

BOARD MEETING DATE: April 2, 2004

AGENDA NO. 35

(Continued from the March 5, 2004 Board Meeting)

REPORT: Annual RECLAIM Audit Report for 2002 Compliance Year

SYNOPSIS: The annual report on the NO_x and SO_x RECLAIM program is prepared in accordance with Rule 2015 - Backstop Provisions. The report assesses emission reductions, average annual price and availability of RECLAIM Trading Credits (RTCs), job impacts, compliance issues, and other measures of performance for the ninth year of this program. This report also contains the program review as required under Rule 2020 RECLAIM Reserve regarding generation and use of emission reductions, and participation in the RECLAIM AQIP and Mitigation Fee Program.

COMMITTEE: Stationary Source, January 23, 2004, Reviewed

RECOMMENDED ACTION:
Approve the attached report.

Barry R. Wallerstein, D.Env.
Executive Officer

CC:CM:DL:scs

Background

The Board adopted the RECLAIM program on October 15, 1993 to provide a more flexible compliance program for RECLAIM facilities, representing the largest emitters of NO_x and SO_x. RECLAIM was designed to meet all state and federal requirements for clean air programs and a variety of performance criteria to ensure protection of public health, air quality improvement, effective enforcement, implementation costs, and minimal job impacts.

RECLAIM represents a significant departure from traditional command-and-control regulations. Therefore, the RECLAIM rules provide for annual program audits to verify that the program objectives are being met. Rule 2015 – Backstop Provisions requires AQMD to conduct an annual program audit to assess various aspects of the program to verify that the program objectives are being met. AQMD staff completed the audit of RECLAIM Compliance Year 2002. The audit results showed that both aggregate emissions and prices of RECLAIM Trading Credits (RTCs) have returned to a level seen before the California’s energy crisis in 2000 and 2001. The aggregate NOx emissions were again achieving programmatic compliance and were 20 percent less than the aggregate NOx allocations for Compliance Year 2002. SOx emissions continued to be less than SOx allocations for Compliance Year 2002.

Audit Findings

The audit of the Compliance Year 2002 RECLAIM program indicates that:

- Aggregate NOx and SOx emissions from RECLAIM facilities were below allocations.
- The RECLAIM universe consisted of 330 facilities at the end of the 2001 compliance year. There was a net increase of two facilities in the RECLAIM universe during the 2002 compliance year. Thus, there were 332 facilities in the RECLAIM Universe at the end of the 2002 compliance year.
- The RTC trading market remained active. More than \$682 million in RTCs have been traded since the adoption of RECLAIM, of which \$32 million occurred in Calendar Year 2003. The annual average NOx and SOx RTCs prices were all below the backstop prices of \$15,000 per ton. Annual average prices during 2001, 2002, and 2003 are summarized below:

2001	2002	2003
• \$ 52,537 per ton for 2001 NOx RTCs	• \$5,110 per ton for 2002 NOx RTCs	• \$1,272 per ton for 2002 NOx RTCs
• \$17,064 per ton for 2003 NOx RTCs	• \$8,952 per ton for 2003 NOx RTCs	• \$3,795 per ton for 2003 NOx RTCs
• \$9,510 per ton for 2010 NOx RTCs	• \$8,839 per ton for 2010 NOx RTCs	• \$7,750 per ton for 2010 NOx RTCs
• \$5,669 per ton for 2001 SOx RTCs	• \$8,986 per ton for 2002 SOx RTCs	• \$6,404 per ton for 2002 SOx RTCs
• \$3,503 per ton for 2003 SOx RTCs	• \$7,849 per ton for 2003 SOx RTCs	• \$5,664 per ton for 2003 SOx RTCs
• \$3,503 per ton for 2010 SOx RTCs	• \$7,166 per ton for 2010 SOx RTCs	• \$10,053 per ton for 2010 SOx RTCs

- The rule amendments in May 2001 are having a definite impact in reducing NOx RTC prices. Actual NOx RTC prices traded have been on a steady decline. The price for Compliance Year 2002 NOx RTCs dropped under \$1000 per ton during the reconciliation periods following the end of each of the two compliance cycles.
- The majority of RECLAIM facilities complied with their Allocations during the 2002 compliance year. At the time of preparation of this report, nine facilities exceeded their Allocations during this compliance year. Failure to obtain sufficient RTCs to reconcile with emissions was the leading cause of exceedance.
- All deducted future allocations from power producing facilities participating in the Emission Mitigation Fee Program and the AQMD Executive Order (#01-03) issued in January 2001 have been fully restored.
- RECLAIM had minimal impact on employment during the 2002 compliance year, as in previous years. Five facilities attributed 112 jobs lost to RECLAIM. Four RECLAIM facilities shut down or went out of business during the 2002 compliance year. None of the operators of these facilities indicated that RECLAIM contributed to their decisions to cease operations.

Attachment

Annual RECLAIM Audit Report for 2002 Compliance Year

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Annual RECLAIM Audit Report for the 2002 Compliance Year

March 5, 2004

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EXECUTIVE OFFICER

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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 purchasing emission credits from facilities that reduce emissions below their target levels.

Rule 2015 - Backstop Provisions, includes provisions for annual program audits focusing on specific topics, as well as a more comprehensive three-year audit to ensure that RECLAIM is meeting all state and federal requirements and other performance criteria. This document constitutes the Rule 2015 annual audit for the 2002 compliance year (January 2002 through June 2003). A program review of the RECLAIM Reserve is also included pursuant to Rule 2020 – RECLAIM Reserve.

Chapter 1: RECLAIM Universe

When RECLAIM was adopted in October 1993, 394 facilities were identified as the initial “universe” of sources subject to the requirements of RECLAIM. Between program adoption and June 30, 2002, 92 facilities were included into the program, 66 were excluded from the program, and 90 facilities ceased operation. Thus, the RECLAIM universe consisted of 330 facilities on July 1, 2002. During Compliance Year 2002, seven facilities were included into the RECLAIM universe, one was excluded from the program, and four facilities shut down. These changes resulted in a net increase of two facilities in the universe, bringing the total number of facilities to 332 at the end of Compliance Year 2002. All of these changes occurred within the NO_x universe only. There were no changes to the SO_x universe.

Chapter 2: RTC Allocations and Trading

The primary source of RTCs available for trading is the aggregate of all allocations issued to RECLAIM facilities. These RECLAIM allocations incorporated emission reduction requirements in AQMD rules and the control measures and projections specified in the Air Quality Management Plan (AQMP). RTCs can also be converted from credits generated under other AQMD rules – Mobile Source Emission Reduction Credits (MSERCs) and Area Source Credits (ASCs). During Calendar Year 2003, there were a net increase of 35.5 tons of NO_x RTCs and a decrease of 0.2 ton of SO_x RTC for Compliance Year 2002.

The Calendar Year 2003 trading market continues to be active with 798 registered RTC transactions. This is higher than the annual activities for Calendar Years 1994 through 1999, but lower than the record setting 1,255 transactions in Calendar Year 2001. RTCs valued at a total of \$32.0 million were traded during Calendar Year 2003. Since the inception of the RECLAIM program in 1994, \$682 million were traded in the RTC trading market.

NOx RTC prices continued a declining trend in Calendar Year 2003 since the rule amendment in May 2001. NOx RTCs were traded under \$1.00 per pound toward the end of the reconciliation period for each of the two cycles in the 2002 Compliance Year. During Calendar Year 2003, annual average prices for Compliance Year 2002 and 2003 SOx RTCs also declined. There were only a few trades involving SOx RTCs for compliance years 2004 and beyond. Average prices for these RTCs were higher when compared to those traded in 2002. All Annual average prices for NOx or SOx RTCs were under the \$15,000 per ton level set under Rule 2015.

Chapter 3: Emissions Reductions

Aggregate NOx and SOx emissions from RECLAIM facilities continued to decrease from the inception of RECLAIM through Compliance Year 2002. RECLAIM is back on track to achieving the reduction goals after the effect of the California 2000 energy crisis subsided. Compliance Year 2002 aggregate NOx emissions from all RECLAIM facilities were below allocations by more than 20 percent. On the other hand, aggregate SOx emissions were under allocations by slightly more than 10 percent.

In response to the energy crisis' effects on the RECLAIM NOx market, the AQMD Governing Board adopted rule amendments in May 2001 to stabilize RTC prices. The amendments included provisions to curtail RTC demand as well as increasing RTC supply. Rule 2009 requires power producing facilities to install Best Available Retrofit Control Technologies and to file compliance plans to project emissions through Compliance Year 2005. Rule 2009.1 requires compliance plans or forecast reports from certain RECLAIM facilities to show how they would comply with annual allocations through Compliance Year 2005. In Compliance Year 2002 actual emissions from facilities subject to these two rules were lower than those projected under compliance plans and forecast reports. The Governing Board also adopted Rule 2020 – RECLAIM Reserve, which established the RECLAIM Air Quality Investment Program (AQIP), the Emissions Mitigation Fee Program, and the State Emission Reduction Credit Bank. These three programs were set up to provide eligible facilities with emission reduction credits. In Compliance Year 2002, no facility requested emission reduction from any of these three programs.

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 the federal and state NSR requirements while providing flexibility to facilities in managing their operations and allowing new sources into the program. Review of NSR activity in Calendar Year 2002 shows that four existing facilities joined the NOx program, while no facility joined the SOx program. These four facilities reported

no NSR activities during this period. However, 48 existing RECLAIM facilities reported NSR NOx emission increases due to expansion or modification. These data indicate that the RECLAIM program does not inhibit expansion and/or modification of sources at RECLAIM facilities.

RECLAIM is required to comply with federal NSR requirements for a 1.2-to-1 offset ratio for NOx and SOx emission increases on a programmatic basis. In Calendar Year 2002, RECLAIM provided an offset ratio of 209-to-1 for NOx on an aggregate basis, demonstrating federal equivalency. There were no NSR increases for RECLAIM SOx during Calendar Year 2002. Compliance with the federally required offset ratio also demonstrates compliance with the state requirement of no net emissions increases from new or modified sources. In addition, RECLAIM requires application of Best Available Control Technologies for all new or modified sources with emission increases.

Chapter 5: Compliance

During Compliance Year 2002, 347 RECLAIM facilities were in the RECLAIM program. Of these, 338 facilities (97 percent) complied with their NOx Allocations and 35 (95 percent) out of the 37 SOx facilities complied with their SOx Allocations. Preliminary results of the Compliance Year 2002 audits revealed that the overall RECLAIM NOx and SOx emission goals were met for this compliance year. However, not all facilities were determined to have complied with their individual allocations. NOx emissions in excess of individual facility NOx allocations totaled 55 tons and SOx emissions in excess of individual facility SOx allocations totaled 4 tons. The three main reasons for allocation exceedances were failure to purchase sufficient RTCs to reconcile with emissions, emission calculation errors, and failure to follow missing data procedures.

Chapter 6: Job Impacts

Job impacts resulting from the RECLAIM program during Compliance Year 2002 continue to be negligible when compared to the overall employment in the Basin. Five facilities claimed the RECLAIM program caused a total of 112 job losses. Furthermore, four RECLAIM facilities shut down or went out of business during Compliance Year 2002. None of facilities attributed their ceasing operations in part to RECLAIM.

Chapter 7: Air Quality and Public Health Impacts

The emissions reported by RECLAIM facilities from Compliance Years 1989 through 2002 are found to be in an overall downward trend. Quarterly NOx emissions remained relatively constant throughout Calendar Year 2002 except for a slight increase in the third quarter. This emissions trend is more apparent if emissions from power producing facilities were isolated. The trend of quarterly SOx emissions was the reverse of the quarterly NOx emissions trend. When quarterly NOx emissions increased, quarterly SOx emissions decreased, and vice versa. Furthermore, analysis of the geographical distribution of emissions during the first nine years of the program on a quarterly basis does not show any distinct shift in the geographical distribution of emissions.

The California Clean Air Act requires a 50 percent reduction in population exposure to ozone 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 attainment with the December 2000 target prior to 1994 and Riverside and San Bernardino Counties achieved attainment in 1996.

Air toxic health risk is primarily caused by emissions of VOCs and metals, rather than NO_x or SO_x emissions. Additionally, RECLAIM facilities are subject to the same air toxic regulations as other sources in the Basin. Therefore, it can be concluded that there is no toxic impact due to the implementation of the RECLAIM program beyond what would have occurred pursuant to the rules and control measures RECLAIM subsumed.

INTRODUCTION

The South Coast Air Quality Management District's Regional Clean Air Incentives Market program (RECLAIM) was adopted in October 1993 and replaces certain command-and-control regulations with a new market incentives program for facilities that meet the inclusion criteria. The goal of RECLAIM is to provide facilities with added flexibility in meeting emissions reduction requirements and to lower the cost of compliance. The RECLAIM program was designed to meet all state and federal requirements for clean air programs, 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, the RECLAIM rules include provisions for program audits in order to verify that the RECLAIM objectives are being met. The rules provide for both annual audits and a more comprehensive audit of the first three years of program implementation. The audit results are used to help determine whether any program modifications are appropriate.

The RECLAIM Program Three-Year Audit and Progress Report was presented to the Governing Board May 8, 1998. This report presents the annual audit and progress report of RECLAIM's ninth compliance year (January 1, 2002 through June 30, 2003), also known as the 2002 compliance year. As required by Rule 2015(b)(1), 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 RTC;
- Availability of RTCs;
- Toxic risk reductions;
- New Source Review permitting activity;
- Compliance issues;
- Emission trends/seasonal fluctuations; and
- Emission control requirement impacts on stationary sources in the program compared to other stationary sources identified in the AQMP.

The Annual Audit is organized into the following chapters:

1. RECLAIM Universe
This chapter discusses changes in the universe of RECLAIM sources that occurred during the 2001 compliance year.
2. RTC Allocations and Trading
This chapter summarizes changes in emissions allocations in the

RECLAIM universe, RTC trading activity, and the average annual price, availability, and supply of RTCs.

3. Emissions Reductions
This chapter assesses emissions trends and reductions for RECLAIM sources and emissions control requirement impacts on these sources compared to other stationary sources. The program review of the RECLAIM Reserve pursuant to Rule 2020(k) is also presented.
4. New Source Review Activity
This chapter summarizes NSR activity at RECLAIM facilities.
5. Compliance
This chapter discusses compliance activities and the compliance status of RECLAIM facilities and evaluates the effectiveness of AQMD's compliance program and the NO_x and SO_x monitoring, reporting, and recordkeeping protocols.
6. Job Impacts
This chapter addresses job impacts.
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, 394 facilities were identified as the initial “universe” of sources subject to the requirements of RECLAIM. Between program adoption and June 30, 2002, 92 facilities were included into the program, 66 were excluded from the program, and 90 facilities ceased operation. Thus, the RECLAIM universe consisted of 330 facilities on July 1, 2002. During Compliance Year 2002, seven facilities were included into the RECLAIM universe, one was excluded from the program, and four facilities shut down. These changes resulted in a net increase of two facilities in the universe, bringing the total number of facilities to 332 at the end of Compliance Year 2002. All of these changes occurred within the NOx universe only. There were no changes to the SOx universe.

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, although certain facilities are categorically excluded from RECLAIM. The categorically excluded facilities include restaurants, police and fire fighting facilities, potable water delivery operations, and all facilities located in the Riverside County and Los Angeles County portions of the Mojave Desert Air Basin and the Salton Sea Air Basin. Furthermore, there are other categories of facilities that are not automatically subject to RECLAIM, but individual facilities in these categories have the option to enter the program at their discretion. These categories include ski resorts, prisons, hospitals, and publicly-owned municipal waste-to-energy facilities. 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 emissions above the four-ton threshold; or
- It ceases to belong to an exempt category; or
- It is discovered by AQMD staff to meet the applicability requirements of RECLAIM, but was initially misclassified as not subject to RECLAIM.

The facilities in the RECLAIM universe were issued an annually declining allocation of emission credits (“RECLAIM Trading Credits” or “RTCs”) that

constitutes an annual emissions budget. RTCs may be bought or sold as the facilities deem appropriate.

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 universe and to add new facilities to the universe. The overall changes to the RECLAIM universe from the date of adoption through June 30, 2002 were: inclusion of 92 facilities (69 facilities were included and 23 facilities were created by partial change of operator of existing RECLAIM facilities), exclusion of 66 facilities, and 90 facility shutdowns. Thus, the net change in the RECLAIM universe during the first eight compliance years was a decrease from 394 to 330 facilities. During Compliance Year 2002, seven facilities were added to the RECLAIM universe. Among this group, four new facilities opted to join RECLAIM, two facilities were created by partial change of operator, and one facility was found to continue operations even though it previously reported to have shut down its operations. During the same time period, one facility was excluded from the RECLAIM program, and four facilities were shut down. These changes brought the total number of facilities in the RECLAIM universe to 332 facilities.

Table 1-1 summarizes the changes in the RECLAIM universe between the start of program and the end of Compliance Year 2002. The most current list of facilities in the RECLAIM universe as of June 30, 2003 is listed in Appendix A.

**Table 1-1
RECLAIM Universe Changes**

	NOx Facilities	SOx Facilities	Total Facilities
Start of Program	392	41	394
Inclusions—1994-2001	92	8	92
Exclusions—1994-2001	65	4	66
Shutdowns—1994-2001	89	9	90
End of Compliance Year 2001	330	36	330
Inclusions—2002	7	0	7
Exclusions—2002	1	0	1
Shutdowns—2002	4	0	4
End of Compliance Year 2002	332	36	332

Facility Inclusions and Exclusions

During Compliance Year 2002, four new facilities opted to join RECLAIM, two facilities were created from partial changes in operator, and one facility that previously reported to be shut down was found to have continued operations. A partial change of operator occurs when a new operator takes over the operation of a part of an existing facility. The two facilities co-exist at the same location. As a result, a new facility is created. A list of facilities included from the RECLAIM universe during Compliance Year 2002 is shown in Appendix B.

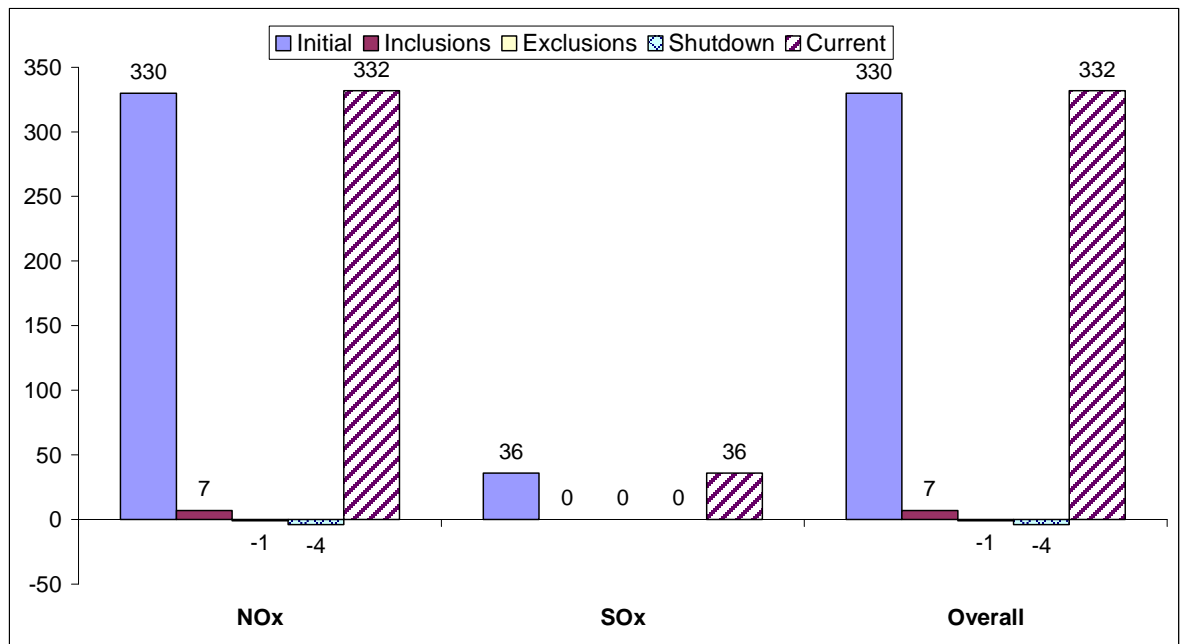
One facility that had been in RECLAIM since the onset of the program was found to be a potable water delivery operation and therefore was excluded pursuant to Rule 2001(i)(1)(H). This facility is now subject to Command and Control Regulations.

Facilities Permanently Ceasing Operations

Four RECLAIM facilities permanently ceased operations between January 1, 2002 and June 30, 2003. Shutdown facilities have the option to retain or sell their RTCs. None of these facilities cited RECLAIM as a contributing factor in their decision to cease operation. Appendix C lists the shutdown facilities and brief descriptions of the known reasons for closing down operations.

All of the affected facilities were NOx facilities. These changes resulted in a net increase of two facilities in the RECLAIM Universe. Additionally, overall changes to the RECLAIM universe that occurred during Compliance Year 2002 for both NOx and SOx facilities are illustrated in Figure 1-1.

