NEW YORK
STATE IMPLEMENTATION PLAN
FOR
OZONE
(8-HOUR NAAQS)

ATTAINMENT DEMONSTRATION
FOR
NEW YORK METRO AREA

FINAL PROPOSED REVISION FEBRUARY 2008

New York State Department of Environmental Conservation
ELIOT SPITZER, GOVERNOR ***ALEXANDER GRANNIS, COMMISSIONER***

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STATE OF NEW YORK

ELIOT SPITZER
GOVERNOR

May 14, 2007

Jared Snyder
Assistant Commissioner
New York State Department of
Environmental Conservation
625 Broadway
Albany, NY 12233-1010

Dear Assistant Commissioner Snyder:

This letter will serve to designate you as the State's representative in all matters relating to the preparation and submission of the State Implementation Plan (SIP) and the Title V operating permits program, in compliance with the Federal Clean Air Act.

Sincerely,

ELIOT SPITZER

cc: Commissioner Grannis, Department of Environmental Conservation
Commissioner Swarts, Department of Motor Vehicles
Acting Commissioner Glynn, Department of Transportation

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EXECUTIVE SUMMARY

Ground-level ozone, a primary ingredient in smog, is formed when volatile organic compounds (VOCs) and oxides of nitrogen (NO_x) react chemically in the presence of sunlight. Cars, trucks, power plants and industrial facilities are primary sources of these emissions. Ozone pollution is a concern during the summer months when the weather conditions needed to form ground-level ozone – sunshine and hot temperatures – normally occur. Ozone is unhealthy to breathe, especially for people with respiratory diseases and for children, the elderly and adults who are active outdoors. Symptoms include reduced lung function and chest pain, and can lead to respiratory diseases such as bronchitis or asthma.

On April 15, 2005, the United States Environmental Protection Agency (EPA) designated the New York—N. New Jersey—Long Island, NY-NJ-CT metropolitan area (NYMA) as a moderate non-attainment area that exceeds the health-based standards for ozone. The National Ambient Air Quality Standard for ozone is 0.08 parts per million, measured over an 8-hour period. Pursuant to the Clean Air Act Amendments of 1990, states have three years from the date of designation to submit a State Implementation Plan (SIP) demonstrating how the nonattainment area will attain the standard. Moderate nonattainment areas are required to demonstrate attainment within six years of the effective date of designation, or June 15, 2010.

On August 9, 2007, the New York State Department of Environmental Conservation (Department) submitted a proposed revision to the ozone SIP for NYMA demonstrating attainment by June 15, 2013 (2010 – 2012 data). This final proposed revision incorporates minor changes made in response to comments received from EPA and the Manufacturers of Emission Controls Association on that proposal. It is also consistent with the Department's request, submitted under separate cover, to have NYMA reclassified from "moderate" to "serious" nonattainment. Serious nonattainment areas are required to demonstrate attainment within nine years of designation, or June 15, 2013.

This final revision to the NYMA SIP is consistent with August 9, 2007 proposal and contains the 2002 baseline emission inventory, projection inventories for 2008, 2011 and 2012, a predictive photo-chemical modeling attainment demonstration by June 15, 2013, and the control measures and programs that will be implemented by the state in order to demonstrate attainment with the 8-hour ozone standard.

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Acronyms and Abbreviations

ACP	Alternative Compliance Program
AFS	Air Facility System (New York)
AIM	Architectural and Industrial Maintenance
APTZEV	Advanced Technology Partial Zero Emission Vehicle
AQS	Air Quality System
ASTM	American Society for Testing and Materials
BARCT	Best Available Retrofit Control Technology
BDV	Base Design Value
BEIS	Biogenic Emissions Inventory System
BOTW	Beyond On The Way
BTU	British Thermal Unit
CAA	Clean Air Act Amendments of 1990
CAIR	Clean Air Interstate Rule
CAMR	Clean Air Mercury Rule
CARB	California Air Resources Board
CFR	Code of Federal Regulations
CMAQ	Congestion Mitigation Air Quality
CMSA	Consolidated Metropolitan Statistical Area
CMV	Commercial Marine Vessel
CTG	Control Technique Guideline
CO	Carbon Monoxide
DAR	Division of Air Resources
Department	New York State Department of Environmental Conservation
DVC	Base Case Design Value
DVF	Future Design Value
DVMT	Daily Vehicle Miles Traveled
ECD	Emission Control Device
ECL	Environmental Conservation Law
EDMS	Emission Dispersion Modeling System
EGR	Exhaust Gas Recirculation
EGU	Electric Generating Unit
EIIP	Emissions Inventory Improvement Program
EPA	United States Environmental Protection Agency
FAA	Federal Aviation Administration
FE	Fractional Error
FEL	Federal Emission Limit
FHWA	Federal Highway Administration
FR	Federal Register
G/BHP-HR	Grams per Brake Horse Power Hour
GVWR	Gross Vehicle Weight Rating
HAP	Hazardous Air Pollutant
HEDD	High Electric Demand Day
Hg	Mercury

ICI	Industrial/Commercial/Institutional
I/M	Inspection/Maintenance
KM	Kilometer
LAER	Lowest Achievable Emission Rate
LEV	Low Emission Vehicle
LDDV	Light Duty Diesel Vehicle
LDGT1	Light Duty Gasoline Truck 1
LDGT2	Light Duty Gasoline Truck 2
LDGV	Light Duty Gasoline Vehicle
MACT	Maximum Achievable Control Technology
MAGE	Mean Absolute Gross Error
MANE-VU	Mid-Atlantic and Northeast Visibility Union
MARAMA	Mid-Atlantic Regional Air Management Association
MATS	Model Attainment Test System
MB	Mean Bias
MC	Motorcycle
MFB	Mean Fractionalized Bias
ML	Milliliter
MMBTU	Million British Thermal Units
MM5	Mesoscale Meteorological Model, Version 5.0
MNB	Mean Normalized Bias
MNGE	Mean Normalized Gross Error
MOU	Memorandum of Understanding
MSW	Municipal Solid Waste
MWE	Megawatt Electrical
MWH	Megawatt Hour
NAA	Non-Attainment Area
NAAQS	National Ambient Air Quality Standard
NACAA	National Association of Clean Air Agencies
NESCAUM	Northeast States for Coordinated Air Use Management
NESHAP	National Emission Standards for Hazardous Air Pollutants
NH_3	Ammonia
NMB	Normalized Mean Bias
NME	Normalized Mean Error
NMHC	Non Methane Hydrocarbons
NMOC	Non Methane Organic Compound
NMOG	Non Methane Organic Gas
NNSR	Non-Attainment New Source Review
NO	Nitric Oxide
NOAA	National Oceanic and Atmospheric Administration
NO_x	Oxides of Nitrogen
NO_2	Nitrogen Dioxide
NSPS	New Source Performance Standards
NSR	New Source Review
NWS	National Weather Service
NYCRR	New York Codes, Rules and Regulations

NYMA	New York Metropolitan Area
NYSDMV	New York State Department of Motor Vehicles
NYSDOT	New York State Department of Transportation
NYVIP	New York Vehicle Inspection Program
OBD	On Board Diagnostics
OTB	On The Books
OTC	Ozone Transport Commission
OTR	Ozone Transport Region
OTW	On The Way
PAMS	Photochemical Assessment Monitoring System
PCE	Tetrachloroethene
PCV	Positive Crankcase Ventilation
PFC	Portable Fuel Container
PLT	Production Line Testing
PM	Particulate Matter
$PM_{2.5}$	Fine Particulate Matter
PM_{10}	Particulate Matter less than 10 microns
PMC	Coarse Particulate Matter
PPB	Parts Per Billion
PPM	Parts Per Million
PSD	Prevention of Significant Deterioration
PSI	Pounds Per Square Inch
PTE	Potential To Emit
PZEV	Partial Zero Emission Vehicle
QA	Quality Assurance
RACM	Reasonably Available Control Measure
RACT	Reasonably Available Control Technology
RFG	Reformulated Gasoline
RFP	Reasonable Further Progress
RIA	Regulatory Impact Analysis
RMSE	Root Mean Square Error
RRF	Relative Reduction Factor
RVP	Reid Vapor Pressure
SEA	Selective Enforcement Audit
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
SULEV	Super Ultra Low Emission Vehicle
TAC	Thermostatic Air Cleaner
TCA	Trichloroethane
TCE	Trichlorethene
TEA-21	Transportation Equity Act for the 21^{st} Century
TPD	Tons Per Day
TPY	Tons Per Year
TSD	Technical Support Document
ULEV	Ultra Low Emission Vehicle
VMT	Vehicle Miles Traveled

VOC	Volatile Organic Compound
ZEV	Zero Emission Vehicle

1.0 BACKGROUND AND OVERVIEW OF FEDERAL REQUIREMENTS

1.1 Introduction

Due to the severity of the health and welfare effects associated with ground-level ozone, the Clean Air Act (CAA) required the United States Environmental Protection Agency (EPA) to establish National Ambient Air Quality Standards (NAAQS) designed to protect public health and the environment. The CAA allows the EPA to establish two types of national air quality standards for primary air pollutants. The primary standards set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly. The secondary standards set limits to protect public welfare, including protection against decreased visibility, and damage to animals, crops, vegetation, and buildings. Until 1997, the ozone NAAQS was established at 0.12 parts per million (ppm) over a 1-hour period for both the primary and secondary standards. On July 18, 1997, EPA promulgated an ozone standard of 0.08 ppm, measured over an 8-hour period, i.e., the 8-hour standard (62 FR 38856).

