with help of the SWG, set up an electronic reporting system, known as Electronic Data Reporting (EDR), to allow RATA results to be submitted on storage media such as floppy diskettes, compact discs (CDs) and digital video discs (DVDs), or by electronic mail using a standardized format. This system minimizes the amount of material the facility must submit to AQMD and also facilitates the RATA review process. With this added option, many facilities have employed the EDR system to report RATA results, which has helped the AQMD expedite the review process. About 95% of RATA results were submitted using EDR in calendar year 2009 and about 97% in 2010.

Non-Major Source Monitoring, Reporting, and Recordkeeping

Emissions quantified for large sources are primarily based on a concentration limits or emission rates specified in the Facility Permit. Other variables used in

the calculation of large source emissions are dependent on the specific process of the equipment, but generally include fuel usage, applicable dry F-factor, and the higher heating value of the fuel used. RECLAIM requires large sources to be source tested within defined three-year windows in order to validate the equipment's concentration limit or emission rate. Since emissions are fuel-based, the monitoring equipment required to quantify emissions is a non-resettable fuel meter that must be corrected to standard temperature and pressure. Large source emission data must be submitted electronically on a monthly basis.

Process unit emission calculations are similar to those of large sources in that emissions are quantified using either the fuel-based calculations for a concentration limit or an emission factor specified in the Facility Permit. Similar to large sources, variables used in emission calculations for process units are dependent on the equipment's specific process, but generally include fuel usage, applicable dry F-factor, and the higher heating value of the fuel used. Process units that are permitted with concentration limits are also required to be source-tested, but within specified five-year windows. Emissions for equipment exempt under Rule 219 are quantified using emission factors and fuel usage. No source testing is required of equipment exempt under Rule 219. Since emissions are fuel-based for both process units and equipment exempt under Rule 219, the monitoring equipment required to quantify emissions is a non-resettable fuel meter, corrected to standard temperature and pressure. Additionally, a timer may be used to record operational time. In such cases, fuel usage is determined based on maximum rated capacity of the source. Process units and equipment exempt under Rule 219 must submit emission reports electronically on a quarterly basis.

Emissions Reporting

Requirements

RECLAIM is designed to take advantage of electronic reporting technology to streamline reporting requirements for both facilities and AQMD, and to help automate compliance-tracking. Under RECLAIM, facilities report their emissions electronically on a per device basis to AQMD's Central Station computer as follows:

- Major sources must use a Remote Terminal Unit (RTU) to telecommunicate emission data to the AQMD Central Station. The RTU collects data, performs calculations, generates the appropriate data files, and transmits the data to the Central Station. This entire process is required to be performed by the RTU without human intervention.
- Emission data for all equipment other than major sources may be transmitted via RTU or compiled manually and transmitted to the Central Station via modem. Alternatively, since January 2005, the existing AQMD internet based application, Web Access To Electronic Reporting System (WATERS), was upgraded to allow RECLAIM facilities to transmit emission data for non-major sources via internet connection. The data may be transmitted directly by the facility or through a third party.

Compliance Status

The main concern for emission reporting is the timely submittal of daily reports from major sources. If daily reports are not submitted by the specified deadlines, RECLAIM rules may require that emissions from CEMS be ignored and the emissions be calculated using MDP. Daily emission reports are submitted by the RTU of the CEMS to the AQMD Central Station via telephone lines. Often communication errors between the two points are not readily detectable by facility operators. Undetected errors can cause facility operators to believe that daily reports were submitted when they were not received by the Central Station. In addition to providing operators a means to confirm the receipt of their reports, the WATERS application can also display electronic reports that were submitted to, and received by, the Central Station. This system helps reduce instances where MDP must be used for late or missing daily reports, because the operators can verify that the Central Station received their daily reports, and can resubmit them if there were communication errors.

Protocol Review

Even though review of MRR protocols was only required by Rule 2015(b)(1) for the first three compliance years of the RECLAIM program, staff continues to review the effectiveness of enforcement and MRR protocols. Based on such review, appropriate revisions to the protocols may be needed to achieve improved measurement and enforcement of RECLAIM emission reductions, while minimizing administrative costs to AQMD and RECLAIM participants.

Since the RECLAIM program was adopted, staff has produced rule interpretations and implementation guidance documents to clarify and resolve specific concerns about the protocols raised by RECLAIM participants. In situations where staff could not interpret existing rule requirements to adequately address the issues at hand, the protocols and/or rules have been amended. During Compliance Year 2009, there were no new amendments to Regulation XX related to MRR protocols[3]. However, as discussed earlier in Chapter 3 of this report, AQMD initiated the amendment process to amend Rule 2002 – Allocations for Oxides of Nitrogen (NOx) and Oxides of Sulfur (SOx) and implement Control Measure CMB-02 ("Further SOx Reductions for RECLAIM"), which estimated that implementation of SOx BARCT could achieve at least 3 tons per day SOx emission reductions from 2011 to 2014. In order to implement this control measure, on November 5, 2010, the AQMD Governing Board adopted amendments to Rule 2002 – Allocations for Oxides of Nitrogen (NOx) and Oxides of Sulfur (SOx) that will result in an overall reduction of 5.7 tons of SOx per day when fully implemented in 2019 (the reductions are being phased in from 2013 through 2019). More detailed discussions of amended Rule 2002 can be found in Chapter 2 of this report.

Finally, with respect to rule interpretations and implementation guidance documents, a Compliance Advisory (dated November 13, 2009) was mailed to all RECLAIM facilities with major sources as well as CEMS vendors to clarify the rules' requirement for calculating the mass emission rate for RECLAIM major sources. The advisory re-iterated that mass emission rate calculations are to be

[3] An amendment to Rule 2002 was adopted on November 5, 2010, resulting in an overall reduction of 5.7 tons of SOx per day by 2019. See Chapter 2 for a more detailed discussion.

conducted at the 15-minute level and that the mass emission rate for each 15-minute period is the product of that period's average stack flow value (the average of all valid stack flow data obtained from the stack flow analyzer in that 15-minute period) and that period's average concentration value (the average of all valid concentration data obtained from the concentration analyzer in that 15-minute period). The deadline to make any changes to CEMS DAS/RTU software to comply with this Compliance Advisory was either of (a) the facility's first 2010 RATA due date for each major source, or (b) March 31, 2010, whichever was later. Furthermore, once the changes are implemented, major source emissions must be recalculated back to January 1, 2010 using the corrected software.

CHAPTER 6
REPORTED JOB IMPACTS

Summary

*This chapter compiles data as reported by RECLAIM facilities in their Annual Permit Emissions Program (APEP). The analysis focuses exclusively on job impacts at RECLAIM facilities and if those job impacts were directly attributable to RECLAIM as reported by those facilities. There may be additional effects of the RECLAIM program on the local economy outside of RECLAIM facilities (*e.g.*, generating jobs for consulting firms, source testing firms and CEMS vendors) and also factors other than RECLAIM (*e.g.*, the current economic downturn), that impact the job market. These factors are not evaluated in this report.*

According to the Compliance Year 2009 employment survey data gathered from APEP reports, RECLAIM facilities reported a net loss of 7,792 jobs, representing 7.33% of their total employment. The vast majority of these losses were attributed to factors other than RECLAIM. Only three facilities (1% of the active facilities) attributed job impact at their facilities to the RECLAIM program. Four RECLAIM facilities were listed as shutdown during Compliance Year 2009. None of these facilities reported on their APEP report that RECLAIM was a contributing factor in their decision to close. Two facilities (0.70% of the RECLAIM universe) reported a combined loss of 188 jobs (0.19% of total employment) due to RECLAIM, whereas one facility (0.35% of the RECLAIM universe) reported a total of two jobs gained due to RECLAIM. AQMD staff has reviewed information available to AQMD for one facility which reported a major portion of the jobs lost (168) due to RECLAIM. This facility has been in the RECLAIM program since RECLAIM's inception 16 years ago, reported job losses last year (Compliance Year 2008) of similar magnitude and attributed them to RECLAIM, has had emission decreases at a rate similar to the RECLAIM rate of emission reduction for NOx emissions, had adequate RTC allocations to cover its emissions in each of the last several years, and was not a structural buyer. The facility's reported NOx emissions had a sharper rate of reduction from Compliance Year 2008 to 2009. This is indicative of decreased production during that period since there was no equipment modification reported. However, the facility's NOx emissions remained approximately constant during Compliance Years 2003 through 2008 (although somewhat higher during Compliance Year 2007). Furthermore, the facility held adequate Compliance Year 2009 RTCs to sustain emissions at the Compliance Years 2003 through 2008 (excluding 2007) level during Compliance Year 2009. Therefore, AQMD could not identify any specific reason why the RECLAIM program would have caused the job losses reported by this facility.

Background

The APEP reports submitted by RECLAIM facilities include survey forms that are used to evaluate the socioeconomic impacts of the program. Facilities were asked to indicate on the forms the number of jobs at the beginning of Compliance Year 2009 and any changes that took place during the compliance year in each of three categories: manufacturing, sale of products, and non-manufacturing.

The number of jobs gained and lost reported by facilities in each category during the compliance year was tabulated.

Additionally, the APEP reports ask facilities that shutdown during Compliance Year 2009 to provide the reasons for their closure. The APEP reports also allow facilities to indicate whether the RECLAIM program led to the creation or elimination of jobs during Compliance Year 2009. Those facilities that reported a change in the number of jobs due to RECLAIM were asked to specify the number of jobs lost or gained, and to state why the job loss or creation was attributed to RECLAIM.

Since data regarding job impacts and facility shutdowns are derived from the APEP reports, the submittal of these reports are essential in assessing the influence that the RECLAIM program has on these issues. The following discussion represents data obtained from APEP reports submitted to AQMD for Compliance Year 2009 and clarifying information collected by AQMD staff. AQMD has no way to verify that the reported job impacts from RECLAIM facilities are real rather than perceived.

Job Impacts

Table 6-1 summarizes job impact data gathered from Compliance Year 2009 APEP reports and follow-up telephone interviews. It should be noted that the total number of facilities reporting job gains or losses does not equal the sum of the number of facilities reporting job changes in each category (*i.e.*, the manufacture, sales of products, and non-manufacture categories) due to the fact that some facilities may report changes under more than one of these categories. A total of 110 facilities reported 5,757 job gains, while 137 facilities reported a total of 13,549 job losses. Net job losses were reported in all three categories: manufacturing (1,308), sales of products (74), and non-manufacturing (6,410). Table 6-1 shows a total net loss of 7,792 jobs, which represents a net decrease of 7.33% at RECLAIM facilities during Compliance Year 2009.

Table 6-1
Job Impacts at RECLAIM Facilities for Compliance Year 2009

Description	Manufacture	Sales of Products	Non-Manufacture	Total
Initial Jobs	43,899	850	61,548	106,297
Overall Job Gain	3,440	98	2,219	5,757
Overall Job Loss	4,748	172	8,629	13,549
Final Jobs	42,591	776	55,138	98,505
Net Job Change	-1,308	-74	-6,410	-7,792
Percent (%) Job Change	-2.98%	-8.71%	-10.4%	-7.33%
Facilities Reporting Job Gains	85	24	60	110
Facilities Reporting Job Losses	118	38	100	137

The above figures include four RECLAIM facilities that were reported to be shutdown in Appendix C during Compliance Year 2009. Of the four facilities that reported shutting down their manufacturing operations during Compliance Year

2009, one facility shut down after it was sold and the plant was vacated. Two other facilities were deemed shut down by AQMD because no APEP report was submitted, AQMD inspectors found both facilities were no longer operating, and attempts to contact representatives from the two facilities were unsuccessful. The fourth facility reported moving to Greenville, North Carolina as part of a strategic business decision.

Three facilities reported job impacts attributed to the RECLAIM program (refer to Appendix E). One facility reported job gains and two reported job losses. One facility reported a gain of two jobs to meet the monitoring, reporting and recordkeeping, as well as additional maintenance requirements, of the RECLAIM program. One facility declared a loss of 168 jobs and cited RECLAIM compliance costs as one of the reasons putting them at a competitive disadvantage compared to other facilities, including their own sister company located outside of California. However, AQMD staff has reviewed available information for this facility and found that the facility has been in the RECLAIM program since RECLAIM's inception, reported job losses last year (Compliance Year 2008) of similar magnitude and attributed them to RECLAIM, has had emission decreases at a rate similar to the RECLAIM rate of emission reduction for NOx emissions, had adequate RTC allocations to cover its emissions in each of the last several years, and was not a structural buyer. The facility's NOx emissions had a sharper rate of reduction from Compliance Year 2008 to 2009. This is indicative of decreased production during that period since there was no equipment modification reported. However, the facility's NOx emissions remained approximately constant during Compliance Years 2003 through 2008 (although somewhat higher during Compliance Year 2007). Furthermore, the facility held adequate Compliance Year 2009 RTCs to sustain emissions at the Compliance Years 2003 through 2008 (excluding 2007) level during Compliance Year 2009. Therefore, AQMD could not identify any specific reason why the RECLAIM program would have caused the job losses reported by this facility. Another facility stated that higher manufacturing costs, decreased profit margins, facility maintenance costs (which also included RECLAIM compliance costs), and a tight annual budget were the reasons that prevented the facility from rehiring for 20 job positions left vacant due to terminations or retirements. However, there was no information from this facility indicating whether or not the reduction in jobs was permanent.

It should be noted that this analysis of socioeconomic impacts based on APEP reports and follow-up interviews is focused exclusively on changes in employment that occurred at RECLAIM facilities. The effect of the program on the local economy outside of RECLAIM facilities, including consulting and source testing jobs, is not considered.

It is not possible to compare the impact of the RECLAIM program on the job market *vis-à-vis* a scenario without RECLAIM. This is because factors other than RECLAIM (*e.g.*, the current economic downturn), also impact the job market. Based on the current year and past few years of data collected from RECLAIM facilities, the job gains or losses attributed only to RECLAIM comprise a very small percentage of the total number of jobs lost or gained in that period. Furthermore, there is no way to compare job impacts attributed to RECLAIM to job impacts attributed to command and control rules that would have been adopted in RECLAIM's absence, because these command and control rules do

not exist. As mentioned in the previous paragraph, the effect of the RECLAIM program on the local economy outside of RECLAIM facilities (*e.g.*, generating jobs for consulting firms, source testing firms and CEMS vendors) is also not considered in this report.

CHAPTER 7
AIR QUALITY AND PUBLIC HEALTH IMPACTS

Summary

Audited RECLAIM emissions have been in an overall downward trend since the program's inception. NOx and SOx emissions in Compliance Year 2009 continued their downward trend (reduced by 12% and 11%, respectively, compared to Compliance Year 2008). Quarterly calendar year 2009 NOx emissions ranged from approximately five percent below to three percent above the mean NOx emissions for the year. Quarterly calendar year 2009 SOx emissions ranged from approximately 11% below to 11% above the year's mean SOx emissions. There was no significant shift in seasonal emissions from the winter season to the summer season. Furthermore, based upon analysis of the geographical distribution of Compliance Year 2009 emissions on a quarterly basis, there was no distinct shift in the geographical distribution of emissions.

The California Clean Air Act (CCAA) required a 50% reduction in population exposure to ozone, relative to a baseline averaged over three years (1986 through 1988), by December 31, 2000. Analysis of per capita exposure (the length of time each person is exposed) to ozone in 1998 and 2000 shows that the Basin achieved the December 2000 target for ozone well before the deadline. In fact, Los Angeles County, Orange County, and the South Coast Air Basin overall achieved compliance with the December 2000 target prior to 1994, and Riverside and San Bernardino Counties achieved compliance in 1996. In calendar year 2010, the per capita exposure to ozone continued to be well below the target set for December 2000.

Air toxic health risk is primarily caused by emissions of certain volatile organic compounds (VOCs) and metals, rather than NOx or SOx emissions. RECLAIM facilities are subject to the same air toxic, VOC, and solid and condensable particulate matter regulations as other sources in the Basin. All sources are subject, where appropriate, to the NSR Rule for Toxics (Rule 1401). In addition, sources with NOx or SOx emission increases are required to be equipped with BACT which minimizes to the best extent feasible the health effects of the NOx and SOx emissions. Therefore, it can be concluded that the RECLAIM program creates no increased toxic impact beyond what would have occurred with the rules and control measures RECLAIM subsumed, and therefore poses no increased adverse public health impacts.