Figure 1-1
Universe Changes during Compliance Year 2002



CHAPTER 2

RTC ALLOCATIONS AND TRADING

Summary

The primary source of RTCs available for trading is the aggregate of all allocations issued to RECLAIM facilities. These RECLAIM allocations incorporated emission reduction requirements in AQMD rules and the control measures and projections specified in the Air Quality Management Plan (AQMP). RTCs can also be converted from credits generated under other AQMD rules – Mobile Source Emission Reduction Credits (MSERCs) and Area Source Credits (ASCs). During Calendar Year 2003, there were a net increase of 35.5 tons of NOx RTCs and a decrease of 0.2 ton of SOx RTC for Compliance Year 2002.

The Calendar Year 2003 trading market continues to be active with 798 registered RTC transactions. This is higher than the annual activities for Calendar Years 1994 through 1999, but lower than the record setting 1,255 transactions in Calendar Year 2001. RTCs valued at a total of \$32.0 million were traded during Calendar Year 2003. Since the inception of the RECLAIM program in 1994, \$682 million were traded in the RTC trading market.

NOx RTC prices continued a declining trend in Calendar Year 2003 since the rule amendment in May 2001. NOx RTCs were traded under \$1.00 per pound toward the end of the reconciliation period for each of the two cycles in the 2002 Compliance Year. During Calendar Year 2003, annual average prices for Compliance Year 2002 and 2003 SOx RTCs also declined. There were only a few trades involving SOx RTCs for compliance years 2004 and beyond. Average prices for these RTCs were higher when compared to those traded in 2002. All Annual average prices for NOx or SOx RTCs were under the \$15,000 per ton level set under Rule 2015.

Background

When a facility enters the RECLAIM program, it is issued allocations for each compliance year based on the facility's operational history and the methodology specified in Rule 2002 – Allocations for Oxides of Nitrogen (NOx) and Oxides of Sulfur (SOx). The allocations decline annually through the 2003 compliance year, and then remain constant for all subsequent years.

Allocations are issued as RTCs, denominated in pounds of NOx or SOx within a specific year. Each RTC may only be used for emissions occurring within the term of the RTC. The RECLAIM program has two staggered compliance cycles – Cycle 1 for compliance period of January 1 through December 31 of each year and Cycle 2 for 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 issued RTCs with corresponding periods of validity.

The issuance of allocations for future years provides RECLAIM facilities guidance to their future emission reduction requirements. Facilities can plan their compliance strategies by reducing actual emissions or securing required

RTCs through trades (or a combination of the two), based on their operational needs.

Through trading, RECLAIM facilities may acquire RTCs issued for either cycle and apply them to emissions, provided that the RTCs are used for emissions occurring within their period of validity and the trades are made during the appropriate time period. In addition, RECLAIM facilities have a 60-day reconciliation period after the end of each compliance year to account for their total annual emissions and to secure adequate RTCs.

Unlike other chapters in this report where data pertain to Compliance Year 2002, RTC prices discussed in this chapter are for Calendar Year 2003. RTC prices during Calendar Year 2002 were presented in the previous Annual RECLAIM Audit Report submitted to the Governing Board in March 2003.

RTC Allocations and Supply

The methodology for determining RTC Allocations is stated in Rule 2002 – Allocations for Oxides of Nitrogen (NOx) and Oxides of Sulfur (SOx). According to this rule, allocations for facilities may change when there is a change in the universe of RECLAIM facilities, when the reported historical activities are updated, and to compensate for additional emissions at facilities producing reformulated gasoline. In addition, RTCs can be generated by conversions of emissions reductions from mobile and area sources. Changes in RTC supply due to these reasons during Compliance Year 2003 are discussed below. The aggregate of all RECLAIM facilities' allocations, conversions of emission reduction credits (ERCs) owned by RECLAIM and non-RECLAIM facilities, and conversion of ERCs from mobile sources and area sources, make up the total RTC supply in the program.

Allocations Adjustments Due to Inclusion and Exclusion of Facilities

Allocations for a facility are based on its historical operation and the emission reduction requirements under the command-and-control rules and the AQMP control measures subsumed by RECLAIM. As stated in Chapter 1 – RECLAIM Universe, four new facilities opted to join, two facilities were created by partial change of operator, one existing facility had reported shut down but was found still operating, four facilities shut down and one facility was excluded. Among the four new facilities that opted in, two facilities were not issued any allocations since they had no prior operating history. The other two facilities were issued allocations based on their past operations totaling 100.1 tons of NOx RTCs for Compliance Year 2002. One facility was excluded from the universe that resulted in a decrease of 0.9 tons of NOx RTC supply in Compliance Year 2002. Allocation for a facility was adjusted based on its reported activity. This resulted in an increase of allocations of 0.2 tons of RTC per year. There was no change in the supply of RTCs caused by facilities that were shut down, or created by partial change of operator in that the original facilities retain the ownership of the RTCs.

Allocations Adjustments Due to Clean Fuel Production

Rule 2002(c)(12) – Clean Fuel Adjustment to Starting Allocation, provides refineries with RTCs to compensate for actual emissions directly related to the

production of California Air Resources Board Phase II reformulated gasoline. The amount of RTCs eligible is based on actual emissions for the subject compliance year and historical production data. In Compliance Year 1999, the refineries were issued a baseline of 86.3 tons of NOx and 52 tons of SOx for Compliance Year 1999 and 101 tons of NOx and 52.9 tons of SOx for each subsequent compliance year. These facilities are required to submit records to substantiate actual emission increases due solely to production of reformulated gasoline annually. If actual emission increases or decreases for a subject year are different than the projected amount, the RTCs issued will be adjusted accordingly (i.e., excess RTCs issued will be deducted if emissions were less than the amount of RTCs issued; same the reverse.) For Compliance Year 2002, there was a net decrease of 7.5 tons of NOx and 0.3 tons of SOx RTCs supply due to this section of the rule.

Tables 2-1 and 2-2 summarize the changes in RTC supply that occurred in Compliance Year 2002 due to changes allowed under Rule 2002.

Table 2-1
Changes in supply of NOx RTCs during Compliance Year 2002 (tons/year)

Source	2002	2003 and on
Universe changes	99.2	88.0
Reformulated Gasoline	-7.5	0
Activity corrections ¹	0.2	0.2
Net change	91.9	88.2

Table 2-2
Changes in total supply of SOx RTCs during Compliance Year 2002 (tons/year)

Source	2002	2003 and on
Universe changes	0	0
Activity corrections ¹	0	0
Reformulated Gasoline	-0.3	0
Net changes	-0.3	0

Conversions of Mobile Source Emission Reductions

Conversions of mobile source emission reduction credits (MSERCs) to RTCs are allowed under Rule 2008 – Mobile Source Credits, and several programs under Regulation XVI – Mobile Source Offset Programs. In Compliance Year 2002, NOx RTCs were issued as a result of conversion of MSERCs generated under Rule 1631 - Pilot Credit Generation Program for Marine Vessels and Rule 1620 – Credits for Clean Off-Road Mobile Equipment. Rule 1631 requires the applicant to project credit generation at the start of the project through June 2005. At the

¹ Allocations issued to a facility depend on historical production data. For various reasons, facilities file amendments to their historical production data that, when approved, cause changes to the facilities' Allocations.

end of each compliance year, the applicant is required to submit actual operation data to substantiate the emission reductions achieved. If actual emission reductions are greater than the projected amount, the applicant is issued additional credits. However, if the actual reductions are less than the projected amount, the applicant is required to surrender 110% of the shortfall. ~~As reported in last year annual report, one project consisting of two vessels was started by an applicant. Both vessels were in operation during Compliance Year 2002.~~

~~At the end of the 2002 calendar year, one of the two vessels was shown to have generated more emission reductions than were projected by the applicant. As a result, 24.7 tons of additional NOx RTCs expiring June 2003 were issued. For the second vessel, the applicant submitted an application in December 2002 to reduce the projected activity level. The application was approved pursuant to Rule 1631(e)(6) in June 2003 and resulted in a decrease of 68.2 tons of emission reductions previously issued for 2002 Compliance Year (credits were due to expire on June 30, 2003). Table 2-3 lists the RTC issuance/reduction activities since January 2003. Of the total 41.9 tons of RTCs issued for Compliance Year 2002, 25.5 tons of RTCs expiring June, 2003 were issued in a printed certificate. This certificate was surrendered to the District and the credits were applied to programs under Rule 2202 – On-Road Motor Vehicle Mitigation Options.~~

Table 2-3
RTCs Issuance and Reduction Since January 2003 under Rule 1631 (tons)

Compliance Year	2001	2002	2003	2004	2005
Activity Adjustments {Rule 1631(i)(3)}		24.7			
Application Amendments {Rule 1631(e)(6)}		-68.2			
Net Changes between 1/03 and 12/03	0	-43.5	0	0	0
RTCs Issued (Between 7/01 and 12/02)	77.3	85.4	108.1	108.1	16.4
Net RTCs Issued Since July 2001	77.3	41.9	108.1	108.1	16.4

While Rule 1631 was being developed and adopted, one project was proposed in May 2001 pursuant to Rule 2202 – On-Road Motor Vehicle Mitigation Options. One vessel was re-powered and began generating emission reductions in July 2001. An application for generating emission reductions by this vessel pursuant to Rule 1631 was later submitted in August 2001. The re-powering of a second vessel was subsequently completed in February 2002. The applicant requested that emission reductions generated by the vessels are to be converted to RTCs. Accordingly, RTCs were issued in 2002 pursuant to Rule 1631 for this project. The amounts of RTCs issued were reported in the last year’s RECLAIM annual report and listed under Table 2-3 below. Both vessels continued to operate and generate emission reductions during 2003. Adjustments were made in Calendar Year 2003 to the RTCs issued due to actual activity and changes requested by

the applicant. However, further review occurred regarding the Memoranda of Understanding (MOU) between the applicant and the AQMD used to generate MSERCs under Rule 2202. Based on the completion date of the re-powering, the District notified the applicant in November of 2003 that the vessel that was first re-powered should have remained subject to Rule 2202, and the second vessel was allowed to remain under Rule 1631. In March 2004, the applicant indicated that the MOU should be the applicable program for credit generation for the second vessel instead of the Rule 1631 Program. As a result of the two actions, all RTCs previously issued under Rule 1631 are void. Table 2-3 summarizes the RTC issuance and subsequent reduction activities.

Table 2-3
RTCs Issuance and Reduction under Rule 1631 (tons)

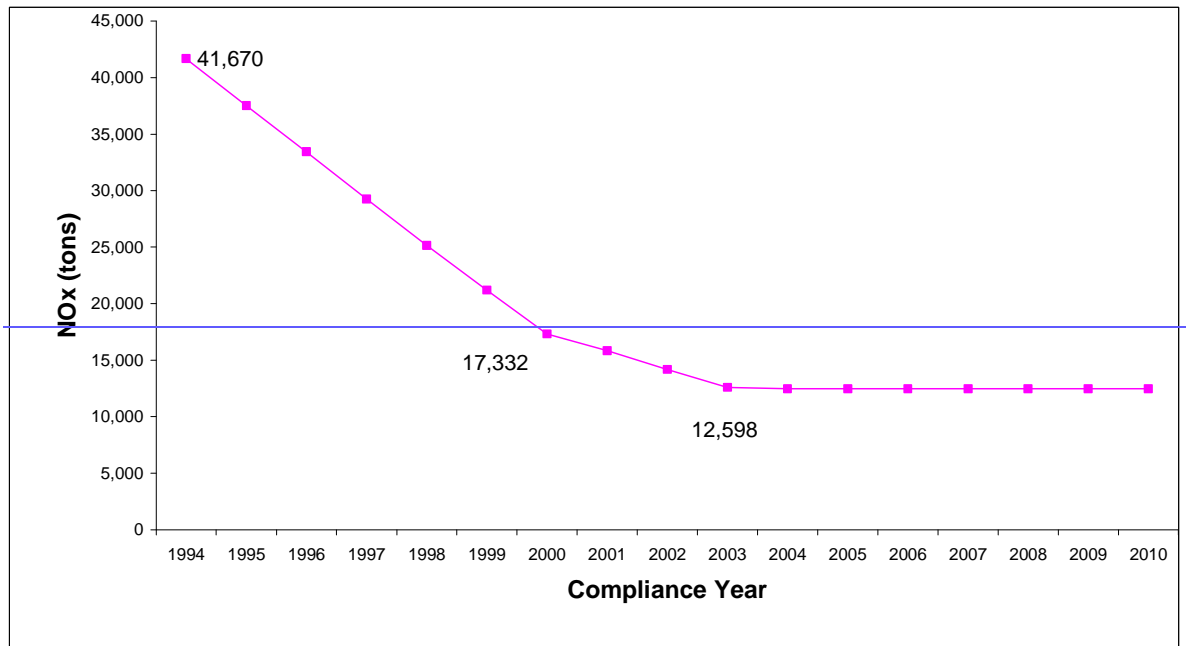
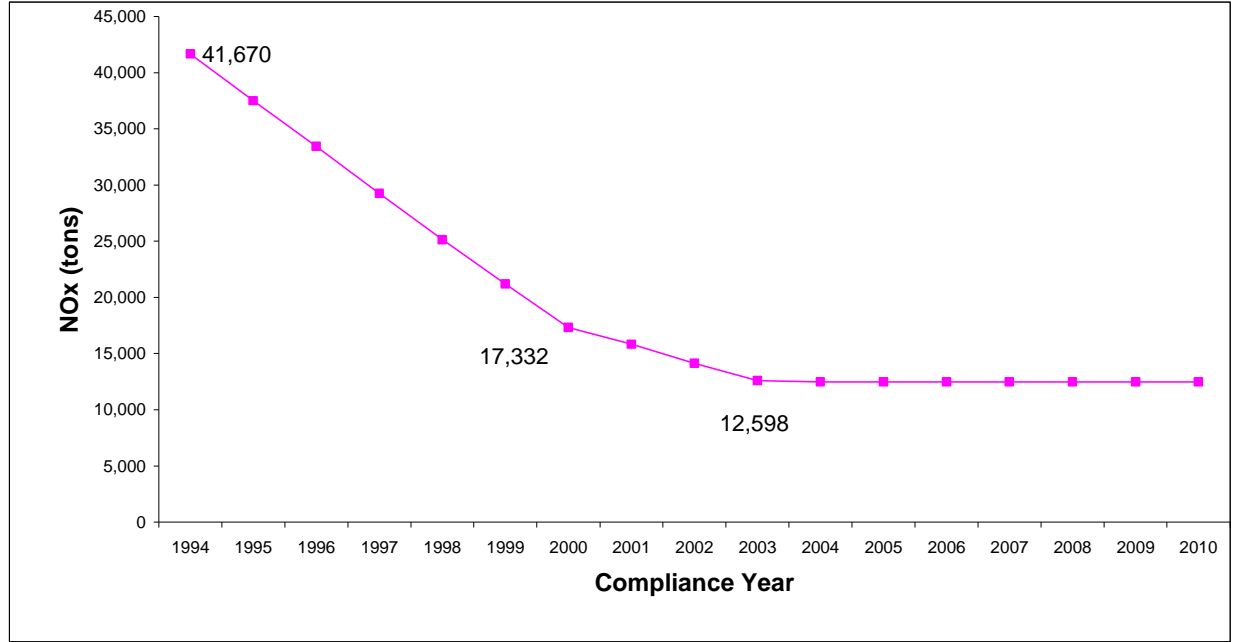
<u>Compliance Year</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>
<u>RTCs Issued in 2002</u>	<u>77.3</u>	<u>85.4</u>	<u>108.1</u>	<u>108.1</u>	<u>16.4</u>
<u>Activity Adjustments in 2003</u>		<u>-43.5</u>			
<u>Removal of vessels</u>	<u>-77.3</u>	<u>-41.9</u>	<u>-108.1</u>	<u>-108.1</u>	<u>-16.4</u>

Some of the Rule 1631 credits were converted to RTCs for Compliance Years 2001 through 2004 and were sold to RECLAIM facilities. Among the facilities that purchased these RTCs, four relied on these RTCs to reconcile emissions in Compliance Years 2001, 2002, and 2003. Since the RTCs are void and the time allowed to reconcile emissions in these compliance years has passed, these four facilities are in violation of Rule 2004 (d)(1), which requires a facility to hold adequate RTCs to reconcile with its emissions during a compliance year. As a result, notices of violation are being issued to these facilities for violating Rule 2004 (d)(1). An amount of RTCs equal to the exceedance, per facility, has been subtracted from their allocations for the next compliance year pursuant to Regulation XX. In addition, the total amount of RTCs removed from the program represents less than 1 percent of all RTCs used per year. Even with this development, compliance rates under RECLAIM exceed that of comparable command and control rules. New administrative procedures have been put in place to ensure there are no further difficulties between the Rule 2202 and Rule 1631 designations for credit generation.

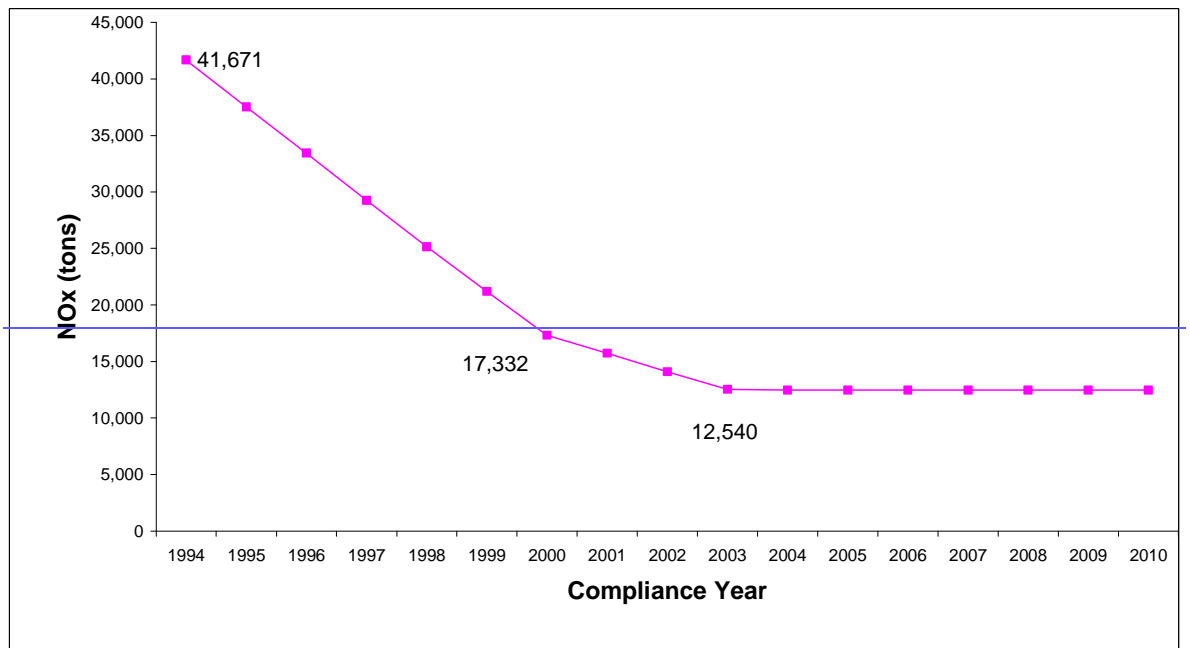
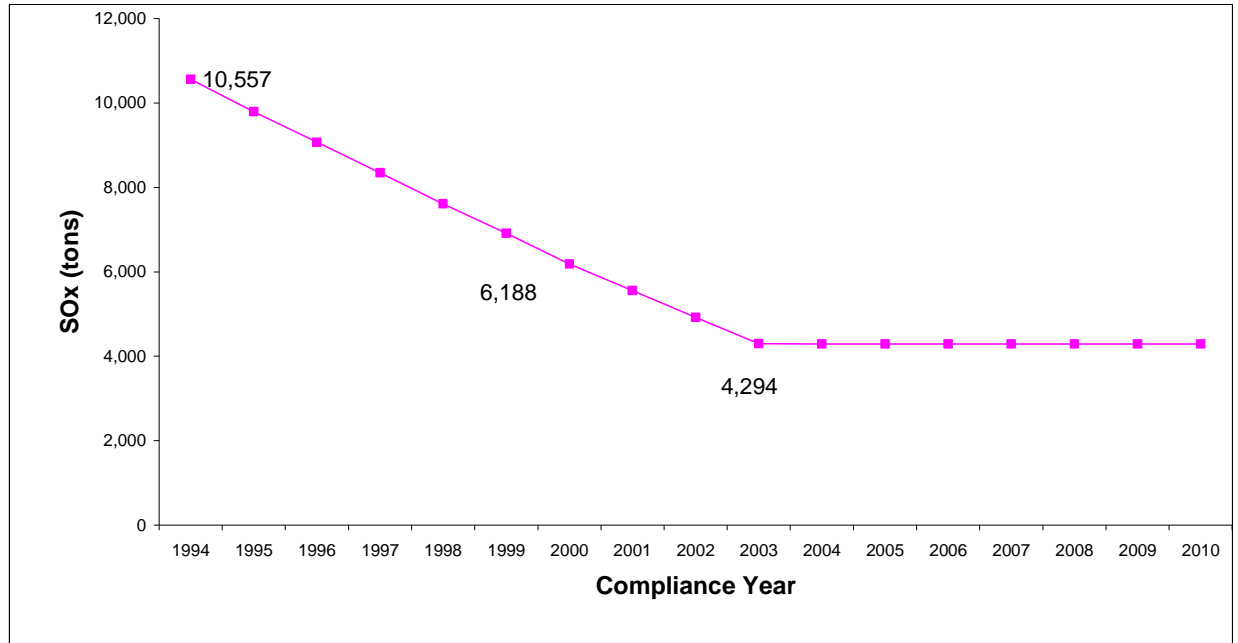
In addition to Rule 1631, there were two requests to convert NOx MSERCs that were previously issued under Rule 1620. In Calendar Year 2003, 4.3 tons of Compliance Year 2002 NOx RTCs and 0.2 ton of Compliance Year 2003 NOx RTCs were converted.