1.2 Ozone Formation

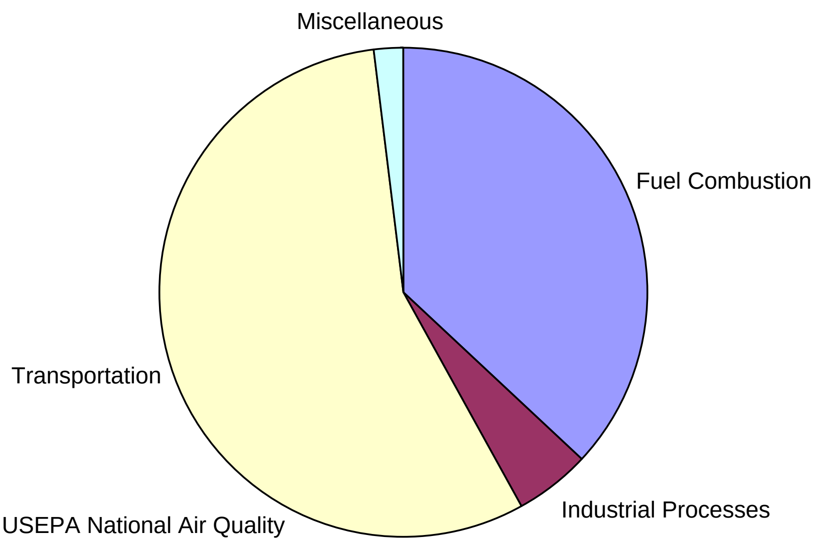
Ozone is produced in complex chemical reactions when its precursors, volatile organic compounds (VOCs) and oxides of nitrogen (NO_x), react in the presence of sunlight. Ozone that is found high in the earth's upper atmosphere (stratosphere) is beneficial because it inhibits the penetration of the sun’s harmful ultraviolet rays to the ground. However, ozone can also form near the earth's surface (troposphere). This ozone, commonly referred to as ground-level ozone, is breathed in by or comes into contact with people, animals, crops and other vegetation, and can cause a variety of serious health effects and damage vegetation resulting in reduced crop yield.

Complicating the formation of ground-level ozone is the fact that the chemical reactions that create ozone can take place while the pollutants are being blown through the air, or transported, by the wind. This means that elevated levels of ozone can occur many miles away from the source of their original precursor emissions. Therefore, unlike more traditional pollutants, e.g., sulfur dioxide (SO_2) and lead, which are emitted directly and can be controlled at their source, reducing ozone concentrations poses additional control challenges.

1.2.1 Ozone Precursor - Oxides of Nitrogen (NO_x)

Oxides of nitrogen are a group of gases including nitric oxide (NO) and nitrogen dioxide (NO_2). NO_2 is a reddish-brown, highly reactive gas that is formed in the air through the oxidation of NO. When NO_2 reacts with other chemicals in the atmosphere, it not only results in the formation of ozone, but it also forms particulate matter (PM), haze and acid rain. Sources of NO and NO_2 include motor vehicle exhaust (including both gasoline-fueled vehicles and diesel-fueled vehicles), the burning of coal, oil or natural gas, and industrial processes such as welding, electroplating and dynamite blasting. Figure 1 shows the national breakdown of NO_x emissions by category. In this chart, fuel combustion refers to stationary sources (i.e., power plants). Transportation is considered a mainly localized contributor of NO_X, while stationary source fuel combustion has transport impacts, making it more of a regional issue.

Figure 1: NOx Emissions by Source Category, 2002



Source: USEPA National Air Quality Emissions Trends Report, 2003 Special Studies Edition, September 2003.

Although most NO_x is emitted as NO, it is readily converted to NO_2 in the atmosphere. In the home, gas stoves and heaters produce substantial amounts of nitrogen dioxide. As much of the NO_x in the air is emitted by motor vehicles, concentrations tend to peak during the morning and afternoon rush hours. Also, due in part to poorer local dispersion conditions caused by light winds and other weather conditions that are more prevalent in the colder months of the year, NO_x concentrations tend to be higher in the winter than the summer.

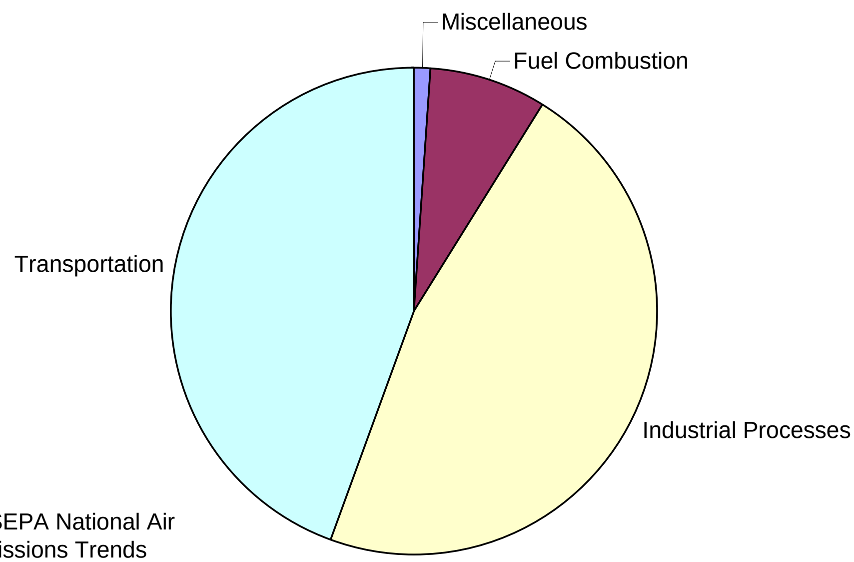
1.2.2 Ozone Precursor - Volatile Organic Compounds (VOCs)

VOCs are chemicals that evaporate (or volatilize) when they are exposed to air. They are called organic because they contain carbon. Some VOC compounds are highly reactive with a short atmospheric lifespan, while others can have a very long lifespan. The short-lived compounds contribute substantially to atmospheric photochemical reactions and thus the formation of ozone.

VOCs are used in the manufacture of, or are present in, many products used daily in both homes and businesses. Some products, like gasoline, actually are VOCs. VOCs are used as fuels (gasoline and heating oil) and are components of many common household items like polishes, paints, cosmetics, perfumes and cleansers. They are also used in industry as degreasers and solvents, and in dry cleaning. VOCs are present in many fabrics and furnishings, construction materials, adhesives and paints. In offices, VOCs can be found in correction fluid, magic markers, paper, rubber bands, invisible tape and other products. The names of many VOCs may be familiar: carbon tetrachloride, trichloroethene (TCE), tetrachloroethene (PCE), trichloroethane (TCA), benzene and toluene. Because of their widespread historical use, and past lack of stringent disposal requirements, they are in our air, soil, and water in varying concentrations. Human-made VOCs are primarily emitted into the air by motor vehicle exhaust, industrial processes and from the evaporation of solvents, oil-based paints and gasoline from gas pumps.

Figure 2 shows the national breakdown of VOC emissions by category. As with the NO_x chart, fuel combustion refers to stationary sources (i.e., power plants).

Figure 2: Anthropogenic VOC Emissions by Source Category, 2002



Source: USEPA National Air Quality Emissions Trends Report, 2003 Special Studies Edition, September 2003.

1.3 Health and Welfare Effects

Ground-level ozone can irritate lung airways and cause skin inflammation much like sunburn. Other symptoms from exposure include wheezing, coughing, pain when taking a deep breath, and breathing difficulties during exercise or outdoor activities. Even at very low levels, exposure to ground-level ozone can result in decreased lung function, primarily in children active outdoors, as well as increased hospital admissions and emergency room visits for respiratory illnesses among children and adults with pre-existing respiratory diseases (i.e. asthma). In addition to these primary symptoms, medical professionals now believe that repeated exposure to ozone pollution for several months could cause permanent lung damage. People with respiratory problems are most vulnerable to the health effects associated with ozone exposure, but even healthy people that are active outdoors can be affected when ozone levels are high. In fact, on July 11, 2007, EPA proposed to lower the ozone standard even more because of documented health effects of ozone (72 FR 37818).

In addition to its health effects, ozone interferes with a plant's ability to produce and store nutrients, which makes them more susceptible to disease, insects, other pollutants, and harsh weather. This impacts annual crop production throughout the United States, resulting in significant losses, and injury to native vegetation and ecosystems. In addition, ozone damages the leaves of trees and other plants, ruining the appearance of cities, national parks, and recreation areas. Ozone can also damage certain man-made materials, such as textile fibers, dyes, rubber products and paints.

1.4 Clean Air Act Amendments of 1990

During the fall of 1990, and after years of debate, the United States Congress approved changes to the federal CAA. These amendments were the first changes to the CAA since 1977. In addition to adding provisions that addressed concerns associated with acid rain, hazardous air pollutants and stratospheric ozone concerns, Congress significantly changed the way in which states were to address remaining attainment problems for criteria pollutants which include ground level ozone.

As opposed to the past when areas were designated as attainment, non-attainment or unclassifiable, the 1990 Amendments required areas to also be classified according to severity. For those areas with more severe classifications, additional requirements were included in the CAA and additional time was also provided for those areas to demonstrate attainment with the NAAQS for ozone.

NAAQS were developed to protect the public health from the impacts associated with various forms of air pollution. In 1979, EPA promulgated the 0.12 ppm 1-hour ozone standard (40 FR 8202, February 8, 1979).

1.5 8-hour Ozone NAAQS

On July 18, 1997, EPA promulgated an ozone standard of 0.08 ppm, measured over an 8-hour period, i.e., the 8-hour standard (62 FR 38856). In general, the 8-hour standard is more protective of public health and more stringent than the 1-hour standard. The CAA and the Transportation Equity Act for the 21 Century (TEA-21) required EPA to designate all areas by July 2000. The NAAQS rule was challenged and in May 1999, the U.S. Court of Appeals for the D.C. Circuit issued a decision remanding, but not vacating, the 8-hour ozone standard. The court noted that EPA is required to designate areas for any new or revised NAAQS in accordance with the CAA and addressed a number of other issues, which are not related to designations. American Trucking Assoc. v. EPA, 175 F.3d 1027, 1047-48, on rehearing 195 F.3d 4 (D.C. Cir. 1999). EPA sought review of the two aspects of that decision in the U.S. Supreme

Court. In February 2001, the Supreme Court upheld EPA's authority to set the NAAQS and remanded the case back to the D.C. Circuit for disposition of issues the Court did not address in its initial decision. Whitman v. American Trucking Assoc., 121 S.Ct. 903, 911-914, 916-919 (2001) (Whitman). In March 2002, the D.C. Circuit rejected all remaining challenges to the 8-hour ozone standard. American Trucking Assoc. v. EPA, 283 F.3d 355 (D.C. Cir. 2002) ATA III). The process for designations following promulgation of a NAAQS is contained in §107(d)(1) of the CAA. For the 8-hour NAAQS, TEA-21 extended by one year the time for EPA to designate areas for the 8-hour NAAQS. Thus, EPA was required to designate areas for the 8-hour NAAQS by July 2000. However, HR3645 (EPA's appropriation bill in 2000) restricted EPA's authority to spend money to designate areas until June 2001 or the date of the Supreme Court ruling on the standard, whichever came first. In 2003, several environmental groups filed suit in district court claiming EPA had not met its statutory obligation to designate areas for the 8-hour NAAQS. EPA entered into a consent decree, which required EPA to issue the designations by April 15, 2004.