Background

RECLAIM is designed to achieve the same, or higher level of, benefits in terms of air quality and public health as would have been achieved from implementation of the control measures and command-and-control rules that RECLAIM subsumed. Therefore, as a part of each annual program audit, AQMD evaluates per capita exposure to air pollution, toxic risk reductions, emission trends, and seasonal fluctuations in emissions. AQMD also generates quarterly emissions

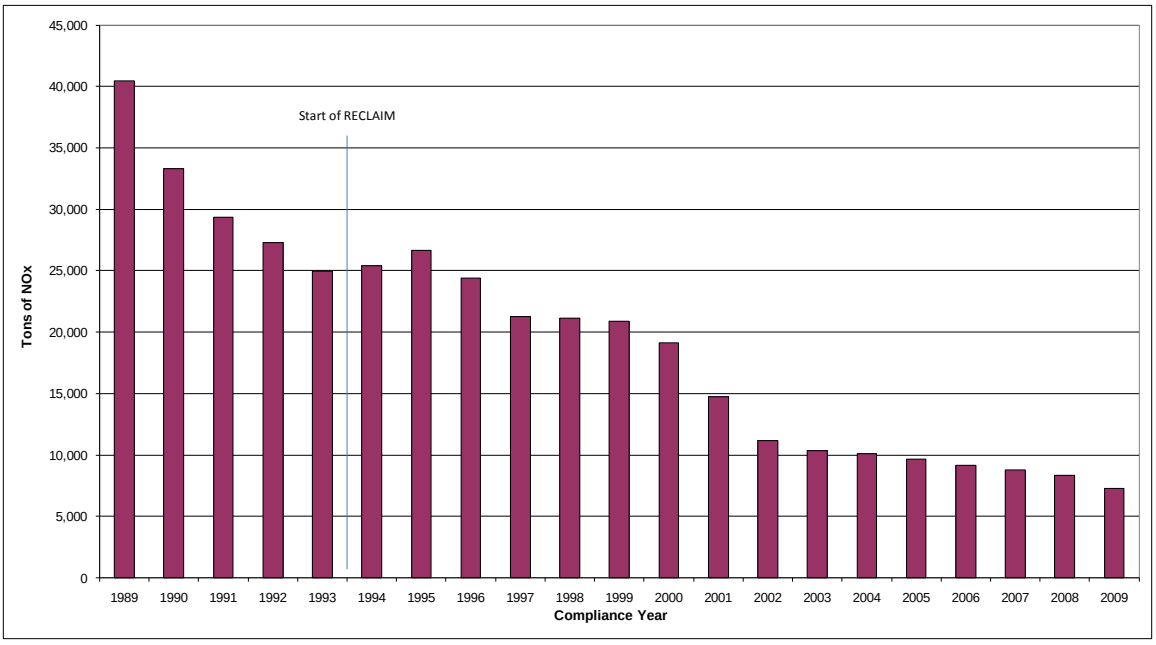
maps depicting the geographic distribution of RECLAIM emissions. This chapter addresses:

- Emission trends for RECLAIM facilities;
- Seasonal fluctuations in emissions;
- Geographic patterns of emissions;
- Per capita exposure to air pollution; and
- Toxics impacts.

Emission Trends for RECLAIM Sources

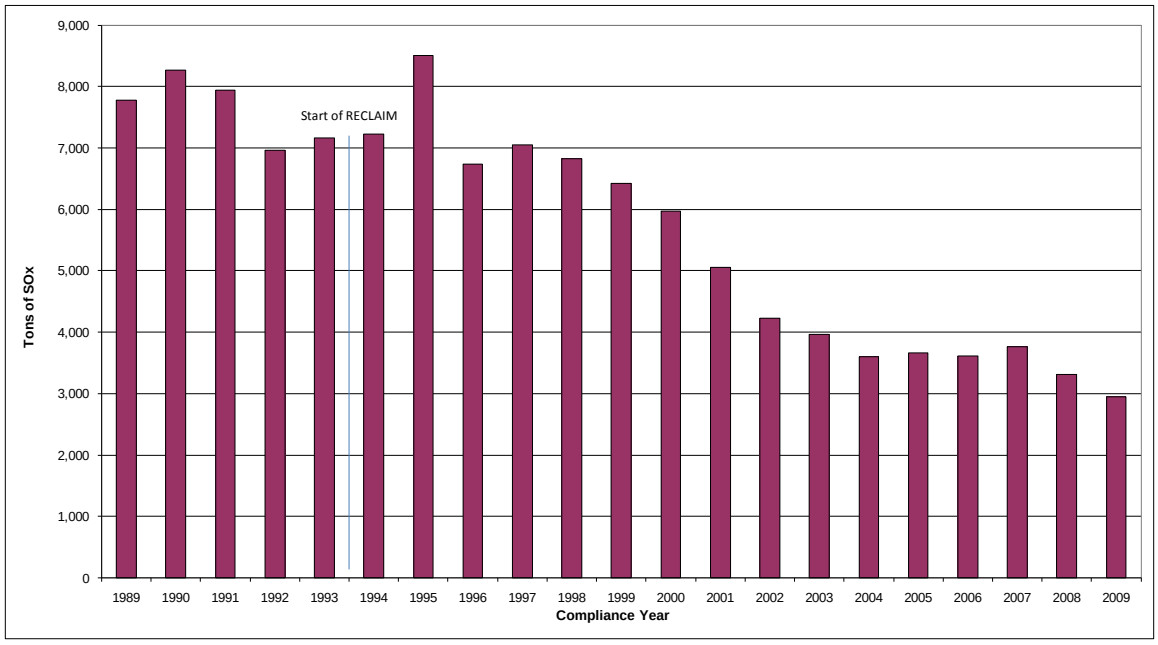
Concerns were expressed during program development that RECLAIM might cause sources to increase their aggregate emissions during the early years of the program due to perceived over-allocation of emissions. In Figures 7-1 and 7-2, which show NOx and SOx emissions from RECLAIM sources since 1989, the analysis of emissions from RECLAIM sources indicates that, in fact, the reverse is true. Overall, RECLAIM emissions have been in a downward trend since program inception. Compliance Year 2009 NOx emissions were 12% lower and SOx emissions were 11% lower than they were in Compliance Year 2008.

Figure 7-1
NOx Emission Trend for RECLAIM Sources



Note: 1989-1993 emissions presented in this figure are the emissions from the facilities in the 1994 NOx universe.

Figure 7-2
SOx Emission Trend for RECLAIM Sources



Note: 1989-1993 emissions presented in this figure are the emissions from the facilities in the 1994 SOx universe.

NOx emissions have decreased every year since Compliance Year 1995. Since Compliance Year 1995, annual SOx emissions have also followed a general downward trend, except for slight increases in Compliance Years 1997, 2005, and 2007 compared to their respective previous compliance year.

The increase in NOx emissions from Compliance Year 1994 to 1995 can be attributed to the application of MDP at the onset of RECLAIM implementation. At RECLAIM's adoption in 1993, facilities with major sources were allowed to report emissions (interim reporting) for their first year in the program by quantifying emissions using an emission factor and fuel throughput. This interim period allowed major sources time to certify their CEMS. However, many facilities with major sources had difficulties in certifying their CEMS by the end of the interim period, and consequently, reported emissions using MDP during Compliance Year 1995. As discussed in Chapter 5, since CEMS for these major sources had no prior data, MDP required the application of the most conservative procedure to calculate substitute data by assuming continuous operation at the maximum rated capacity, regardless of the actual operational level during missing data periods. As a result, the application of MDP during this time period yielded substitute data that may have been much higher than the actual emissions. Overall, the figures clearly show that RECLAIM facilities did not increase their aggregate emissions during the earlier years of the program, dispelling the concerns about increased emissions in the early years.

Seasonal Fluctuation in Emissions for RECLAIM Sources

During program development, another concern was that RECLAIM might cause facilities to shift emissions from the winter season into the summer ozone season, thus exacerbating poor air quality. To address this concern, AQMD staff analyzed quarterly audited emissions during calendar year 2009 and compared them with quarterly audited emissions for prior years to assess if there had been such a shift in emissions. This analysis is reflected in Figures 7-3, 7-4, 7-5, and 7-6.[1]

Figure 7-3 shows the 2009 mean quarterly NOx emissions, which are the average of the aggregate emissions for each of the four quarters, versus the 2009 actual quarterly emissions and Figure 7-4 compares the 2009 quarterly NOx emissions with the quarterly emissions from 2002 through 2008. During calendar year 2009, aggregate quarterly NOx emissions varied from about three percent above the mean in the third quarter (July through September) to about five percent below the mean in the fourth quarter (October through December). Furthermore, Figure 7-4 shows that all four quarters of 2009 had lower aggregate RECLAIM NOx emissions than the corresponding quarter of any prior year since the program began in 1994. Additionally, the 2009 quarterly aggregate NOx emissions profile is similar to the corresponding profiles for several other recent years. Figures 7-3 and 7-4, together, show that the RECLAIM program has not caused a significant shift in NOx emissions from the winter season into the summer season and that, although aggregate RECLAIM NOx emissions in 2009 were lower than in previous years, the 2009 seasonal emissions profile was consistent with previous years.

[1] Data used to generate these figures were derived from audited data. Similar figures for calendar years 1994 through 2007 in previous annual reports were generated from a combination of audited and reported data available at the time the reports were written.

Figure 7-3
Calendar Year 2009 NOx Quarterly Emissions

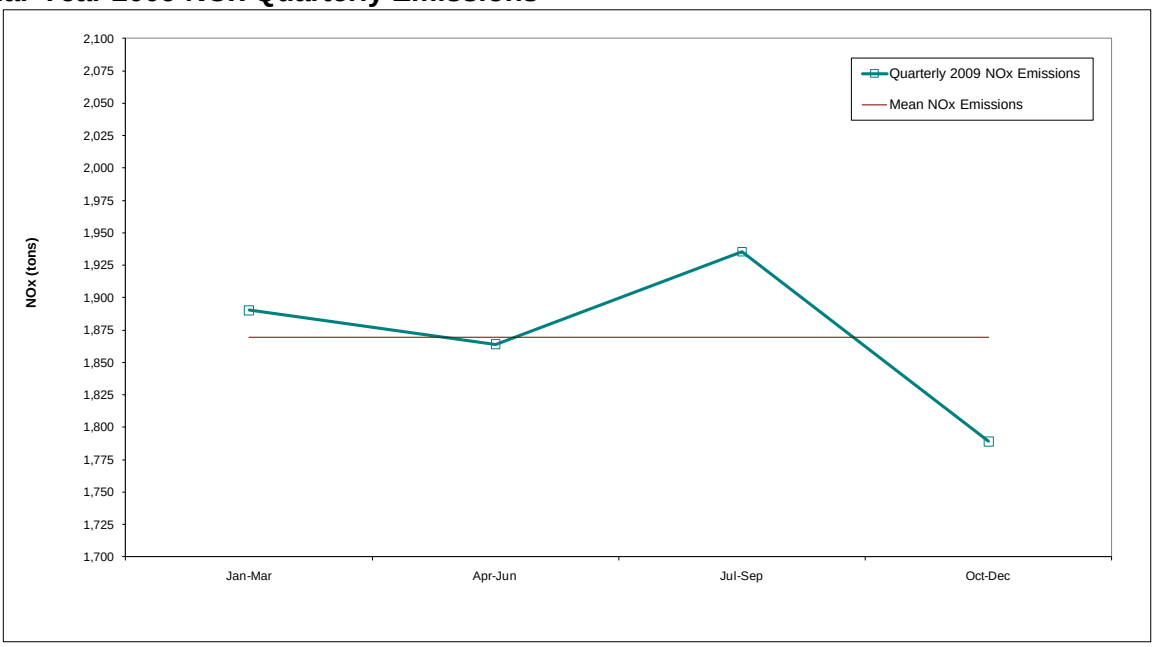


Figure 7-4
Quarterly NOx Emissions from Calendar Years 2002 through 2009

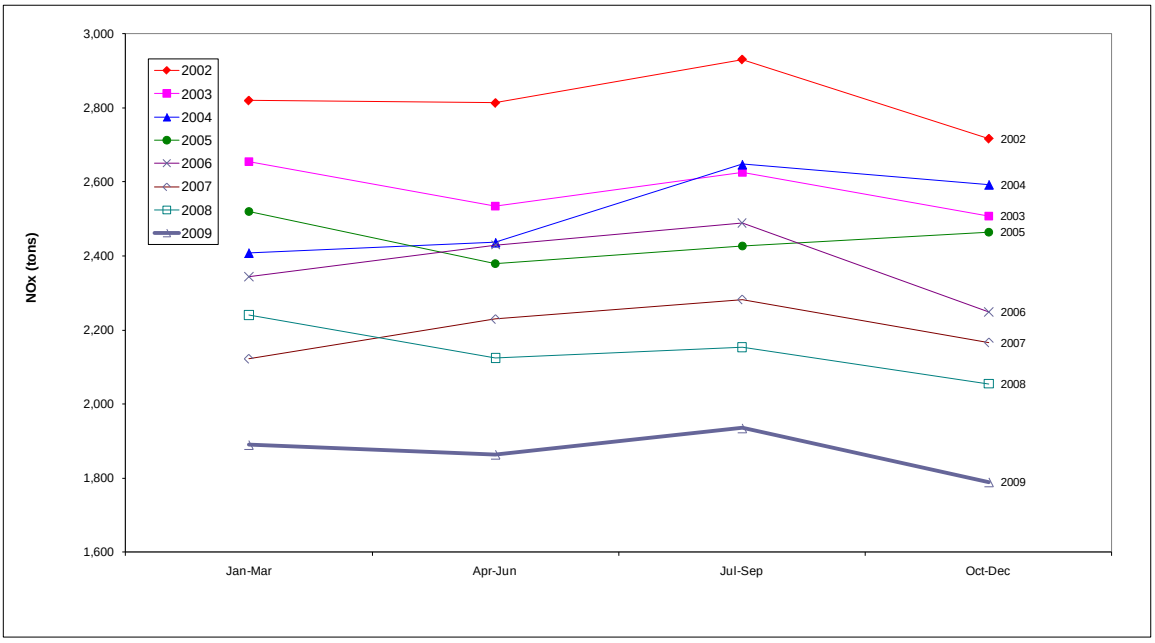


Figure 7-5 presents the 2009 mean quarterly SOx emissions versus the 2009 actual quarterly emissions and Figure 7-6 compares the 2009 quarterly SOx emissions with the quarterly emissions from 2002 through 2008. Figure 7-5 shows that quarterly SOx emissions during calendar year 2009 varied from 11% below the mean in the first quarter (January through March) to 11% above the mean in the third quarter (July through September). Figure 7-6 reveals that the

2009 quarterly aggregate SOx emissions profile was similar to those for previous years and all four quarters had lower aggregate RECLAIM SOx emissions than the corresponding quarter of any prior year since the program began in 1994.

AQMD staff discovered that the 11% peak above the mean in the third quarter would have been eliminated if the effect of one facility's reported emissions based on the use of MDP were removed. The CEMS used by the facility was in operation for less than one year and had operational problems for two months. With this long period of invalid data, the emissions were calculated using the lifetime maximum value for part of the missing data period. The missing data caused a significant deviation from the facility's normal emissions. Figure 7-7 shows the 2009 mean quarterly SOx emissions versus what the 2009 actual quarterly SOx emissions would have been if the missing data applied to the facility was replaced with the highest normal quarterly emission value during the compliance year from the facility. By substituting the missing data with even the highest quarterly emissions for just this one facility during the third quarter, SOx emissions in the third quarter are only slightly greater than the second quarter. SOx emissions now vary by six percent below the mean in the first quarter to four percent above the mean in the third quarter.

Although the magnitude of the peak in the summer quarter emissions was larger than in previous years, this analysis shows that the RECLAIM program has not caused a significant shift in SOx emissions from the winter season into the summer season and that the calendar year 2009 seasonal emissions profile was consistent with previous years. The spike in emissions during the summer quarter was primarily due to missing data applied to one facility, not seasonal emission shifts.