The changes to RTCs described in the above sections resulted in a net change in RTC supply for Compliance Year 2002 of 52.7 tons of NOx RTCs which is relatively small when compared to the total supply of 14,076 tons of NOx RTCs for the same compliance year. On the other hand, the change in SOx RTCs for Compliance Year 2002 was only a decrease of 0.3 tons. Figures 2-1 and 2-2 illustrate respectively the total NOx and SOx RTC supplies at the end of 2003.

Figure 2-1
NOx RTC Supply (tons/year)



**Figure 2-2
SOx RTC Supply (tons/year)**

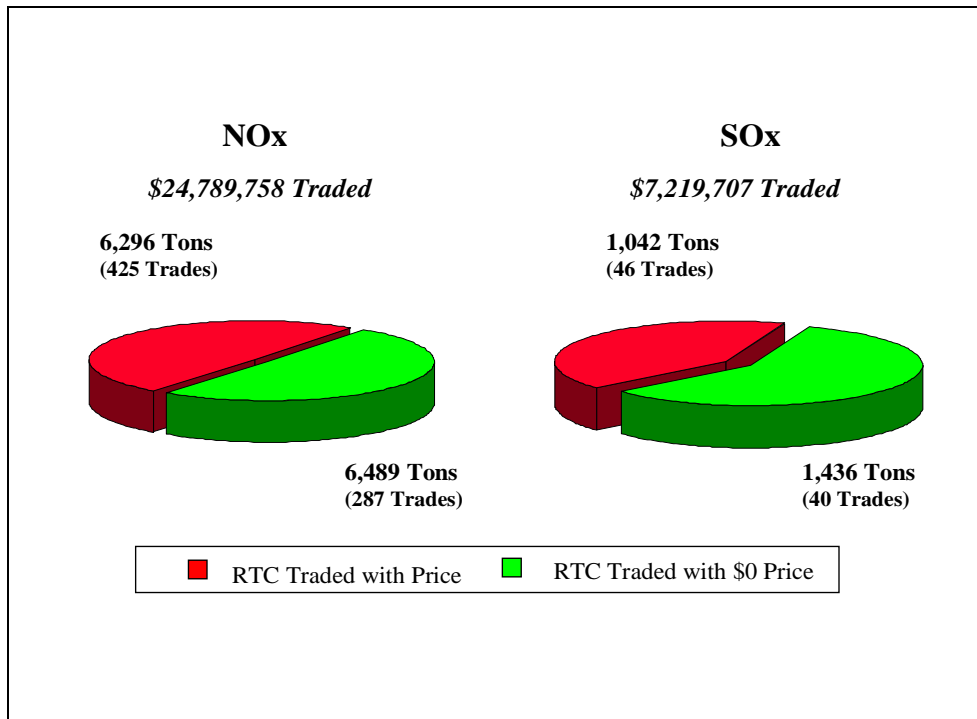


RTC Trading Activity

The RTC trading market continued to be active in Calendar Year 2003. There were 798 trades totaling over 15,262 tons of NOx and SOx RTCs during Calendar Year 2003. In terms of the number of registrations, the total of 798 trades is lower than Calendar Year 2002's number of registrations (1071 trades). The total amount of 15,262 tons of RTCs traded is also lower than the 31,823 tons of RTCs traded in 2002. These trades included both RTCs

traded with prices and transfers with \$0 price. Since the inception of the RECLAIM program in 1994 and excluding trades without price, 92,338 tons of NOx RTCs and 27,582 tons of SOx RTCs have been traded with a total price of more than \$682 million (\$609 million for NOx and \$73 million for SOx RTCs). Figure 2-3 summarizes trading activity in Calendar Year 2003 by pollutants.

Figure 2-3
2002 Trading Activity



In Calendar Year 2003, 471 trades (425 for NOx and 46 for SOx) totaling 6,296 tons of NOx and 1,042 tons of SOx occurred with prices. These trades included current and future year RTCs. The total value of the RTCs traded with prices for Calendar Year 2003 was slightly over \$32 millions. Most of the trades with prices were conducted through brokers.

Trades with \$0 price generally occur when a seller transfers RTCs to a broker, when there is a transfer between brokers, between facilities under common ownership, or between facilities that have gone through change of ownership. These trades are indicators of available RTC supply, market dynamics, and credit management strategies.

In addition to traditional trades of RTCs for price, swaps of RTCs occurred between facilities. There were trades of current-year NOx RTCs for future-year NOx RTCs. Some facilities traded RTCs of different pollutants where one facility transferred NOx RTCs to a second facility. In return, the second facility transferred SOx RTCs to the first facility. There were also trades that involved a combination of RTCs and cash payment. Facilities swapping RTCs were required to report the equivalent price of RTCs under individual trades. Figures 2-4 and 2-5 present historical trades in tons of NOx and SOx RTCs traded,

respectively. These figures show trades with and without prices in Calendar Year 2003 and compare them with trading activity in prior years.

Figure 2-4
Total Tons of NOx Traded

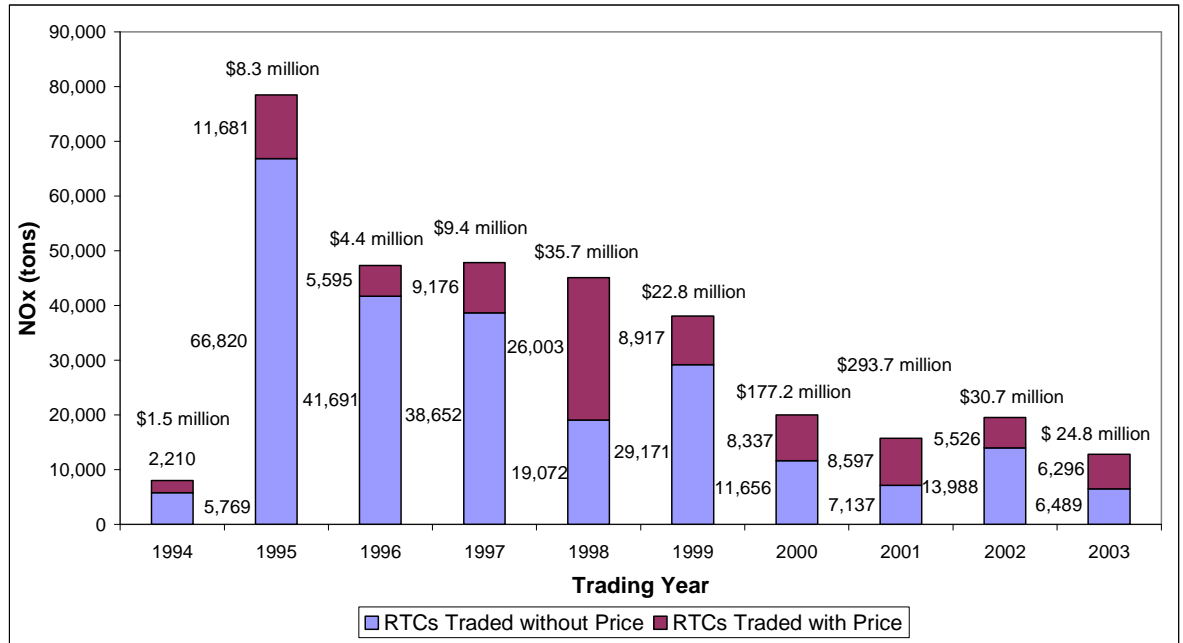
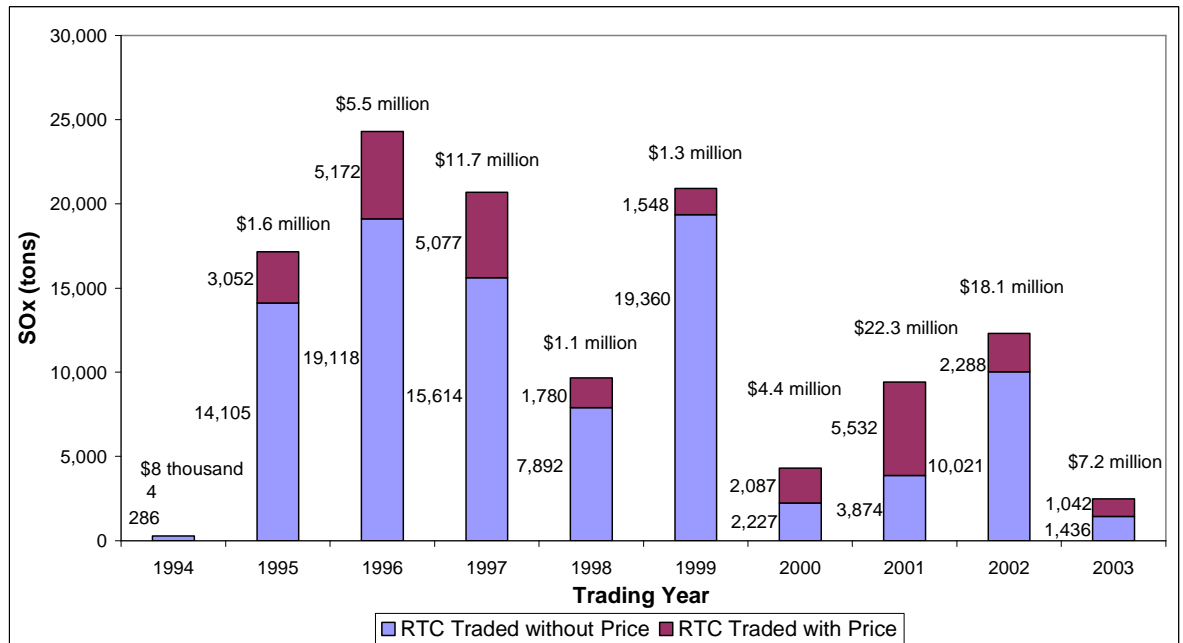


Figure 2-5
Total Tons of SOx Traded



Comparison of Calendar Year 2003 Trading Activity to Previous Years

The total number of trades registered with AQMD in Calendar Year 2003 was more than the annual activities for Calendar Years 1994 through 1999, but less than the record setting Calendar Year 2001. In Calendar Year 2003, total quantity of NOx RTC traded with price increased compared to Calendar Year 2002. However, only \$24.8 millions in value were traded in 2003. When compared to the total value \$30.7 millions during Calendar Year 2002, this reflects the general decline in NOx RTC prices.

The total quantity of SOx RTCs traded in Calendar Year 2003 decreased compared to Calendar Year 2002. In Calendar Year 2003, just over \$7.2 million of SOx RTCs were traded, whereas, over \$18 million of SOx RTCs were traded in Calendar Year 2002. There were only nine trades involving SOx RTCs for Compliance Years 2004 and after. Of these, only two were for compliance years 2006 and future year.

RTC Prices

Prices for NOx RTCs increased dramatically in Calendar Year 2000 in response to a high demand for NOx RTCs from the power producing sector to offset the increased emissions due to the California energy crisis. The high NOx RTC prices continued during the first half of Calendar Year 2001 and started to decline in the second half of the calendar year after the rule amendments in May 2001. In Calendar Year 2003 NOx RTC prices continued its declining trend. Prices for near-term NOx RTCs returned to the pre-2000 price level (see Figure 2-6). NOx RTCs that expired in June 2003 were trading below \$1 per pound during the reconciliation period that followed the end of the 2002 Compliance Year.

Annual average prices for Compliance Years 2002 and 2003 SOx RTC decreased from last year prices as illustrated in Figure 2-7. Prices for Compliance Years 2004 and beyond averaged at about \$10,000 per ton. These were the highest annual average prices in history of SOx prices. However, these average prices were derived from relatively small number of trades. There were only eight trades involving 2004 SOx RTCs, four trades involving 2005 SOx RTCs and two trades involving 2006 and later SOx RTCs. The low trade activities in these SOx RTCs may have affected the average prices.

As in previous years, post-Compliance Year 2010 RTCs are traded as if they were collectively tied to the Compliance Year 2010 RTCs; all trades involving post-Compliance Year 2010 RTCs have been executed in blocks extending infinitely forward in time with a single aggregate price. Figures 2-6 and 2-7 show annual average prices for NOx and SOx RTCs respectively traded each year since 1994. As shown in these figures, all annual average prices for NOx and SOx RTCs during 2003 were below the \$15,000 per ton level set under Rule 2015.

Figure 2-6
Yearly Average Prices for NOx RTCs

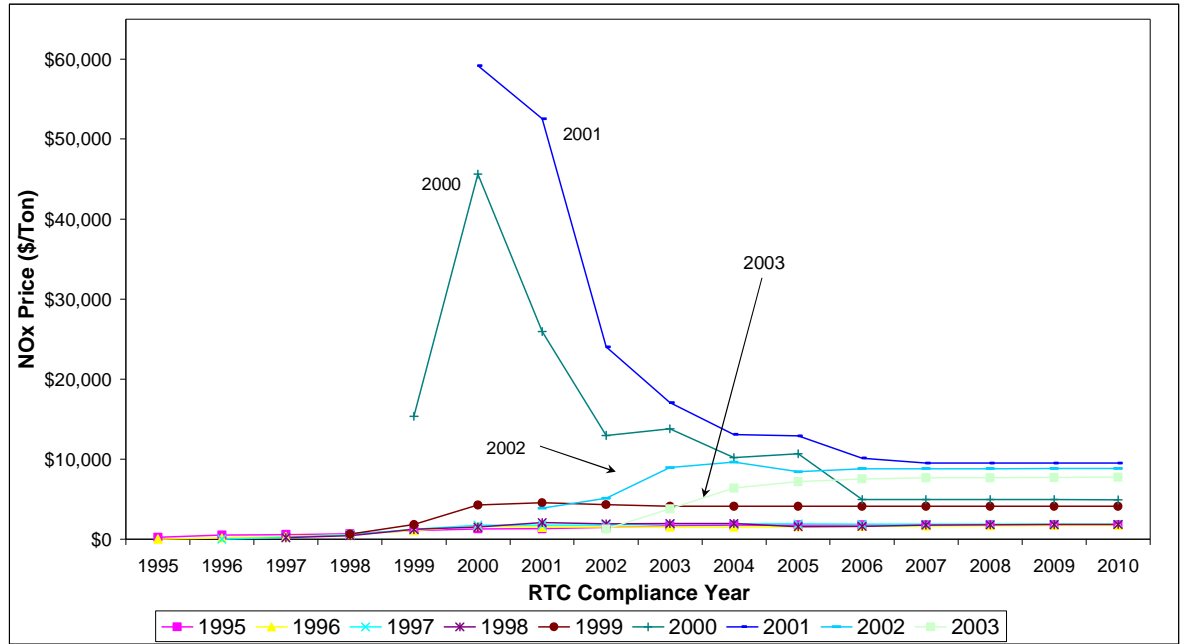
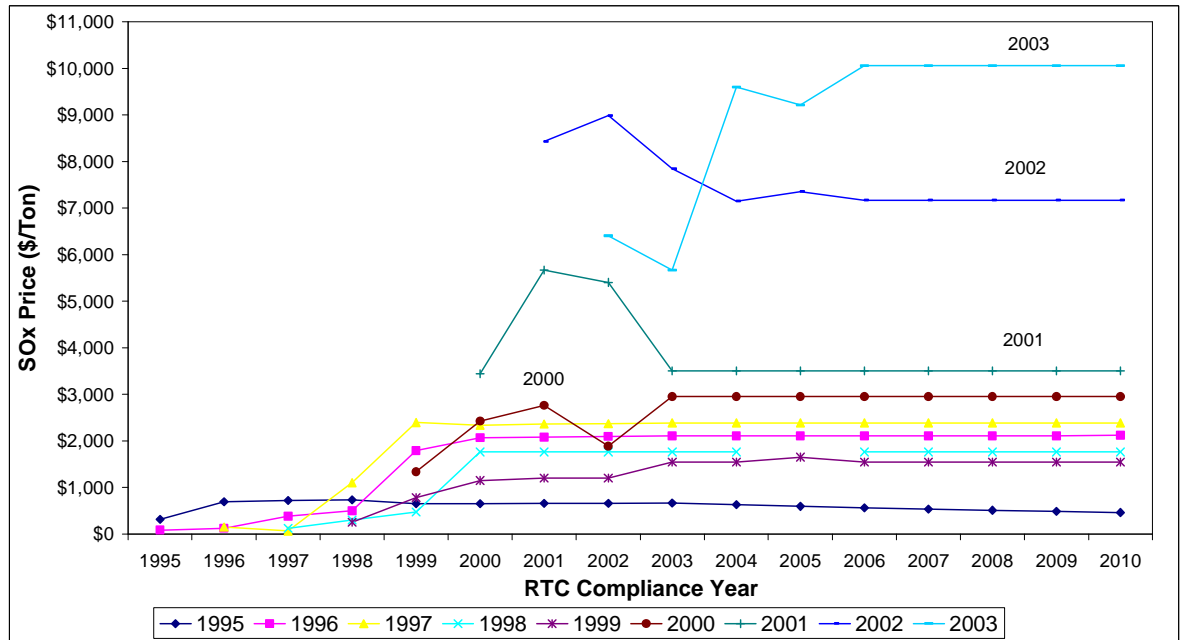


Figure 2-7
Yearly Average Prices for SOx RTCs



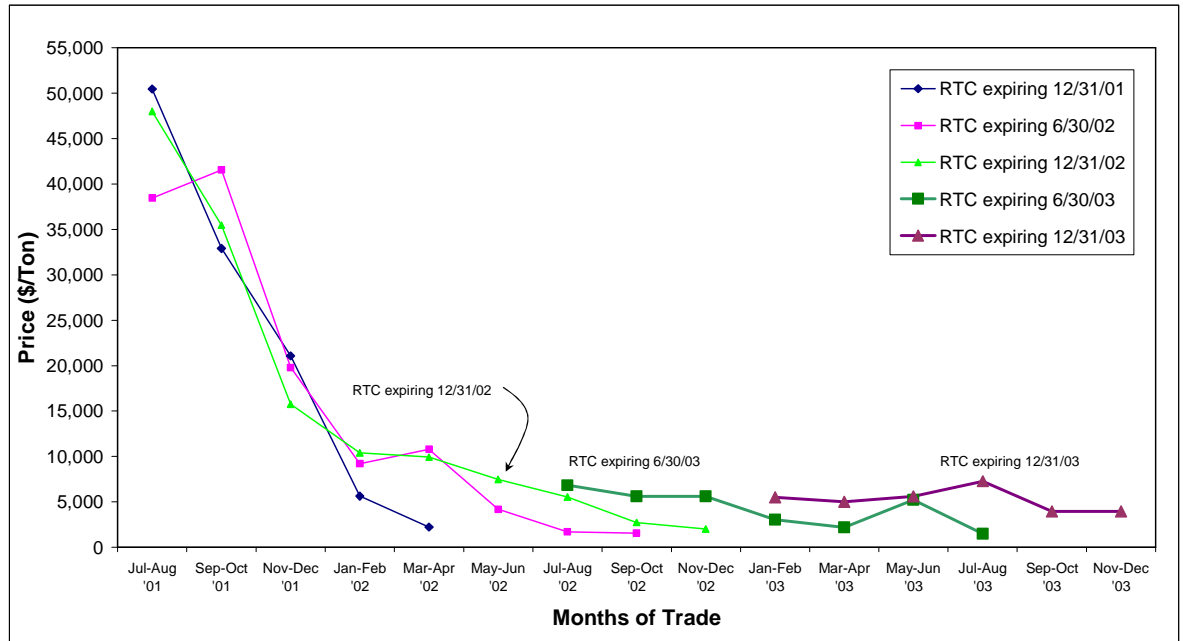
The effects of the May 2001 Rule Amendment on RTC Prices

In response to the price spike in 2000, the AQMD started a review of the program in the second half of 2000. The cause of the price spike was

summarized in the White Paper on Stabilization of NOx Prices which was presented to the Governing Board for approval on January 11, 2001. RECLAIM rules were amended in May 2001 to adopt recommendations presented in the White Paper. The actions adopted by the Governing Board included removing power producing facilities from the RECLAIM market, requiring power producing facilities to install Best Available Retrofit Control Technologies (BARCT) on all electric generating units, setting up emission reduction reserves for power producing facilities that choose to participate, requiring facilities with more than 50 tons of NOx emissions to submit compliance plans to specify steps to achieve compliance with their allocations through Compliance Year 2005, and facilities with emissions between 25 and 50 tons NOx emissions to submit forecast reports through Compliance Year 2005. In addition, the May 2001 amendments also added new requirements to trade reporting so that market trading information can be provided to RECLAIM participants in a timely manner. RTC trades must be reported to the AQMD within five days of trade agreement. Additional information regarding RTC ownership was also required. In addition, future trades and contingent trades were also required to be reported to the AQMD within five days of reaching an agreement.