Under the requirements of the CAA, states have a responsibility to ensure that all areas within their jurisdiction meet and maintain air quality levels that do not exceed the NAAQS prescribed by the federal government.

1.6 Designation and Requirements

On April 30, 2004, EPA designated the New York – N. New Jersey – Long Island, NY-NJ-CT area, comprised of the New York State counties of Suffolk, Nassau, Kings, Queens, Richmond, New York, Bronx, Westchester and Rockland, as well as counties in the states of Connecticut and New Jersey, as non-attainment (moderate classification) for the federal 8-hour ozone NAAQS, effective June 15, 2004 (69 FR 23858). Consequently, New York State must develop a State Implementation Plan (SIP) to demonstrate how it will come into compliance with the ozone standard.

2.0 PREVIOUS COMMITMENTS

2.1 Introduction

This section summarizes the ongoing mobile source and stationary source control measures that have been enacted in the past to minimize emissions of NO_x and VOCs. Many control measures in this Chapter were developed and implemented after the April 30, 2004 designations. Part D of Title I of the CAA requires that these measures be implemented and display reasonable further progress as the area strives to reach attainment. These past commitments continue indefinitely, unless replaced by an equivalent or stricter emission reduction strategy.

New mobile source and stationary source control measures, included in this SIP as Chapters 8 and 9, respectively, will work in conjunction with these prior commitments to help achieve attainment of the ozone NAAQS.

2.2 Gasoline Measures

2.2.1 Part 225-3: Fuel Consumption and Use - Gasoline

New York State adopted Subpart 225-3 of Title 6 of the New York Codes, Rules and Regulations (6 NYCRR) to limit the volatility, or Reid Vapor Pressure (RVP), of motor fuel statewide as a strategy for controlling VOC emissions from motor vehicles. Specifically, this regulation established a maximum RVP of 9.0 pounds per square inch (psi) for all gasoline sold or supplied to retailers and wholesale purchaser-consumers anywhere in New York State from May 1 through September 15 of each year.

2.2.2 Part 230: Gasoline Dispensing Sites and Transport Vehicles

This rule contains requirements for Stage I and Stage II gasoline dispensing site regulations. Stage I systems are required state-wide, while Stage II systems are mandated only in the New York Metropolitan Area (NYMA) and lower Orange County. Part 230 affects those gasoline-dispensing sites whose annual throughput exceeds 120,000 gallons. (This minimum throughput level is waived for NYMA.)

A Stage I vapor collection system captures gasoline vapors which are displaced from underground gasoline storage tanks when those tanks are filled. These vapors are forced into a vapor-tight gasoline transport vehicle or vapor control system through direct displacement by the gasoline being loaded. A Stage II vapor collection system captures at least 90 percent, by weight, of the gasoline vapors that are displaced or drawn from a vehicle fuel tank during refueling; these vapors are then captured and either retained in the storage tanks or destroyed in an emission control device.

2.2.3 Federal Reformulated Gasoline – Phase I and II

Section 211(k) of the CAA deemed that reformulated gasoline must be sold in certain ozone non-attainment areas. Federal reformulated gasoline allows for a maximum of 1 percent benzene by volume. Phase I of the rule took effect January 1, 1995 with preliminary VOC and air toxics standards. These reformulated gasoline standards were replaced with Phase II standards, effective January 1, 2000, which called for broader emissions controls, requiring 25%-29% VOC emission reductions and 20%-22% air toxics reductions. Retail distribution of reformulated gasoline is required in NYMA and Orange County. Dutchess County and a portion of Essex County have voluntarily opted to use reformulated gasoline.

2.3 NY Motor Vehicle Hardware Measures

2.3.1 Part 217: Motor Vehicle Emissions

To help limit ozone precursor emissions from motor vehicles, New York State has implemented 6 NYCRR Part 217, which contains emissions standards for in-use vehicles and applies to all non-electric and non-diesel automobiles in the state. This rule also requires that all affected vehicles have an on-board diagnostic system which functions correctly and meets certain design standards.

2.3.2 Part 218: Emission Standards for Motor Vehicles and Motor Vehicle Engines

In this rule, New York State requires that new light-duty vehicles sold in New York meet California emissions standards.

2.4 Part 231: New Source Review in Non-Attainment Areas and Ozone Transport Region

New Source Review (NSR) in non-attainment areas has been regulated by 6 NYCRR Part 231 of the New York State air pollution control regulations since 1979. Part 231 was written to conform to federal guidelines and requirements on new sources and modifications at major facilities in non-attainment areas which would cause emission increases exceeding *de minimus* levels set forth in the regulation. The base requirements for applicable sources were that Lowest Achievable Emission Rate (LAER) be applied and that emission offsets be provided.

2.5 VOC RACT

EPA has approved regulations for prior SIP commitments for reducing emissions from non-mobile sources. Descriptions of these regulations are summarized in the following sections.

2.5.1 Part 212: General Process Emission Sources

This rule, which applies to both VOC and NO_x emissions, requires the application of Reasonably Available Control Technology (RACT) for each emission point which emits NO_x for major NO_x facilities or VOCs for major VOC facilities. Its requirements are mostly generic, with specific requirements only for coating operations not subject to Part 228.

2.5.2 Part 226: Solvent Metal Cleaning Processes

Part 226 puts forth guidelines for the cleaning of metal surfaces by VOC-containing substances. Listed in this regulation are specifications limiting the vapor pressure solvents as well as those for control equipment and proper operating practices for a variety of degreasing operations, as well as general requirements for storage and recordkeeping. The Department may accept a lesser degree of control upon submission of satisfactory evidence that the person engaging in solvent metal cleaning is applying RACT and has a plan to develop the technologies necessary to comply with the aforementioned sections.

2.5.3 Part 228: Surface Coating Processes (Including Autobody Shops)

Part 228 limits the VOC content for each gallon of coating and sets minimum efficiency for VOC incinerators used as control equipment for VOC emissions from coating processes. It also provides for the use of source-specific analyses of control requirements where the requirements of the rules cannot be met. Additionally, Part 228 contains requirements for paints and coatings used in autobody refinishing and repairing, including spray equipment and housekeeping.

2.5.4 Part 229: Petroleum and Volatile Organic Liquid Storage and Transfer

This rule limits VOC emissions from applicable gasoline bulk plants, gasoline loading terminals, marine loading vessels, petroleum liquid storage tanks or organic liquid storage tanks. There are lower applicability thresholds for each process for NYMA than those for the Lower Orange County metropolitan area, upstate ozone non-attainment areas, and areas not included above.

2.5.5 Part 233: Pharmaceutical and Cosmetic Manufacturing Processes

This rule limits VOC emissions from synthesized pharmaceutical or cosmetic manufacturing processes at a major source facility located in NYMA. Compliance requires the installation of control devices, along with monitoring, recordkeeping, and leak repair.

2.5.6 Part 234: Graphic Arts

This rule sets control requirements and limits VOC emissions from packaging rotogravure, publication rotogravure, flexographic, offset lithographic or screen printing processes at a major source facility located in NYMA.

2.6 MACT

Under section 112 of the 1990 CAA Amendments, hazardous air pollutants (HAPs) are required to be controlled by technology determined to be the Maximum Achievable Control Technology (MACT). Since many organic HAPs are also VOCs, the use of MACT results in the reduction of VOC and NO_x emissions. New York has been adopting MACT control requirements as they have been developed by EPA and has therefore been realizing the reductions resulting from the MACT program. These federal regulations are incorporated by reference in 6 NYCRR 200.10 (Tables 2,3 and 4).

2.7 Part 235: Consumer Products

The Consumer Products rule regulates the VOC content of consumer and commercial products that are sold to retail customers for personal, household, or automotive use, along with the products marketed by wholesale distributors for use in commercial or institutional settings such as beauty shops, schools and hospitals. The rule also includes labeling, reporting and compliance requirements that apply to manufacturers of these products.

2.8 Part 205: Architectural and Industrial Maintenance (AIM) Coatings

This regulation limits the content of VOCs in AIM coatings by setting minimum VOC limits for AIM coatings. Part 205 also contains labeling and reporting requirements, compliance provisions and test methods.

2.9 Part 208: Landfill Gas Collection and Control Systems for Certain Municipal Solid Waste Landfills

This rule applies to the operation of municipal solid waste (MSW) landfills exceeding stated capacities. For landfills whose non-methane hydrocarbon emissions exceed 50 megagrams per year, the operator must submit a collection and control system design and permit application, along with operating standards for the control systems. The rule additionally contains requirements for monitoring, testing, recordkeeping and reporting.

2.10 Part 227: Stationary Combustion Installations

2.10.1 Subpart 227-2: Reasonably Available Control Technology (RACT) for Oxides of Nitrogen (NO_x)

Subpart 227-2 sets NO_x control limits for major source stationary combustion installations. NO_x RACT requirements applicable to particular applicable combustion sources fall into one of two categories: presumptive RACT limits (which are often set as emission limits but also take other forms) or case-by-case RACT determinations. Presumptive RACT limits are category-wide requirements. However, for some sources, presumptive RACT limits may not be attainable. Case-by-case RACT determinations consider the technological and economic circumstances of the source in these circumstances. Each case-by-case determination which establishes RACT requirements in a source's permit must be submitted to the administrator as a separate SIP revision.

2.10.2 Other NO_x RACT Provisions

Additional RACT provisions include Part 220 which limits particulate and NO_x emissions from portland cement plants, and Part 212, which applies to general process sources. For the purpose of RACT analyses related to the 8-hour ozone standard, RACT consists of technically feasible NO_x control strategies to minimize NO_x formation.