Figure 7-5
Calendar Year 2009 SOx Quarterly Emissions

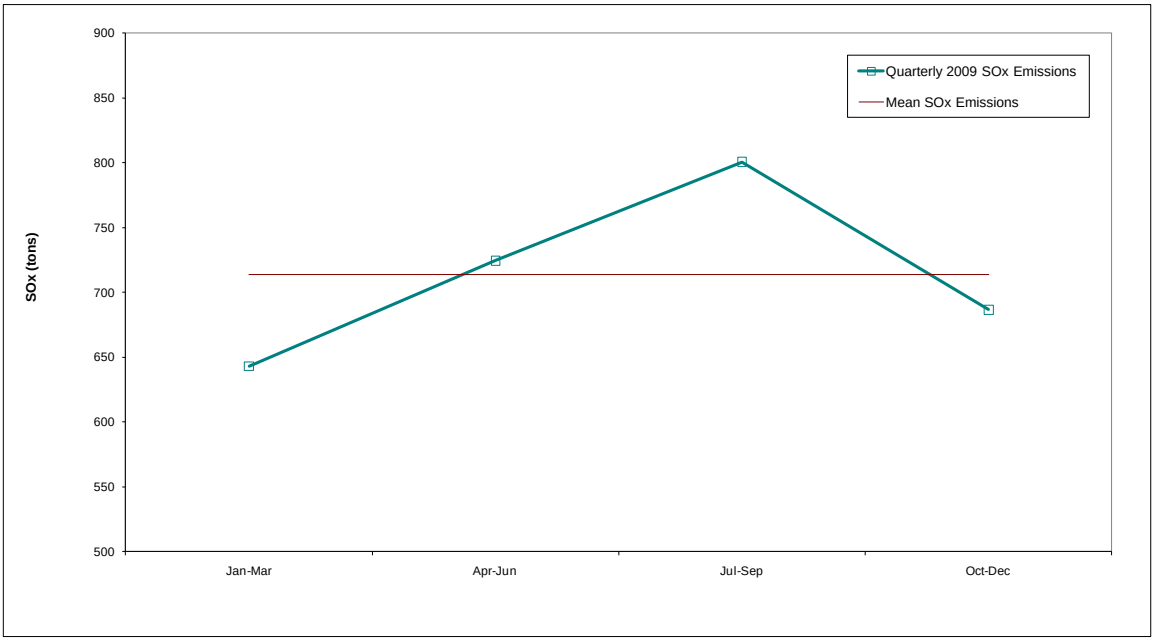


Figure 7-6
Quarterly SOx Emissions from Calendar Years 2002 through 2009

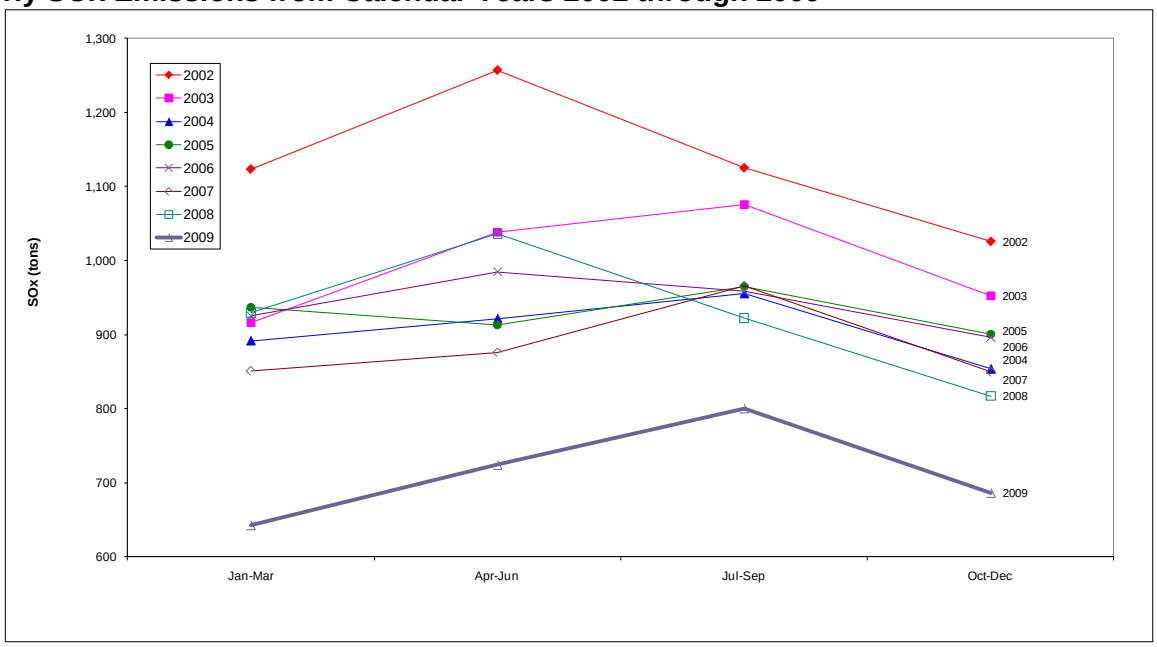
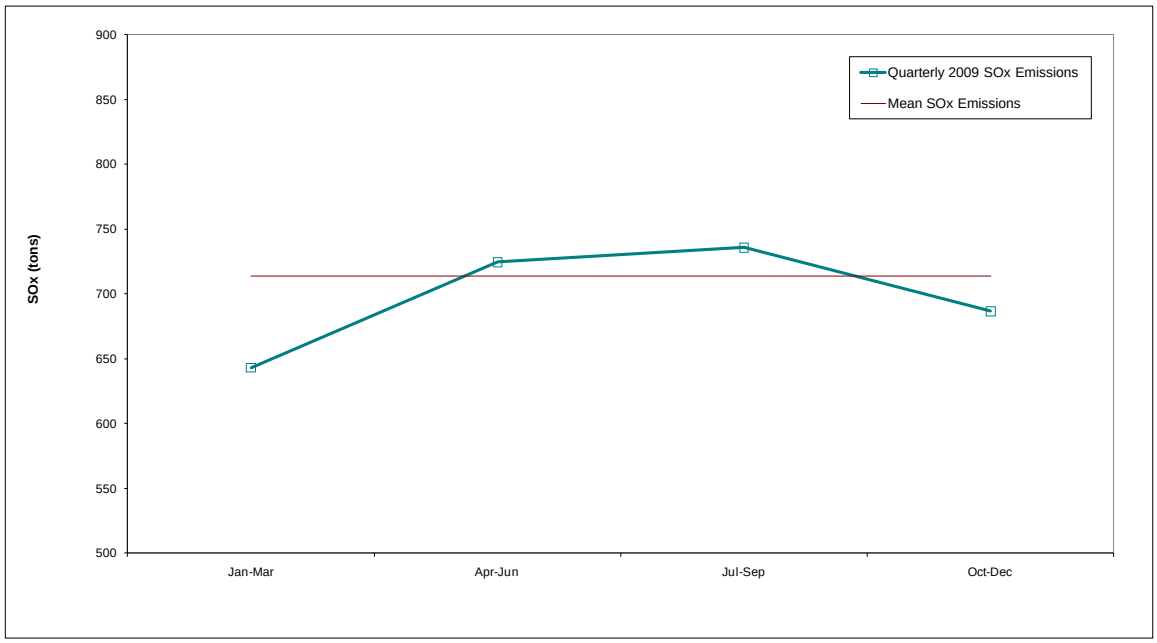


Figure 7-7
Calendar Year 2009 SOx Quarterly Emissions removing MDP from the Summer Quarter



Geographic Distribution of Emissions

As part of this program audit, AQMD staff examined the quarterly emissions maps (developed pursuant to Rule 2015(b)(2)), for any notable changes in the geographic distribution of emissions. RECLAIM facilities have the flexibility to

increase emissions as much as they need to, as long as they can provide RTCs to offset the emissions exceeding their allocations; however, there are NSR implications if they increase their annual emissions above their Compliance Year 1994 Allocation including Non-tradable/Non-usable credits. This flexibility that a RECLAIM facility has to control emissions by installing air pollution control equipment and/or the ability of RECLAIM facilities to purchase RTCs from other facilities to offset their emissions presents cause for concern that RECLAIM could alter the geographic distribution of emissions in the Basin and adversely affect air quality in certain areas.

Quarterly reported RECLAIM emissions for both NOx and SOx were mapped for Compliance Year 2009 (all four quarters of calendar year 2009 and the first two quarters of calendar year 2010). These maps are included in Appendices F and G. Grids are superimposed on these emission maps in order to geographically represent emissions, with shaded cells identifying emission ranges. Each map also identifies the highest emission level among all the grids (*i.e.*, maximum emissions). Comparisons were made of cell patterns and of maximum emissions identified on each map for both NOx and SOx pollutants on a quarterly basis between Compliance Year 2008's and Compliance Year 2009's NOx and SOx quarterly emission maps to determine if there were any distinct shifts of emissions.

A comparison of the cell patterns on quarterly maps for both NOx and SOx pollutants, representing ranges of emissions, revealed no significant geographic shift in the cell patterns. The comparison of maximum emissions was also made for both NOx and SOx pollutants to determine if there were any emissions increases greater than five percent (a conservative threshold for review) for either pollutant. Both the quarterly NOx and SOx emission map comparisons for Compliance Year 2009 revealed that there were no emissions increases greater than five percent for either pollutant. Rather, both NOx and SOx emissions decreased during all four quarters for calendar year 2009 and the first two quarters in calendar year 2010. In summary, the emission maps show no distinct shift in emissions geographically based on cell patterns from quarter to quarter.

Per Capita Exposure to Pollution

The predicted effects of RECLAIM on air quality and public health were thoroughly analyzed through modeling during program development. The results were compared to projected impacts from continuing traditional command-and-control regulations and implementing control measures in the 1991 AQMP. One of the criteria examined in the analysis was per capita population exposure.

Per capita population exposure reflects the length of time each person is exposed to unhealthful air quality. The modeling performed in the program development analysis projected that the reductions in per capita exposure under RECLAIM in calendar year 1994 would be nearly identical to the reductions projected for implementation of the control measures in the 1991 AQMP, and the reductions resulting from RECLAIM would be greater in calendar years 1997 and 2000. As reported in previous annual reports, actual per capita exposures to ozone for 1994 and 1997 were below the projections.

As part of the Children's Environmental Health Protection Act that was passed in 1999, and in consultation with the Office of Environmental Health Hazard

Assessment, CARB is to "review all existing health-based ambient air quality standards to determine whether these standards protect public health, including infants and children, with an adequate margin of safety." As a result of that requirement, CARB adopted a new 8-hour ozone standard (0.070 ppm), which became effective May 17, 2006, in addition to the 1-hour standard (0.09 ppm) already in place. Table 7-1 shows the number of days that both the new state 8-hour ozone standard of 0.070 ppm and the 1-hour standard of 0.09 ppm were exceeded.

In July 1997, the USEPA established a new ozone National Ambient Air Quality Standard (NAAQS) of 0.085 ppm based on an 8-hour average measurement. As part of the Phase I implementation that was finalized in June 2004, the federal 1-hour ozone standard (0.12 ppm) was revoked. Effective May 27, 2008, the 8-hour NAAQS ozone standard was reduced to 0.075 ppm. To reflect this revised standard, Table 7-1 shows monitoring results based on this revised 8-hour federal standard.

Table 7-1 summarizes ozone data for calendar years 2001 through 2010 in terms of the number of days that exceeded the state and federal ambient ozone standards and the Basin's maximum concentration in each calendar year. This table shows that in calendar year 2010, the state 1-hour standard was exceeded on 83 days, which is the lower than previous years. The state 8-hour standard was exceeded on 128 days, which is about the average since calendar year 2006. As for the federal 8-hour standard, calendar year 2010 shows about the same number of exceedances as calendar year 2007. Finally, the table shows that in calendar year 2010 the Basin maximum 1-hour and the Basin maximum 8-hour values are the lowest to date.

Table 7-1
Summary of Ozone Data

	Calendar Year									
	2001	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**
Days exceeding state 1-hour standard (0.09 ppm)	121	118	133	110	111	102	99	98	100	83
Days exceeding state new 8-hour standard (0.07 ppm)	156	149	161	161	142	121	128	136	131	128
Days exceeding federal 8-hour standard (0.075 ppm)	132	135	141	126	116	114	108	121	113	109
Basin Maximum 1-hour ozone concentration (ppm)	0.191	0.169	0.216	0.163	0.163	0.175	0.171	0.176	0.176	0.143
Basin Maximum 8-hour ozone concentration (ppm)	0.146	0.148	0.200	0.148	0.145	0.142	0.137	0.131	0.128	0.123

The CCAA, which was enacted in 1988, established targets for reducing overall population exposure to severe non-attainment pollutants in the Basin—a 25% reduction by December 31, 1994, a 40% reduction by December 31, 1997, and a 50% reduction by December 31, 2000 relative to a calendar years 1986-88 baseline. These targets are based on the number of hours on average a person is exposed ("per capita exposure"[2]) to ozone above the state 1-hour standard of 0.09 ppm. Table 7-2 shows, the 1986-88 baseline, the actual per capita exposures each year since 1994 (RECLAIM's initial year), and the 1997 and 2000 targets set by the CCAA for each of the four counties in the district and the Basin overall. As shown in Table 7-2, the CCAA reduction targets were achieved as early as 1994 (actual 1994 Basin per capita exposure was 37.6 hours, which is below the 2000 target of 40.2 hours). The per capita exposure continues to remain much lower than the CCAA targets since RECLAIM started in 1994. For calendar year 2010, the actual per capita exposure for the Basin was 1.18 hours, which represents a 98.5% reduction from the 1986-88 baseline level.

[2] AQMD staff divides the air basin into a grid of square cells and interpolates recorded ozone data from ambient air quality monitors to determine ozone levels experienced in each of these grids. The total person-hours in a county experiencing ozone higher than the state ozone standard is determined by summing over the whole county the products of the number of hours exceeding the state ozone standard per grid cell with the number of residents in the corresponding cell. The per capita ozone exposures are then calculated by dividing the sum of person-hours by the total population within a county. Similar calculations are used to determine the Basin-wide per capita exposure by summing and dividing over the whole Basin.

Table 7-2
Per Capita Exposure to Ozone above the State One-Hour Standard of 0.09 ppm (hours)

Calendar Year	Basin	Los Angeles	Orange	Riverside	San Bernardino
1986-88 baseline[1]	80.5	75.8	27.2	94.1	192.6
1994 actual	37.6	26.5	9	71.1	124.9
1995 actual	27.7	20	5.7	48.8	91.9
1996 actual	20.3	13.2	4	42.8	70
1997 actual	5.9	3	0.6	13.9	24.5
1998 actual	12.1	7.9	3.1	25.2	40.2
2000 actual	3.8	2.6	0.7	8.5	11.4
2001 actual	1.73	0.88	0.15	6	5.68
2002 actual	3.87	2.16	0.13	11.12	12.59
2003 actual	10.92	6.3	0.88	20.98	40.21
2004 actual	3.68	2.26	0.50	6.82	12.34
2005 actual	3.11	1.43	0.03	6.06	12.54
2006 actual	4.56	3.08	0.68	8.02	13.30
2007 actual	2.90	1.50	0.35	4.65	10.53
2008 actual	4.14	2.04	0.26	7.50	14.71
2009 actual	2.872	1.538	0.078	3.884	10.539
2010 actual	1.184	0.377	0.107	2.451	4.476
1997 target[2]	48.3	45.5	16.3	56.5	115.6
2000 target[3]	40.2	37.9	13.6	47	96.3

[1] Average over three years, 1986 through 1988.

[2] 60% of the 1986-88 baseline exposures.

[3] 50% of the 1986-88 baseline exposures.

Table 7-2 shows that actual per capita exposures during all the years mentioned were well under the 1997 and 2000 target exposures limits. It should also be noted that air quality in the Basin is a complex function of meteorological conditions and an array of different emission sources, including mobile, area, RECLAIM stationary sources, and non-RECLAIM stationary sources. Therefore, the reduction of per capita exposure beyond the projected level is not necessarily attributable to implementation of the RECLAIM program. It is possible that actual per capita exposure might have been as low, if not lower, with continuation of command-and-control regulations.

Toxic Impacts

Based on a comprehensive toxic impact analysis performed during program development, it was concluded that RECLAIM would not result in any significant impacts on air toxic emissions. Nevertheless, to ensure that the implementation of RECLAIM does not result in adverse toxic impacts, each annual program audit is required to assess any increase in the public health exposure to toxics caused by RECLAIM.

RECLAIM sources are subject to the same air toxic statutes and regulations (*e.g.*, AQMD Regulation XIV, State AB 2588, Federal National Emissions Standards for Hazardous Air Pollutants, etc.) as other sources in the Basin. These regulations ensure that RECLAIM does not result in adverse air toxic

health impacts. In addition, air toxic health risk is primarily caused by emissions of VOCs and certain metals, rather than NOx or SOx emissions. VOC sources at RECLAIM facilities are subject to source-specific command-and-control rules the same way these rules apply to non-RECLAIM facilities, in addition to the toxics requirements described above. Sources of toxic metals emissions are also subject to the above-identified regulations pertaining to toxic emissions. Additionally, sources with NOx or SOx emission increases are also required to be equipped with BACT which minimizes to the best extent feasible the health effects of NOx and SOx emissions.

In conclusion, implementation of NOx and SOx RECLAIM is not expected to adversely impact air toxic emissions. That is, the substitution of NOx and SOx RECLAIM for the command-and-control rules and the measures RECLAIM subsumes are irrelevant to toxic emissions; the same toxics requirements and VOC rules and control measures apply in either case; and any emission increases are controlled by BACT. However, AQMD will continue to monitor and assess toxic risk reduction as part of future annual audits.

APPENDIX A
RECLAIM UNIVERSE OF SOURCES

The RECLAIM universe of active sources as of June 30, 2010 is provided below.