These concerted efforts were aimed to reduce demand and increase supply of NOx RTCs and also to make the trading market more efficient. After the rule adoption in May 2001, NOx RTC prices have been on a steady decline. Figure 2-8 illustrates this downward trend on a monthly basis starting from June 2001 for NOx RTCs that were near expiration. In Calendar Year 2003, the price trend for NOx RTCs returned to the pattern seen prior to the energy crisis in 2000, in that prices for RTCs started out high at the beginning of the compliance year and gradually declined over the course of the year. NOx RTCs expiring in 2003 were traded at prices less than \$1 per pound in the 60 day-period following their expiration date during which facilities are allowed to trade to reconcile their emissions.

Figure 2-8
Changes in Monthly Average Prices for NOx RTCs since July 2001



The added trade reporting requirements resulted in providing market participants with more timely trade information. When received, information regarding trades is entered into the AQMD databases and posted daily on the AQMD Internet web site at http://www.aqmd.gov/reclaim/rtc_main.html. In addition to trade data, a list of authorized RTC trade representatives registered with the AQMD is provided on this web page. This list was requested by RTC trade brokers to help in identifying the proper signatories for each RECLAIM participant. This new information source is being frequently accessed by RECLAIM participants and trade brokers.

CHAPTER 3 EMISSION REDUCTIONS

Summary

Aggregate NOx and SOx emissions from RECLAIM facilities continued to decrease from the inception of RECLAIM through Compliance Year 2002. RECLAIM is back on track to achieving the reduction goals after the effect of the California 2000 energy crisis subsided. Compliance Year 2002 aggregate NOx emissions from all RECLAIM facilities were below allocations by more than 20 percent. On the other hand, aggregate SOx emissions were under allocations by slightly more than 10 percent.

In response to the energy crisis' effects on the RECLAIM NOx market, the AQMD Governing Board adopted rule amendments in May 2001 to stabilize RTC prices. The amendments included provisions to curtail RTC demand as well as increasing RTC supply. Rule 2009 requires power producing facilities to install Best Available Retrofit Control Technologies and to file compliance plans to project emissions through Compliance Year 2005. Rule 2009.1 requires compliance plans or forecast reports from certain RECLAIM facilities to show how they would comply with annual allocations through Compliance Year 2005. In Compliance Year 2002 actual emissions from facilities subject to these two rules were lower than those projected under compliance plans and forecast reports. The Governing Board also adopted Rule 2020 – RECLAIM Reserve, which established the RECLAIM Air Quality Investment Program (AQIP), the Emissions Mitigation Fee Program, and the State Emission Reduction Credit Bank. These three programs were set up to provide eligible facilities with emission reduction credits. In Compliance Year 2002, no facility requested emission reduction from any of these three programs.

Background

One major objective of the RECLAIM program audit is to assess whether RECLAIM is achieving its targeted emission reductions. The annual allocations given to RECLAIM facilities reflect the required emission reductions mirroring the reductions anticipated under the command-and-control rules. As such, RECLAIM is designed to achieve by 2003 the same level of emissions reductions as would have been achieved in aggregate by implementing the subsumed rules and command-and-control measures. From 2003 on, the level of allocation remains the same for each year thereafter.

In 2000, power producing facilities increased their power generation in response to the California energy crisis. The corresponding increases in NOx emissions caused a sudden surge in the NOx RTC prices that adversely impacted other RECLAIM participants and the overall objective of the program. To correct this problem, the Governing Board amended Regulation XX to bifurcate power producing facilities from the rest of the RECLAIM program participants to stabilize the RTC prices. Power producing facilities are still subject to the requirements of the RECLAIM Program except that they cannot purchase

additional RTCs to offset their emissions. Instead these facilities may participate, if needed, in the Emission Mitigation Fee Program. The Board also adopted Rule 2020 – RECLAIM Reserve, to provide a reserve of NOx emission reductions that can be used for the RECLAIM Air Quality Investment Program (RECLAIM AQIP), Emission Mitigation Fee Program, or natural gas turbine power plant peaking sources. A program review as required under Rule 2020 (k) – Program Review, is included in this chapter.

Emissions Audit Process

AQMD has conducted annual audits on the data submitted by RECLAIM facilities for the past nine compliance years to ensure the integrity and reliability of the data. The process begins when each facility submits a comprehensive Annual Permit Emissions Program (APEP) report within sixty days of the end of each compliance year. AQMD staff then reviews the APEP reports to assess the accuracy of reported emissions. This process includes field inspections to check the equipment, monitoring devices, and operational records. It also involves verification of emissions data reported during the course of the year (daily, monthly, quarterly, and annually).

These audits have revealed that some facilities have made errors in quantifying their emissions, such as arithmetic errors, use of inappropriate emission factors, or inappropriate use of missing data substitution. Consequently, the reported emissions in the APEP reports for those facilities were adjusted to correct the errors. Whenever AQMD staff found discrepancies, they were discussed with the facility operators. In cases where staff feels that the facility may have additional input, facilities were provided an opportunity to review the changes and to present additional data or arguments in support of the data in their APEP reports. This kind of rigorous audit process reinforces RECLAIM's emissions monitoring and reporting requirements and enhances the validity and reliability of the reported emissions data.

Emission Trends and Analysis

RECLAIM achieves its emission reduction goals on an aggregate basis by ensuring that aggregate annual emissions are below allocations. Allocations are based on projected emission levels in 2003 if the rules and control measures identified in the AQMP that RECLAIM subsumed were implemented.

Table 3-1 summarizes emissions from RECLAIM facilities for each of the first nine compliance years. Emissions data for Compliance Year 2002 contained in this report have been compiled based on the available audited emissions combined with emissions extracted from the APEP or QCER reports for those facilities with audits still under review.

**Table 3-1
Annual NOx Emissions¹ for Compliance Years 1994 through 2002**

	1994	1995	1996	1997	1998	1999	2000	2001	2002
Annual Emission (ton)	25,314	25,764	24,796	21,786	20,982	20,775	20,491	15,721	10,943
% Change from 1994	0 %	+1.8 %	-2.0 %	-13.9 %	-17.1 %	-17.9 %	-19.1 %	-37.9 %	-56.8 %
Total RTCs ² (ton)	40,127	36,031	32,017	27,919	24,678	21,013	17,197	15,693	14,105 <u>4,044</u>
RTC Left Over (ton)	14,813	10,267	7,221	6,133	3,696	238	-3,294	-28	3,162 <u>101</u>
% Excess RTCs	37 %	28 %	23 %	22 %	15 %	1.1 %	-19 %	-0.18 %	22 %

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

Table 3-1 shows that there were excess RTCs left over after accounting for emissions for the first six compliance years (1994 through 1999). Therefore, RECLAIM facilities have not exceeded their NOx allocations on an aggregate basis for these initial years. However, beginning in Compliance Year 2000, power producing facilities operated at a production level significantly higher than their past operation levels due to California's energy crisis. The high production level continued into Compliance Year 2001 but has significantly declined through Compliance Year 2002. Table 3-2 illustrates the impact of NOx emissions from the power producing facilities on the overall RECLAIM NOx allocations in Compliance Year 2000. Table 3-3 categorizes Compliance Year 2002 emissions in the same fashion as Table 3-2 to illustrate emission trend between 2000 and 2002. Although power producing facilities were initially allocated 1,904 tons of NOx RTCs for Compliance Year 2002 based on their historical operations, these facilities only emitted 1,047 tons of NOx in Compliance Year 2002. This level was almost 5,800 tons (85%) less than the emissions from power producing facilities in Compliance Year 2000. The decrease in emission was due to the combination of a lower production level and the installation of NOx control equipment at power producing facilities. There was also appreciable reduction in emissions from non-power producing facilities even though to a lesser extent. Non-power producing facilities emitted only 9,896 tons of NOx which is approximately 3,800 tons (28%) less than their emissions in Compliance Year 2000. Thus, both sectors contributed to the decreases in emissions between Compliance Years 2000 and 2002.

**Table 3-2
Impact of NOx Emissions from Power Producing Facilities on the Overall NOx Allocations for Compliance Year 2000**

	Compliance Year 2000				
	Non-Power Producing Facilities (a)		Power Producing Facilities (b)		All Facilities (a) + (b)
	RTCs Held	Initial Allocations	RTCs Held	Initial Allocations	
Allocations (tons)	12,345	14,895	4,852	2,302	17,197
Emissions (tons)	13,703		6,788		20,491
Difference (Exceedance)	(1,358)	1192	(1,936)	(4,486)	(3,294)

**Table 3-3
NOx Emissions for Compliance Year 2002**

	Compliance Year 2002				
	Non-Power Producing Facilities (a)		Power Producing Facilities (b)		All Facilities (a) + (b)
	RTCs Held	Initial Allocations	RTCs Held	Initial Allocations	
Allocations (tons)	<u>12,450</u> 12,514	<u>12,140</u> 12,204	1,594	1,904	<u>14,044</u> 14,105
Emissions (tons)	9,896		1,047		10,943
Difference (Exceedance)	<u>2,554</u> 2,615	<u>2,244</u> 2,305	547	857	<u>3,101</u> 3,162

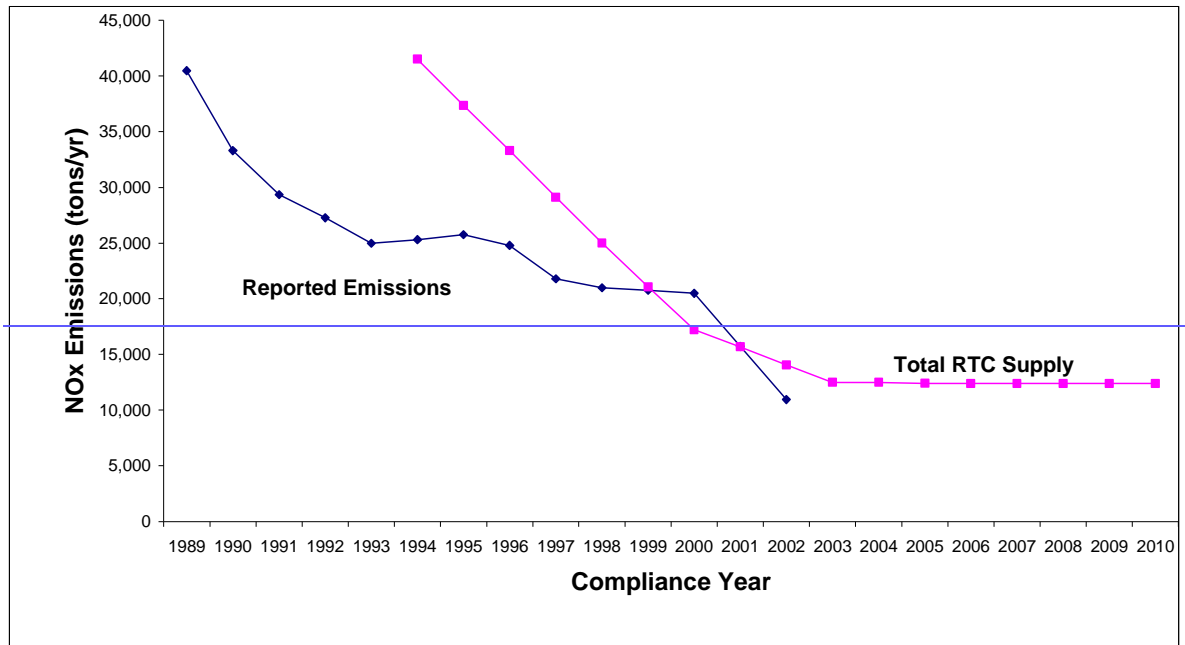
As shown in Table 3-4, RECLAIM facilities have not exceeded their SOx allocations on an aggregate basis during any of the nine completed compliance years (1994 through 2002). This indicates that RECLAIM met its programmatic SOx emission reduction goals and demonstrated equivalency in SOx emissions reduction compared to the traditional command-and-control measures. Table 3-4 shows that SOx emissions in Compliance Year 2002 continued the declining trend and decreased approximately 40 percent from 7,232 tons in 1994 to 4,374 tons in 2002. —Figures 3-1 and 3-2 illustrate the comparison of emissions and the RTC supply for NOx and SOx respectively.

**Table 3-4
Annual SOx Emissions¹ for Compliance Years 1994 through 2002**

	1994	1995	1996	1997	1998	1999	2000	2001	2002
Annual Emission (ton)	7,232	8,064	6,484	6,464	6,793	6,378	6,009	5,003	4,374
% Change from 1994	0%	+11.5%	-10.3%	-10.6%	-6.1 %	-11.8%	-16.9%	-30.8%	-39.5%
Total RTCs ² (ton)	10,365	9,612	8,894	8,169	7,577	6,911	6,185	5,557	4,924
RTC Left Over(ton)	3,133	1,548	2,410	1,705	784	533	176	554	550
% Excess RTCs	30 %	16%	27 %	21%	10 %	8 %	3 %	10 %	11 %

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**



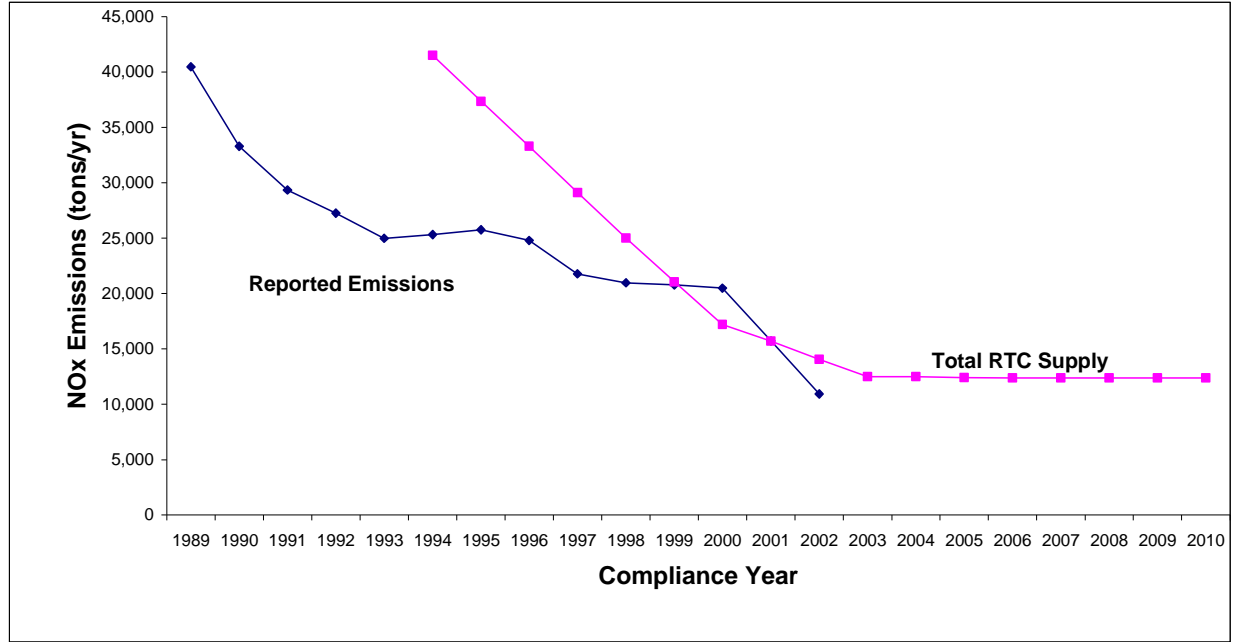
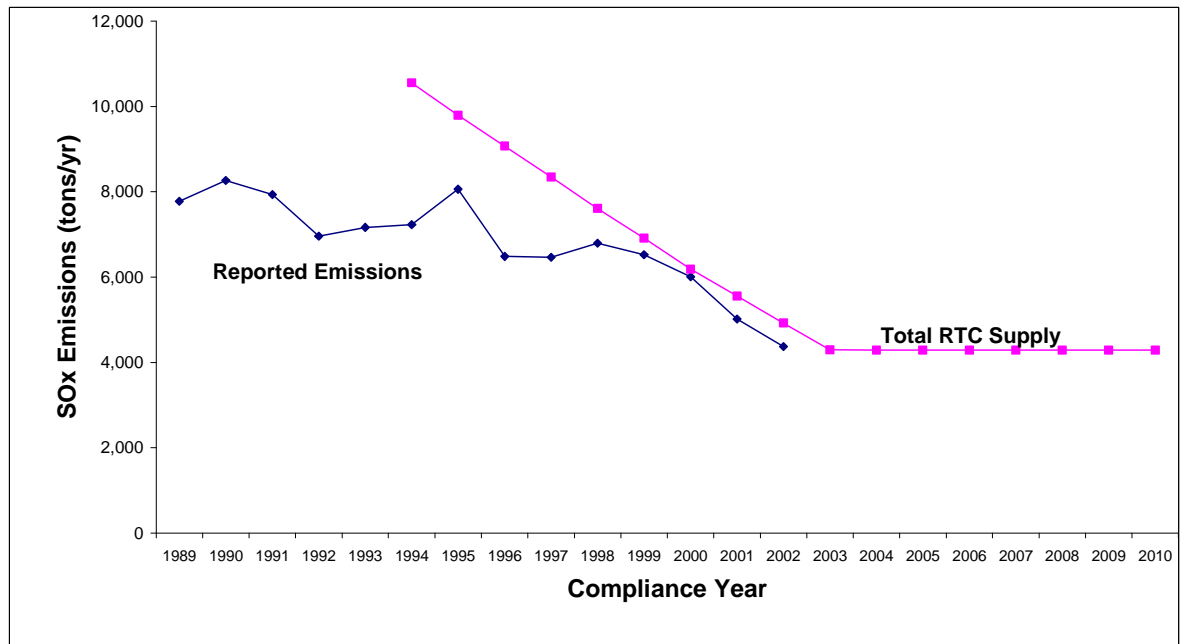


Figure 3-2
SOx Emissions and Available RTCs



Comparison to Command-and-Control Rules

As mentioned previously, RECLAIM subsumed a number of command-and-control rules¹, and sought to achieve equivalent reductions as these subsumed rules. RECLAIM facilities are exempt from the requirements of these rules as

¹See Tables 1 and 2 of Rule 2001

they are applicable to NOx or SOx emissions. No change was made to these subsumed rules during Compliance Year 2002.

Program Amendments

Rule 2015 – Backstop Provisions, requires that the AQMD review the program and implement necessary measures to amend the program whenever aggregate emissions exceed the allocations by five percent or more, or whenever the average price of RTCs exceed \$15,000 per ton. A program review was initiated in 2000 upon recognition of the RTC shortage and the surge of RTC prices. This effort culminated in the amendments of the RECLAIM rules on May 11, 2001, to implement the following key backstop measures:

- Isolating power producing facilities from the rest of the RECLAIM facilities;
- Requiring power producing facilities to submit compliance plans delineating schedule for installation of Best Available Retrofit Control Technology (BARCT) on power producing facilities by the end of 2003;
- Requiring facilities with 50 tons or more NOx emissions to submit compliance plans specifying approaches to complying with the facility allocations;
- Requiring facilities with NOx emissions between 25 and 50 tons to submit forecast reports demonstrating compliance with annual allocation for Compliance Years 2002 through 2005;
- Requiring timely registration of RTC trades to provide RECLAIM facilities with better price information;
- Creating an Emission Mitigation Fee Program to provide a means for power producing facilities to comply with annual allocations;
- Creating an Air Quality Investment Program (AQIP) to provide small RECLAIM facilities with needs for additional emission reduction credits;
- Creating a reserve of emission reductions to support the Emission Mitigation Fee Program and AQIP.

As shown in Chapter 2, annual average prices for NOx and SOx RTC prices were below the \$15,000 per ton level. In addition, Compliance Year 2002 aggregate NOx and SOx [emissions](#) were both below aggregate allocations as shown in Figures 3-1 and 3-2.

Compliance Plans and Forecast Reports

The May 2001 rule amendments included provisions for compliance plans to be submitted by power producing facilities (Rule 2009 – Compliance Plan for Power Producing Facilities) and by non-power producing facilities with NOx emissions of 50 tons or more in Compliance Year 1999 or any compliance year thereafter (Rule 2009.1(b) – Compliance Plans and Forecasts Reports for Non-Power Producing Facilities). The compliance plans were due by September 1, 2001. A report was presented to the Governing Board on November 9, 2001, presenting data collected under these compliance plans and the expected compliance with

allocations for power producing and non-power producing sectors through Compliance Year 2005. Forecast reports are also required under Rule 2009.1(e) – Forecast Reports, from non-power producing facilities with annual NOx emissions between 25 and 50 tons.

In Compliance Year 2001, there are 14 power producing facilities subject to Rule 2009, 42 facilities subject to the Rule 2009.1 compliance plans requirement, and 24 facilities subject to the Rule 2009.1 forecast reports requirement. Table 3-5 lists the Compliance Years 2000 and 2002 emissions from the three groups of facilities and compares them to the projected 2002 emissions as specified under the compliance plans or forecast reports and also to their RTC holdings. The table shows all three groups of facilities were able to achieve lower emissions than those projected for Compliance Year 2002. Aggregate emissions from the three groups were also below their individual aggregate RTC holdings that can be used to reconcile with the emissions. Based on Compliance Year 2002 emissions, three additional facilities exceeded the 50-ton annual NOx emission level and are required to file compliance plans under Rule 2009.