2.10.3 Part 204: NO_x Budget Trading Program

Part 204 sets requirements for how New York meets the emissions budget for NO_x established in EPA's final rule entitled "Finding of Significant Contribution and Rulemaking for Certain States in the Ozone Transport Assessment Group Region for Purposes of Reducing Regional Transport of Ozone," otherwise known as the "NO_x SIP Call." This rulemaking set a NO_x emissions budget for New York for the five month summer season. New York is meeting this budget through control programs already in place and by limiting the NO_x emissions of certain major stationary sources through the NO_x budget trading program established under 6 NYCRR 204. Part 204 applies to the following source categories: Electric Generating Units (EGUs) with nameplate capacities equal to or greater than 15 megawatts; non-EGUs with maximum design heat inputs equal to or greater than 250 million British thermal units (mmBTU) per hour; and portland cement kilns with maximum design heat inputs equal to or greater than 250 mmBTU per hour. The Department allocates the budget to sources within the above categories. Sources may hold or transfer allowances, but, at the end of each year's reconciliation period, must have enough allowances in its compliance accounts to cover emissions during the control period.

3.0 AIR QUALITY DATA AND TRENDS

Ozone and ozone precursor monitoring stations in the New York Consolidated Metropolitan Statistical Area (New York CMSA) 8-hr ozone non-attainment area are listed in Table 1 in Appendix A.

3.1 Ozone

Table 2 in Appendix A lists ozone measurements for a total of 24 stations, of which 9 are in New York, 8 in Connecticut and 7 in the New Jersey portions of the non-attainment area for the 2000 to 2006 period. There are some monitors which have blanks indicating that either they were not operational during the entire period or were discontinued during this period. The data listed for each monitor consists of the four highest 1-hr and 8-hr concentrations and the corresponding number of exceedance days that had occurred at that monitor. Table 3 in Appendix A lists the calculated design values for the period of 2000 to 2004 that are averaged to yield the base year design value (DVC) at each monitor.

3.2 NMOC

Following the Photochemical Assessment Monitoring Station (PAMS) network design, there are three sites within the New York CMSA that measure non-methane organic compounds (NMOC) during the ozone season. The locations are identified as upwind, center city and downwind under PAMS network configuration (PAMS 1995). The three sites are:

Station	County	AQS ID	Status
New Brunswick	Middlesex, NJ	340230011	upwind
Botanical Gardens	Bronx, NY	360050083	center city
Sherwood Island	Fairfield, CT	090019003	downwind

Hereafter, we refer the upwind site as RU, center city site as NY, and downwind site as SI. In this analysis, we examined the seasonal averages of the Total NMOC and some selected species at the three PAMS sites for the period 1995 to 2006. The following provides a brief assessment on the measured NMOC levels in New York CMSA, along with the following species (AQS = Air Quality System):

Species	AQS Parameter	Species	AQS
Total NMOC	43102	Benzene	45201
Ethane	43202	Toluene	45202
Propane	43204	Ethylbenzene	45203
Isoprene	43243	O-Xylene	45204

Figure 3-1 displays the seasonal average of total NMOC concentrations at NY, RU, and SI from 1995 through 2006. There is no surprise that the center city site (NY) measures the highest total NMOC concentrations, follow by the upwind site (RU) and downwind site (SI). Unfortunately no data were available for 2006 for the NY site. The center city (NY) shows a downward trend except for a sudden increase in year 2003, while no clear trend emerges for the upwind (RU) and downwind (SI) stations, respectively.

Figures 3-2 to 3-8 display the seasonal average concentrations for ethane, propane, isoprene, benzene, toluene, ethylbenzene, and o-xylene, respectively. A majority of these species represent motor vehicle exhaust, natural gas-based hot water heating, industrial coatings, and natural sources. The center city site (NY), reports higher concentrations than the upwind (RU) or the downwind (SI) sites for ethane, benzene, ethylbenzene and o-xylene, indicating the localized nature of these compounds. Similar to the total NMOC, in general there is a downward trend in these compounds, but with occasional exceptions. Figure 3-3 displays the average concentrations of propane, which appears to show a decrease in the center city (NY) with levels similar to those at upwind (RU) or downwind (SI). For toluene (Figure 3-6), attributable to the industrial coating usage, there seems to be a general decrease in the levels at NY and RU, reaching to those similar to the downwind (SI) site. In the case of isoprene (Figure 3-4), the measurements show year-to-year variability associated with changes in meteorological conditions.

3.3 CO, NO and NO_2

Seasonal averages (June, July, and August) were calculated for CO, NO, and NO_2 for monitors in New York CMSA for the period 1995 to 2006. The averaging was performed using hourly data from 6 to 9 AM that is reflective of the morning rush-hour traffic. For each pollutant the mean concentration and the standard deviation are listed in Table 4 in Appendix A. Examination of the NO and NO_2 data shows that these are associated with high standard deviations suggesting higher variability in these measurements. The CO concentration shows a clearly declining trend for most of the locations in the CMSA. From the limited data, the NO average concentrations also show a slight decline, while NO_2 concentrations are so varied that no clear trend can be ascribed.

3.4 Emissions - Anthropogenic

The 2002 base year emissions inventory has been compiled as part of the regional modeling effort and the details are reported in TSD-1c (2007), and in Pechan (2006). Tables 5a and 5b in Appendix A list the 2002 emissions by major source category and summary, respectively, and in Figure 3-9 are displayed in graphical form. The 2009 projected year emissions inventories for on-the-way (OTW) and beyond-on-the-way (BOTW) have been compiled as part of the regional modeling effort and the details are reported in TSD-1d (2007), TSD-1f (2007), TSD-1j (2007) and MACTEC (2007). The emissions were projected based on growth and control, and in the case of point sources they are provided as 3 distinct sectors, namely as emissions from electric generation units (EGUs), emissions from other point sources (Non-EGU), and emissions from non-fossil fuel units (Non. Foss.). Tables 6a and 6b in Appendix A list the 2009OTW emissions by county and by source sector, while Figures 3-10 and 3-11 display the 2009OTW and 2009BOTW, respectively. In addition to the 2009 scenario, emissions are also estimated for 2012BOTW and these are listed in Table 7a in Appendix A by county and summarized in Table 7b in Appendix A and displayed in Figure 3-12. The emissions identified as 2009BOTW reflect additional emissions reduction measures being undertaken by the Ozone Transport Commission (OTC) states. In this case, emissions changes were limited to the non-EGU and Area sectors only. It should be noted that these emissions data are then processed using SMOKE for use as input to the photochemical model, CMAQ, to simulate ozone over the domain.

3.5 Emissions – Biogenic

Biogenic emissions over the modeling domain were calculated using SMOKE2.1 that incorporated Biogenic Emissions Inventory System (BEIS) v3.1.2. Details of the approach are described in TSD-1b (2007). Briefly, the method utilized surface temperatures generated by the mesoscale meteorological model (TSD-1a 2007) and gridded land use and emissions factors data provided in SMOKE. These estimated emissions were used in all photochemical model (CMAQ) applications. Table 8 in Appendix A lists the annual emissions by county for the New York CMSA.

3.6 Meteorology

The 2002 annual meteorology using MM5 was developed as input data for photochemical model CMAQ. Details of MM5 setup and assessment can be found in TSD-1a (2007).

3.7 Photochemical Model Application

3.7.1 Base Year 2002

The five month period covering May 15 through September 30, 2002 was examined explicitly for ozone. The model assessment on a regional basis can be found in TSD-1e (2007) in Appendix A, which shows that the simulation can be considered satisfactory in reproducing the observed ozone distribution. Eder et al (2003) suggested that overall normalized mean bias (NMB) should be less than 10% and normalized mean error (NME) of 20% as possible indicators of acceptable model performance for ozone.

The statistical measures applied in this analysis are

Observed average, in parts per billion (ppb):

$$\overline{O} = \frac{1}{N}\sum O_i$$

Predicted average, in ppb (only use P_i when O_i is valid):

$$\overline{P} = \frac{1}{N}\sum P_i$$

Correlation coefficient, R^2:

$$R^2 = \frac{\left[\sum (P_i - \overline{P})(O_i - \overline{O})\right]^2}{\sum (P_i - \overline{P})^2 \sum (O_i - \overline{O})^2}$$

Normalized mean error (NME), in %:

$$NME = \frac{\sum |P_i - O_i|}{\sum O_i} \times 100\%$$

Root mean square error (RMSE), in ppb:

$$RMSE = \left[\frac{1}{N}\sum (P_i - O_i)^2\right]^{1/2}$$

Fractional error (FE), in %:

$$FE = \frac{2}{N}\sum\left|\frac{P_i - O_i}{P_i + O_i}\right| \times 100\%$$

Mean absolute gross error (MAGE), in ppb:

$$MAGE = \frac{1}{N}\sum\left|P_i - O_i\right|$$

Mean normalized gross error (MNGE), in %:

$$MNGE = \frac{1}{N}\sum\frac{\left|P_i - O_i\right|}{O_i} \times 100\%$$

Mean bias (MB), in ppb:

$$MB = \frac{1}{N}\sum(P_i - O_i)$$

Mean normalized bias (MNB), in %:

$$MNB = \frac{1}{N}\sum\frac{(P_i - O_i)}{O_i} \times 100\%$$

Mean fractionalized bias (MFB), in %:

$$MFB = \frac{2}{N}\sum\left[\frac{P_i - O_i}{P_i + O_i}\right] \times 100\%$$

Normalized mean bias (NMB), in %:

$$NMB = \frac{\sum(P_i - O_i)}{\sum O_i} \times 100\%$$

In particular for this non-attainment area, the assessment is performed with measurements based on the ozone monitors listed in Table 1 in Appendix A and the results of the statistical measures are listed in Table 9a and 9b in Appendix A for two observed daily maximum 8-hr ozone threshold levels of 40 and 60 ppb, respectively. Results listed suggest that the estimated NME and NMB at most of these monitors is at an acceptable level suggested by Eder et al (2003).

Table 10 in Appendix A lists the comparison between measured and predicted ozone precursor concentrations including selected NMOC species provide an overall view of the application of SMOKE/CMAQ system.

3.7.2 Future Year 2009 and 2012

Photochemical modeling was performed in a manner similar to that of base year. The intent of this modeling is to use the predicted ozone concentrations relative to the base year and estimate the future design value at the monitored locations as well as other areas of the nonattainment area. The approach to be used has been documented in EPA Guidance documents (EPA 2005, 2006) and how it is applied is described in TSD-1g (2007) and in TSD-1h (2007). Table 11a and 11b in Appendix A summarizes the information on the estimated relative reduction factor (RRF) and the projected future design values for 2009BOTW and 2012BOTW scenarios, respectively. Examination of Table 11a in Appendix A indicates that the projected DVF is above the 8-hr ozone NAAQS level of 84 ppb as well as outside the weight of evidence (WOE) range for several monitors in the CMSA. Examination of Table 11b in Appendix A shows that all monitored stations are below the 8-hr ozone NAAQS except for the Stratford, CT location (AQS ID 090013007) which is within the WOE range, thus demonstrating modeled attainment of the area.