Facility ID	Cycle	Facility Name	Market
800088	2	3M COMPANY	NOx
104017	1	AERA ENERGY LLC	NOx
23752	2	AEROCRAFT HEAT TREATING CO INC	NOx
115394	1	AES ALAMITOS, LLC	NOx
115389	2	AES HUNTINGTON BEACH, LLC	NOx/SOx
42676	2	AES PLACERITA INC	NOx
115536	1	AES REDONDO BEACH, LLC	NOx
148236	2	AIR LIQUIDE LARGE INDUSTRIES U.S., LP	NOx/SOx
3417	1	AIR PROD & CHEM INC	NOx
101656	2	AIR PRODUCTS AND CHEMICALS, INC.	NOx
5998	1	ALL AMERICAN ASPHALT	NOx
114264	1	ALL AMERICAN ASPHALT	NOx
3704	2	ALL AMERICAN ASPHALT, UNIT NO.01	NOx
140499	2	AMERESCO HUNTINGTON BEACH, L.L.C.	NOx
800196	2	AMERICAN AIRLINES INC	NOx
145836	2	AMERICAN APPAREL DYEING AND FINISHING INC.	NOx
156722	1	AMERICAN APPAREL DYEING AND FINISHING INC.	NOx
10141	2	ANGELICA TEXTILE SERVICES	NOx
21598	2	ANGELICA TEXTILE SERVICES	NOx
74424	2	ANGELICA TEXTILE SERVICES	NOx
16642	1	ANHEUSER-BUSCH INC., (LA BREWERY)	NOx/SOx
117140	2	AOC, LLC	NOx
11640	1	ARLON ADHESIVE SYSTEM/DECORATIVE FILMS	NOx
12155	1	ARMSTRONG WORLD INDUSTRIES INC	NOx
16737	2	ATKINSON BRICK CO	NOx
10094	2	ATLAS CARPET MILLS INC	NOx
117290	2	B BRAUN MEDICAL, INC	NOx
800016	2	BAKER COMMODITIES INC	NOx
117785	1	BALL METAL BEVERAGE CONTAINER CORP.	NOx
800205	2	BANK OF AMERICA NT & SA, BREA CENTER	NOx
40034	1	BENTLEY PRINCE STREET INC	NOx
119907	1	BERRY PETROLEUM COMPANY	NOx
155474	2	BICENT (CALIFORNIA) MALBURG LLC	NOx
132068	1	BIMBO BAKERIES USA INC	NOx
149491	2	BOEING REALTY CORP	NOx
115241	1	BOEING SATELLITE SYSTEMS INC	NOx
800067	1	BOEING SATELLITE SYSTEMS INC	NOx
800343	2	BOEING SATELLITE SYSTEMS, INC	NOx
131003	2	BP WEST COAST PROD.LLC BP CARSON REF.	NOx/SOx
131249	1	BP WEST COAST PRODUCTS LLC,BP WILMINGTON	NOx/SOx
98159	2	BREITBURN ENERGY CORP	NOx
25638	2	BURBANK CITY, BURBANK WATER & POWER	NOx
128243	1	BURBANK CITY, BURBANK WATER & POWER SCPPA	NOx
800344	1	CALIFORNIA AIR NATIONAL GUARD, MARCH AFB	NOx
22607	2	CALIFORNIA DAIRIES, INC	NOx
138568	1	CALIFORNIA DROP FORGE, INC	NOx
800181	2	CALIFORNIA PORTLAND CEMENT CO	NOx/SOx
46268	1	CALIFORNIA STEEL INDUSTRIES INC	NOx
107653	2	CALMAT CO	NOx
107654	2	CALMAT CO	NOx

Facility ID	Cycle	Facility Name	Market
107655	2	CALMAT CO	NOx
107656	2	CALMAT CO	NOx
119104	1	CALMAT CO	NOx/SOx
153992	1	CANYON POWER PLANT	NOx
94930	1	CARGILL INC	NOx
22911	2	CARLTON FORGE WORKS	NOx
118406	1	CARSON COGENERATION COMPANY	NOx
141555	2	CASTAIC CLAY PRODUCTS, LLC	NOx
800373	1	CENCO REFINING COMPANY	NOx/SOx
148925	1	CHERRY AEROSPACE	NOx
800030	2	CHEVRON PRODUCTS CO.	NOx/SOx
56940	1	CITY OF ANAHEIM/COMB TURBINE GEN STATION	NOx
129810	1	CITY OF RIVERSIDE PUBLIC UTILITIES DEPT	NOx
139796	1	CITY OF RIVERSIDE PUBLIC UTILITIES DEPT	NOx
16978	2	CLOUGHERTY PACKING LLC/HORMEL FOODS CORP	NOx
800210	2	CONEXANT SYSTEMS INC	NOx
800362	1	CONOCOPHILLIPS COMPANY	NOx/SOx
800363	2	CONOCOPHILLIPS COMPANY	NOx/SOx
38440	2	COOPER & BRAIN - BREA	NOx
2537	2	CORONA CITY, DEPT OF WATER & POWER	NOx
68042	2	CORONA ENERGY PARTNERS, LTD	NOx
65384	1	CRITERION CATALYST CO L.P.	NOx
50098	1	D&D DISPOSAL INC, WEST COAST RENDERING CO	NOx
63180	1	DARLING INTERNATIONAL INC	NOx
3721	2	DART CONTAINER CORP OF CALIFORNIA	NOx
7411	2	DAVIS WIRE CORP	NOx
143738	2	DCOR LLC	NOx
143739	2	DCOR LLC	NOx
143740	2	DCOR LLC	NOx
143741	1	DCOR LLC	NOx
132071	1	DEAN FOODS CO. OF CALIFORNIA	NOx
47771	1	DELEO CLAY TILE CO INC	NOx
800037	2	DEMENNO/KERDOON	NOx
125579	1	DIRECTV	NOx
800189	1	DISNEYLAND RESORT	NOx
142536	2	DRS TECHNOLOGIES, INC.	NOx
800264	2	EDGINGTON OIL COMPANY	NOx/SOx
133813	1	EI COLTON, LLC	NOx
115663	1	EL SEGUNDO POWER, LLC	NOx
800372	2	EQUILON ENTER. LLC, SHELL OIL PROD. US	NOx/SOx
124838	1	EXIDE TECHNOLOGIES	NOx/SOx
17344	1	EXXONMOBIL OIL CORP	NOx
25058	2	EXXONMOBIL OIL CORP	NOx
800089	1	EXXONMOBIL OIL CORPORATION	NOx/SOx
800094	1	EXXONMOBIL OIL CORPORATION	NOx
95212	1	FABRICA	NOx
11716	1	FONTANA PAPER MILLS INC	NOx
346	1	FRITO-LAY NORTH AMERICA, INC.	NOx
2418	2	FRUIT GROWERS SUPPLY CO	NOx
142267	2	FS PRECISION TECH LLC	NOx
5814	1	GAINEY CERAMICS INC	NOx
152857	2	GEORGIA PACIFIC	NOx
153033	2	GEORGIA-PACIFIC CORRUGATED LLC	NOx
124723	1	GREKA OIL & GAS, INC	NOx
137471	2	GRIFOLS BIOLOGICALS INC	NOx
106325	2	HARBOR COGENERATION CO	NOx
157359	1	HENKEL	NOx
123774	1	HERAEUS METAL PROCESSING, INC.	NOx
141585	1	HEXION SPECIALTY CHEMICALS, INC.	NOx

Facility ID	Cycle	Facility Name	Market
15164	1	HIGGINS BRICK CO	NOx
113160	2	HILTON COSTA MESA	NOx
160888	1	HINES REIT EL SEGUNDO, L.P.	NOx
800066	1	HITCO CARBON COMPOSITES INC	NOx
2912	2	HOLLIDAY ROCK CO INC	NOx
800003	2	HONEYWELL INTERNATIONAL INC	NOx
124619	1	IMPRESS USA INC	NOx
124808	2	INEOS POLYPROPYLENE LLC	NOx/SOx
129816	2	INLAND EMPIRE ENERGY CENTER, LLC	NOx
23589	2	INTERNATIONAL EXTRUSION CORP	NOx
157363	2	INTERNATIONAL PAPER	NOx
106810	2	INTERSTATE BRANDS CORP	NOx
22364	1	ITT INDUSTRIES, CANNON	NOx
16338	1	KAISER ALUMINUM & CHEM CORP	NOx
21887	2	KIMBERLY-CLARK WORLDWIDE INC.-FULT. MILL	NOx/SOx
1744	2	KIRKHILL RUBBER CO	NOx
800335	2	LA CITY, DEPT OF AIRPORT	NOx
800170	1	LA CITY, DWP HARBOR GENERATING STATION	NOx
800074	1	LA CITY, DWP HAYNES GENERATING STATION	NOx
800075	1	LA CITY, DWP SCATTERGOOD GENERATING STN	NOx
800193	2	LA CITY, DWP VALLEY GENERATING STATION	NOx
61962	1	LA CITY, HARBOR DEPT	NOx
550	1	LA CO., INTERNAL SERVICE DEPT	NOx
9053	1	LA ENERGY CORPORATION	NOx
9217	1	LA ENERGY CORPORATION	NOx
11034	2	LA ENERGY CORPORATION	NOx
115277	1	LAFAYETTE TEXTILE IND LLC	NOx
141295	2	LEKOS DYE AND FINISHING, INC	NOx
144455	2	LIFOAM INDUSTRIES, LLC	NOx
83102	2	LIGHT METALS INC	NOx
151394	2	LINN WESTERN OPERATING, INC.	NOx
151415	2	LINN WESTERN OPERATING, INC.	NOx
151532	2	LINN WESTERN OPERATING, INC.	NOx
152054	1	LINN WESTERN OPERATING, INC.	NOx
115314	2	LONG BEACH GENERATION LLC	NOx
17623	2	LOS ANGELES ATHLETIC CLUB	NOx
58622	2	LOS ANGELES COLD STORAGE CO	NOx
125015	2	LOS ANGELES TIMES COMMUNICATIONS LLC	NOx
800080	2	LUNDAY-THAGARD COMPANY	NOx/SOx
38872	1	MARS PETCARE U.S., INC.	NOx
14049	2	MARUCHAN INC	NOx
3029	2	MATCHMASTER DYEING & FINISHING INC	NOx
148340	2	MCDONNELL DOUGLAS CORP/COM AIRCRAFT SERV	NOx
2825	1	MCP FOODS INC	NOx
115563	1	METAL COATERS OF CALIFORNIA	NOx
94872	2	METAL CONTAINER CORP	NOx
155877	1	MILLERCOORS, LLC	NOx
12372	1	MISSION CLAY PRODUCTS	NOx
121737	1	MOUNTAINVIEW POWER COMPANY LLC	NOx
11887	2	NASA JET PROPULSION LAB	NOx
40483	2	NELCO PROD. INC	NOx
12428	2	NEW NGC, INC.	NOx
131732	2	NEWPORT FAB, LLC	NOx
18294	1	NORTHROP GRUMMAN CORP, AIRCRAFT DIV	NOx
800408	1	NORTHROP GRUMMAN SPACE & MISSION SYSTEMS	NOx
800409	2	NORTHROP GRUMMAN SPACE & MISSION SYSTEMS	NOx
112853	2	NP COGEN INC	NOx
45471	2	OGLEBAY NORTON INDUSTRIAL SANDS INC	NOx
89248	2	OLD COUNTRY MILLWORK INC	NOx

Facility ID	Cycle	Facility Name	Market
47781	1	OLS ENERGY-CHINO	NOx
35302	2	OWENS CORNING ROOFING AND ASPHALT, LLC	NOx/SOx
7427	1	OWENS-BROCKWAY GLASS CONTAINER INC	NOx/SOx
151594	1	OXY USA, INC	NOx
151601	1	OXY USA, INC	NOx
45746	2	PABCO BLDG PRODUCTS LLC PABCO PAPER, DBA	NOx/SOx
17953	1	PACIFIC CLAY PRODUCTS INC	NOx
59618	1	PACIFIC CONTINENTAL TEXTILES, INC.	NOx
151178	1	PACIFIC ENERGY	NOx
2946	1	PACIFIC FORGE INC	NOx
137520	1	PACIFIC TERMINALS LLC	NOx
800416	1	PACIFIC TERMINALS LLC	NOx
800417	2	PACIFIC TERMINALS LLC	NOx
800419	2	PACIFIC TERMINALS LLC - HUNTINGTON	NOx
800420	2	PACIFIC TERMINALS LLC - LONG BEACH	NOx
130211	2	PAPER-PAK INDUSTRIES	NOx
800183	1	PARAMOUNT PETR CORP	NOx/SOx
800168	1	PASADENA CITY, DWP	NOx
133987	1	PLAINS EXPLORATION & PRODUCTION CO, LP	NOx
133996	2	PLAINS EXPLORATION & PRODUCTION COMPANY	NOx
800431	1	PRATT & WHITNEY ROCKETDYNE, INC.	NOx
7416	1	PRAXAIR INC	NOx
42630	1	PRAXAIR INC	NOx
152501	1	PRECISION SPECIALTY METALS INC	NOx
136	2	PRESS FORGE CO	NOx
105903	1	PRIME WHEEL	NOx
132191	1	PURENERGY OPERATING SERVICES, LLC	NOx
132192	1	PURENERGY OPERATING SERVICES, LLC	NOx
8547	1	QUEMETCO INC	NOx/SOx
19167	2	R J NOBLE COMPANY	NOx
3585	2	R. R. DONNELLEY & SONS CO, LA MFG DIV	NOx
20604	2	RALPHS GROCERY CO	NOx
115041	1	RAYTHEON COMPANY	NOx
114997	1	RAYTHEON COMPANY	NOx
115172	2	RAYTHEON COMPANY	NOx
800371	2	RAYTHEON SYSTEMS COMPANY - FULLERTON OPS	NOx
20543	1	REDCO II	NOx
15544	2	REICHHOLD INC	NOx
115315	1	RELIANT ENERGY ETIWANDA, INC.	NOx
52517	1	REXAM PLC, REXAM BEVERAGE CAN COMPANY	NOx
114801	1	RHODIA INC.	NOx/SOx
61722	2	RICOH ELECTRONICS INC	NOx
139010	2	RIPON COGENERATION LLC	NOx
800182	1	RIVERSIDE CEMENT CO	NOx/SOx
800113	2	ROHR,INC	NOx
18455	2	ROYALTY CARPET MILLS INC	NOx
4242	2	SAN DIEGO GAS & ELECTRIC	NOx
161300	2	SAPA EXTRUDER INC.	NOx
155221	2	SAVE THE QUEEN LLC (DBA QUEEN MARY)	NOx
15504	2	SCHLOSSER FORGE COMPANY	NOx
20203	2	SCOPE PRODUCTS INC, DEXT CO	NOx
14926	1	SEMPRA ENERGY (THE GAS CO)	NOx
37603	1	SGL TECHNIC INC, POLYCARBON DIVISION	NOx
131850	2	SHAW DIVERSIFIED SERVICES INC	NOx
117227	2	SHCI SM BCH HOTEL LLC, LOEWS SM BCH HOTE	NOx
16639	1	SHULTZ STEEL CO	NOx
54402	2	SIERRA ALUMINUM COMPANY	NOx
85943	2	SIERRA ALUMINUM COMPANY	NOx
101977	1	SIGNAL HILL PETROLEUM INC	NOx

Facility ID	Cycle	Facility Name	Market
43201	2	SNOW SUMMIT INC	NOx
4477	1	SO CAL EDISON CO	NOx
5973	1	SO CAL GAS CO	NOx
800127	1	SO CAL GAS CO	NOx
800128	1	SO CAL GAS CO	NOx
8582	1	SO CAL GAS CO/PLAYA DEL REY STORAGE FACI	NOx
14871	2	SONOCO PRODUCTS CO	NOx
800338	2	SPECIALTY PAPER MILLS INC	NOx
126498	2	STEELSCAPE, INC	NOx
105277	2	SULLY MILLER CONTRACTING CO	NOx
19390	1	SULLY-MILLER CONTRACTING CO.	NOx
23196	2	SUNKIST GROWERS, INC	NOx
2083	1	SUPERIOR INDUSTRIES INTERNATIONAL INC	NOx
3968	1	TABC, INC	NOx
18931	2	TAMCO	NOx
14944	1	TECHALLOY CO., INC.	NOx/SOx
151798	1	TESORO REFINING AND MARKETING COMPANY LOS ANGELES REFINERY	NOx/SOx
800436	1	TESORO REFINING AND MARKETING COMPANY LOS ANGELES REFINERY	NOx/SOx
96587	1	TEXOLLINI INC	NOx
14736	2	THE BOEING COMPANY	NOx
800110	2	THE BOEING COMPANY	NOx
800038	2	THE BOEING COMPANY - C17 PROGRAM	NOx
11119	1	THE GAS CO./ SEMPRA ENERGY	NOx
153199	1	THE KROGER CO/RALPH GROCERY CO	NOx
11435	2	THE PQ CORP	NOx/SOx
97081	1	THE TERMO COMPANY	NOx
800330	1	THUMS LONG BEACH	NOx
129497	1	THUMS LONG BEACH CO	NOx
800325	2	TIDELANDS OIL PRODUCTION CO	NOx
68118	2	TIDELANDS OIL PRODUCTION COMPANY ETAL	NOx
800240	2	TIN, INC. TEMPLE-INLAND, DBA	NOx
137508	2	TONOGA INC, TACONIC DBA	NOx
53729	1	TREND OFFSET PRINTING SERVICES, INC	NOx
43436	1	TST, INC.	NOx
800026	1	ULTRAMAR INC	NOx/SOx
9755	2	UNITED AIRLINES INC	NOx
73022	2	US AIRWAYS INC	NOx
800149	2	US BORAX INC	NOx
800150	1	US GOVT, AF DEPT, MARCH AIR RESERVE BASE	NOx
12185	2	US GYPSUM CO	NOx/SOx
18695	1	US GYPSUM CO	NOx
1073	1	US TILE CO	NOx
800393	1	VALERO WILMINGTON ASPHALT PLANT	NOx
111415	2	VAN CAN COMPANY	NOx
14502	2	VERNON CITY, LIGHT & POWER DEPT	NOx
115130	1	VERTIS, INC	NOx
148897	2	VINTAGE PETROLEUM	NOx
148896	2	VINTAGE PETROLEUM, INC DEL VALLE OIL FLD	NOx
151899	2	VINTAGE PRODUCTION CALIFORNIA LLC	NOx
14495	2	VISTA METALS CORPORATION	NOx
126501	2	VOUGHT AIRCRAFT INDUSTRIES	NOx
143261	1	WELLHEAD POWER COLTON LLC	NOx
42775	1	WEST NEWPORT OIL CO	NOx/SOx
17956	1	WESTERN METAL DECORATING CO	NOx
51620	1	WHEELABRATOR NORWALK ENERGY CO INC	NOx
127299	2	WILDFLOWER ENERGY LP/INDIGO ENERGY FAC	NOx
158950	1	WINDSOR QUALITY FOOD CO. LTD.	NOx

APPENDIX B
FACILITY INCLUSIONS

As discussed in Chapter 1, two facilities were added to the RECLAIM universe through inclusions from July 1, 2009 through June 30, 2010. The reasons for the inclusion are also provided.

Facility ID	Cycle	Facility Name	Market	Date	Reason
160888	1	HINES REIT EL SEGUNDO, L.P.	NOx	4/9/2010	Partial change of operator from an existing facility.
153992	1	CANYON POWER PLANT	NOx	3/23/2010	Opt-in at facility request.

APPENDIX C
RECLAIM FACILITIES CEASING OPERATION OR EXCLUDED

AQMD staff is aware of the following RECLAIM facilities that permanently shut down all operations, inactivated their RECLAIM permits, or were excluded from the RECLAIM universe from July 1, 2009 through June 30, 2010. The reasons for shutdowns and exclusions cited below are based on the information available to AQMD staff.