**Table 3-5
Comparison of 2002 Emissions for Facilities Subject to Compliance Plans Requirement**

Facility Category	Power Producing Facilities (tons)	Non-Power Producing Facilities with Annual Emissions ≥ 50 tons (tons)	Non-Power Producing Facilities with Annual Emissions between 25 and 50 tons (tons)
Compliance Year 2000 Reported Emissions	6,786	10,227	802
Compliance Year 2002 Reported Emissions	1,047	8,110	464
Projected Emissions for 2002	3,043	9,191	534
RTC Holdings Available for Compliance Year 2002 Emissions	1,765	8,736	637

Rule 2020 – RECLAIM Reserve

The May 2001 rule amendments also included mechanism to increase RTC supplies. Under Rule 2020, the Board established a Reserve of emission reduction for use in the RECLAIM Air Quality Investment Program (RECLAIM AQIP), the Emission Mitigation Fee Program, and natural gas turbine power plant peaking source. These programs are available only through Compliance Year 2004.

The RECLAIM AQIP is set up for structural buyers of RTCs who may obtain available emission reductions from the program by demonstrating their eligibility and paying a participation fee of \$7.50 per pound of NOx emissions. Structural buyers are RECLAIM facilities that are either new facilities built after October

1993 or facilities with annual emissions of less than six tons, and meet certain conditions contained under Rule 2000 (c)(74). The amendments have been effective in stabilizing NOx RTC prices, which have been significantly lower than the \$7.50 per pound level since the rules were amended. Therefore, no request for emission reductions was received under the RECLAIM AQIP.

The Emission Mitigation Fee Program is available only to power producing facilities that meet the requirements under Rule 2004(o) – Emission Mitigation Fee Program for Power Producing Facilities. A power producing facility may obtain emission reductions from the Emission Mitigation Fee Program provided it has not sold since January 11, 2001, any NOx RTCs valid for the compliance year that it is requesting emission reductions. An equivalent amount of NOx RTCs is deducted from the requesting facility’s future year allocations (up to two years from the compliance year requested) to protect the environment. When emission reductions are available under the Emission Mitigation Fee Program, the reductions are distributed to the participants on a prorated basis to replace the future allocations that were deducted up-front. Four power producing facilities requested emission reductions during Calendar Year 2001. No request was received since then.

The sources of emission reductions for the RECLAIM Reserve include emission reduction projects that meet the requirements of State Implementation Plan (SIP) approved pilot credit generation rules and the State Emission Reduction Credit Bank. Table 3-7 lists the pilot credit generation rules adopted by the Board and their SIP approval status.

**Table 3-7
Pilot Credit Generation Rules**

Rule Description	Approval Status (Approval Date)
Rule 1612.1 – Mobile Source Credit Generation Pilot Program	Approved (2/7/2002)
Rule 1631 - Pilot Credit Generation Program for Marine Vessels	Original Rule Approved (2/7/2002) 10/2002 Amendments (11/24/2003)
Rule 1632 - Pilot Credit Generation Program for Hotelling Operations	Approved (2/7/2002)
Rule 1633 – Pilot Credit Generation Program for Truck/Trailer Refrigeration Units	Approved (2/7/2002)
Rule 1634 – Pilot Credit Generation Program for Truck Stops	Pending EPA Review Approved (11/24/03)
Rule 2507 – Pilot Credit Generation Program for Agricultural Pumps	Approved (2/7/2002)

The AQMD Governing Board authorized funding of projects under the Emission Mitigation Fee Program and the RECLAIM AQIP for credits generation in

accordance with Rules 1612.1, 1631 and 2507. No project has been initiated under the other pilot credit generation programs. One project was approved by the Governing Board in Calendar Year 2003. This project consisted of replacing 37 Class 7/8 diesel-fueled trucks with compressed natural gas (CNG) fueled trucks and re-powering eight marine vessels. When fully implemented, this project is expected to generate a total of 61.4 tons per year of NOx emission reductions. At the same time, the Board also approved a change in a previously approved project under Rule 2507. The change was made to replace the existing project because the contractor was unable to fulfill the commitment. The new project is expected to generate approximately 60 tons of NOx reductions annually without any increase in project cost when compared to the existing project. Table 3-8 lists the details of [this the projects](#).

**Table 3-8
Emission Reduction Project Approved in Calendar Year 2003**

Contractor	Location	Description	Rule	Expected NOx Reductions (tons)
City of Ontario	Ontario	15 CNG Class 7/8 refuse haulers	1612.1	12
City of Long Beach	Long Beach	22 CNG Class 7/8 refuse haulers	1612.1	13
Seaboard Marine	District Waters	Re-power 3 marine vessels	1631	19
OceanAir	District Waters	Re-power 5 marine vessels	1631	18
Air Quality Management Services	Coachella Valley	Electrify 34 agricultural pumps	2507	60
			Total	122

During the first three quarters of Calendar Year 2003, 30 re-powered marine vessels were generating emission reduction credits. Based on the reported fuel consumption, these vessels generated an aggregate of 275.5 tons of emission reduction. However, the submitted records have not been fully audited and the emission reductions have not been credited under the Emission Mitigation Fee Program. If the submitted records are fully substantiated, there will be a total of 247.9 tons of emission reduction available for the Mitigation Fee Program after the rule required ten percent retirement. Table 3-9 lists the details of the emission reductions achieved during the first three quarters of Calendar Year 2003. At the time of preparing this report, data for the fourth quarter have not been compiled. The projects involving replacement of diesel fuel trucks and agricultural pumps were just started in 2003. Activity reports from these projects

have just recently been submitted. The amount of actual emission reductions has not been verified and no credit from these projects has been deposited in the RECLAIM Reserve.

Table 3-9 Emission Reductions Achieved Pursuant to Rule 1631 during First Three Quarters in Calendar Year 2003 ¹

Contractor	Number of Marine Vessels ²	Location of Reduction Project	Total NOx Reductions ³ (tons)	10% Retirement ⁴ (tons)	NOx RTCs Available (tons)
Ocean Air Environmental	22	District Waters	253.2	25.3	227.9
Seaboard Marine	8	District Waters	22.3	2.2	20.1
Total:			275.5	27.5	247.9

¹ This data was provided by Technology Advancement Office. As of date of preparation of this report, records for the fourth quarter activities have not been fully compiled.

² Number of marine vessels currently generating credits.

³ Records submitted to support these emission reductions are being audited. No emission reduction credits have been deposited into the Mitigation Fee Program. The level of emission reduction may change after completion of audits.

⁴ Ten percent of all credits generated are retired for the benefit of the environment pursuant to rule requirements.

PureEnergy Operating Services, LLC. operates two facilities (Drew Substation and Century Substation) in Colton. Each of these two facilities has eight natural gas-fired peaking turbines. These facilities opted into the NOx RECLAIM program in Compliance Year 2001. Both facilities qualified and applied to use the emissions reductions from the State Emission Reduction Credit Bank. Each facility was issued 58 tons (totaling 116 tons) per year of non-tradeable NOx RTCs for the period of May 2, 2001 through October 31, 2003. However, the facilities only emitted 18 tons of NOx emissions during Compliance Year 2002. As these are non-tradeable RTCs, they can only be used to offset emissions at the facilities. Therefore, for purposes of determining programmatic compliance, only Allocations equivalent to the emissions at these facilities were included. Aside from this use, there was no request for emission reduction from the reserve received in Calendar Year 2003.

The Governing Board authorized the Executive Officer to use funds collected from power producing facilities to purchase excess RTCs from RECLAIM market to offset allocation deductions due to participation in the AQMD Executive Order and the Emission Mitigation Fee Program and emissions excluded from the Governor Executive Order. Purchases were made over four separate periods during the year-end reconciliation periods. A total of 1,410 tons of excess RTCs were purchased. As a result, all deductions of future allocations as required under the AQMD Executive Order and the Emission Mitigation Fee Program from the participating facilities were fully replaced with the purchased RTCs.

Impact of Changing Universe

As discussed in Chapter 1, changes to the NOx RECLAIM universe during Compliance Year 2002 were: four new facilities opted into RECLAIM, two new facilities were created, one existing facility was excluded, and four facilities ceased operations. All of the changes involved NOx facilities. Staff conducted an analysis to evaluate the impact on emissions reductions due to such changes in the RECLAIM universe.

When a new facility is constructed and its NOx or SOx emissions exceed four tons per year, it is brought into the RECLAIM universe. Such facilities are required to obtain sufficient RTCs to offset their NOx or SOx emissions. These RTCs must be obtained through the trading market and are not issued to the facility (external offsets used, if any, to obtain permits are converted to RTCs). 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.

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. This has the opposite effect on the RTC market as does a new facility — in this case the overall demand for RTCs is reduced while the supply remains constant.

There is no net effect on the overall RECLAIM program when a facility splits into two. A facility is excluded from the Universe if it is determined that the circumstance that caused the inclusion changed or was found to be inaccurate. The RTCs that were issued to the facility for the future years are also withdrawn. This also decreases the supply of RTCs.

Some facilities that did not initially meet the inclusion criteria subsequently chose to enter the program. These facilities were issued RTC allocations based upon their operational history using the same methodology as was used for the facilities in the initial universe. 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. They also change the rules and requirements that apply to the affected facilities.

In short, new facilities and shutdown facilities change the demand for RTCs without changing the supply while exclusions and inclusions make corresponding changes to both the demand and the supply, thereby mitigating their own impact on the markets.

Table 3-10 summarizes NOx emissions from new facilities and facilities that were shut down, excluded from the program, or included into the program for the Compliance Year 2002. One of the shutdown facilities previously went through a partial change of ownership. At that time, all the allocations issued to the original facility were transferred to the five newly formed facilities. The facility shut down at this time did not retain any initially allocated RTCs. Therefore, the data presented in Table 3-10 does not include those allocations.

Table 3-10
NOx Emissions Impact from the Changes in Universe (Tons)

Category	2002 NOx Emissions (tons)	2002 NOx Initial Allocations (tons)	2003 NOx Initial Allocations (tons)
Shutdown Facilities ¹	3.3	104.2	92.5
Excluded Facilities ²	N/A	0.9	0.8
Included Facilities	80.2	101.8	90.3
RECLAIM Universe	10,943	14,105 14,044	12,598 12,482

¹ Included in these facilities that shut down were three facilities that had previously undergone partial change of ownership in Compliance Year 1998. At that time, all the allocations were transferred to the new operator. Therefore, these figures do not include any of those allocations.

² Only one facility was excluded from the RECLAIM program during Compliance Year 2002. This facility did not submit RECLAIM emissions reports following exclusion.

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 the federal and state NSR requirements while providing flexibility to facilities in managing their operations and allowing new sources into the program. Review of NSR activity in Calendar Year 2002 shows that four existing facilities joined the NOx program, while no facility joined the SOx program. These four facilities reported no NSR activities during this period. However, 48 existing RECLAIM facilities reported NSR NOx emission increases due to expansion or modification. These data indicate that the RECLAIM program does not inhibit expansion and/or modification of sources at RECLAIM facilities.

RECLAIM is required to comply with federal NSR requirements for a 1.2-to-1 offset ratio for NOx and SOx emission increases on a programmatic basis. In Calendar Year 2002, RECLAIM provided an offset ratio of 209-to-1 for NOx on an aggregate basis, demonstrating federal equivalency. There were no NSR increases for RECLAIM SOx during Calendar Year 2002. Compliance with the federally required offset ratio also demonstrates compliance with the state requirement of no net emissions increases from new or modified sources. In addition, RECLAIM requires application of Best Available Control Technologies 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 and state NSR requirements to ensure that progress toward attainment of ambient air quality standards is not hampered. RECLAIM is designed to comply with federal and state NSR requirements without hindering facilities' ability to expand or modify their operations.

Sources in extreme non-attainment areas such as the South Coast Air Basin are required by Title 42, U.S.C. §7511a(e), to mitigate their emissions increases by providing emissions offsets at a 1.2-to-1 ratio or higher. Although RECLAIM allows a 1-to-1 offset ratio for emissions increases, RECLAIM complies with the federal offset requirement by demonstrating compliance with the 1.2-to-1 offset requirement on an aggregate basis. The annual reductions of aggregate allocations generate sufficient excess emissions reductions to mitigate the difference between the RECLAIM emissions offset ratio and the higher offset ratios required under federal law.

RECLAIM requires Best Available Control Technology (BACT) analysis for new or modified sources with emissions increases of RECLAIM pollutants. This provision demonstrates compliance with both the state and federal requirements regarding control technologies. In addition to offset and BACT requirements, RECLAIM subjects those RTC trades, which are conducted to mitigate emissions

increases over the sum of the facility's starting allocation and non-tradable credits, to trading zone restrictions to ensure net ambient air quality improvement within the sensitive zone, as established in Health and Safety Code §40410.5. This annual audit report assesses NSR permitting activities for the 2002 calendar year to verify that programmatic compliance of RECLAIM with state and federal NSR requirements has been maintained.

NSR Activity

Evaluation of NSR data for Calendar Year 2002 indicates that RECLAIM facilities continue to successfully expand or modify their operations while complying with NSR requirements. Four existing facilities joined the NOx program, and no new or existing facilities joined the SOx program. There was no NOx NSR activity (i.e., increases) at the four facilities joined the RECLAIM this compliance year. An additional 48 existing RECLAIM facilities experienced a total of 148 tons of NOx NSR emission increases due to expansion or modification. Table 4-1 shows the NSR activity for RECLAIM facilities since the program inception in 1994.

**Table 4-1
RECLAIM Facilities with NSR Activity**

Facility Type	1994	1995	1996	1997	1998	1999	2000	2001	2002
Facilities New to RECLAIM	2	0	0	0	0	7	0	2	0
Existing RECLAIM Facilities with Expansions or Modifications	41	114	50	44	40	70	41	52	48

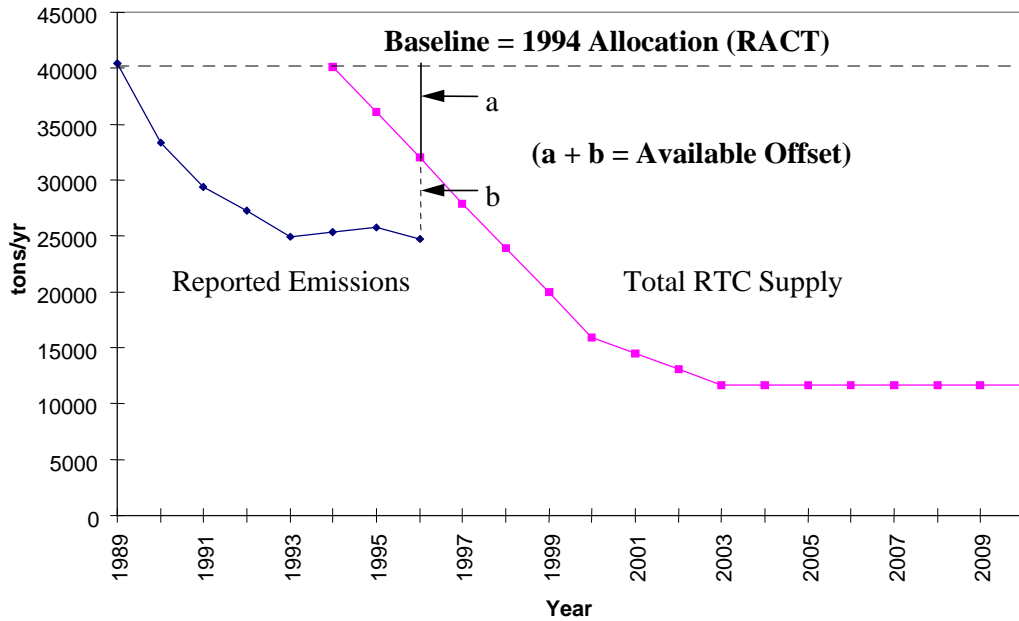
NSR Compliance Demonstration

RECLAIM is designed to comply with the federal NSR offset requirements. Meeting the NSR requirement (offset ratio of 1.2-to-1) also indicates compliance with the state requirement of no net emission increases from new or modified sources. Section 173 (c) of the federal Clean Air Act (Act) states that only emissions reductions beyond the requirements of the Act, such as 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, any emissions reductions beyond the initial allocations are available for NSR offset purposes.

The methodology for determining the available offsets for NSR emissions increases from RECLAIM facilities is illustrated in Figure 4-1. In the figure, the solid line indicated by the letter "a" represents the programmatic reductions beyond the 1994 allocation level (baseline) via declining allocations. The dotted line indicated by the letter "b" accounts for the unused RTCs, (allocations - reported emissions) which also qualify as available NSR offsets. Consequently,

the combined total of “a” and “b” is considered the total available offset for calculating the offset ratio to demonstrate compliance with federal NSR requirements.

Figure 4-1
Available Offsets for NSR Emissions Increase



To determine the NSR offset ratio, the available offset for each year is compared to the NSR emission increase for the same year according to the following methodology:

1. Offset Available = 1994 Initial Allocation (all available RTCs) - Annual Emission Reported (RTC used); “a” + “b” as shown in Figure 4-1
2. Offset Ratio = [1 + (Offset Available/NSR Emission Increase)] to 1 (One is added to “Offset Available/NSR Emission Increase” to reflect the fact that the NSR Emission Increase is included in reported emissions and, therefore, offset at a 1-to-1 ratio by the RTCs used to offset reported emissions)

Table 4-2 and Table 4-3 summarize the NSR emission increases and the offset ratios calculated based on the above methodology for each calendar year since the start of the RECLAIM program in 1994. As noted in the tables, the aggregate offset ratio for RECLAIM facilities is 209 to 1 for NOx in Calendar Year 2002.

Table 4-2
Emission Reductions and Offset Ratios for NOx

	1994	1995	1996	1997	1998	1999	2000	2001	2002
NSR Emission Increase (tons)	66	393	174	318	275	75	121	141	148
Offsets Available (tons)	11,028	14,253	18,341	15,331	19,753	20,648	21,008	25,752	30,728
Offset Ratio	168:1	37:1	106:1	49:1	73:1	276:1	175:1	184:1	209:1

Table 4-3
Emission Reductions and Offset Ratios for SOx

	1994	1995	1996	1997	1998	1999	2000	2001	2002
NSR Emission Increase (tons)	37	42	63	62	8	0	0	0	0
Offsets Available (tons)	2,242	2,299	3,901	3,881	3,698	4,113	4,548	5,555	5,555
Offset Ratio	62:1	56:1	63:1	64:1	451:1	N/A	N/A	N/A	N/A

RECLAIM continues to generate sufficient excess emissions reductions to provide greater than 1.2-to-1 offset ratios as required by federal law. This compliance with the federal offset requirements is built into the design of the RECLAIM program through the annual reductions of the allocations assigned to RECLAIM facilities.

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 above the facility's original (1994) allocation and Non-Tradable Credits. Furthermore, the RTC trading zone restrictions in Rule 2005 – New Source Review for RECLAIM, limit trades conducted to mitigate emission increases over the sum of the facility's starting allocation and non-tradable 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 Calendar Year 2002 shows that RECLAIM is in compliance with both state 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.

Rule 2004(q) 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 by forty (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 2002, no facility was found to be subject to this requirement.

CHAPTER 5 COMPLIANCE

Summary

During Compliance Year 2002, 347 RECLAIM facilities were in the RECLAIM program. Of these, 338 facilities (97 percent) complied with their NOx Allocations and 35 (95 percent) out of the 37 SOx facilities complied with their SOx Allocations. Preliminary results of the Compliance Year 2002 audits revealed that the overall RECLAIM NOx and SOx emission goals were met for this compliance year. However, not all facilities were determined to have complied with their individual allocations. NOx emissions in excess of individual facility NOx allocations totaled 55 tons and SOx emissions in excess of individual facility SOx allocations totaled 4 tons. The three main reasons for allocation exceedances were failure to purchase sufficient RTCs to reconcile with emissions, emission calculation errors, and failure to follow missing data procedures.

Background

RECLAIM facilities are provided with the flexibility to choose among compliance options, either trading RTCs or reducing emissions, to meet their annual allocations. However, this flexibility must be supported by standardized emission monitoring, reporting, and recordkeeping (MRR) requirements to ensure the reported emissions are real, quantifiable, and enforceable. In order to meet clean air goals, AQMD must ensure that the annual emissions targets for the RECLAIM facilities are being met. As a result, compliance is one of the most critical elements of the RECLAIM program.

The MRR requirements were designed to provide more accurate and up-to-date emission reports. Once facilities install and complete the 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 by the monitoring and reporting equipment. Failure to obtain quality assured data from the monitoring equipment or failure to file daily emissions reports by the time due results in emissions determined instead by a rule prescribed methodology known as Missing Data Procedure (MDP). Depending on the performance of the monitoring equipment (i.e., availability of quality assured data), the MDP uses a tiered approach to calculate emissions. As availability of quality assured data increases, the calculated emissions become more representative of the actual emissions.

Allocation Compliance

Requirements

At the beginning of the program, each RECLAIM facility received an annual allocation for each compliance year from 1994. Upon entry to the RECLAIM

program, each facility new to the program is also issued annual allocations according to the same methodology as those facilities that were initially included at the start of the program. With the knowledge of emission goals, RECLAIM facilities have the flexibility to decide how to manage their emissions in order to meet their allocations in the most cost-effective manner. Facilities may buy RTCs to increase their allocations or sell unneeded RTCs.