3.7.3 Unmonitored Area Analysis

As per EPA guidance (2005, 2006a), the potential occurrence of a projected exceedence at an unmonitored location was investigated. The procedure examined all grid cells for all counties within and immediately surrounding the non-attainment area using the spatial interpolation and gradient adjustment techniques implemented in the EPA-MATS (Model Attainment Test System) software (Timin, 2006).

In this application, MATS was utilized to spatially interpolate base year observed design values. MATS was also utilized to estimate gradient adjustment factors that were based on the CMAQ predictions of the top-30 daily maximum 8-hr ozone concentrations at each grid cell for the 2002 base case. The relative effect of the emission reduction under the 2009BOTW scenario on daily maximum 8-hr concentrations was then estimated by calculating a gridded field of RRF by treating each grid cell as a monitor location. Two approaches were used for calculating the RRF. Use MATS to provide RRF at each grid cell, and the other approach is based on 9-grid cells as described in TSD-1g and TSD-1h. Finally, Future design value (DVF) for each grid cell is estimated by multiplying the spatially interpolated Base Design Values (DVB) from MATS with the gridded gradient adjustment factors (from MATS) and with the gridded RRF fields estimated by the two methods.

The New York CMSA 8-hr ozone non-attaiment is abutted by the Philadelphia, Poughkeepsie, and Greater Connecticut 8-h ozone nonattainment areas, and as such are not considered in this analysis and discussed elsewhere (New York CMSA, 2007).

Table 12a and 12b in Appendix A lists all the counties pertaining to the nonattainment area and some of the surrounding counties identified by their FIPS code and location of the grid cells in the CMAQ modeling domain for the 2009BOTW and 2012BOTW scenarios, respectively. The Tables also provide information as to whether or not the grid cell is associated with an ozone monitor and the percent of the grid area located over water based upon the land classification used in the meteorological modeling with MM5. This analysis shows that for the 2009BOTW scenario, there are several other grid cells that are not associated with a monitor but a percent of the grid cell is over water that are above the 84 ppb threshold both under the hybrid MATS or MATS methodology. In particular, a grid cell that is not associated with water in Bergen County, NJ is at 92ppb or 91ppb depending upon the MATS methodology used. Considering the 2012BOTW scenario (see Table 12b in Appendix A) again the Bergen county grid cell that is not associated with water is projected at 88ppb or 87ppb depending upon the MATS methodology, while other grid cells above the 84 ppb threshold are found to be associated with water. Thus the unmonitored area analysis suggests the potential exists for projected 8-h ozone levels to be above the 8-h ozone NAAQS level under the 2009BOTW scenario, but are essentially absent under the 2012 scenario.

3.8 Weight of Evidence

The model projects that the 8-hr ozone design values for 2009 for the New York CMSA are well above the 8-hr ozone NAAQS, but are below for 2012. The current design values (DV) from 2002 through 2007 are listed in Table 13 in Appendix A. While all monitors show that the 2006 DV levels are lower compared to 2002 DVs, several of the monitors continue to be above the 8-hr ozone NAAQS level. There was a slight upturn in measured ozone levels for 2007. For the monitors in New York State, the only appreciable upward changes were found at the White Plains monitor in Westchester County and the Riverhead monitor in Suffolk County. The changes in DVs from 2006 to 2007 is mostly attributable to the loss of a low 4th highest value (0.078 ppm at White Plains and 0.069 ppm at Riverhead) for 2004. Since the long term trends at these locations show declining ozone, data from these sites will need to be examined carefully in the future.

The EPA recommended method of estimating the base year design value (DVC) for the period of 2000 to 2004 is a weighted average approach that weighs 2002 measurements much more than the other years. Another method is to estimate the base year design value as the average of the five year period of 2000 to 2004. For this approach the 4th highest concentration listed in Table 2 in Appendix A are utilized and average DVC is listed in Table 14 in Appendix A for each of the monitors. The projected design values are estimated using the RRF values from Table 11a in Appendix A and are included in Table 14 in Appendix A. The estimated design values by this method are well below the 8-hr ozone NAAQS, suggesting that this area may be in attainment of the 8-hr ozone NAAQS in 2009. The Department chose not to use this approach to demonstrate attainment since it did not believe, especially given the measured ozone levels for 2007, it had the evidence to indicate that such dramatic drops in measured ozone levels were achievable.

In addition, the trends in the hourly ozone concentrations at some of the monitoring stations (TSD-aa 2007) were examined and the results are listed in Table 15 in Appendix A. The estimated trend is found to be strongly dependent upon the time period that is being considered in the analysis. The estimated trend (percent per year) at a majority of the monitors is downward (with and without meteorological adjustment) for the overall monitoring time period, with some exceptions for the longer time period. However, if consideration is given to the 2000 to 2005 period during which there were targeted reductions in ozone precursor emissions through the state and federal programs, all monitors in the CMSA show a downward trend.

The Department, as a result of the above referenced attainment projection modeling, is requesting under separate cover, that EPA reclassify the NY-NJ-CT ozone nonattainment area as “serious” in accordance with CAA Section 181(a)(3). The completed modeling shows that the nonattainment area will attain the ozone NAAQS by 2012 considering weight-of-evidence. The critical monitoring location (Fairfield (Stratford), CT) has a predicted 2012 design value of 0.086 ppm which is within the weight-of-evidence range as allowed pursuant to EPA’s “Guidance on the Use of Models and Other Analyses for Demonstrating Attainment of Air Qulaity Goals for Ozone, $PM_{2.5}$, and Regional Haze.” The Department anticipates that the nonattainment area will measure attainment by 2012 (equal to or less than 0.084 ppm) as a result of additional emissions reduction measures that are not accounted for in the model-based attainment predictions.

A number of control programs are being adopted or implemented that are not represented in the projection inventories for 2012. These include:

- Part 222, Distributed Generation
- Part 227-2, NOx RACT (High Electric Demand Day Units)
- PlaNYC (New York City emission reduction initiatives)
- Governor Spitzer’s “15 by 15” Initiative

These measures will reduce NOx and VOC emissions by significant amounts. The regulations being adopted by the Department will yield quantifiable, enforceable NOx emissions reductions on the order of 50 tons per day. When compared to those measures included in the modeling and the base and projected NOx inventories, it is apparent that reductions of this magnitude (9 percent of the 2012 projected NOx inventory) have the ability to reduce ozone levels substantially. Given that New Jersey and Connecticut as well as other northeastern states (Delaware, Maryland and Pennsylvania) are committing to similar measures that will also yield substantial reductions in NOx emissions (Memorandum of Understanding Among the States of the Ozone Transport Commission Concerning the Incorporation of High Electrical Demand Day Emission Reduction Strategies into Ozone Attainment State Implementation Planning), it is expected that NOx emissions on days of high electricity demand (which typically track with days of high ozone) will be reduced substantially throughout the Northeast corridor.

3.8.1 Part 222, Distributed Generation

This regulation will set limits on small generators that are not currently controlled. As minor sources, these sources need only to stay below the major source threshold to avoid reasonably available control technology (RACT). Most of these sources (generally diesel-fired stationary internal combustion engines) tend to operate on days of high electricity demand and when called upon to address reliability concerns. This regulation will place NOx and PM limits on existing sources as well as restrict the number of megawatts that can be called to operate under demand response. It will also set strict emission standards for new units. It is expected that NOx emissions on High Electricity Demand Days (HEDD) could be reduced by 10 to 15 tons per day in 2012 through the implementation of this regulation.

3.8.2 Part 227-2, NOx RACT (High Electricity Demand Day Units)

This regulatory revision will set new more stringent NOx limits on electricity generating units. On High Electricity Demand Days (HEDD) base loaded, load following and peaking units all increase operations to meet demand. HEDD are generally those days when the potential for ozone formation is highest (hazy, hot and humid weather). The Department is specifically moving to revise the NOx emission limits for all very large boilers and combustion turbines. These emission limits are expected to result in the reduction of 35 to 40 tons per day of NOx emissions.

3.8.3 PlaNYC

PlaNYC is a compilation of initiatives intended to make the City of New York “the model for cities in the 21st Century.” PlaNYC is a holistic vision that focuses on five key elements of the city’s environment – land air, water, energy and transportation recognizing that choices in one area have unavoidable impacts on the other areas. The air quality goal of PlaNYC is to “achieve the cleanest air quality of any big U. S. city.” We laud the City of New York for this ambitious goal and will partner with the City to help it achieve this goal. While much of PlaNYC has an outlook beyond the attainment date of this plan (2012) and is focused on pollutants that are not causing ozone, many initiatives within PlaNYC will help reduce emissions of NOx and VOCs in time to assist with the 2012 attainment of the ozone NAAQS. It should be noted that the Department is not committing to adopting any of these measures as part of the SIP, but is instead providing these programs as information to further its weight-of-evidence demonstration. If the Department chooses to include these measures in a future SIP revision, it will first evaluate each measure resulting from this initiative individually to determine if it is appropriate to be included in the SIP. The Department will need to consider among other things whether the measure is quantifiable, enforceable, and include emissions reductions that are additional to other adopted SIP measures. The PlaNYC measures include:

Improving the fuel efficiency of private cars by waiving New York City's sales tax on the cleanest, most efficient vehicles and working with the MTA, the Port Authority, and the State DOT to promote hybrid and other clean vehicles. Pilot new technologies and fuels, including hydrogen and plug-in hybrid vehicles.

Reducing emissions from taxis and other for-hire vehicles by reducing idling and increasing fleet efficiency. This will be accomplished by working with the Taxi and Limousine Commission, the industry and other stakeholders.

Retrofit ferries and mandate the use of cleaner fuels. Retrofit the Staten Island Ferry fleet to reduce emissions. Work with private ferries to reduce their emissions.