Facility ID	16395
Facility Name	AAA Glass Corp.
City and County	Los Angeles, Los Angeles County
SIC	3229
Pollutants	NOx
1994 Allocation	9,152
Reason for Shutdown	Facility shut down after it was sold. A new owner bought the facility and decided not to operate the permitted equipment. AQMD inspectors confirmed that the facility had been shut down and that the facility was vacated.

Facility ID	60531
Facility Name	Pacific Fabric Finishing
City and County	Vernon, Los Angeles County
SIC	2262
Pollutants	NOx
1994 Allocation	7,534
Reason for Shutdown	The RECLAIM audit inspection for the prior compliance year was performed on 10/9/2009. The audit showed facility emissions were reconciled with RTC holdings. No indication of impending shutdown was noted in the inspector's report. For the Compliance Year 2009, the facility did not submit QCERs after the first quarter, or their APEP. AQMD staff was unable to contact facility as of 12/9/2010. All permits expired on 10/8/2009 due to non-payment of renewal fees and other dues. The assumed date of shutdown was 6/30/2010.

Facility ID	153478
Facility Name	Mega Printex, Inc.
City and County	Gardena, Los Angeles County
SIC	2262
Pollutants	NOx
1994 Allocation	0
Reason for Shutdown	The RECLAIM audit inspection for the prior compliance year was performed on 11/5/2009. The audit showed that though the facility emissions were in exceedance of its RTC holdings in the first 3 quarters, it successfully reconciled all its emissions in the last quarter. No indication of the impending shutdown was noted in the inspector's report. For the Compliance Year 2009, the facility did not submit QCERs after the second quarter, or their APEP. Subsequently, AQMD staff was unable to reach facility by phone. Compliance Year 2009 APEP forms were returned undeliverable. Attempts to deliver the forms in-person at equipment location and forwarding addresses were also unsuccessful. The assumed date of shutdown was 6/30/2010.

Facility ID	800437
Facility Name	Attends Healthcare Products Inc.
City and County	La Verne, Los Angeles County
SIC	2823
Pollutants	NOx
1994 Allocation	67,590
Reason for Shutdown	Strategic business decision to move to Greenville, NC.

APPENDIX D
FACILITIES THAT EXCEEDED THEIR ANNUAL ALLOCATIONS FOR COMPLIANCE YEAR 2009

The following is a list of facilities that failed to reconcile by securing RTCs to cover their NOx and/or SOx emissions in Compliance Year 2009 based on the results of audits conducted by AQMD staff.

Facility ID	Facility Name	Compliance Year	Emittant
3704	ALL AMERICAN ASPHALT	2009	NOx
5998	ALL AMERICAN ASPHALT	2009	NOx
21598	ANGELICA TEXTILE SERVICES	2009	NOx
23196	SUNKIST GROWERS, INC	2009	NOx
56940	CITY OF ANAHEIM/COMB TURBINE GEN STATION	2009	NOx
89248	OLD COUNTRY MILLWORK INC	2009	NOx
101656	AIR PRODUCTS AND CHEMICALS, INC.	2009	NOx
124723	GREKA OIL & GAS	2009	NOx
125579	DIRECTV	2009	NOx
141295	LEKOS DYE AND FINISHING, INC	2009	NOx
145836	AMERICAN APPAREL DYEING & FINISHING, INC	2009	NOx
800182	RIVERSIDE CEMENT CO	2009	SOx
800373	CENCO REFINING COMPANY	2009	NOx

APPENDIX E
REPORTED JOB IMPACTS ATTRIBUTED TO RECLAIM

Each year, RECLAIM facility operators are asked to provide employment data in their APEP reports. The report asks company representatives to quantify job increases and/or decreases, and to report the positive and/or negative impacts of the RECLAIM program on employment at their facilities.

The detailed information for facilities reporting that RECLAIM contributed to job gains or losses during Compliance Year 2009 (January 1 through December 31, 2009 for cycle1 facilities and July 1, 2009 through June 30, 2010 for cycle 2 facilities) is summarized below:

Facilities with actual job gains or losses attributed to RECLAIM:

Facility ID	40034
Facility Name	Bentley Prince Street Inc.
City and County	City of Industry, Los Angeles County
SIC	2273
Pollutant(s)	NOx
Cycle	1
Job Gain	0
Job Loss	168
Comments	Fees and costs of compliance resulted in a competitive disadvantage with companies outside of RECLAIM.[1]

Facility ID	153033
Facility Name	Georgia-Pacific Corrugated LLC
City and County	Buena Park, Orange County
SIC	2679
Pollutant(s)	NOx
Cycle	2
Job Gain	0
Job Loss	20
Comments	Facility stated that higher manufacturing costs, lower profit margins, facility maintenance costs (including RECLAIM compliance costs), and a tight

[1] AQMD staff has reviewed information available to AQMD for this facility and found that the facility has been in the RECLAIM program since RECLAIM's inception, reported job losses last year (Compliance Year 2008) of similar magnitude and attributed them to RECLAIM, has had emission decreases at a rate similar to the RECLAIM rate of emission reduction for NOx emissions, had adequate RTC allocations to cover its emissions in each of the last several years, and was not a structural buyer. The facility's NOx emissions had a sharper rate of reduction from Compliance Year 2008 to 2009. This is indicative of decreased production during that period since there was no equipment modification reported. However, the facility's NOx emissions remained approximately constant during Compliance Years 2003 through 2008 (although somewhat higher during Compliance Year 2007). Furthermore, the facility held adequate Compliance Year 2009 RTCs to sustain emissions at the Compliance Years 2003 through 2008 (excluding 2007) level during Compliance Year 2009. Therefore, AQMD could not identify any specific reason why the RECLAIM program would have caused the job losses reported by this facility.

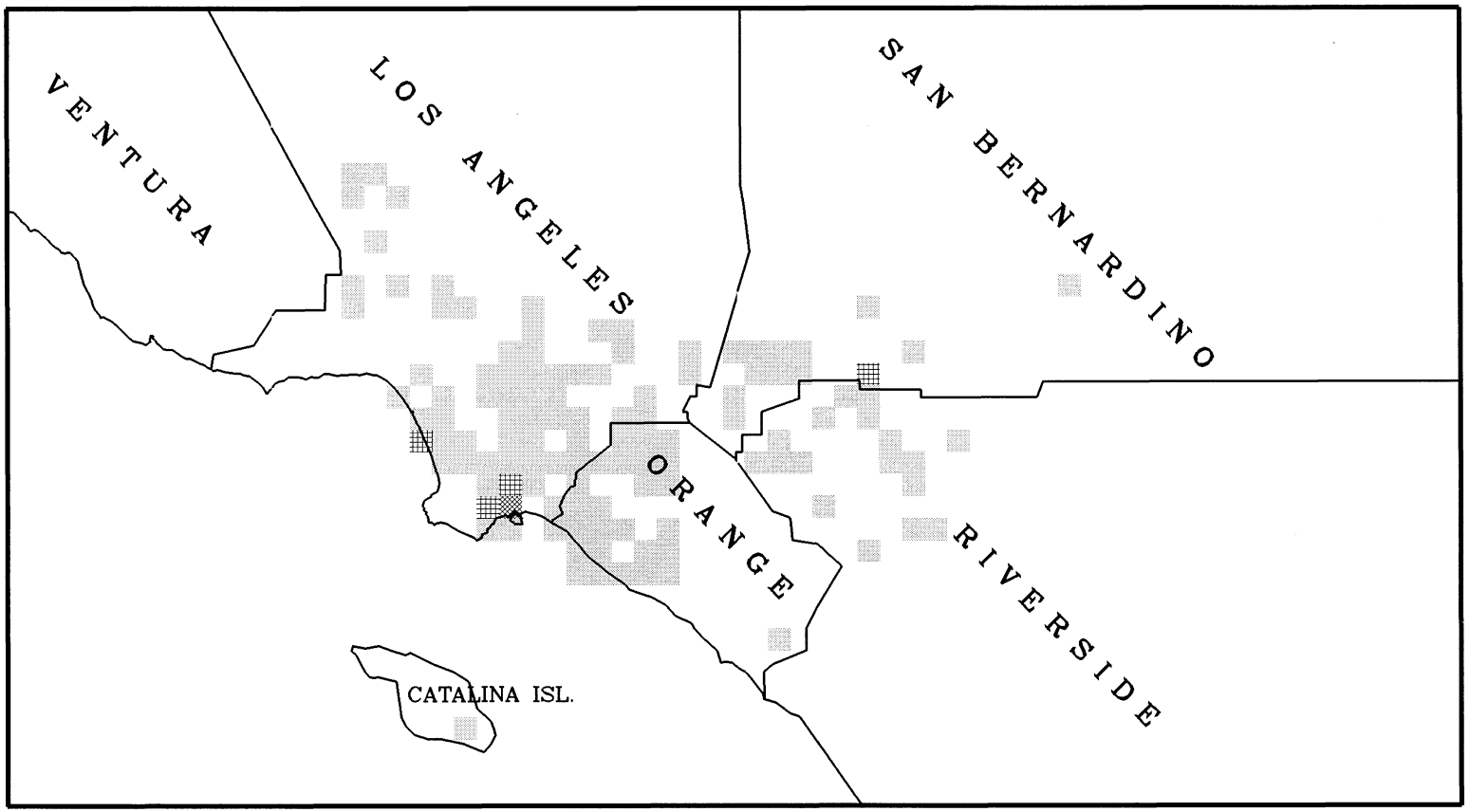
annual budget prevented the facility from rehiring for 20 positions left vacant due to terminations or retirements. There was no information indicating whether or not the reduction in jobs was permanent.

Facility ID	800074
Facility Name	LA City, DWP Haynes Generating Station
City and County	Long Beach, Los Angeles County
SIC	4911
Pollutant(s)	NOx
Cycle	1
Job Gain	2
Job Loss	0
Comments	Facility cited monitoring, reporting and recording responsibilities, as well as additional maintenance for compliance as the reasons for job gains.

APPENDIX F
QUARTERLY NOx EMISSION MAPS

RECLAIM Facilities

Certified NOx Emissions (Tons) from 01/2009 to 03/2009



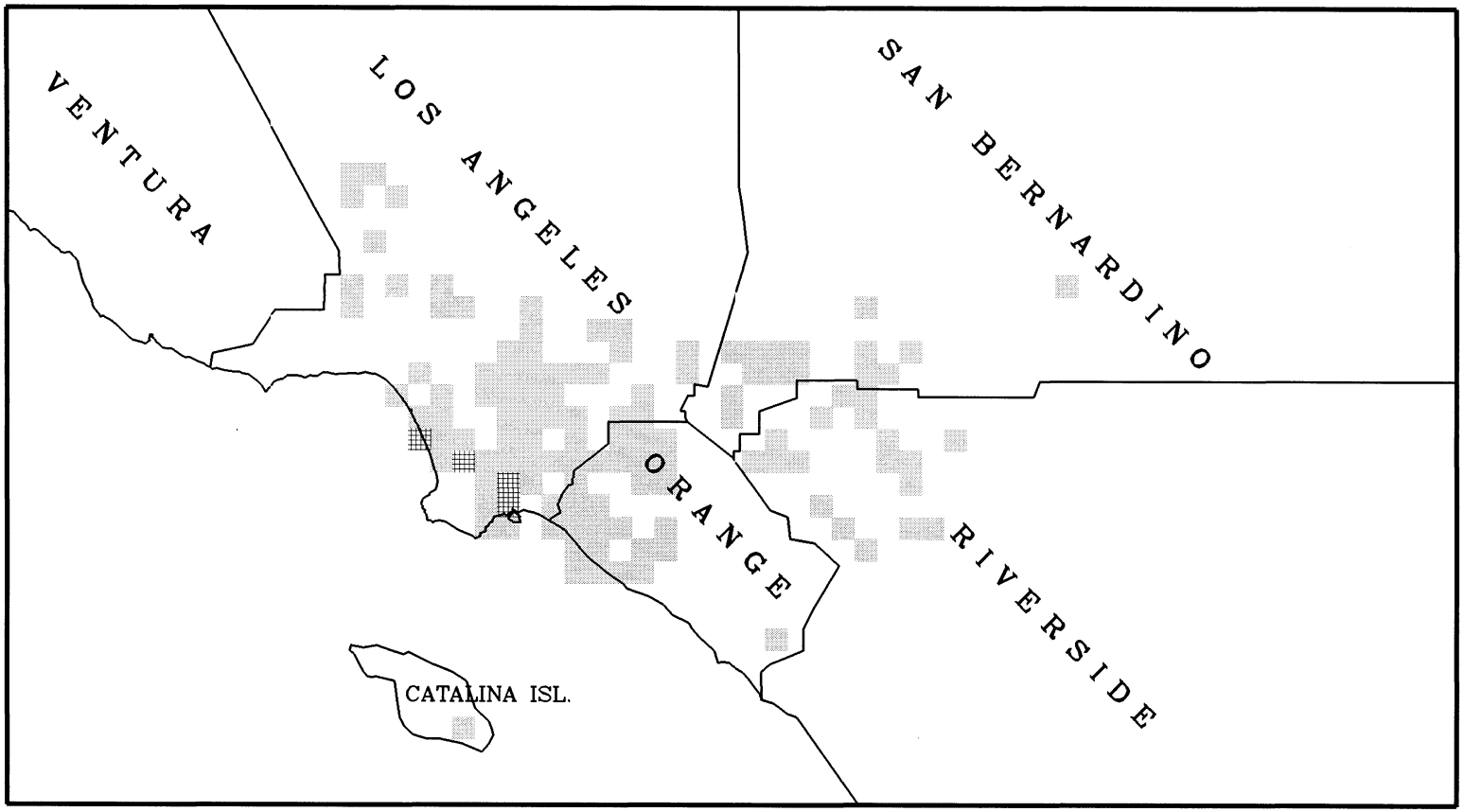
>0 – 150 | 150 – 300 | 300 – 450 | 450 – 600 | 600 – 750 | over 750

max. emissions = 304 tons

Generated on 12/14/2010

RECLAIM Facilities

Certified NOx Emissions (Tons) from 04/2009 to 06/2009



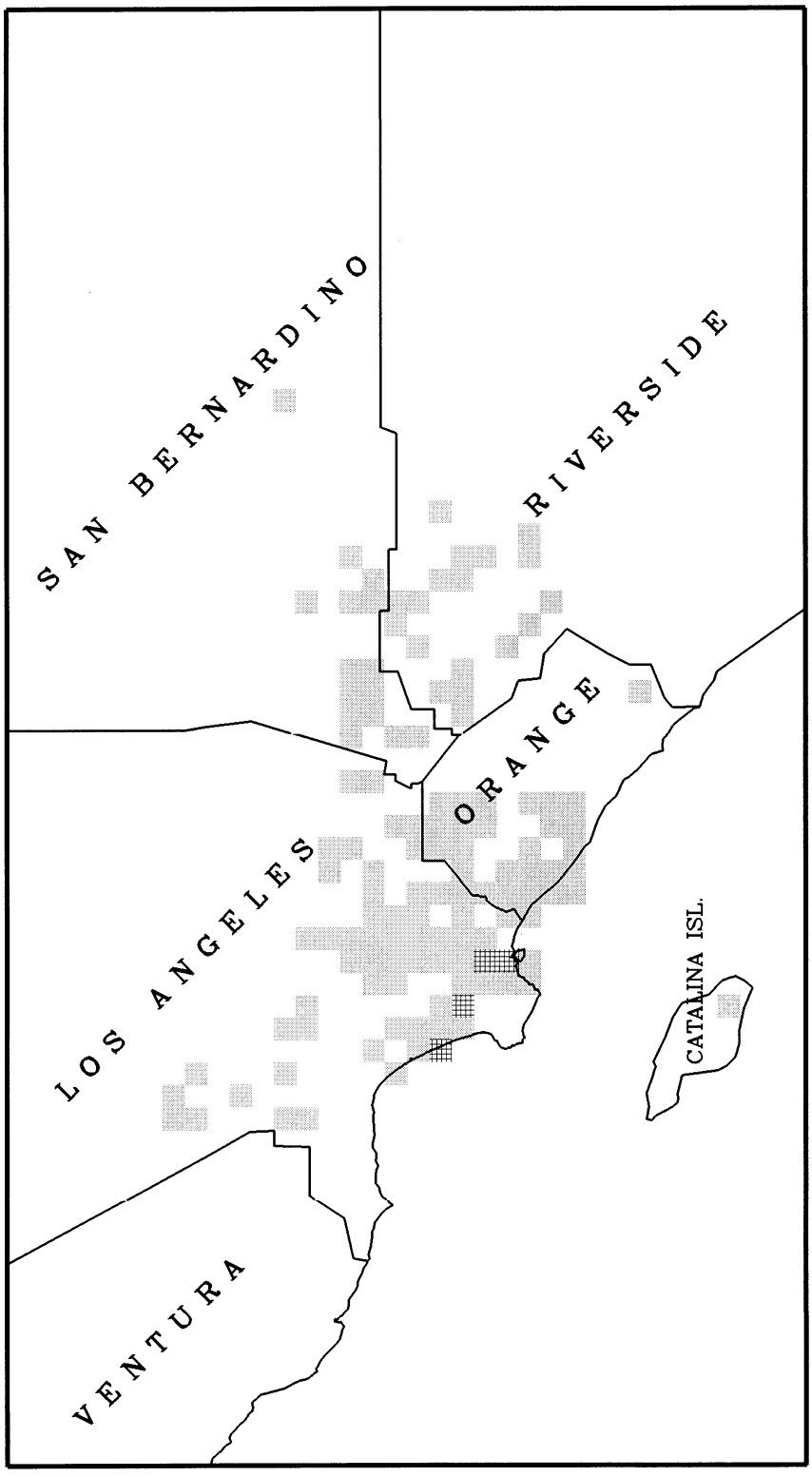
>0 – 150 | 150 – 300 | 300 – 450 | 450 – 600 | 600 – 750 | over 750