At the end of each quarter and each compliance year, each facility must hold sufficient RTCs in its Allocation account to cover its emissions for the compliance year. Facilities may buy or sell RTCs from each other at any time of the year in order to ensure that their emissions are covered. In addition, after 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. At the end of this reconciliation period, each facility is required to certify the emissions for the preceding compliance year by submitting its Annual Permit Emissions Program (APEP) Report.

Compliance Audit

AQMD has conducted annual audits on the data submitted by RECLAIM facilities to ensure the integrity and reliability of the data each compliance year since the beginning of the program in 1994. The audit process includes field inspections to check the equipment, monitoring devices, operational records, and checking emissions calculations to verify the emissions reported to AQMD's Central Station or submitted in Quarterly Certified Emissions Reports (QCERs) and APEP reports. These inspections revealed that some facilities made errors in quantifying their emissions, such as arithmetic errors, use of inappropriate emission factors, or inappropriate use of missing data substitution. Therefore, some of the reported emissions in the QCER or APEP reports had to be adjusted after completion of the audits.

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

Compliance Status

Based on Quarterly certification reports, APEP reports or completed AQMD audit results, enforcement action was taken on nine NOx facilities and two SOx facilities that did not reconcile their emissions with allocations. This corresponded to an overall compliance rate of 97 percent (338 out of 347 facilities) for NOx RECLAIM facilities and 95 percent (35 out of 37 facilities) for SOx RECLAIM facilities. The amount of excess emissions from these facilities totaled 55 tons of NOx and 4 tons of SOx. Appendix D lists facilities that were determined to have been unable to reconcile NOx and/or SOx emissions for Compliance Year 2002. As of the end of January 2004, audits of 104 facilities have been completed. Staff is finalizing the audits of emissions reported by the remaining facilities. As audits are completed, the list of facilities that exceeded their allocations is updated. The up-to-date list is available to the public at

District Headquarters by contacting RECLAIM Administration Team staff. Additional cases of allocation violation may be identified after audits are finalized.

Based on the certified quarterly or annual emissions reports submitted by the facility or completed annual RECLAIM compliance audits conducted by AQMD staff, the main reasons for why facilities had an allocation exceedance are summarized below. For some facilities, more than one of these factors contributed to the exceedances.

- **Failure to Reconcile**
Eight facilities did not have sufficient RTCs to cover their reported emissions yet did not purchase any RTCs to reconcile their emissions.
- **Emission Calculation Errors**
Three facilities exceeded their allocations due to emission calculation errors. Typical errors included using the wrong pressure and/or temperature correction factors and making arithmetic errors in the calculations.
- **Failure to Follow Missing Data Procedures**
RECLAIM rules require facilities to report emissions according to MDP when valid data are not obtained from the monitoring equipment or when daily emission reports for major sources are not submitted on time. MDP uses a conservative approach to estimate emissions. Three of the nine facilities that had an allocation exceedance failed to properly apply MDP to its process units because of lack of individual fuel consumption data. There was no MDP applied to major sources in this category.

Power Producing Facilities

As illustrated in Table 3-2, power producing facilities had aggregate compliance year NO_x emissions of 1,047 tons and held 1,287 tons of allocations. These emissions are considerably lower than the emissions associated with the heightened level of operations in 2000 and 2001. In addition, all power producing facilities met their individual allocations in Compliance Year 2002 based on their reported emissions or completed audits where available. The reduced emissions are a result of the fact that power producing facilities have been retrofitted with control equipment and a lower production level in Compliance Year 2002.

In May 2001, the AQMD Governing Board amended the RECLAIM rules to bifurcate power producing facilities from the rest of the RECLAIM facilities. In an effort to stabilize RTC prices, power producing facilities were prohibited to acquire NO_x RTCs from the rest of the RECLAIM facilities. Instead, power producing facilities are allowed to participate in the Mitigation Fee Program set up under Rule 2004(o). The details of the Mitigation Fee Program are discussed in Chapter 3 of this report. The AQMD Executive Order expired upon amendment of the RECLAIM rules in May 2001. In addition, the Governor of California issued an Executive Order in June 2001 to exclude emissions from being accounted under the annual allocations of a qualified power producing facility. No provision for deduction of future allocations was included in the Governor's Executive Order, which expired in October 2001.

No facility requested participation in these programs in Calendar Year 2003. Funds collected under these programs are invested to generate NOx emissions reductions. In addition, the AQMD Governing Board authorized the Executive Officer to purchase, with the collected funds excess NOx RTCs from the market. As of the end of August 2003, adequate RTCs have been purchased from the market to offset all deductions due to both AQMD Executive Order and Mitigation Fee Program. Therefore, all deductions from future year allocations were replaced.

Impact of Missing Data Procedure

MDP was designed to provide a method for determining emissions when an emission monitoring system fails to yield valid emissions. These occurrences may be caused by failure of the monitoring systems or the data acquisition and handling system (DAHS), which is required for major sources. In addition, major sources are required to use MDP for determining emissions whenever daily emissions reports are not submitted by the applicable deadline. Different sets of MDP are defined for different source classifications.

In addition to MDP for major sources, there are also MDP defined in the RECLAIM rules for large sources and process units. These procedures are applicable when a process monitoring device fails or when the facility operators fail to record process rates or fuel usage. However, the resulting emissions reports are reasonably representative of the actual emissions because average or maximum emissions from previous operating periods are allowed to be used.

According to Compliance Year 2002 APEP reports, 85 NOx facilities and 14 SOx facilities used MDP in reporting their annual emissions. In terms of mass emissions, only 3.4 percent of the total reported NOx emissions and 4.8 percent of the total reported SOx emissions in the APEP reports for Compliance Year 2002 were calculated using MDP. Table 5-1 summarizes the impact of MDP on annual emissions for the past eight years from the 1995 through 2002 compliance years (MDP did not apply during the 1994 compliance year).

**Table 5-1
MDP Impact on Annual Emissions**

Emittant	Percent of Reported Emissions Using Substituted Data ¹							
	1995	1996	1997	1998	1999	2000	2001	2002
NOx	23% (65)	20% (61)	18% (83)	7.3% (77)	9.6% (84)	6.5% (82)	8.1% (47)	3.4% (85)
SOx	40% (12)	16% (11)	16% (17)	13% (15)	20% (13)	10.7% (13)	11% (9)	4.8% (14)

1. Numbers in parenthesis represent the number of facilities that reported use of MDP in each compliance year.

As indicated in the table, the impact of MDP on reported emissions has significantly decreased since the beginning of the program. In most of the cases where MDP was used, the substituted data were representative of actual

emissions, as explained below. Based on past audits, the data seem to suggest that facilities have gained experience in the operation and maintenance of the monitoring equipment to achieve much higher quality emissions data over time.

Most of the issues associated with Continuous Emissions Monitoring Systems (CEMS) certifications were resolved prior to the 1999 compliance year. Very few facilities have had to submit emissions reports based on the worst case scenario under MDP that considerably overstates the actual emissions from major sources. This scenario is applicable to sources that failed to have their CEMS certified in a timely manner where required, and therefore, no valid CEMS data can be used in the substitution. In cases where prior CEMS data is available, MDP is applied in tiers depending on the duration of missing data periods and the availability of monitoring systems. As the duration of missing data periods gets shorter and the historic availability of monitoring systems gets higher, the substitute data yielded by MDP become more representative of actual emissions.

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 operation at the maximum rated capacity of their equipment, regardless of the actual operational level during the missing data periods. As a result, the calculation yielded substitute data that may have been much higher than the actual emissions. On the other hand, 85 facilities reported NO_x emissions using MDP in 2002. Even though this is higher than those in 1995 in terms of the number of facilities, Compliance Year 2002 is much lower than Compliance Year 1995 in terms of the percentage of emissions reported. Since most CEMS have been certified and had been reporting actual emissions by the beginning of the 1997 compliance year, 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 representative of the actual emissions.

It is important to note that the portions of annual emissions that are attributed to MDP include actual emissions from the sources as well as the possible overestimated emissions due to MDP bias. For example, it is estimated that 3.4 percent of NO_x annual emissions were reported using MDP in 2002. This does not mean that 3.4 percent of 2002 reported NO_x emissions were not real. A portion of the 3.4 percent may be overestimated emissions due to MDP bias, but 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 an example, refineries tend to operate at maximum capacity for 24 hours/day and seven days/week, barring major breakdowns or other unforeseeable circumstances. 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. On the other hand, MDP could significantly overestimate emissions from sources that operate intermittently. The significant portion of NO_x emissions data quantified using MDP (22 percent) and SO_x emissions data quantified using MDP (38 percent) were reported by refineries.

Emissions Monitoring

Overview

The accuracy of reported RECLAIM facility emissions—and thereby the enforceability of the RECLAIM program—is assured through a three-tiered hierarchy of MRR requirements. The MRR category into which equipment at a facility falls is based on what kind of equipment it is and on the level of emissions produced or potentially produced by the equipment. RECLAIM divides all NO_x sources into major sources, large sources, process units, and equipment exempt pursuant to Rule 219 - Equipment Not Requiring a Written Permit Pursuant to Regulation II. All SO_x sources are divided into major sources, process units, and equipment exempt 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 (NO _x and SO _x)	Large Sources (NO _x only)	Process Units and Rule 219 Equipment (NO _x and SO _x)
Monitoring Method	Continuous Emission Monitoring System (CEMS)	Fuel Meter or Continuous Process Monitoring System (CPMS)	Fuel Meter and/or Timer
Reporting Frequency	Daily	Monthly	Quarterly

Continuous Emission Monitoring Systems (CEMS)

Requirements

CEMS represent both the most accurate and the most reliable method for continuously monitoring all of the parameters necessary to directly determine mass emissions of NO_x and SO_x, as well as the most costly method. These attributes make CEMS the most appropriate method for the largest equipment in the RECLAIM universe, major sources, which are relatively few in number but represent a majority of the total emissions from all equipment.

Alternatives to CEMS, namely Alternative Continuous Emission Monitoring Systems (ACEMS), are allowed under the RECLAIM regulation. These are devices that do not directly monitor NO_x or SO_x mass emissions, instead, they correlate multiple process parameters to arrive at mass emissions. The requirements for ACEMS are that they 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 certified or provisionally approved their CEMS. The uncertified CEMS are for sources that recently became subject to major source reporting

requirements or 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. However, there are no longer any CEMS that have been in the process for a significant length of time and that are experiencing delays due to unusual circumstances.

Standing Working Group on RECLAIM CEMS Technical Issues (SWG)

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. The SWG meets quarterly to discuss progress and also bring up new issues. The SWG no longer meets regularly, but can be convened as necessary.

Semiannual and Annual Assessments of CEMS

RECLAIM facilities have been conducting the Relatively Accuracy Test Audit (RATA) of certified CEMS—using private sector testing laboratories approved under the AQMD Laboratory Approval Program (LAP)—at their prescribed intervals, either semiannually or annually depending on the most recent relative accuracy value (the sum of the average differences and the confidence coefficient). The interval is annual only when all relative accuracies are 7.5 percent or less.

To verify the quality of CEMS, this audit report compares the CEMS data to reference method data taken simultaneously by a LAP-approved source testing contractor. The relative accuracy performance requirements for the RATAs are ± 20 percent for pollutant concentration, ± 15 percent for stack flow rate, and ± 20 percent 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).

Table 5-3 summarizes passing rates for RATAs of certified CEMS, for NO_x and SO_x concentration, total sulfur in fuel gas concentrations, stack flow rate (in-stack monitors and F-factor based calculation), and NO_x and SO_x mass emissions through the 2002 calendar year.

Table 5-3
Passing Rates Based on Relative Accuracy Test Audits of Certified CEMS in 2002¹

Concentration						Stack Flow Rate				Mass Emissions			
NOx		SO ₂		Total Sulfur		In-Stack Monitor		F-Factor Based Calc.		NOx		SOx ²	
No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass
378	100	57	100	15	100	55	100	360	100	378	100	57	100

1. All passing rates calculated from data submitted before January 1, 2003 and may exclude data from the 4th quarter of calendar year 2002. About 5 percent of test audits are still submitted in paper form and are not included in this table.
2. Does not include SOx emissions calculated from total sulfur analyzers.

Table 5-4 summarizes the 2003 calendar year 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 calculation), and NOx and SOx mass emissions.

Table 5-4
Passing Rates Based on Relative Accuracy Test Audits of Certified CEMS in 2003¹

Concentration						Stack Flow Rate				Mass Emissions			
NOx		SO ₂		Total Sulfur		In-Stack Monitor		F-Factor Based Calc.		NOx		SOx ²	
No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass	No.	% Pass
349	100	62	100	21	100	48	100	357	100	349	100	62	100

1. All passing rates calculated from data submitted in electronic form before January 1, 2004 and may exclude some data from the 4th quarter of calendar year 2003. About 5 percent of test audits are still submitted in paper form and are not included in this table.
2. Does not include SOx emissions calculated from total sulfur analyzers.

As indicated in Tables 5-3 and 5-4, the passing rates for NOx/SO₂ 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 the ability to obtain valid total sulfur analyzer data. A greater familiarity with individual sources on the part of testing laboratories has also contributed to the high passing rates.

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 diskettes or by electronic mail using a standardized format. This system minimizes the amount of material the facility has to submit to the AQMD and also facilitates the RATA review process. With this added option, many facilities have employed the EDR system to report RATA results that, in turn, has helped the AQMD in expediting the review process.

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 tracking compliance. Under RECLAIM, facilities report their emissions electronically on a per device basis to the AQMD's Central Station computer as follows:

- Major sources must use a Remote Terminal Unit (RTU) to telecommunicate rule compliance 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.
- Rule compliance data for large sources and process units may be transmitted via RTU. Alternatively, RECLAIM facilities may compile the data manually for large sources and process units and transmit it to the Central Station via modem. The data may be transmitted directly from 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 within 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 the facility operators. Undetected errors will cause the facility operators to believe that the daily reports were submitted when they were not received by the AQMD. In order to provide operators a means to confirm the receipt of the reports, the AQMD set up an internet based application (known as Web Access to Electronic Reporting System (WATERS)) to view the electronic reports that were submitted to and received by the Central Station. This system helps to reduce the instances where MDP had to be used for late or missing daily reports in that the operators can re-submit the daily reports if there were communication errors.

Protocol Review

Even though it is only required 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 cost to the District and RECLAIM participants.

Since the 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 make interpretations to existing rule requirements to adequately

address the issues at hand, the protocols or rules have been amended. Since the last annual report, the only amendments to the RECLAIM rules were in December 2003. Rule 2007 – Trading Requirements was amended to basically lift the trading restrictions placed on power producers in the 2001 RECLAIM amendments. The changes to this rule will allow power producing facilities to use RTCs to reconcile emissions, and to sell or transfer RTCs below their original allocation after Compliance Year 2003. Additionally, Rule 2011 – Requirements For Monitoring, Reporting, and Recordkeeping For Oxides of Sulfur (SO_x) Emissions and Rule 2012 – Requirements For Monitoring, Reporting, and Recordkeeping For Oxides of Nitrogen (NO_x) Emissions were amended to clarify when the 90 day recertification period applies to modified major NO_x or SO_x sources. The amended rules make more specific that the 90-day period applies when a new CEMS, or a component of an existing CEMS (e.g., analyzer, RTU or DAS units) is added to an existing or modified major RECLAIM source..

AQMD will continue to work closely with RECLAIM participants to resolve their issues and concerns in the most timely and appropriate manner.

CHAPTER 6 JOB IMPACTS

Summary

Job impacts resulting from the RECLAIM program during Compliance Year 2002 continue to be negligible when compared to the overall employment in the Basin. Five facilities claimed the RECLAIM program caused a total of 112 job losses. Furthermore, four RECLAIM facilities shut down or went out of business during Compliance Year 2002. None of facilities attributed their ceasing operations in part to RECLAIM.

Background

AQMD staff has assessed RECLAIM's impacts on jobs in the regional economy each year of the program. The assessment for Compliance Year 2002 was performed by examining job data submitted by RECLAIM facilities as part of their Compliance Year 2002 Annual Permit Emissions Program (APEP) reports.

The Compliance Year 2002 APEP reports include the number of manufacturing, non-manufacturing, and sale of products jobs at each facility at the beginning of the compliance year. In addition to the numbers of jobs at the beginning of the compliance year, the APEP asks for the number of job increases and decreases (as opposed to the net change), which occurred during the compliance year, the extent to which any increase or decrease in the number of jobs was attributable to the RECLAIM program, and a brief explanation of the job increases or decreases attributed to RECLAIM.

Job Impacts

During Compliance Year 2002, a total of 122 facilities reported 10,118 overall job gains while a total of 152 facilities reported 16,518 overall job losses, which resulted in 6,400 net job losses for RECLAIM facilities in the Basin. This net job loss constituted about five percent of the overall RECLAIM facility employment (126,687 jobs). The information gathered from Compliance Year 2002 APEP forms regarding overall employment and RECLAIM job impacts are tabulated and summarized in Table 6-1.

Table 6-1 also shows that during Compliance Year 2002, 7,717 "Manufacturing" jobs and 156 "Sales of Products" jobs were lost (net). However, during the same period, 1,473 "Non-Manufacturing" jobs were added (net). Furthermore, four RECLAIM facilities shut down or went out of business during Compliance Year 2002. None of the facilities that shut down attributed their ceasing operations in part to RECLAIM.

Table 6-1
Job Impacts at RECLAIM Facilities During the 2001 Compliance Year

Description	Manufacture	Sales of Products	Non-Manufacture	Total
Initial Jobs	65,025	1,573	66,489	133,087
Overall Job Gain	4,365	70	5,683	10,118
Overall Job Loss	12,082	226	4,210	16,518
Final Jobs	57,308	1,417	67,962	126,687
Net Job Change	-7,717	-156	1,473	-6,400
Percent Job Change	-12%	-10%	2%	-4.81%
Facilities Reporting Job Gains	86	24	72	122
Facilities Reporting Job Losses	116	35	99	152

To properly assess RECLAIM's impact on jobs in the regional economy, AQMD staff has identified and reviewed the APEP forms from those facilities that reported job losses specifically due to the RECLAIM program. Five facilities indicated in their APEP forms that they experienced a total of 112 jobs lost due to RECLAIM. Out of the number of jobs lost, the majority of jobs (100) lost was reported by one company. When contacted for additional information, the company also attributed energy costs and increased worker's compensation costs as contributing factors to the job losses. The detailed information for facilities that reported job gains and losses in APEP forms for Compliance Year 2002 are summarized in Appendix E. The RECLAIM-related job losses are negligible when compared to the total number of jobs at RECLAIM facilities as listed in Table 6-1.

It should also be noted that the analysis of job impacts is confined to job gains and losses that occurred at RECLAIM facilities. It does not address jobs created or eliminated in the economy outside of RECLAIM facilities as a result of the RECLAIM program.

CHAPTER 7

AIR QUALITY AND PUBLIC HEALTH IMPACTS

Summary

The emissions reported by RECLAIM facilities from Compliance Years 1989 through 2002 are found to be in an overall downward trend. Quarterly NOx emissions remained relatively constant throughout Calendar Year 2002 except for a slight increase in the third quarter. This emissions trend is more apparent if emissions from power producing facilities were isolated. The trend of quarterly SOx emissions was the reverse of the quarterly NOx emissions trend. When quarterly NOx emissions increased, quarterly SOx emissions decreased, and vice versa. Furthermore, analysis of the geographical distribution of emissions during the first nine years of the program on a quarterly basis does not show any distinct shift in the geographical distribution of emissions.

The California Clean Air Act requires a 50 percent reduction in population exposure to ozone 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 attainment with the December 2000 target prior to 1994 and Riverside and San Bernardino Counties achieved attainment in 1996.

Air toxic health risk is primarily caused by emissions of VOCs and metals, rather than NOx or SOx emissions. Additionally, RECLAIM facilities are subject to the same air toxic regulations as other sources in the Basin. Therefore, it can be concluded that there is no toxic impact due to the implementation of the RECLAIM program beyond what would have occurred pursuant to the rules and control measures RECLAIM subsumed.

Background

RECLAIM is designed to achieve the same, or a 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 maintains 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. The analysis of emissions from RECLAIM sources indicates that this did not occur. Figures 7-1 and 7-2 show NOx and SOx emissions for RECLAIM sources for Compliance Years 1989 through 2002.