Replace, retrofit and refuel diesel trucks. Introduce biodiesel into the City’s truck fleet, go beyond compliance with local laws, and further reduce emissions. Accelerate emissions reductions of private fleets through existing Congestion Mitigation and Air Quality (CMAQ) programs. Work with stakeholders and the State to create incentives for the adoption of vehicle emission control and efficiency strategies. Improve compliance of existing anti-idling laws through targeted educational campaign.

Reduce emissions from buildings by improving energy efficiency, decreasing fuel consumption, promoting the use of cleaner burning heating fuels, and facilitating the repowering, replacement and retirement of out-of-date equipment at older power plants.

Implement more efficient construction management practices. Accelerate adoption of technologies to reduce construction related emissions.

Partner with Port Authority to reduce emissions from port marine vehicles, port facilities and airports.

Reduce emissions from boilers in 100 city public schools.

Reforest 2,000 acres of parkland. Increase tree planting on lots. Through MillionTreesNYC plant and care for one million new trees across the City's five boroughs over the next decade.

3.8.4 Governor Spitzer's "15 by 15" Initiative

"15 by 15" is a comprehensive plan for reducing energy costs and curbing pollution in New York. It calls for the reduction of electricity use by 15 percent from forecasted levels by the year 2015 through new energy efficiency programs in industry and government. It also calls for the creation of new appliance efficiency standards and the setting of more rigorous energy building codes. The Department is not committing to the inclusion of any of these measures as part of the SIP at this time, The Department will evaluate each measure resulting from this initiative individually to determine if it is appropriate to be included in the SIP. The Department will need to consider among other things whether the measure is quantifiable, enforceable, and include emissions reductions that are additional to other adopted SIP measures.

3.9 Summary

This study shows that based upon the projected emissions inventory and the photochemical modeling the New York CMSA shows modeled attainment for 8-hr ozone NAAQS in 2012 based upon the EPA guidance method.

3.10 References

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TSD-aa (2007) Trends in Measured 1-hr Ozone Concentrations over the OTR modeling domai

4.0 EMISSION INVENTORIES

4.1 Introduction

This chapter begins with a review of the annual 2002 emission inventory, even though for purposes of an ozone implementation plan the more appropriate measure is an emission rate based on a "typical" ozone season day (OSD). Ozone season emissions are presented in the second section. A third section is devoted to future year projections. Both OSD and future projections use these 2002 annual estimates as the baseline. OSD emissions are adjusted for the various types of emission source sectors, based on their activity level during the summer ozone season. The source sectors enumerated in this chapter are divided into point, EGU, area, non-road mobile, on-road mobile, and biogenic sources.

4.2 Summary of 2002 Baseline Annual Emissions

The fundamental unit for the inventory of each source sector and contaminant is an annual tons per year emissions level reported on a "by-county" basis. The by-county and total statewide inventory for CO, NO_x, and VOCs are detailed in Appendix B. The statewide totals are summarized in Table 4.1. Tons per year are reported to the nearest ton, except where there is less than one (1) ton. Those instances are reported in tenths to distinguish them from categories where there are no (or zero) emissions.

Table 4.1 Statewide Summary

2002 Annual	Tons per Year			Percent of All Sectors		
	CO	**NOx**	**VOC**	**CO**	**NOx**	**VOC**
Point (non-EGU)	53,563	37,985	13,363	1.2%	5.8%	1.0%
EGU	12,189	80,386	1,316	0.3%	12.2%	0.1%
Area	356,287	98,804	507,292	7.7%	15.0%	37.5%
Nonroad	1,206,370	119,808	157,892	26.0%	18.2%	11.7%
Onroad	2,942,730	313,890	179,731	63.5%	47.6%	13.3%
Biogenic	63,436	8,313	492,483	1.4%	1.3%	36.4%
All Sectors	4,634,575	659,186	1,352,076	100.0%	100.0%	100.0%

For the nine-county NYMA, the summary is tabulated below as Table 4.2.

Table 4.2 New York Metropolitan Area

2002 Annual	Tons per Year				Percent of All Sectors		
	CO	**NOx**	**VOC**		**CO**	**NOx**	**VOC**
Point (non-EGU)	3,542	9,211	2,379		0.2%	3.3%	0.7%
EGU	6,741	33,454	819		0.4%	12.0%	0.2%
Area	23,834	54,968	158,039		1.3%	19.7%	47.6%
Nonroad	667,739	55,984	60,635		36.9%	20.1%	18.3%
Onroad	1,106,919	124,640	81,499		61.1%	44.7%	24.6%
Biogenic	3,098	633	28,372		0.2%	0.2%	8.6%
All Sectors	1,811,874	278,890	331,743		100.0%	100.0%	100.0%

For both the Statewide and NYMA annual inventories, the percent share of each sector for each of the contaminants is shown in the left-hand portion of the tables above. The by-county and by-sector details (presented as Appendix B) are also available in spreadsheets (MS Excel).

4.2.1 Point Inventory Methodology

New York State has an integrated emissions, permitting, compliance, and fee billing computer system identified as New York's Air Facility System (AFS). The emissions module of AFS is a database which contains detailed facility and emissions information for all of the major (Title V) sources within New York State. This database is used to generate annual emission statement forms which are sent out to the State's major facilities each year. Emission statements survey the type and amount of fuel consumed (combustion sources), throughput rates (non-combustion processes), average hours of operation, percent operation by season, control descriptions/efficiencies, and estimates of actual emissions for each regulated contaminant. The 2002 emissions from point sources were obtained directly from Title V major sources via the required emission statement surveys. These data from the major sources were further subdivided into EGU and (other) point source sectors.

All of this data was submitted to MARAMA / MANE-VU for additional quality assurance (QA) and for their use in preparing the projection inventories. MARAMA, the Mid-Atlantic Regional Air Management Association, Inc. is a voluntary, non-profit association of ten state and local air pollution control agencies. MARAMA is cooperating with the Northeast States for Coordinated Air Use Management (NESCAUM) and the Ozone Transport Commission (OTC) to provide staff support to the Mid-Atlantic and Northeast

Visibility Union (MANE-VU). The inventory summary work described in this chapter was prepared by MANE-VU as a coordinated effort among the states to develop a consistent inventory throughout the region with the most efficient process. The MANE-VU methodology and results can be found in the document “Development of Emission Projections for 2009, 2012, and 2018 for NonEGU Point, Area, and Nonroad Sources in the MANE-VU Region,” February 2007.

4.2.2 Area Inventory Methodology

Area sources are defined and calculated in accordance with the descriptions and methodologies in the EPA Emissions Inventory Improvement Program (EIIP) Volume III - Area Source series, and the Air Toxic Emission Protocol for the Great Lakes States. Area sources collectively represent individual stationary sources that have not been inventoried as specific point sources. These individual sources treated collectively as area sources are typically too small, numerous, or difficult to inventory using the methods for the other classes of sources. Area sources represent a collection of emission points for a specific geographic area, most commonly at the county level; however, any geographic area can be used to present area sources. Facilities and emission points are grouped together with other like sources into area source categories. These area source categories are combined in such a way that emissions can be estimated for an entire category using one methodology. This methodology normally requires a step to exclude the emissions from sources that have already been accounted for as point sources. The area source categories must be defined in such a way to avoid overlap or duplication with point, mobile or biogenic emissions sources.

New York has applied the methodologies as identified in EIIP and/or the Air Toxic Emission Protocol for the Great Lakes States, including appropriate 2002 actual activity data to develop the 2002 periodic area source inventory. The area sources are broken down according to Area Source Codes (ASC). Details of area source methodologies are provided as Appendix D.

All of the area source data was submitted to MANE-VU for additional QA and for its use in preparing the projection inventories. The MANE-VU methodology and results can be found in the document “Development of Emission Projections for 2009, 2012, and 2018 for Non-EGU Point, Area, and Nonroad Sources in the MANE-VU Region,” February 2007.

4.2.3 On-Road Inventory Methodology

The on-road component of the 2002 base year inventory includes an estimate of emissions from all motorized vehicles operated on public roadways. All on-road mobile emissions were estimated using EPA's MOBILE6 emission model and individual inputs for each of the 62 counties in the state. These inputs include varying temperature, traffic, and/or air quality programs. “Base-year” inventory inputs were derived from 2002 data, where applicable, and reflect the programs and controls that were in effect in 2002. In order to yield more accurate annual inventories the modeling was done using specific inputs for each month. Brief descriptions of these input types are provided below.

A new 2002 Daily Vehicle Miles Traveled (DVMT) inventory was constructed by the New York State Department of Transportation (NYSDOT) to provide DVMT estimates by county, geographic component (urban, small urban, and rural) and functional class. This resulting VMT by county and by functional class is then multiplied by a seasonal adjustment factor to account for seasonal differences. This seasonal adjustment factor is also supplied by the NYSDOT. For ozone season day, the seasonal adjustment factor is a 10 year average of “summer” seasonal adjustment factors supplied by NYSDOT.

The vehicle mix for each of the 11 NYSDOT regions in New York State is used to produce VMT by vehicle type. There are 28 fuel and weight categories employed by MOBILE6. The main objective is to create a separate, distinct (where justified) vehicle mix for each of the twelve roadway types in the Federal Highway Administration (FHWA) classification scheme.

The vehicle age distributions used in MOBILE6 are obtained from the New York State Department of Motor Vehicles (NYSDMV) registration data for the current year at the beginning of each July. Each record is sorted into the 28 vehicle types by county. The 2002 registration distribution was used for 2002 inventories. Diesel fractions are obtained at the same time as the registration distributions.

EPA default Mileage Accumulation Rates for all vehicle types were taken from EPA’s Fleet Characterization Data for Mobile6.1.

NYSDOT created vehicle use profiles similar to those used as inputs to California’s EMFAC model. One of these inputs is the percent of vehicle trips in each hour; these values also equate to the number of starts per hour.

Hourly temperatures were obtained from the National Oceanic and Atmospheric Administration for New York and vicinity. Each area of the State was then matched to a NWS station. The Department uses hourly values to more accurately model hourly emissions. Monthly average hourly temperatures were created from recorded hourly temperature data for all of 2002 for each of the weather stations used for ozone temperatures.

The relative humidity data for modeling of ozone exceedance days were calculated from hourly airport observations that the Department obtained from the National Climatic Data Center. Dewpoint observations for the same dates and locations that were used in temperature calculations were also used to determine hourly relative humidity values. The Department uses actual recorded hourly values to more accurately model hourly emissions. In modeling annual emissions an average daily absolute humidity value was calculated for each month of the year.