max. emissions = 295 tons

Generated on 12/14/2010

RECLAIM Facilities

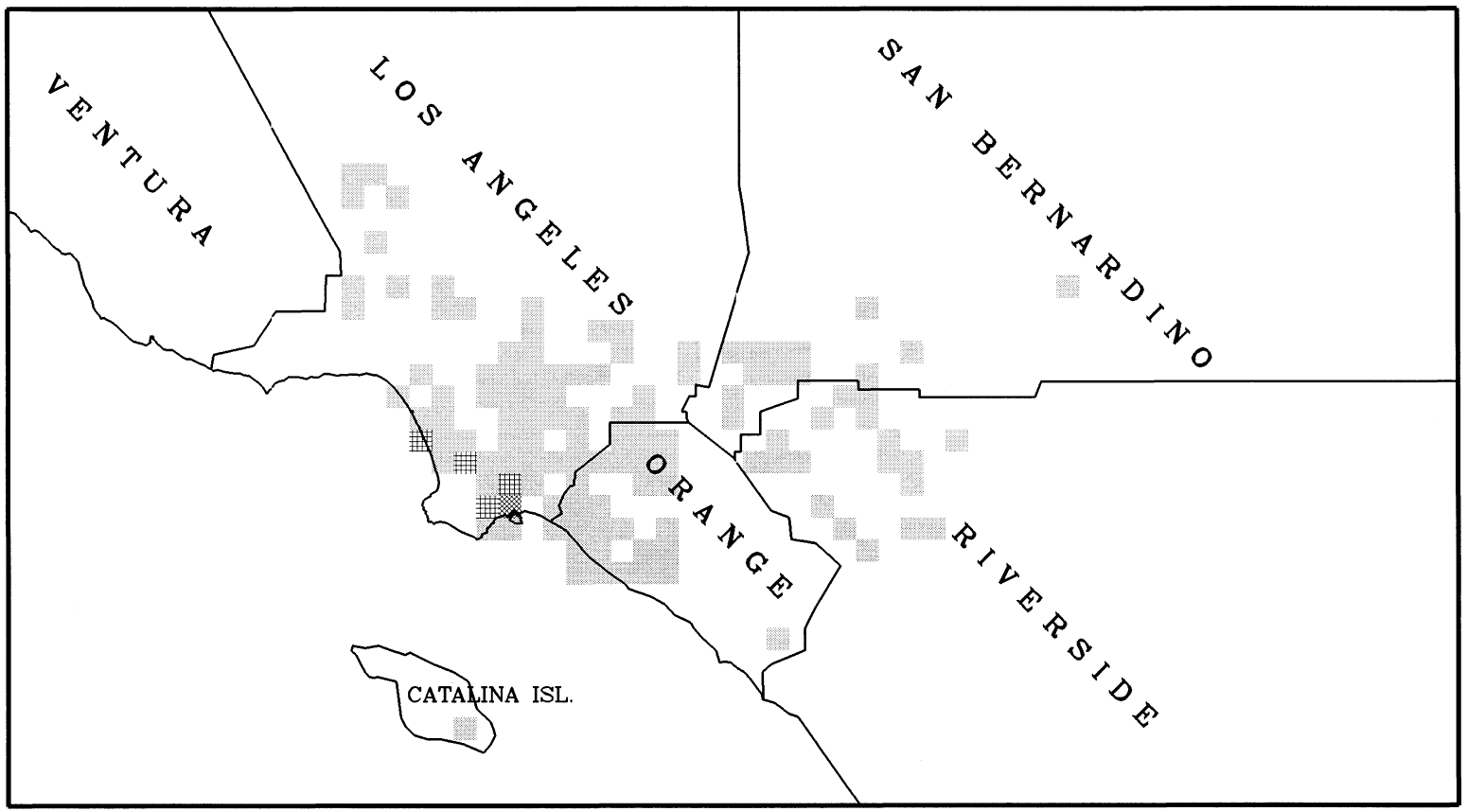
Certified NOx Emissions (Tons) from 07/2009 to 09/2009



Generated on 12/14/2010

RECLAIM Facilities

Certified NOx Emissions (Tons) from 10/2009 to 12/2009



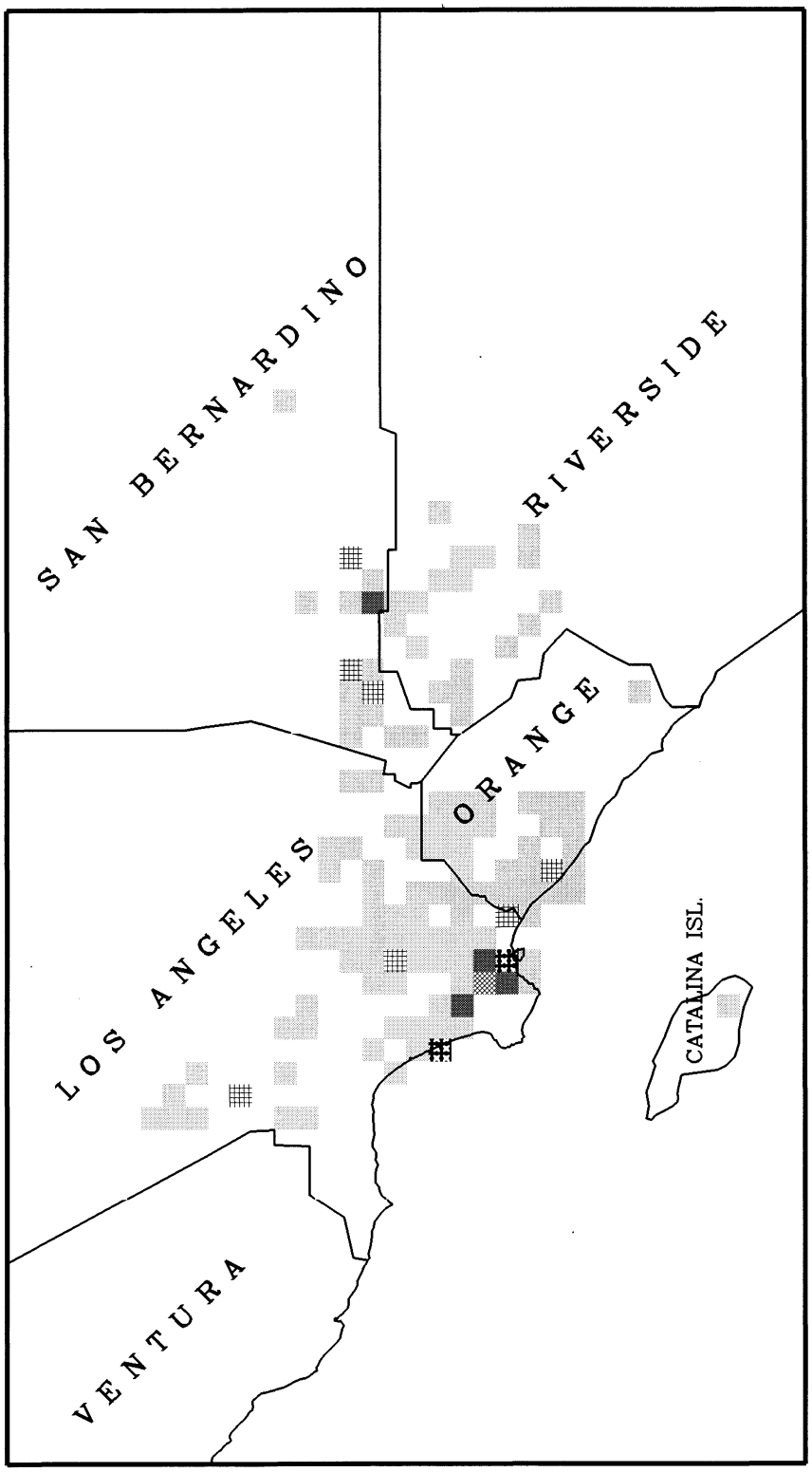
>0 – 150 | 150 – 300 | 300 – 450 | 450 – 600 | 600 – 750 | over 750

max. emissions = 302 tons

Generated on 12/14/2010

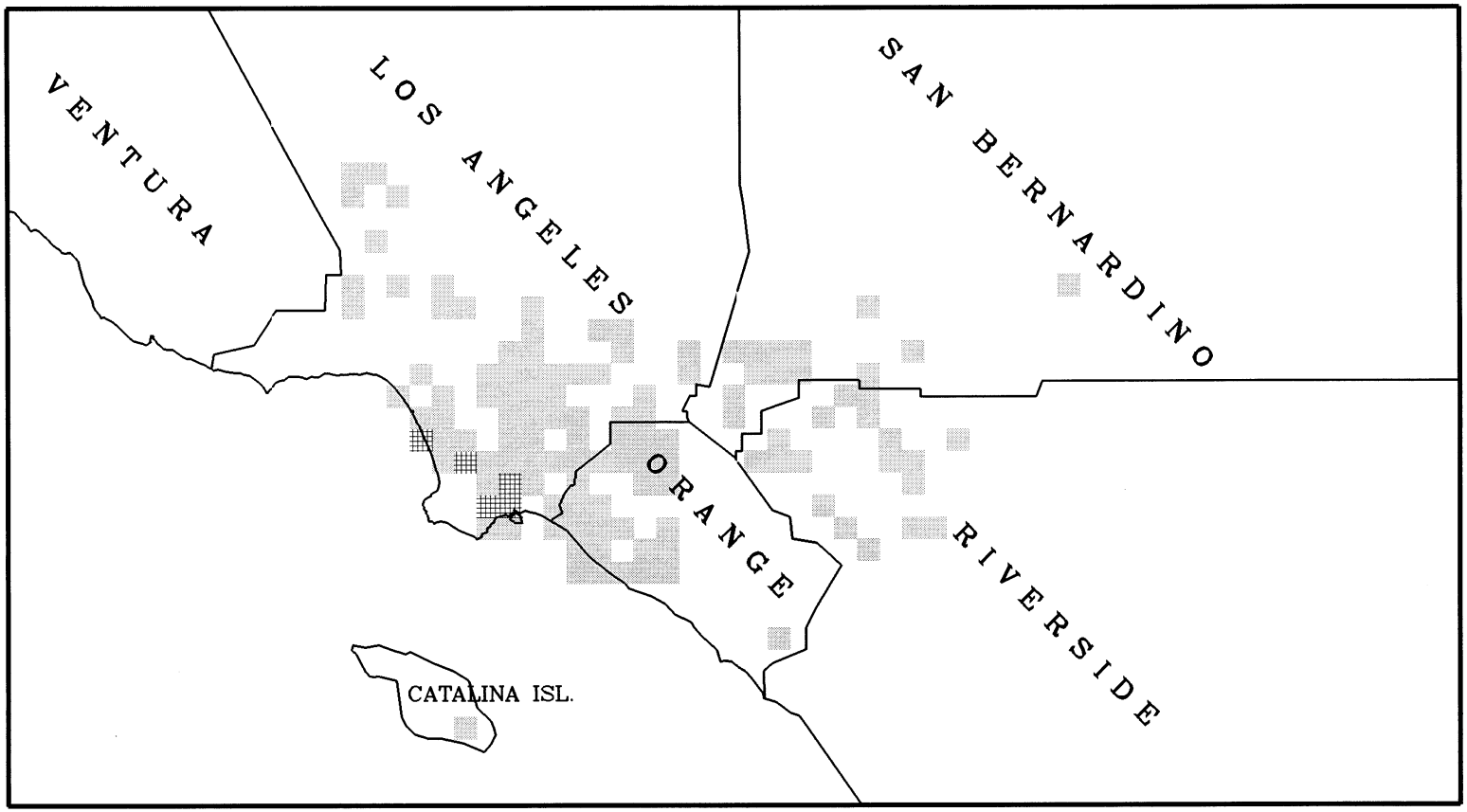
RECLAIM Facilities

Certified NOx Emissions (Tons) Year to date (12/31/2009)



RECLAIM Facilities

Certified NOx Emissions (Tons) from 01/2010 to 03/2010



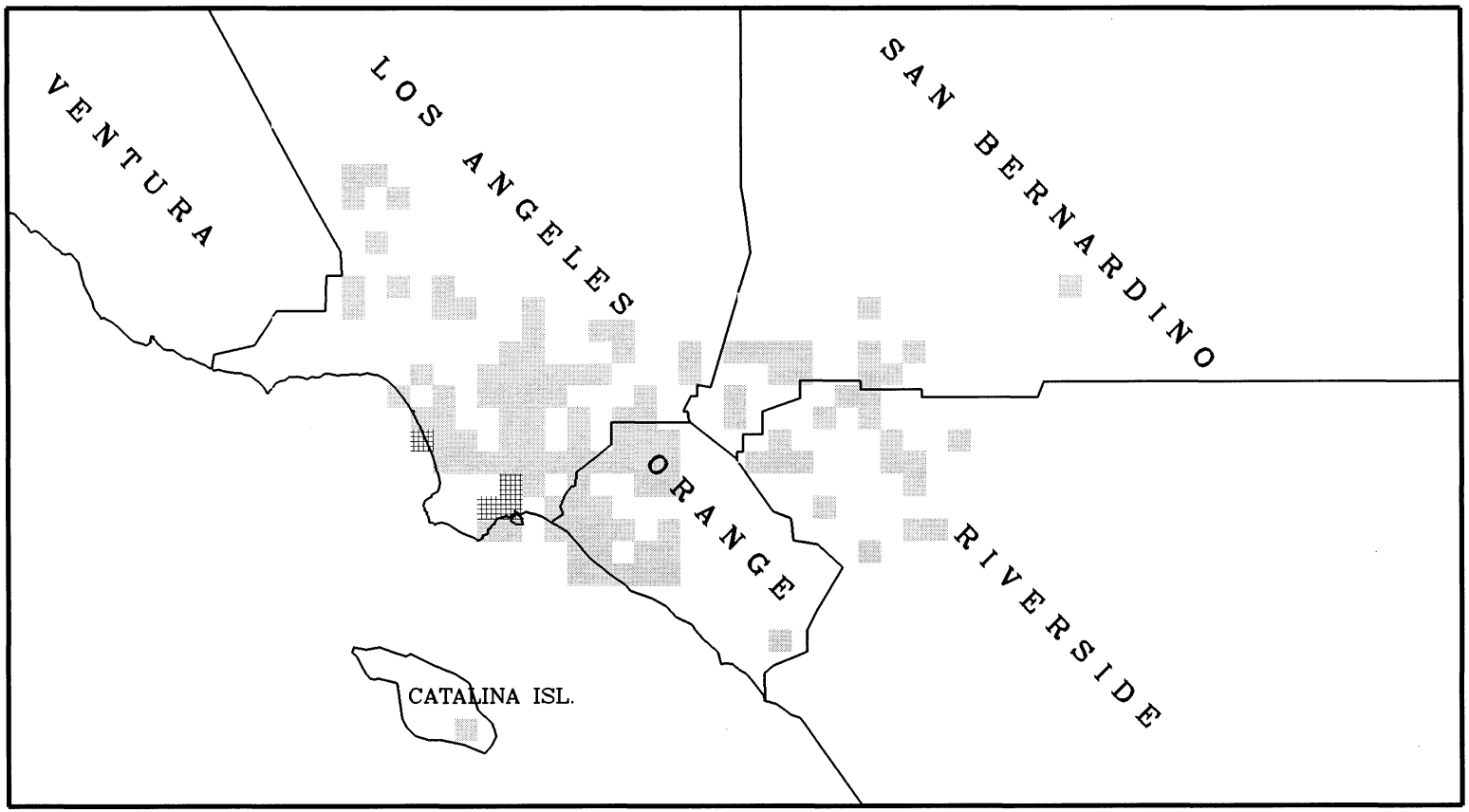
>0 – 150 | 150 – 300 | 300 – 450 | 450 – 600 | 600 – 750 | over 750