Figure 7-1
NOx Emission Trend for RECLAIM Sources

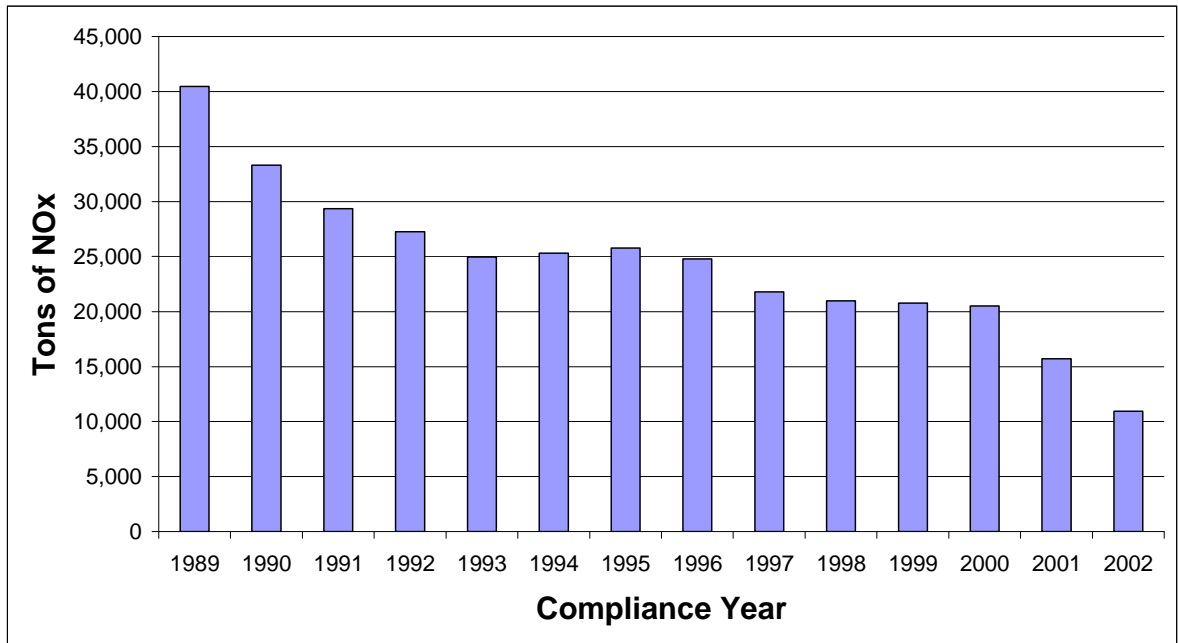
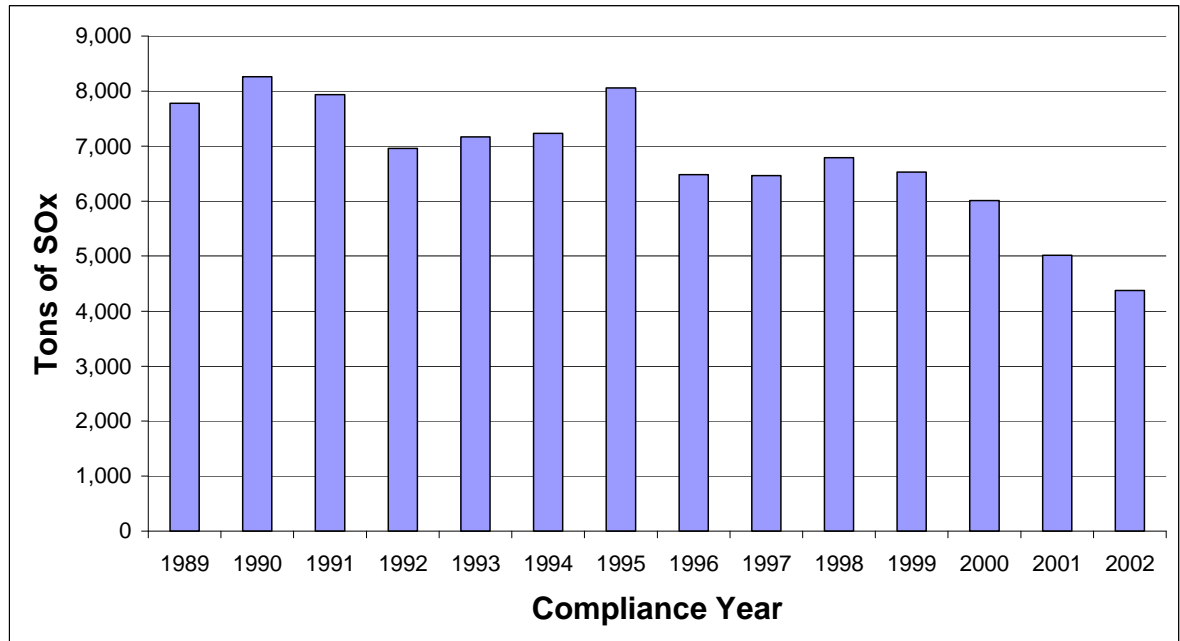


Figure 7-2
SOx Emission Trend for RECLAIM Sources



As indicated in Figures 7-1 and 7-2, there is an overall downward trend in both NOx and SOx emissions. When comparing SOx emissions for Compliance Years 1997 through 2002, there was a slight increase in SOx emissions in Compliance Year 1998, with Compliance Year 1999 SOx emissions comparable to Compliance Year 1997. Compliance Year 2002 SOx emissions are the lowest of the six years. The decrease of SOx emissions continued from Compliance Years 1999 to 2002. 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 higher 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 air quality. To address this concern, AQMD staff analyzed quarterly emissions during calendar year 2002 to assess if there had been such a shift in emissions. Where available, audited quarterly emissions data was used for this analysis. Where audited emissions were unavailable, emissions as reported by facilities (either under the Annual Permitted Emissions Program or the Quarterly Certification of Emissions Report) were used.

Figure 7-3
Calendar Year 2002 NOx Quarterly Emissions

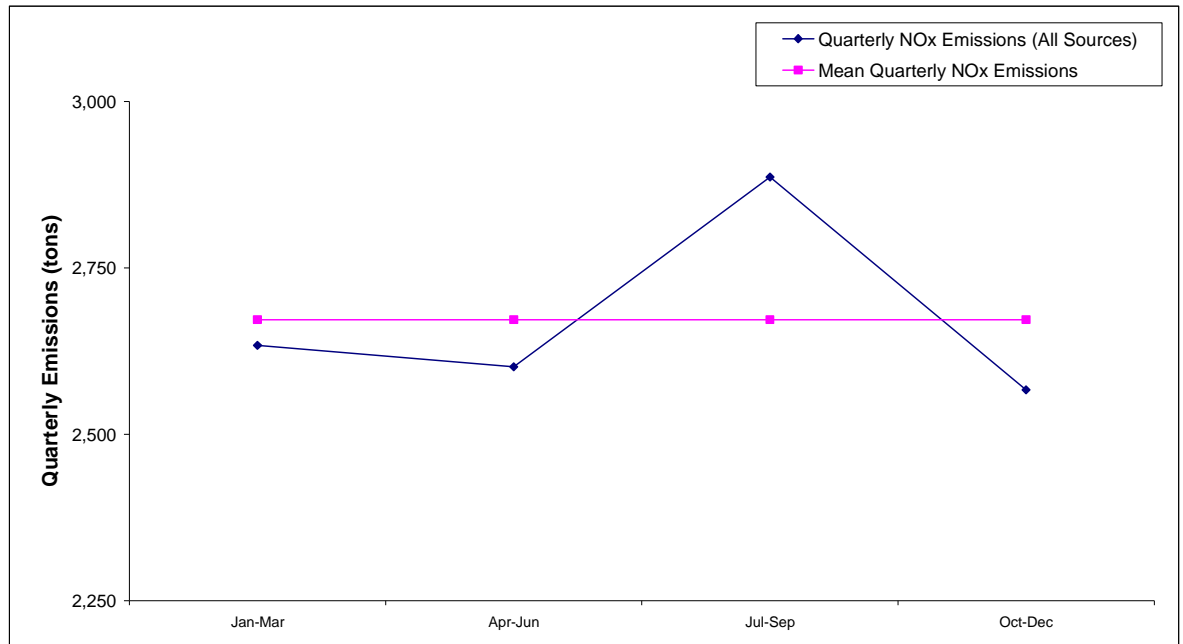


Figure 7-3 shows the mean quarterly NOx emission, which is the average of the four quarterly emissions, versus the actual quarterly emissions. Quarterly NOx emissions vary about the mean quarterly emission with maximum percent differences in the third quarter (July through September) of 8 percent above the mean and 4 percent below the mean in the fourth quarter (October through December). Aggregate quarterly NOx emissions were relatively constant throughout the year except for the slight increase in the third quarter, as previously mentioned. To show the cause of this upward trend, Figure 7-4 was plotted to separate power producing facility emissions and from the rest of RECLAIM facilities. This figure shows that the upward trend is mostly attributed to the increased emissions from power producing facilities because the slope of increasing emissions from power producing facilities matches similarly to the slope of increasing emissions from all facilities during the calendar year. In addition, emissions from non-power producing facilities were essentially flat throughout the Calendar Year 2002.

Figure 7-4
Comparison of Calendar Year 2002 NOx Quarterly Emissions from Power Producing Facilities and Non-power Producing Facilities

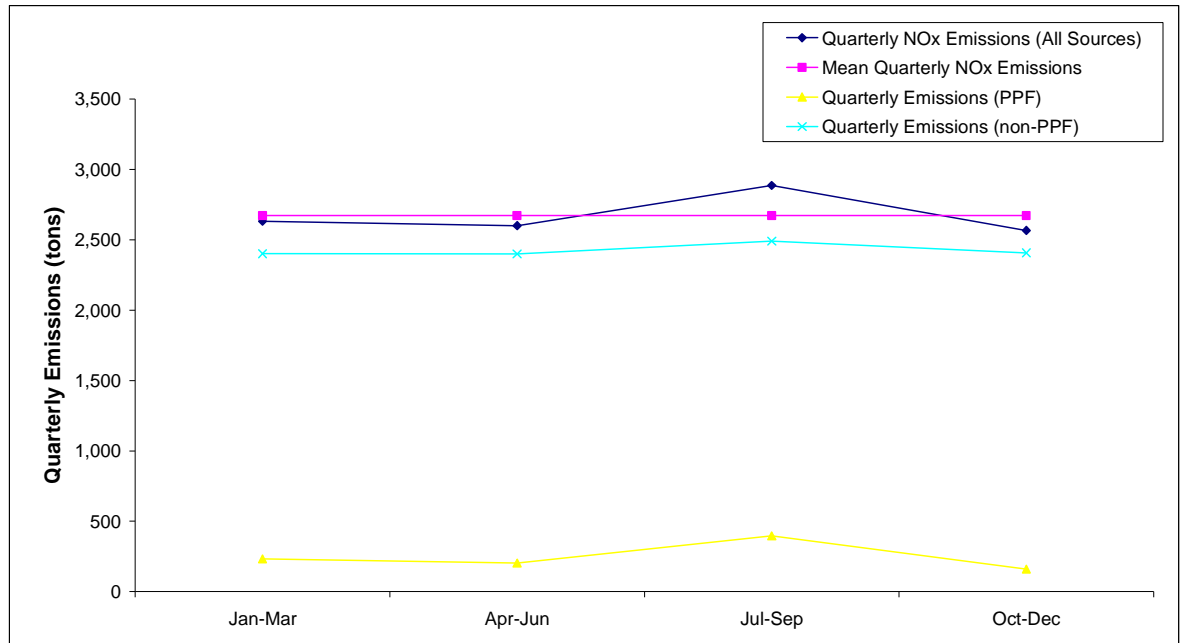
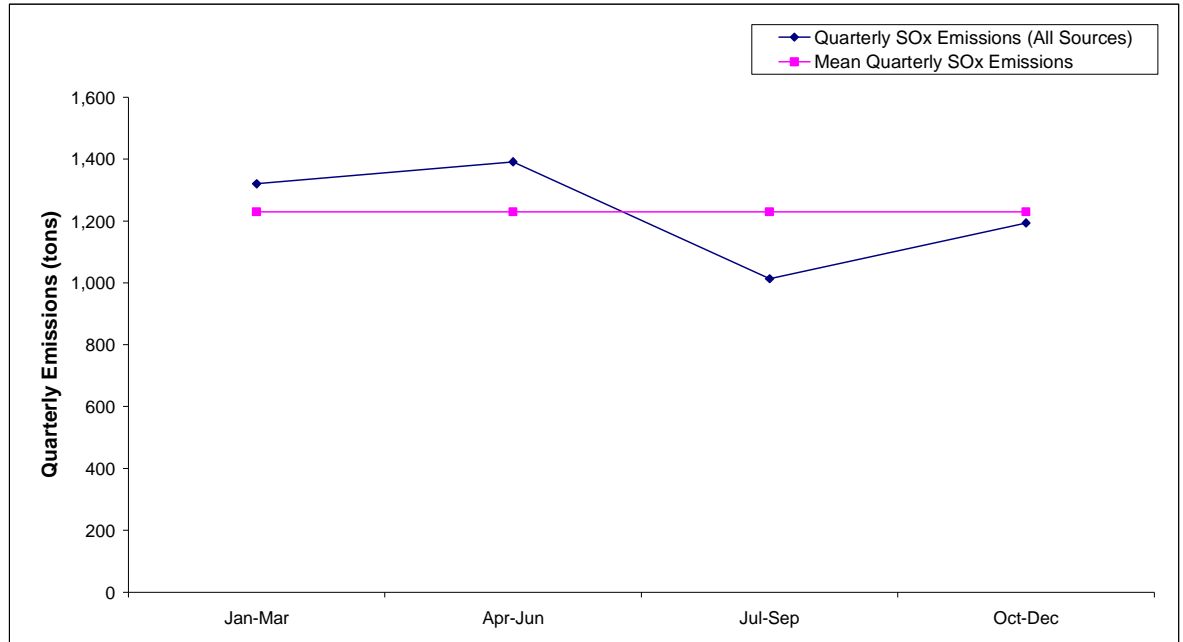


Figure 7-5 shows quarterly SOx emissions during Calendar Year 2002. Quarterly SOx emissions trend was the reverse of the NOx emissions trend. When quarterly NOx emissions increased, quarterly SOx emissions decreased.. And vice versa, when NOx emissions decreased, SOx emissions increased. Quarterly SOx emissions vary about the mean quarterly emission with maximum percent differences in the second quarter (April through June) of 13 percent above the mean and 18 percent below the mean in the third quarter (July through September).

Figure 7-5
Calendar Year 2002 SOx Quarterly Emissions



Geographic Distribution of Emissions

As part of this program audit, AQMD staff examined the quarterly emissions maps, which were developed pursuant to Rule 15(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 above their Compliance Year 1994 Allocation including non-tradable credits. Because of this flexibility and the ability of RECLAIM facilities to purchase RTCs from other facilities, some people were concerned that RECLAIM could alter the geographic distribution of emissions in the Basin and adversely affect air quality in certain areas.

Quarterly emissions for both NO_x and SO_x were mapped for Compliance Year 2002 (all four quarters of 2002 and the first two quarters of 2003). These maps are included in Appendices F and G. The quarterly emission maps do not show any distinct shift in the geographic pattern of emissions. AQMD will continue to review additional quarterly maps and assess the geographic patterns of emissions as the information becomes available.

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 the continuation of the traditional command-and-control regulations and implementation of 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 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.

Table 7-1 compares the projected Calendar Years 1994 and 1997 per capita exposures to ozone based upon continuation of the command-and-control regulatory approach and the implementation of the control measures in the 1991 AQMP with the actual per capita exposure in the Basin for Calendar Years 1994 and 1997. Table 7-2 summarizes Calendar Years 1998 through 2003 ozone data in terms of the number of days that exceeded the state and federal ambient ozone standards and the Basin's maximum concentration during each of the six calendar years.

**Table 7-1
Comparison of Per Capita Exposures Over State Standard for Ozone
1991 AQMP Projection Vs Actual Exposures**

Calendar Year	Projected Per Capita Exposure based on 1991 AQMP (hrs)	Actual Per Capita Exposure (hrs)
1994	38.6	37.6
1997	32.0	5.9

**Table 7-2
Summary of Ozone Data**

	Calendar Year					
	1998	1999	2000	2001	2002	2003
Days exceeding state standard	113	120	125	121	118	133
Days exceeding federal standard	62	42	40	36	49	68
Basin Maximum (pphm)	24	17	18.5	19.1	16.9	21.6

Table 7-3 compares the actual per capita exposures to the exposure milestones as specified in the California Clean Air Act (CCAA) for Calendar Years 1997 and 2000. The CCAA establishes specific milestones for achieving reductions in overall population exposure to severe non-attainment pollutants in the Basin. These milestones include a 25 percent reduction by December 31, 1994, a 40 percent reduction by December 31, 1997, and a 50 percent reduction by December 31, 2000, relative to a Calendar Years' 1986-88 baseline. The data presented in Table 7-3 for actual per capita exposure in both Calendar Years 1997 and 2000 for the four counties, and the Basin overall, have shown substantial progress toward continuous attainment of the state standard. As

indicated in Table 7-3, actual reductions in per capita exposure in Calendar Year 1997 have gone well beyond the 50 percent reduction target scheduled for Calendar Year 2000.

Table 7-3
Per Capita Exposure to Ozone above the State 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
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

The three tables (Tables 7-1, 7-2, and 7-3) in combination show that actual per capita exposure during all the years mentioned continues to be well under the projected exposure in the 1991 AQMP. 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 as a result of RECLAIM.

RECLAIM sources are subject to the same air toxic regulations (i.e., AQMD Regulation XIV, State AB 2588, Federal NESHAP, etc.) as other sources in the Basin. These regulations further ensure that RECLAIM does not result in adverse air toxic health impacts. In addition, air toxic health risk is primarily caused by emissions of VOC and certain metals, rather than NO_x or SO_x emissions. The majority of VOC sources at RECLAIM facilities are subject to

source-specific command-and-control rules, in addition to the applicable toxics requirements described above. Similarly, sources of toxic metals emissions are also subject to the above-identified regulations pertaining to toxic emissions. As a result, implementation of NOx and SOx RECLAIM is not expected to significantly 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 not relevant to toxic emissions; the same toxics requirements and VOC rules and control measures apply in either case. 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 sources as of the end of the 2002 compliance year is provided below.

Facility ID	Cycle	Facility Name	Market
16395	2	AAA GLASS CORP	NOx
73635	1	ABLESTIK LABORATORIES	NOx
104012	1	AERA ENERGY LLC	NOx
104013	2	AERA ENERGY LLC	NOx
104015	2	AERA ENERGY LLC	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
3417	1	AIR PROD & CHEM INC	NOx
101656	2	AIR PRODUCTS HYCAL CO L.P.,AIR PROD&CHEM	NOx
5998	1	ALL AMERICAN ASPHALT	NOx
114264	1	ALL AMERICAN ASPHALT	NOx
3704	2	ALL AMERICAN ASPHALT, UNIT NO.01	NOx
127380	1	ALLIANCE COLTON, LLC	NOx
127381	1	ALLIANCE COLTON, LLC	NOx
21290	1	ALPHA BETA CO./RALPH GROCERY CO.	NOx
17840	2	ALPHA THERAPEUTIC CORP	NOx
800196	2	AMERICAN AIRLINES INC (EIS USE)	NOx
45527	2	AMERICAN RACING EQUIPMENT INC	NOx
60540	1	AMERICAN RACING EQUIPMENT INC, PLNT #2	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
47232	1	ARCO CQC KILN	NOx/SOx
124808	2	ARCO POLYPROPYLENE LLC	NOx/SOx
11640	1	ARLON ADHESIVE SYSTEM/DECORATIVE FILMS	NOx
12155	1	ARMSTRONG WORLD INDUSTRIES INC	NOx
100130	2	ARTESIA SAWDUST PRODUCTS, 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 MILLS INC	NOx
119907	1	BERRY PETROLEUM COMPANY	NOx
132068	1	BIMBO BAKERIES USA INC	NOx
113240	2	BLACK HILLS ONTARIO LLC	NOx
19390	1	BLUE DIAMOND MATERIALS, SUN VALLEY PLANT	NOx
133405	1	BODYCOTE INC/BODYCOTE THERMAL PROCESSING	NOx
115241	1	BOEING SATELLITE SYSTEMS INC	NOx

ANNUAL RECLAIM AUDIT

Facility ID	Cycle	Facility Name	Market
800067	1	BOEING SATELLITE SYSTEMS INC	NOx
800343	2	BOEING SATELLITE SYSTEMS, INC	NOx
131003	2	BP WEST COAST PRODUCTS LLC	NOx/SOx
10340	1	BREA CANYON OIL CO INC	NOx
98159	2	BREITBURN ENERGY CORP	NOx
25638	2	BURBANK CITY, PUB SERV DEPT	NOx
800344	1	CALIFORNIA AIR NATIONAL GUARD, MARCH AFB	NOx
22607	2	CALIFORNIA DAIRIES, INC	NOx
800181	2	CALIFORNIA PORTLAND CEMENT CO (NSR USE)	NOx/SOx
46268	1	CALIFORNIA STEEL INDUSTRIES INC	NOx
107653	2	CALMAT CO	NOx
107654	2	CALMAT CO	NOx
107655	2	CALMAT CO	NOx
107656	2	CALMAT CO	NOx
119104	1	CALMAT CO	NOx/SOx
8791	2	CAL-PACIFIC DYEING & FINISHING CORP	NOx
9141	1	CANNERS STEAM CO INC	NOx/SOx
94930	1	CARGILL INC	NOx
22911	2	CARLTON FORGE WORKS	NOx
118406	1	CARSON COGENERATION COMPANY	NOx
25016	2	CASTAIC CLAY MFG CO., INC	NOx
800373	1	CENCO REFINING COMPANY	NOx/SOx
40764	1	CENTURY LAMINATORS INC	NOx
800030	2	CHEVRON PRODUCTS CO.	NOx/SOx
95212	1	CHROMA SYSTEMS PARTNERS	NOx
56940	1	CITY OF ANAHEIM/COMB TURBINE GEN STATION	NOx
129810	1	CITY OF RIVERSIDE PUBLIC UTILITIES DEPT	NOx
16978	2	CLOUGHERTY PACKING CO, FARMER JOHN MEATS	NOx
62281	2	COASTCAST CORP	NOx
110982	1	COMMONWEALTH ALUMINUM CONCAST	NOx
800210	2	CONEXANT SYSTEMS INC	NOx
122822	2	CONSOLIDATED FILM INDUSTRIES, LLC	NOx
38440	2	COOPER & BRAIN - BREA	NOx
68042	2	CORONA ENERGY PARTNERS, LTD	NOx
117572	1	CRIMSON RESOURCE MANAGEMENT CORP	NOx
117581	1	CRIMSON RESOURCE MANAGEMENT CORP	NOx
65384	1	CRITERION CATALYST CO L.P.	NOx
18648	1	CROWN CITY PLATING CO.	NOx
3950	1	CROWN CORK & SEAL CO INC	NOx
15982	2	CUSTOM ALLOY SALES INC	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
47771	1	DELEO CLAY TILE CO INC	NOx
800037	2	DEMENNO/KERDOON	NOx
125579	1	DIRECTV	NOx
800189	1	DISNEYLAND RESORT	NOx
38872	1	DOANE PRODUCTS CO	NOx
800038	2	DOUGLAS PRODUCTS DIVISION	NOx
129729	2	DRS TECHNOLOGIES INC	NOx
121746	2	DUKESOLUTIONS HUNTINGTON BEACH, LLC	NOx
104571	2	E & J TEXTILE GROUP, INC	NOx
126351	1	EASTMAN CHEMICAL COMPANY	NOx
800264	2	EDGINGTON OIL COMPANY	NOx/SOx
115663	1	EL SEGUNDO POWER, LLC	NOx
10873	1	ELSINORE READY-MIX CO INC	NOx
117247	1	EQUILON ENTERPRISES, LLC	NOx/SOx