The Planning Division of NYSDOT developed speed estimates for air quality modeling in 1994. Speeds were developed for 15 areas, some as small as a single county, throughout the state along with each of the 12 possible functional classes and four time periods. When modeling these speeds in MOBILE6, the AVERAGE SPEED command was not used because it can only model a single speed for the entire day. The SPEED VMT command allows the modeling of different hourly speeds and was therefore chosen as the input format for New York State speeds.

The Stage II Refueling program began for the NYMA area in 1989. However, refueling emissions are not included as part of the mobile source inventory; rather, they are calculated separately and included in the area source component of the inventory.

The Mobile6 Anti-Tampering Program command is used to specify the programs in effect in New York State. The Anti-Tampering Program is applicable statewide to all gasoline-powered vehicles during the annual safety/emissions inspections. An additional gas cap pressure check was added in 1999 The Mobile 6 I/M Program command is used to specify the Inspection/Maintenance (I/M) programs in effect in New York State.

The LEV 2 phase-in schedules were created using a spreadsheet to solve for the NMOG standard for each model year using the various motor vehicle certification standards, or “bins.” The LEV 2 program is based on each vehicle meeting an NMOG standard for each model year. This standard can be met using any combination of LEV 2 bins the manufacturer desires.

4.2.4 Non-Road Inventory Methodology

The non-road component of the 2002 base year inventory includes an estimate of emissions from motorized vehicles and equipment that are not typically operated on public roadways. Emissions estimates for non-road mobile sources were estimated using four separate methodologies. EPA's Non-Road Model is used for a number of non-road emission categories while airport, commercial marine vessel and locomotive emissions are calculated separately outside of the model. In addition, all 62 counties are modeled separately and the state is separated into two areas to account for the federally mandated RFG program in place in the 10-county NYMA.

Emissions from 2-stroke gasoline, 4-stroke gasoline, liquefied petroleum gas, compressed natural gas and diesel fueled non-road vehicles as well as emissions from recreational marine vessels were estimated using the U.S. EPA Non-Road Model Version 2005. The software was finalized for use in SIP development on June 12, 2006. Using the Non-Road Model, emissions from New York were estimated for each individual county for each month of the year. To account for temperature and fuels differences across the state, county-specific temperature and fuels blend data for each month of the year were input into the model.

For 2-stroke gasoline, 4-stroke gasoline, liquefied petroleum gas, compressed natural gas and diesel fueled nonroad vehicles as well as emissions from recreational marine vessels; the U.S. EPA Nonroad Model was run on a monthly county-by-county basis. To develop emissions for a typical ozone season day, the emissions for June - August were added together and then divided by 92.

The temperature data for 2002 was acquired from the National Oceanic and Atmospheric Administration which included historical weather data from 33 airport locations across the State of New York as well as surrounding locations. This information was used to develop average high and low temperatures for each month of the year on a county by county basis.

Fuels blend data for 2002 was acquired from the New York State Department of Agriculture and Markets. This data is based on thousands of samples collected across the state from fueling stations and retention areas. These samples are analyzed for many profiles including oxygen content, RVP, and sulfur content. This analysis provides average monthly fuels profiles on a county-by-county basis for use in the model.

Aircraft emissions for New York State are estimated using the Federal Aviation Administration's (FAA) Emission Dispersion Modeling System (EDMS) Version 4.4. Airport specific landing and take-off data by aircraft type acquired from FAA are used as inputs to the model. EDMS uses this information to estimate emissions from both aircraft and ground service equipment.

Commercial Marine Vessel (CMV) emissions are based upon the CMV emissions report prepared by the Starcrest Consulting Group in conjunction with their work on the New York Harbor Deepening Project. The emissions from Bronx, Kings, Nassau[1], New York, Queens, Richmond, Rockland, Suffolk and Westchester counties are based on actual 2002 operational data from an intensive survey performed by Starcrest. The CMV inventory for the rest of the state is based on Radian Corporation's report entitled "1990 Base Year Ozone Precursor Emissions Inventory for New York State: Volume 4: Non-Road Mobile Sources," March 1993 (revised July 1993).

The Starcrest inventory includes a detailed survey of all CMV types, activity and fuel consumption and took several months to complete. This project was undertaken as part of the NYC Harbor Deepening Project to update the baseline inventory and to optimize the offsets that would be utilized by the Army Corps of Engineers. This updated inventory was performed by Starcrest Consulting under contract to the Port Authority. While the Department would like to use the Starcrest methodology to update the CMV inventory for the rest of the state it would require an intensive effort to survey all of the counties bordering Lake Erie, Niagara River, Lake Ontario, the St. Lawrence Seaway, Lake Champlain, Hudson River, Mohawk River, Erie Canal and both the Long Island Sound and Atlantic Ocean since Suffolk County was not included in the Starcrest inventory. Other bodies of water that may have CMV traffic are the Finger Lakes, Oneida Lake, Lake George and possibly some other rivers.

The Department is aware that there is more recent EPA guidance regarding CMV inventory development but the methodology is very different than the work completed by Starcrest. The Department also believes that this guidance is far less detailed and would not result in an improvement to the methodology established in the development of the 1990 inventory.

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[1] The update to the Nassau and Suffolk CMV inventory only pertains to that portion included in the New York Harbor study completed by Starcrest. Only portions of these counties affected by the New York City Harbor Deepening Project are included. The remaining portions of Nassau and Suffolk counties are based upon emissions from the 1990 Radian Report grown to reflect 2002 vessel activity.

The locomotive emissions inventory is based upon a report developed under contract to the New York State Energy Research and Development Authority (NYSERDA). The report is entitled "NYSERDA CLEAN DIESEL TECHNOLOGY: NON-ROAD FIELD DEMONSTRATION PROGRAM; Development of the 2002 Locomotive Survey & Inventory for New York State." The locomotive inventory is based upon a survey conducted of the national, regional, and local freight railroads, as well as passenger and commuter rail lines operating in New York State. Information collected in the survey was used in development of the emissions inventory.

For aircraft, commercial marine and locomotives the 2002 annual base year inventories were first grown to annual projection year inventories by the method described above. For all three categories, there is no documentation that supports using any seasonal adjustment factors to develop daily emissions. Therefore, ozone season day emissions were calculated by dividing the annual emissions by 365.

4.2.5 Biogenic Inventory Methodology

Biogenic emissions were calculated using Biogenic Emissions Inventory System (BEIS) v3.1.2. Daily values were totaled for each county to yield annual numbers.

4.3 Summary of 2002 Ozone Season Day (OSD) Emissions

For this portion of the inventory, the fundamental unit for the inventory of each source sector is tons per OSD. Similar to the annual inventory, the OSD inventory is reported on a "by-county" basis for the various source sectors. The by-county and total statewide inventory for CO, NO_x, and VOCs are detailed in Appendix C. The statewide numbers are summarized in Table 4.3. They are reported to the nearest hundredth ton. In some cases, where there is less than one-hundredth (0.01) ton, emissions are reported in thousandths to distinguish them from categories where there are no (or zero) emissions.

Table 4.3 Statewide Ozone Season Day Summary

2002 OSD	Tons per Day			Percent of All Sectors		
	CO	**NOx**	**VOC**	**CO**	**NOx**	**VOC**
Point (non-EGU)	227.27	140.85	59.46	1.8%	7.8%	1.0%
EGU	36.73	237.29	3.97	0.3%	13.1%	0.1%
Area	148.31	153.39	889.13	1.2%	8.5%	15.3%
Nonroad	5,386.05	400.78	749.45	42.2%	22.1%	12.9%
Onroad	6,518.33	844.22	546.65	51.1%	46.6%	9.4%
Biogenic	431.59	35.68	3,548.04	3.4%	2.0%	61.2%
All Sectors	12,748.29	1,812.20	5,796.69	100.0%	100.0%	100.0%

For the NYMA, the summary is tabulated as Table 4.4.

Table 4.4 New York Metropolitan Area Ozone Season Day Summary

2002 OSD	Tons per Day				Percent of All Sectors		
	CO	**NOx**	**VOC**		**CO**	**NOx**	**VOC**
Point (non-EGU)	15.78	50.91	11.21		0.3%	6.7%	0.9%
EGU	23.07	117.61	2.70		0.4%	15.6%	0.2%
Area	28.70	78.33	461.31		0.5%	10.4%	38.4%
Nonroad	2,824.03	178.49	283.51		53.3%	23.6%	23.6%
Onroad	2,384.72	327.31	236.83		45.0%	43.3%	19.7%
Biogenic	21.08	2.72	204.40		0.4%	0.4%	17.0%
All Sectors	5,297.38	755.38	1,199.96		100.0%	100.0%	100.0%

The percent share of each sector for each of the contaminants on a statewide basis is shown in the rightmost columns in the tables above.

4.3.1 Methodological Details Used to Compute Ozone Season Day from the Annual Estimates

OSD emission inventories are derived from annual inventories and are estimated by adjustments to reflect the relative difference of emission patterns during the ozone season when compared to cooler months. Depending upon source sector activity levels, some source categories are more or less likely to have emissions during an OSD. For example, an OSD is less likely to have emissions related to space heating and more likely to have emissions related to air conditioning or painting. Many categories have relatively constant emissions throughout the year (e.g., consumer products – deodorant, house cleaning products, etc.) OSD estimates attempt to characterize those seasonal differences to more accurately reflect emissions during the summer season.

The ORMS (on-road mobile source) sector uses a seasonal adjustment factor to adjust DOT's annual average daily vehicle miles traveled (AADVMT). This seasonal adjustment factor is an average of the June, July, and August monthly factors used by NYSDOT.

Hourly temperatures were obtained from the National Oceanic and Atmospheric Administration for New York and vicinity. Each area of the State was then matched to a NWS station. The Department uses hourly values to more accurately model hourly emissions.

The relative humidity data for modeling of ozone exceedance days were calculated from hourly airport observations that NYSDEC obtained from the National Climatic Data Center. Dewpoint observations for the same dates and locations that were used in temperature calculations were also used to determine hourly relative humidity values. NYSDEC uses actual recorded hourly values to more accurately model hourly emissions.