max. emissions = 256 tons

Generated on 12/14/2010

RECLAIM Facilities

Certified NOx Emissions (Tons) from 04/2010 to 06/2010



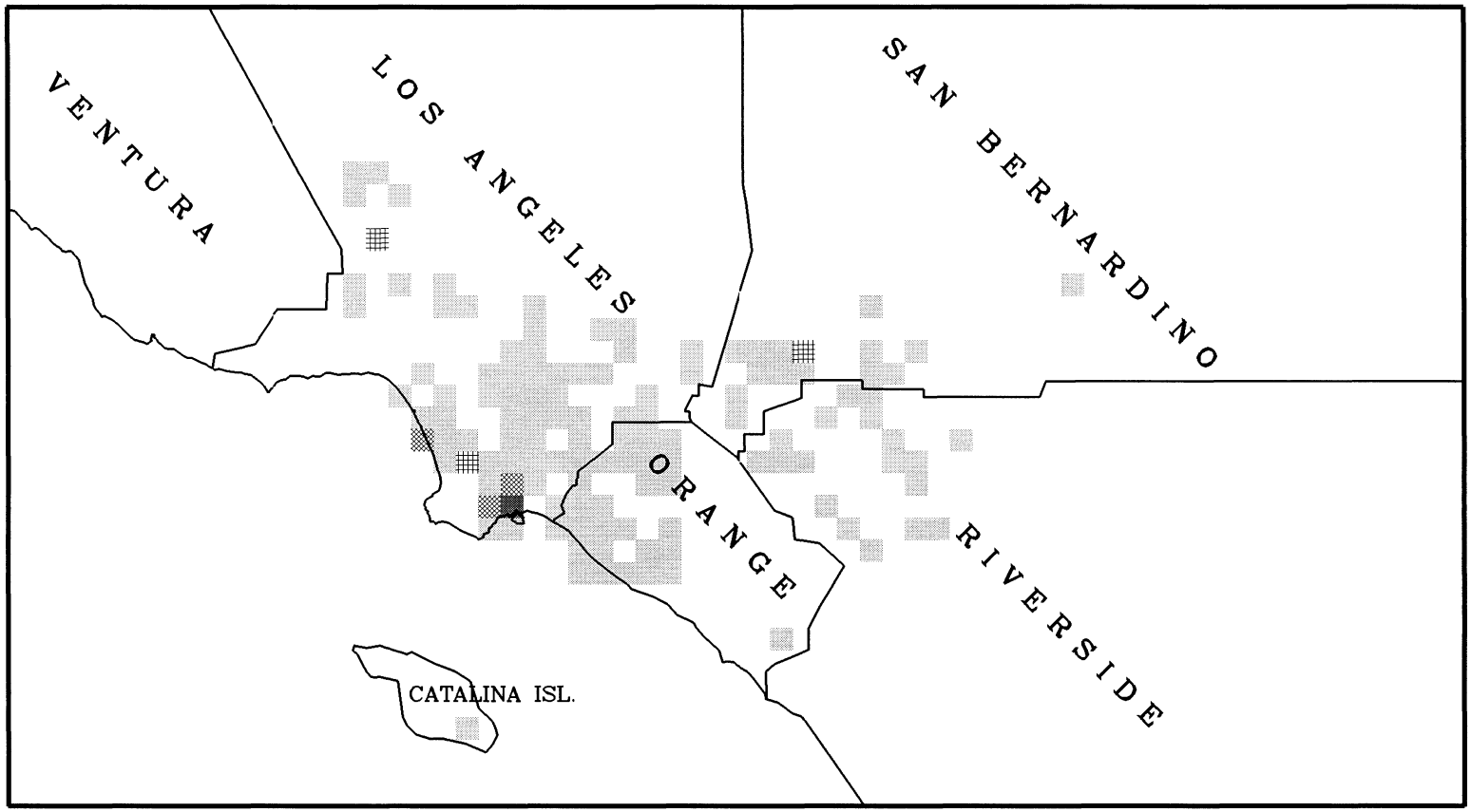
>0 – 150 | 150 – 300 | 300 – 450 | 450 – 600 | 600 – 750 | over 750

max. emissions = 287 tons

Generated on 12/14/2010

RECLAIM Facilities

Certified NOx Emissions (Tons) Year to date (06/30/2010)



>0 – 100 | 100 – 200 | 200 – 400 | 400 – 800 | 800 –1600 | over 1600

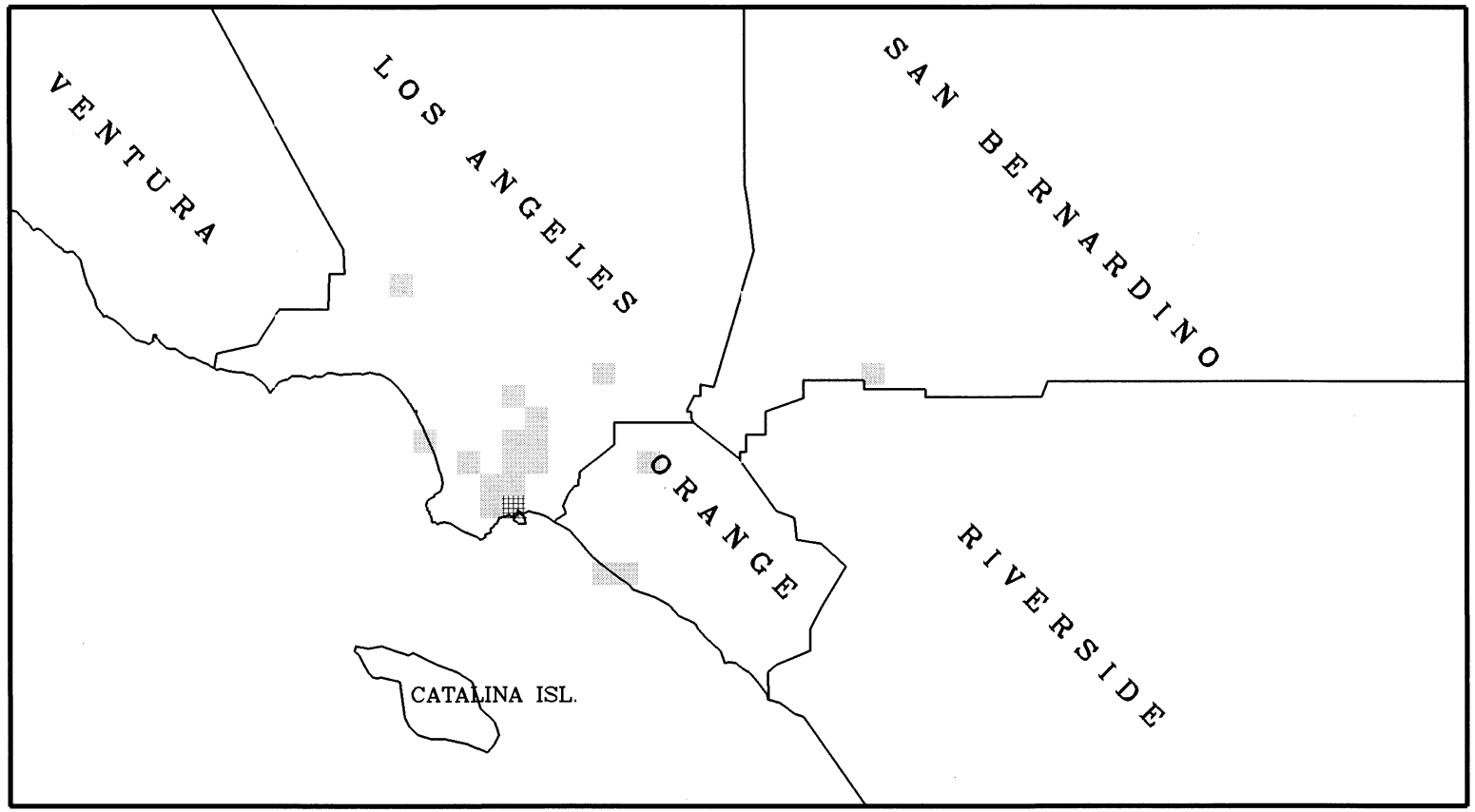
max. emissions = 544 tons

Generated on 12/14/2010

APPENDIX G
QUARTERLY SOx EMISSION MAPS

RECLAIM Facilities

Certified SOx Emissions (Tons) from 01/2009 to 03/2009



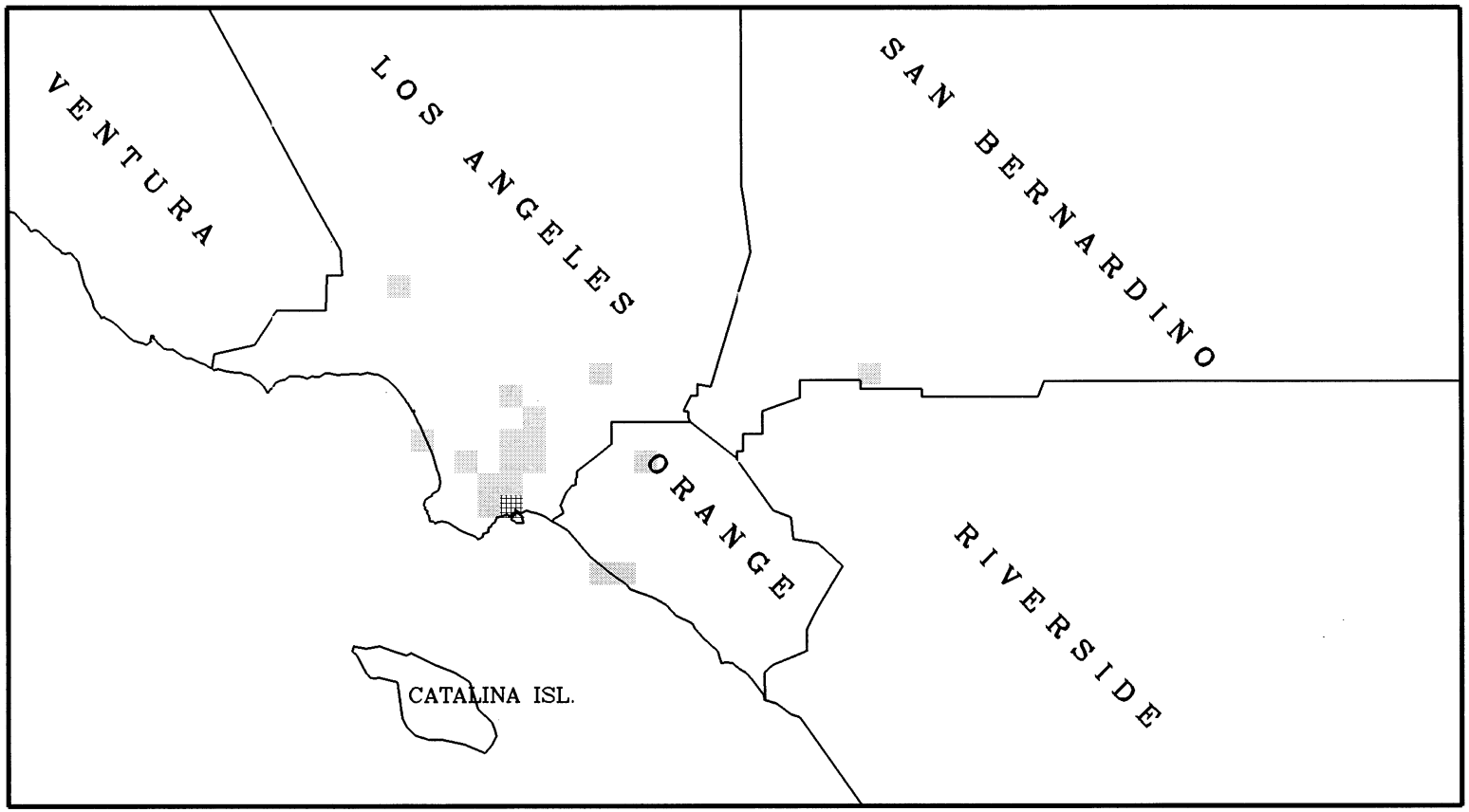
>0 – 150 | 150 – 300 | 300 – 450 | 450 – 600 | 600 – 750 | over 750

max. emissions = 181 tons

Generated on 12/14/2010

RECLAIM Facilities

Certified SOx Emissions (Tons) from 04/2009 to 06/2009



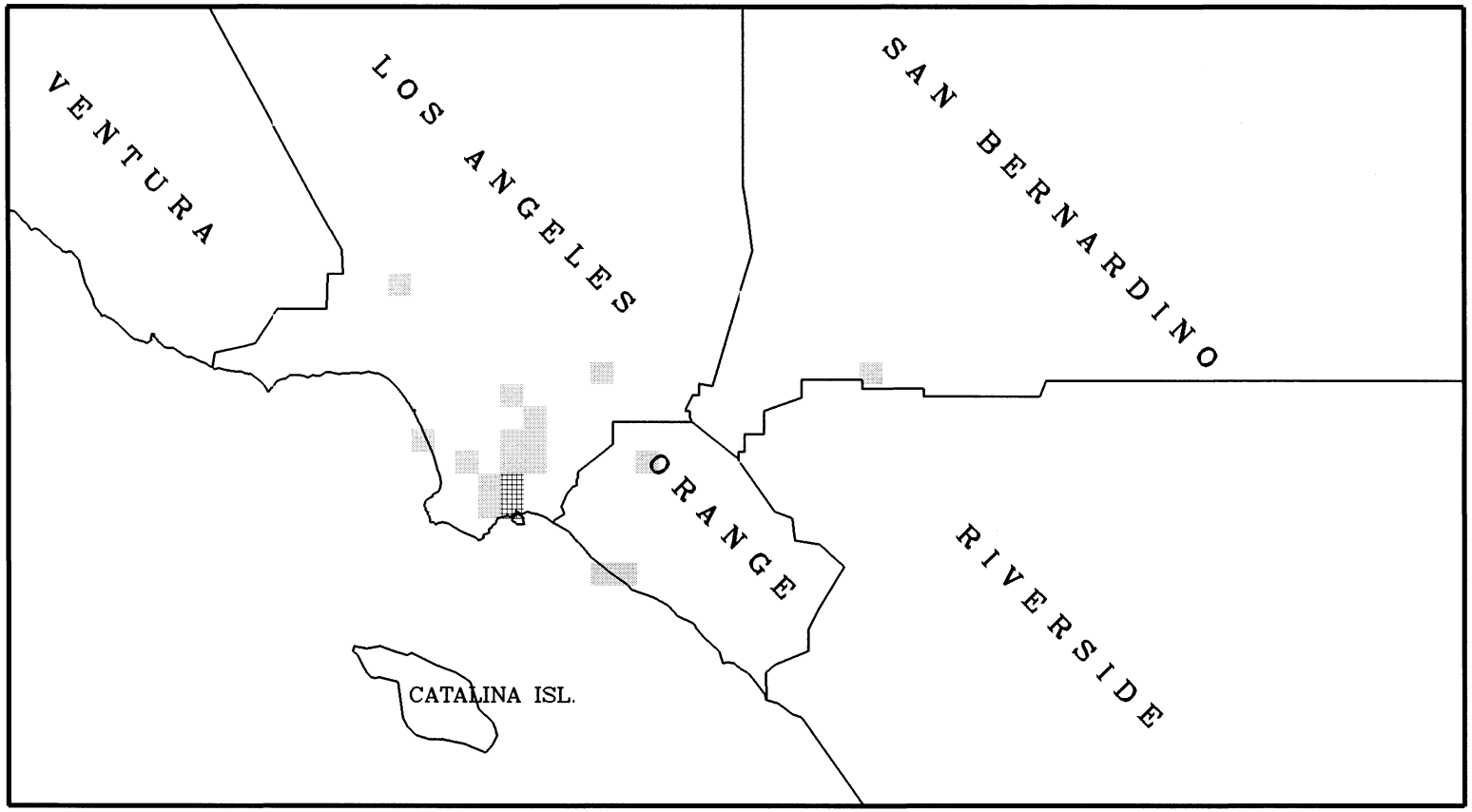
>0 – 150 | 150 – 300 | 300 – 450 | 450 – 600 | 600 – 750 | over 750

max. emissions = 201 tons

Generated on 12/14/2010

RECLAIM Facilities

Certified SOx Emissions (Tons) from 07/2009 to 09/2009



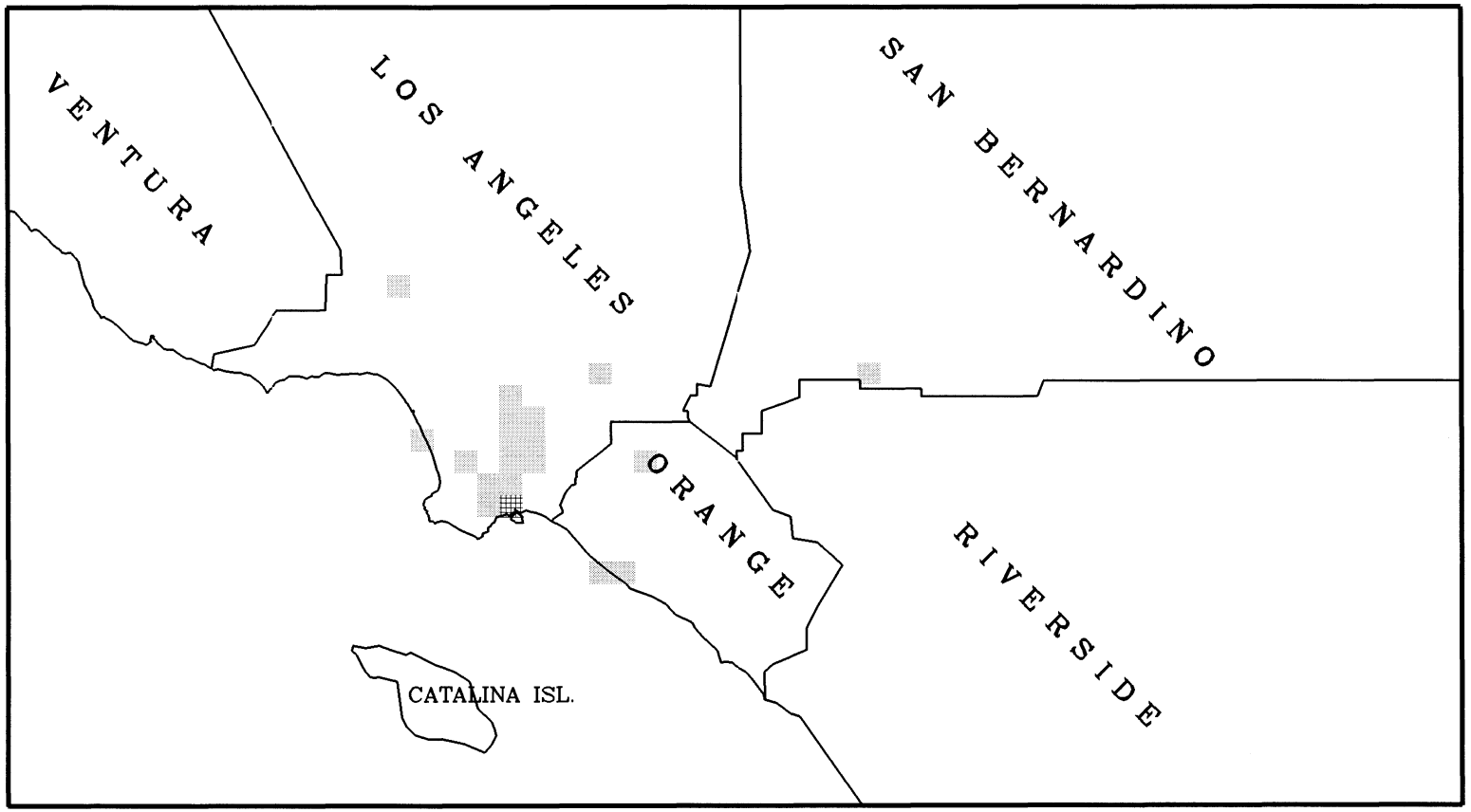
>0 – 150 | 150 – 300 | 300 – 450 | 450 – 600 | 600 – 750 | over 750