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Facility ID	Cycle	Facility Name	Market
800370	1	EQUILON ENTERPRISES, LLC	NOx/SOx
800372	2	EQUILON ENTERPRISES, LLC	NOx/SOx
124838	1	EXIDE TECHNOLOGIES	NOx/SOx
122295	2	FALCON FOAM, A DIV OF ATLAS ROOFING CORP	NOx
22047	1	FANSTEEL/CALIFORNIA DROP FORGE	NOx
11716	1	FONTANA PAPER MILLS INC	NOx
2418	2	FRUIT GROWERS SUPPLY CO	NOx
5814	1	GAINNEY CERAMICS INC	NOx
11016	2	GEORGIA-PACIFIC CORP	NOx
10055	2	G-P GYPSUM CORP	NOx
67945	2	GREAT WESTERN MALTING CO., INC.	NOx/SOx
40196	2	GUARDIAN INDUSTRIES CORP.	NOx/SOx
861	1	H J HEINZ, L P	NOx
106325	2	HARBOR COGENERATION CO	NOx
45953	1	HAYES LEMMERZ INTERNATIONAL CAL INC	NOx
123774	1	HERAEUS METAL PROCESSING, INC.	NOx
15164	1	HIGGINS BRICK CO	NOx
113160	2	HILTON COSTA MESA	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
123087	2	INDALEX WEST INC	NOx
800240	2	INLAND PAPERBOARD AND PACKAGING INC	NOx
5830	1	INTERMETRO INDUSTRIES CORP	NOx
23589	2	INTERNATIONAL EXTRUSION CORP	NOx
106810	2	INTERSTATE BRANDS CORP	NOx
22364	1	ITT INDUSTRIES, CANNON	NOx
119134	2	ITW CALIFORNIA INDS PRODS, LLC/STAMPINGS	NOx
22373	1	JEFFERSON SMURFIT CORPORATION (U.S.)	NOx
16338	1	KAISER ALUMINUM & CHEM CORP	NOx
18865	2	KAL KAN FOODS INC	NOx
11142	2	KEYSOR-CENTURY CORP	NOx
21887	2	KIMBERLY-CLARK WORLDWIDE INC.-FLTN MILL	NOx/SOx
1744	2	KIRKHILL RUBBER CO	NOx
57329	2	KWIKSET CORP	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 STA	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
7931	1	LA PAPER BOX & BOARD MILLS	NOx
115277	1	LAFAYETTE TEXTILE IND LLC	NOx
12912	2	LIBBEY GLASS INC	NOx/SOx
57892	2	LIFE-LIKE PRODUCTS INC.	NOx
83102	2	LIGHT METALS INC	NOx
31046	2	LISTON BRICK COMPANY OF CORONA	NOx
115314	2	LONG BEACH GENERATION LLC	NOx
14229	2	LORBER INDUSTRIES OF CALIFORNIA	NOx
17623	2	LOS ANGELES ATHLETIC CLUB	NOx
58622	2	LOS ANGELES COLD STORAGE CO	NOx
125015	2	LOS ANGELES TIMES COMMUNICATIONS LLC	NOx
13976	1	LUCKY STORES INC, #952	NOx
800080	2	LUNDAY-THAGARD OIL CO	NOx
14049	2	MARUCHAN INC	NOx
3029	2	MATCHMASTER DYEING & FINISHING INC	NOx

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Facility ID	Cycle	Facility Name	Market
2825	1	MCP FOODS INC	NOx
100844	2	MEDALLION CALIFORNIA PROPERTIES CO	NOx
115563	1	METAL COATERS OF CALIFORNIA	NOx
94872	2	METAL CONTAINER CORP	NOx
14855	1	MILLER BREWING CO	NOx
800088	2	MINNESOTA MINING & MFG CO	NOx
12372	1	MISSION CLAY PRODUCTS	NOx
115211	2	MISSION DYE HOUSE LLC	NOx
800089	1	MOBIL OIL CORP (EIS USE)	NOx/SOx
800094	1	MOBIL OIL CORP, NEWHALL STA (EIS USE)	NOx
17344	1	MOBIL OIL CORP, WEST COAST PIPELINES DIV	NOx
25058	2	MOBIL OIL CORP, WEST COAST PIPELINES DIV	NOx
121737	1	MOUNTAINVIEW POWER COMPANY LLC	NOx
16274	2	NABISCO BRANDS INC	NOx
11887	2	NASA JET PROPULSION LAB	NOx
12428	2	NATIONAL GYPSUM CO	NOx
40483	2	NELCO PROD. INC	NOx
16531	2	NEVILLE CHEM CO	NOx
84223	1	NEWELLRUBBERMAID INC	NOx
131732	2	NEWPORT FAB, LLC	NOx
800167	2	NORTHROP GRUMMAN CORP	NOx
18294	1	NORTHROP GRUMMAN CORP, AIRCRAFT DIV	NOx
112853	2	NP COGEN INC	NOx
45471	2	OGLEBAY NORTON INDUSTRIAL SANDS INC	NOx
89248	2	OLD COUNTRY MILLWORK INC	NOx
47781	1	OLS ENERGY-CHINO C/O GPU INT'L., INC.	NOx
35302	2	OWENS CORNING	NOx/SOx
7427	1	OWENS-BROCKWAY GLASS CONTAINER INC	NOx/SOx
17953	1	PACIFIC CLAY PRODUCTS INC	NOx
45746	2	PACIFIC COAST BLDG PRODS INC,PABCO PAPER	NOx/SOx
59618	1	PACIFIC CONTINENTAL TEXTILES, INC.	NOx
60531	2	PACIFIC FABRIC FINISHING	NOx
2946	1	PACIFIC FORGE INC	NOx
800208	2	PAPER PAK PROD. INC	NOx
130211	2	PAPER-PAK INDUSTRIES	NOx
89429	2	PARADISE TEXTILE CO	NOx
800183	1	PARAMOUNT PETR CORP (EIS USE)	NOx/SOx
19989	2	PARKER HANNIFIN AEROSPACE CORP	NOx
800168	1	PASADENA CITY, DWP (EIS USE)	NOx
119920	1	PECHINEY CAST PLATE INC	NOx
115449	1	PLAYA PHASE I COMMERCIAL LAND, LLC	NOx
117151	2	POMONA PAPER COMPANY	NOx
117485	2	PORT OF LONG BEACH	NOx
7416	1	PRAXAIR INC	NOx
42630	1	PRAXAIR INC	NOx
75411	1	PRECISION SPECIALTY METALS INC	NOx
136	2	PRESS FORGE CO	NOx
136	2	PRESS FORGE CO	NOx
22808	2	PRICE PFISTER INC	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
114997	1	RAYTHEON SYSTEMS COMPANY	NOx
115041	1	RAYTHEON SYSTEMS COMPANY	NOx
115172	2	RAYTHEON SYSTEMS COMPANY	NOx
800371	2	RAYTHEON SYSTEMS COMPANY - FULLERTON OPS	NOx
346	1	RECOT, INC.	NOx

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Facility ID	Cycle	Facility Name	Market
346	1	RECOT, INC.	NOx
20543	1	REDCO II	NOx
15544	2	REICHHOLD INC	NOx
115315	1	RELIANT ENERGY ETIWANDA, LLC.	NOx
52517	1	REXAM PLC, REXAM BEVERAGE CAN COMPANY	NOx
114801	1	RHODIA, INC.	NOx/SOx
61722	2	RICOH ELECTRONICS INC	NOx
108113	1	RIDGEWOOD/CALIFORNIA POWER PARTNERS,L.P.	NOx
114138	2	RIPON COGENERATION, INC.	NOx
115666	2	RIVERSIDE CANAL POWER COMPANY	NOx
800182	1	RIVERSIDE CEMENT CO (EIS USE)	NOx/SOx
98812	2	RMS FOUNDATION INC	NOx
800113	2	ROHR,INC	NOx
18455	2	ROYALTY CARPET MILLS INC	NOx
93073	1	SABA PETROLEUM INC	NOx
106797	1	SAINT-GOBAIN CONTAINERS LLC	NOx/SOx
108701	1	SAINT-GOBAIN CONTAINERS LLC	NOx/SOx
4242	2	SAN DIEGO GAS & ELECTRIC	NOx
15504	2	SCHLOSSER FORGE CO	NOx
20203	2	SCOPE PRODUCTS INC, DEXT CO	NOx
9053	1	SEMPRA ENERGY SOLUTIONS/CENTRAL PLANTS	NOx
9217	1	SEMPRA ENERGY SOLUTIONS/CENTRAL PLANTS	NOx
11034	2	SEMPRA ENERGY SOLUTIONS/CENTRAL PLANTS	NOx
16575	1	SEMPRA ENERGY SOLUTIONS/CENTRAL PLANTS	NOx
37603	1	SGL TECHNIC INC, POLYCARBON DIVISION	NOx
131850	2	SHAW DIVERSIFIED SERVICES	NOx
117227	2	SHCI SM BCH HOTEL LLC, LOWES 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
82727	2	SMURFIT NEWSPRINT CORPORATION	NOx
43201	2	SNOW SUMMIT INC	NOx
4477	1	SO CAL EDISON CO	NOx
18763	1	SO CAL EDISON CO	NOx
800123	2	SO CAL EDISON CO	NOx
800124	2	SO CAL EDISON CO	NOx
800125	1	SO CAL EDISON CO	NOx
800126	2	SO CAL EDISON CO	NOx
800224	1	SO CAL EDISON CO (EIS USE)	NOx
5973	1	SO CAL GAS CO	NOx
11119	1	SO CAL GAS CO	NOx
14926	1	SO CAL GAS CO	NOx
800127	1	SO CAL GAS CO (EIS USE)	NOx
800128	1	SO CAL GAS CO (EIS USE)	NOx
8582	1	SO CAL GAS CO/PLAYA DEL REY STORAGE FACI	NOx
9114	1	SOMITEX PRINTS OF CAL INC	NOx
14871	2	SONOCO PRODUCTS CO	NOx
103618	1	SPECIALTY BRANDS INC	NOx
800338	2	SPECIALTY PAPER MILLS INC	NOx
1634	2	STEELCASE INC, WESTERN DIV	NOx
131824	2	STEELCASE INC.	NOx
126498	2	STEELSCAPE, INC	NOx
83753	1	STOCKER RESOURCES INC	NOx
112164	2	STOCKER RESOURCES, INC	NOx
34055	2	SULLY MILLER CONTRACTING CO	NOx
105277	2	SULLY MILLER CONTRACTING CO	NOx
23196	2	SUNKIST GROWERS, INC	NOx

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Facility ID	Cycle	Facility Name	Market
2083	1	SUPERIOR INDUSTRIES INTERNATIONAL INC	NOx
3968	1	TABC, INC	NOx
18931	2	TAMCO	NOx
56427	1	TANDEM INDUSTRIES	NOx
14944	1	TECHALLOY CO., INC.	NOx/SOx
126050	2	TERADYNE, INC	NOx
96587	1	TEXOLLINI INC	NOx
4451	1	TEXTRON AEROSPACE FASTENERS	NOx
14736	2	THE BOEING COMPANY	NOx
800110	2	THE BOEING COMPANY	NOx
800259	1	THE BOEING COMPANY	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
68122	2	TIDELANDS OIL PRODUCTION COMPANY ETAL	NOx
43436	1	TIMCO	NOx
55758	1	TISSURAMA INDUSTRIES INC	NOx
108616	1	TORCH OPERATING CO	NOx
109192	2	TORCH OPERATING COMPANY	NOx
109198	2	TORCH OPERATING COMPANY	NOx
109207	2	TORCH OPERATING COMPANY	NOx
800362	1	TOSCO REFINING COMPANY	NOx/SOx
800363	2	TOSCO REFINING COMPANY	NOx/SOx
53729	1	TREND OFFSET PRINTING SERVICES, INC	NOx
11674	1	TRI-ALLOY INC	NOx
800219	2	TRW INC,	NOx
800218	1	TRW INC, (EIS & NSR USE ONLY)	NOx
800391	2	TWA AIRLINES, LLC	NOx
83738	1	U.S. DYEING & FINISHING INC.	NOx
800026	1	ULTRAMAR INC (NSR USE ONLY)	NOx/SOx
118618	2	UNI-PRESIDENT (U.S.A.) INC	NOx
9755	2	UNITED AIRLINES INC	NOx
60342	2	UNITED STATES CAN CO	NOx
800258	1	UNOCAL CORP., HARTLEY CENTER	NOx
73022	2	US AIRWAYS INC	NOx
800149	2	US BORAX INC	NOx
800150	1	US GOVT, AF DEPT, MARCH AFB (NSR USE)	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
101369	2	VINTAGE PETROLEUM INC	NOx
122012	2	VINTAGE PETROLEUM, INC DEL VALLE OIL FLD	NOx
14495	2	VISTA METALS CORPORATION	NOx
126501	2	VOUGHT AIRCRAFT INDUSTRIES	NOx
42775	1	WEST NEWPORT OIL CO	NOx/SOx
17956	1	WESTERN METAL DECORATING CO	NOx
1962	2	WEYERHAEUSER COMPANY	NOx
51620	1	WHEELABRATOR NORWALK ENERGY CO INC	NOx
129238	1	XYRON INC	NOx

APPENDIX B

FACILITY INCLUSIONS

As discussed in Chapter 1, seven facilities were added to the NOx market of the RECLAIM universe for the 2002 compliance year. Of these seven, two new facilities were created by partial change of ownership of existing RECLAIM facilities, four existing facilities opted to join RECLAIM, and one facility reported to be out of business during a previous report but was found to have continued operations.

Facility ID	Cycle	Facility Name	Market	Date	Reason
129497	1	THUMS LONG BEACH CO	NOx	5/10/2002	Opt-in at facility request
22364	1	ITT INDUSTRIES, CANNON	NOx	8/9/2002	Opt-in at facility request
129810	1	CITY OF RIVERSIDE PUBLIC UTILITIES DEPT	NOx	1/9/2002	Opt-in at facility request
43201	2	SNOW SUMMIT INC	NOx	12/31/2002	Opt-in at facility request
130211	2	PAPER-PAK INDUSTRIES	NOx	9/6/2002	Partial C/O from Paper-Pak (800208)
131732	2	NEWPORT FAB, LLC	NOx	2/20/2003	Partial C/O from (800210 Conexant Systems)
13976	1	LUCKY STORES INC, #952	NOx	10/15/1993	Facility not out-of-business as stated in previous report, continued operation of emergency ICE.

APPENDIX C

RECLAIM FACILITIES CEASING OPERATION OR EXCLUDED

AQMD staff is aware of the following RECLAIM facilities that permanently ceased all operations and went out of business during the 2002 compliance year. The reasons for shutdown cited below are based on AQMD staff's best available information.

Facility ID	55711
Facility Name	Sunlaw Cogeneration Partners I
City and County	Vernon, Los Angeles County
SIC	4931
Pollutants	NOx
1994 Allocation	482,202
Reason for Shutdown	Facility was unable to obtain contract to sell power at cost-effective price.

Facility ID	55714
Facility Name	Sunlaw Cogeneration Partners I
City and County	Vernon, Los Angeles County
SIC	4931
Pollutants	NOx
1994 Allocation	316,480
Reason for Shutdown	Facility was unable to obtain contract to sell power at cost-effective price.

Facility ID	61589
Facility Name	Vanguard Energy Sys
City and County	Gardena, Los Angeles County
SIC	3825
Pollutants	NOx
1994 Allocation	14,878
Reason for Shutdown	The facility cited declining demand for products.

Facility ID	115002
Facility Name	Raytheon Systems Company
City and County	El Segundo, Los Angeles County
SIC	3761
Pollutants	NOx
1994 Allocation	32,796
Reason for Shutdown	Cancelled Facility Permit; no permitted equipment remain at this location.

Facility ID	6714
Facility Name	Brea City
City and County	Brea, Orange County
SIC	4941
Pollutants	NOx
1994 Allocation	22,390
Reason for Shutdown	Excluded from RECLAIM pursuant to Rule 2001(i)(1)(H): potable water delivery operations.

APPENDIX D

Facilities that were Unable to Reconcile Emissions for Compliance Year 2002

The following is a list of facilities that were determined to have not reconciled their allocations with their NO_x and/or SO_x emissions in Compliance Year 2002 based on emissions reported under Quarterly Certification reports, the APEP report filed by the facility or completed audits conducted by AQMD staff. This list is being maintained and updated as audits are completed. The updated list is available by contacting the RECLAIM Administration Team at 21865 Copley Drive, Diamond Bar, CA 91765, (909) 396-3119.

Facilities That Failed to Reconcile NO_x Emissions With Their Allocations

Armstrong World Industries, Inc. (ID# 12155)
Commonwealth Aluminum Concast (ID# 110982)
Equilon Enterprises, LLC. (ID# 117247)
Owens-Brockway Glass Container Inc. (ID# 7427)
Pacific Continental Textiles (ID# 59618)
Raytheon Systems Company (ID# 114997)
Raytheon Systems Company (ID# 115041)
REDCO II (ID# 20543)
Saint-Gobain Containers LLC (ID# 106797)

Facilities That Failed to Reconcile SO_x Emissions With Their Allocations

Equilon Enterprises, LLC. (ID# 117247)
Owens-Brockway Glass Container Inc. (ID# 7427)

APPENDIX E

JOB IMPACTS ATTRIBUTED TO RECLAIM

Each RECLAIM facility operator is requested to include in their Annual Permit Emissions Program (APEP) report an assessment of job increases and decreases that occurred during the compliance year and the extent to which any increase or decrease in the number of jobs is attributable to the RECLAIM program. The job impact resulting from the RECLAIM program during the 2002 compliance year was assessed by examining data in APEP reports submitted by RECLAIM facilities.

The detailed information for facilities that reported job gains and losses in their APEP forms for Compliance Year 2002 is summarized below:

Facilities with actual job gains or losses attributed to RECLAIM:

Facility ID	16978
Facility Name	Clougherty Packing Co, Farmer John Meats
City and County	Vernon, Los Angeles County
SIC	2011
Pollutant(s)	NOx
Cycle	2
Job Gain	0
Job Loss	202 (5 attributed to RECLAIM)
Comments	"Compliance costs have necessitated the cutting of engineering positions."

Facility ID	50098
Facility Name	D&D Disposal Inc, West Coast Rendering Co
City and County	Vernon, Los Angeles County
SIC	2077
Pollutant(s)	NOx
Cycle	1
Job Gain	0
Job Loss	4 (2 attributed to RECLAIM)
Comments	"In order to avoid exceeding limits, additional raw material had to be turned down, reducing additional job opening."

Facility ID	45953
Facility Name	Hayes Lemmerz International Cal Inc
City and County	La Mirada, Los Angeles County
SIC	3714
Pollutant(s)	NOx
Cycle	1
Job Gain	0
Job Loss	115 (100 attributed to RECLAIM)
Comments	This company stated "eliminated operations and transfer business to reduce NOx emissions." When contacted for additional information, the company also cited higher utility costs and increased worker's compensation costs as factors contributing to the job losses.

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Facility ID 121737
Facility Name Mountainview Power Company LLC
City and County San Bernardino, San Bernardino County
SIC 4911
Pollutant(s) NOx
Cycle 1
Job Gain 0
Job Loss 7 (5 attributed to RECLAIM)
Comments "Imposition of Rule 2009 on existing units. Specifically device numbers D1& D2."

Facility ID 83738
Facility Name U.S. Dyeing & Finishing Inc.
City and County Garden Grove, Orange County
SIC 2260
Pollutant(s) NOx
Cycle 1
Job Gain 155 (unknown number attributed to RECLAIM)
Job Loss 3 (unknown number attributed to RECLAIM)
Comments None submitted by this company.

APPENDIX F
QUARTERLY NO_x EMISSION MAPS

APPENDIX G
QUARTERLY SO_x EMISSION MAPS