max. emissions = 182 tons

Generated on 12/14/2010

RECLAIM Facilities

Certified SOx Emissions (Tons) from 10/2009 to 12/2009



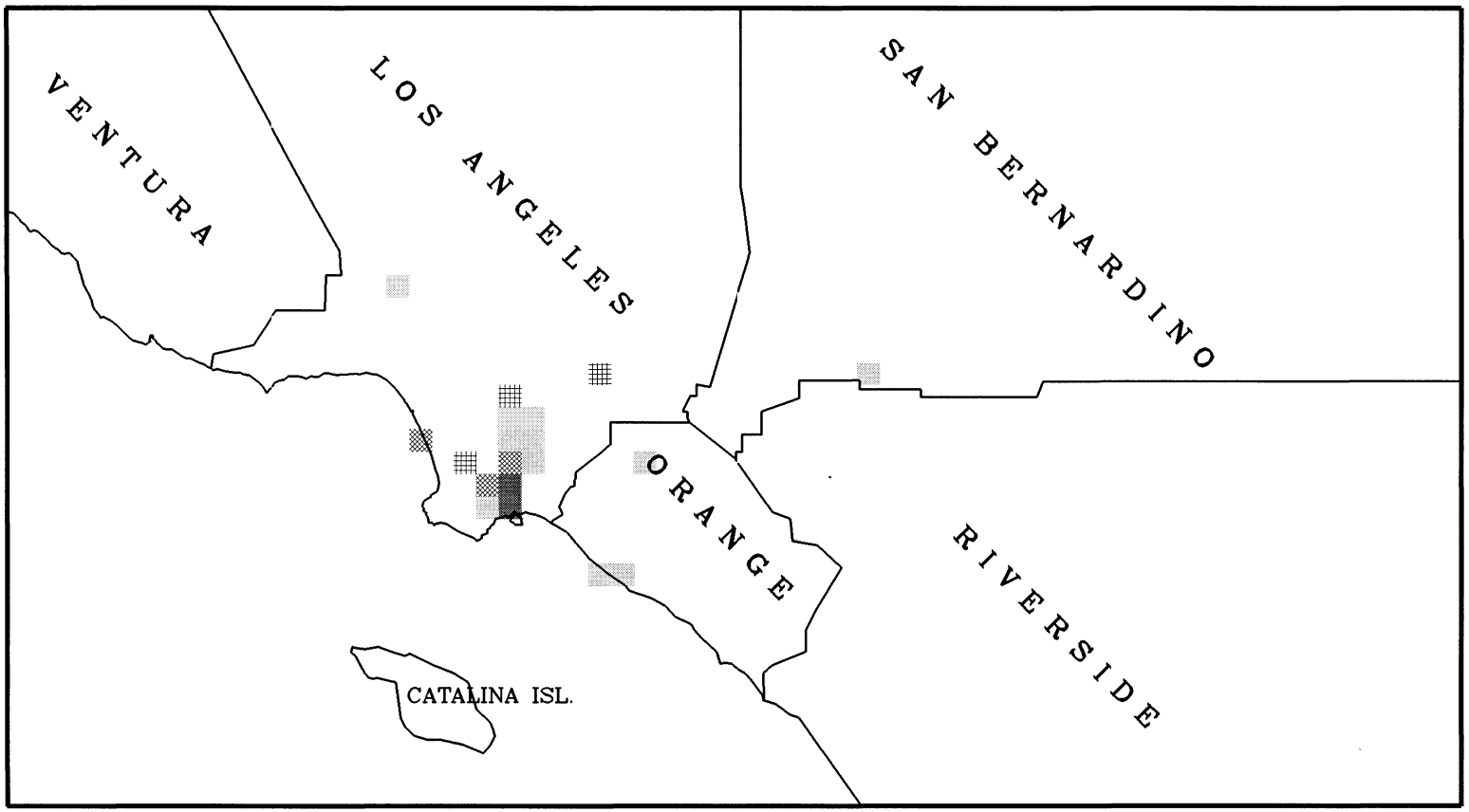
>0 – 150 | 150 – 300 | 300 – 450 | 450 – 600 | 600 – 750 | over 750

max. emissions = 210 tons

Generated on 12/14/2010

RECLAIM Facilities

Certified SOx Emissions (Tons) Year to date (12/31/2009)



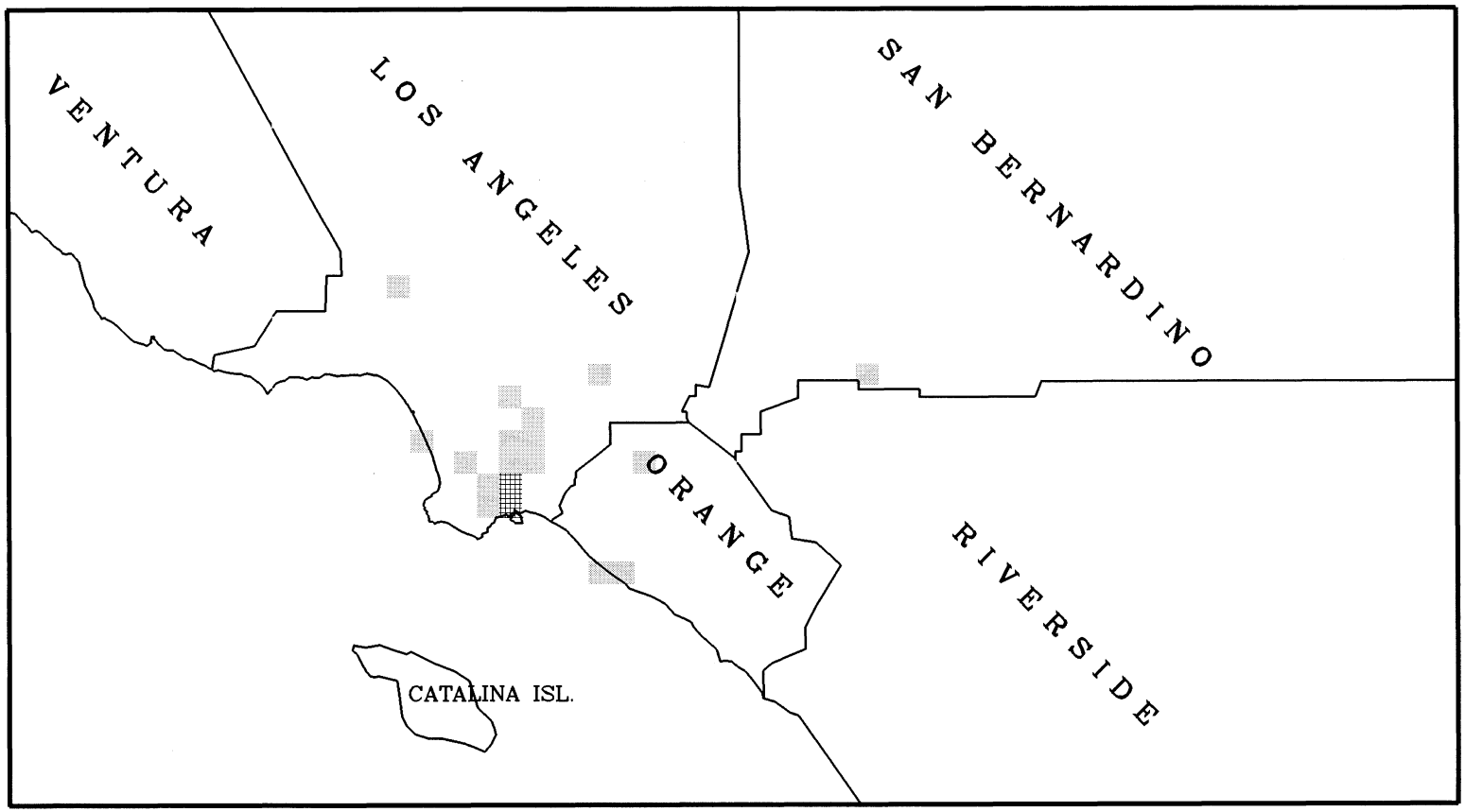
>0 – 100 | 100 – 200 | 200 – 400 | 400 – 800 | 800 –1600 | over 1600

max. emissions = 775 tons

Generated on 12/14/2010

RECLAIM Facilities

Certified SOx Emissions (Tons) from 01/2010 to 03/2010



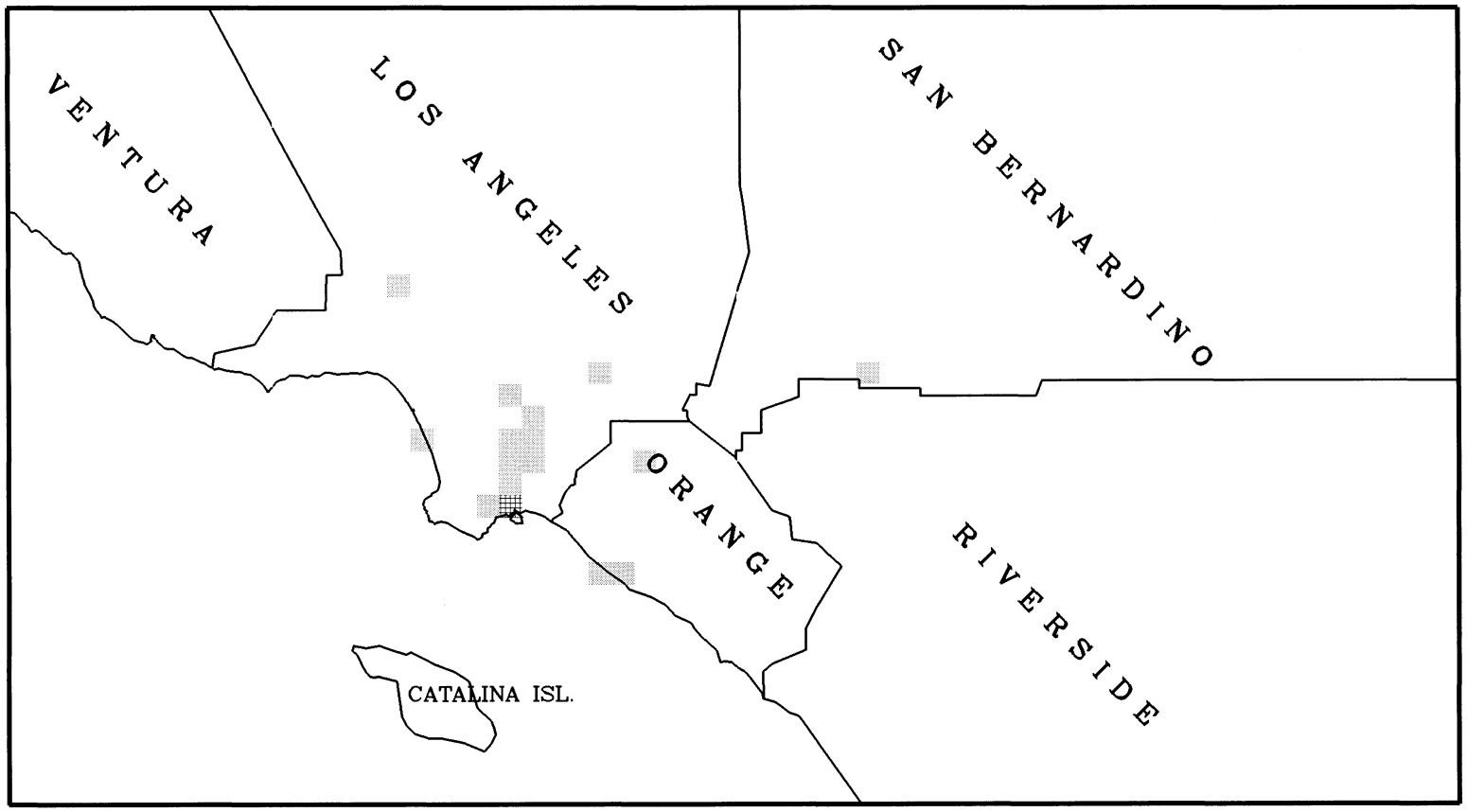
>0 – 150 | 150 – 300 | 300 – 450 | 450 – 600 | 600 – 750 | over 750

max. emissions = 178 tons

Generated on 12/14/2010

RECLAIM Facilities

Certified SOx Emissions (Tons) from 04/2010 to 06/2010



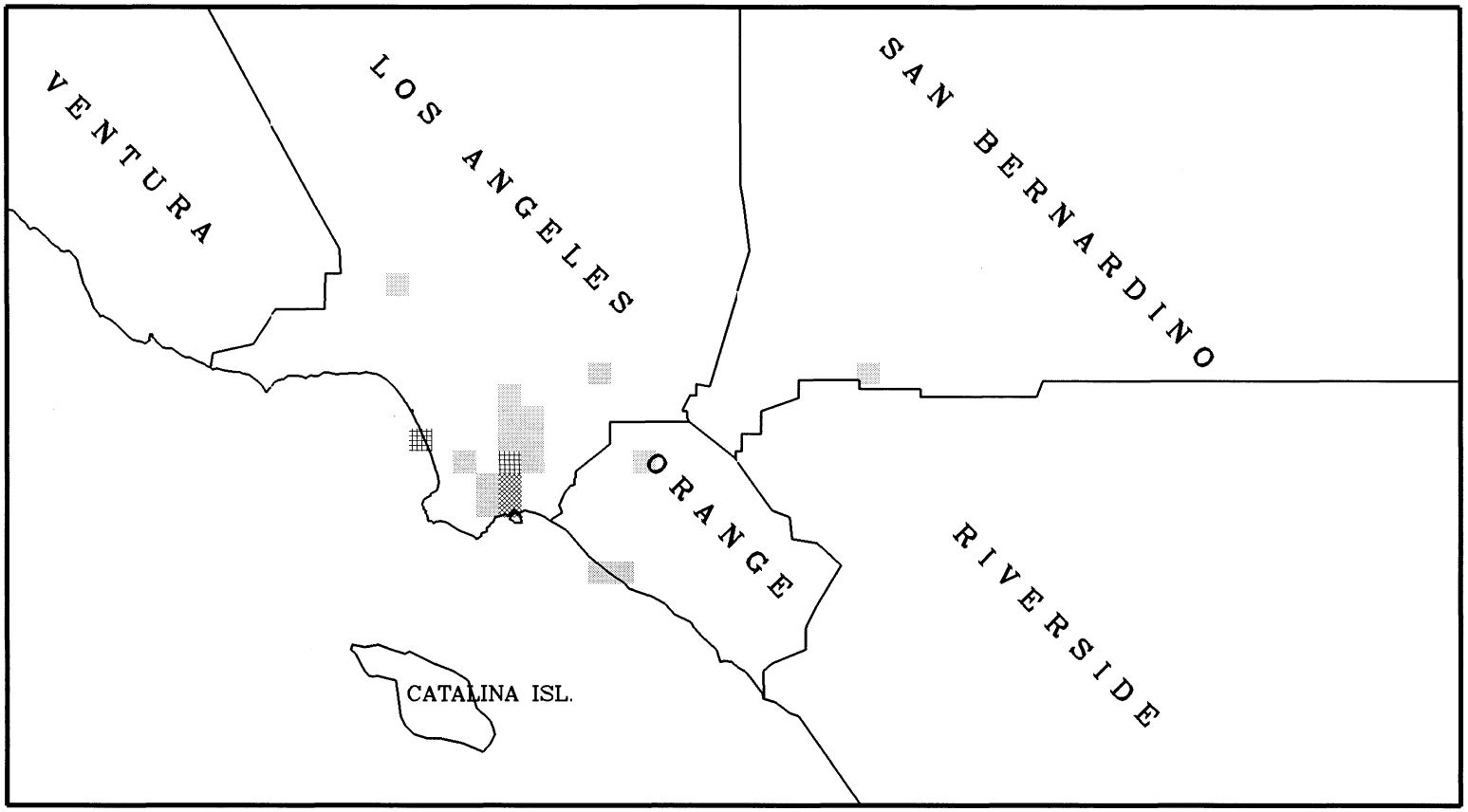
>0 – 150 | 150 – 300 | 300 – 450 | 450 – 600 | 600 – 750 | over 750

max. emissions = 151 tons

Generated on 12/14/2010

RECLAIM Facilities

Certified SOx Emissions (Tons) Year to date (06/30/2010)



>0 – 100 | 100 – 200 | 200 – 400 | 400 – 800 | 800 –1600 | over 1600

max. emissions = 322 tons

Generated on 12/14/2010