These inputs are then used in MOBILE6.2 to produce an emission factor for each vehicle and road type combination for all 62 counties. The resultant emission factor in grams/mile is multiplied by daily VMT, including seasonal adjustment, to determine daily ozone season emissions.

For NRMS (non-road mobile sources) the following methodologies were used:

1. For 2-stroke gasoline, 4-stroke gasoline, liquefied petroleum gas, compressed natural gas and diesel fueled non-road vehicles as well as emissions from recreational marine vessels ; the U.S. EPA Non-Road Model was run on a monthly county-by-county basis. To develop emissions for a typical OSD, the emissions for June through August were added together and then divided by 92.

2. For aircraft, commercial marine vessels and locomotives the 2002 annual base year inventories were first grown to annual projection year inventories by the method described above. For all three categories, there is no documentation that supports using any seasonal adjustment factors to develop daily emissions. Therefore, OSD emissions were calculated by dividing the annual emissions by 365.

Area source (non-point) sector OSD emissions are calculated based upon the area source category. For example, for consumer products, the annual emissions are simply divided by 365 because consumer products are generally used uniformly throughout the year. For dry cleaning, the emissions are assumed to be consistent throughout the year, but are assumed to be five day per week emissions, so annual emissions for this category are divided by 260 (5*52) to estimate OSD emissions. For AIM coatings, activity is higher during the summer, so based upon EPA guidance, an adjustment factor of 1.3 is applied during the summer – annual emissions are multiplied by 1.3 and divided by 365 to estimate OSD emissions.

Point source sector OSD emissions are calculated from the operational information provided in the emission statement forms. This information includes the process throughput and a breakdown of operation by season, including the number of days the process was in operation during that season.

For biogenics, technical staff used statewide annual by-day BEIS output to calculate what they have come to call "biogenic OSD expansion factors". These are subsequently applied to the "annual by-county" estimates to generate OSD tonnages. The expansion factors use BEIS model statewide daily values from June, July, and August to compute a representative ton per OSD. Details of this series of computations are available upon request.

4.4 Summary of Future Year Emissions

For the NYMA, the future years of interest are 2008, 2011 and 2012. The inventories for those years are presented in Tables 4.5, 4.6 and 4.7.

Table 4.5 New York Metropolitan Area 2008 Ozone Season Day Summary

2008 OSD	Tons per Day			Percent of All Sectors		
	CO	**NOx**	**VOC**	**CO**	**NOx**	**VOC**
Point (no EGU)	17.74	64.99	13.21	0.4%	10.4%	1.3%
EGU	27.07	108.94	2.50	0.6%	17.4%	0.3%
Area	31.06	76.73	406.31	0.7%	12.2%	41.0%
Nonroad	3,121.62	161.51	214.87	68.6%	25.8%	21.7%
Onroad	1,332.64	211.77	148.85	29.3%	33.8%	15.0%
Biogenic	21.08	2.72	204.40	0.5%	0.4%	20.6%
All Sectors	4,551.20	626.66	990.14	100.0%	100.0%	100.0%

Table 4.6 New York Metropolitan Area 2011 Ozone Season Day Summary

2011 OSD	Tons per Day			Percent of All Sectors		
	CO	**NOx**	**VOC**	**CO**	**NOx**	**VOC**
Point (no EGU)	18.28	64.05	13.68	0.4%	11.3%	1.5%
EGU	27.07	108.94	2.50	0.6%	19.2%	0.3%
Area	31.76	77.05	398.88	0.7%	13.6%	42.8%
Nonroad	3,250.20	149.85	191.70	72.3%	26.5%	20.6%
Onroad	1,149.41	163.84	120.93	25.6%	28.9%	13.0%
Biogenic	21.08	2.72	204.40	0.5%	0.5%	21.9%
All Sectors	4,497.79	566.45	932.09	100.0%	100.0%	100.0%

Table 4.7 New York Metropolitan Area 2012 Ozone Season Day Summary

2012 OSD	Tons per Day			Percent of All Sectors		
	CO	**NOx**	**VOC**	**CO**	**NOx**	**VOC**
Point (no EGU)	18.46	62.80	13.84	0.4%	11.5%	1.5%
EGU	27.07	108.94	2.50	0.6%	20.0%	0.3%
Area	31.91	77.34	399.75	0.7%	14.2%	43.5%
Nonroad	3,292.11	145.67	187.23	73.6%	26.7%	20.4%
Onroad	1,083.31	147.43	111.08	24.2%	27.1%	12.1%
Biogenic	21.08	2.72	204.40	0.5%	0.5%	22.2%
All Sectors	4,473.94	544.90	918.80	100.0%	100.0%	100.0%

4.4.1 Projection Methodologies for Point, EGU, and Area Sources

The 2002 non-EGU point and area source emissions inventories were projected using the growth factors in tables provided by MANE-VU. The emissions used for projections were interpolated for the years 2005, 2008, and 2011. The MANE-VU methodology and results can be found in the document “Development of Emission Projections for 2009, 2012, and 2018 for Non-EGU Point, Area, and Non-Road Sources in the MANE-VU Region,” February 2007.

For EGU point sources, EPA has recommended the use of the IPM model to project EGU emissions. MANE-VU followed this recommendation, so the MANE-VU projections for point sources used IPM to estimate EGU emissions. When the IPM modeled emissions were compared to the actual 2005 emissions for New York, or when IPM modeled emissions were compared to the permit applications that the Department has received for new EGUs, it became obvious that, for New York, the IPM projected emissions were not realistic (for example, in NYCMA, IPM projected more than a 70 percent reduction in NO_x emissions from EGUs by 2009 with the generation – and associated emissions – moving further upstate). This re-siting of facilities by IPM and hence the movement of emissions does not accurately reflect the reality of the constraints of the electrical grid in New York State, nor does it reflect the realities of siting new power plants in New York. In order to present a more realistic projection of EGU emissions for New York, it is assumed that the 2005 actual EGU emissions will represent the EGU emissions for the future years. 2005 is the most recent data available. The trend in recent years for EGUs has been decreasing emissions statewide (25 percent NO_x reduction between 2002 and 2005). Although it is forecasted that generation will increase in New York in future years, emissions are not expected to increase due to the Clean Air Interstate Rule (CAIR) which establishes NO_x and SO_2 emission caps. The only exception to assuming that the 2005 actual EGU emissions represent future year EGU emissions is where there is a consent agreement that limits future year emissions for a facility. In that case, the future year emissions for that specific facility have been reduced to meet the limits contained in the agreement.

Sample calculations for point and area source growth and control are provided in Appendix J.

4.4.2 On-Road Projection Methodology

New York State is modeled by using individual inputs for each of the 62 counties. Each county receives varying temperature, traffic, and/or air quality programs. The mobile source projection inventory was developed by using Mobile6 emission factors and vehicle miles traveled (VMT) projections for each future inventory year prepared by the New York State Department of Transportation (NYSDOT). This projection uses linear regression of Highway Performance Monitoring System (HPMS) historical data for forecasting VMT. These projections employed HPMS data from 1981 to 2002.

Mobile 6.2 is then run to produce emission factors for each vehicle and road type combination for all 62 counties. The resultant emission factor in grams/mile is multiplied by daily VMT, including seasonal adjustment, to determine daily emissions.

It should be noted that the on-road projections factor in the Department's proposal to discontinue the NYMA tailpipe testing requirement on December 31, 2010. This discontinuation will be documented in a separate I/M SIP revision being developed by the Department and will address the anti-backsliding provisions of section 110(l) of the CAA.

4.4.3 Non-Road Projection Methodology

The U.S. EPA Nonroad Model Version 2005, was used to develop future year nonroad emissions projections for 2-stroke gasoline, 4-stroke gasoline, liquefied petroleum gas, compressed natural gas and diesel fueled nonroad vehicles as well as emissions from recreational marine vessels. When completing future year projections, the model incorporates emissions effects that result from both anticipated changes in equipment activity as well as deterioration of equipment. The model also accounts for expected turnover of old equipment. In addition, the following EPA nonroad emission control programs are built into the model:

1. New Phase 2 Standards for Small Spark-Ignition Non-handheld Engines (March 1999) which covers NOx and HC reductions from mowers, edgers, lawn tractors, and other non-hand held gasoline equipment.

2. Final Phase 2 Standards for Small Spark-Ignition Handheld Engines (March 2000) which covers NOx and HC reductions from trimmers, leaf blowers, chain saws, and other handheld gasoline equipment.

3. Emission Standards for New Nonroad Engines (September 2002) which covers NOx, HC and CO from the following new engines and vehicles:

   a. Large Industrial Spark-Ignition Engines (forklifts, electric generators, airport baggage, etc.)
   b. Recreational Vehicles (snowmobiles, dirt-bikes, ATVs)
   c. Recreational Diesel Marine Engines (for use in yachts and cruisers)

4. Clean Air Nonroad Diesel Rule (May 2004) which covers NOx, PM and SOx emissions from diesel engines used in most construction, agricultural, industrial and airport equipment

In addition, this rule includes and requires a 99 percent reduction in diesel sulfur by 2010.

Future year nonroad emissions projections for the aircraft, commercial marine and locomotives categories were calculated using the growth factors developed for the MANE-VU Emissions Projections Technical Support Document. These projections were developed using combined growth and control factors developed from emission projections for U.S. EPA's Clean Air Interstate Rule (CAIR). The control programs in place that were used to develop the growth factors were:

1. Adopted Aircraft Engine Emissions Standards (April 1997) which reduces NOx and CO from new aircraft engines

2. Final Emissions Standards for Locomotives (December 1997) which reduces NOx, HC, CO and PM from new and remanufactured diesel powered locomotive engines. This rule requires a reduction in diesel sulfur which will result in a reduction in SOx.

3. Emission Standards for New Commerical Marine Diesel Engines (November 1999) which reduces NOx and PM from

diesel marine engines over 37 kW. This rule requires a reduction in diesel sulfur which will result in a reduction in SOx.

The following regulations were not built into the growth factors.

November 2005 - New Emission Standards for New Commercial Aircraft Engines
March 2007 - EPA Proposal for More Stringent Emissions Standards for Locomotives and Marine Compression-Ignition Engines

4.4.4 Biogenic Future Year Emissions

Biogenic emissions levels were maintained at the 2002 levels for all future years.

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5.0 PERMIT PROGRAM

One of the most effective means of applying the requirements of SIPs in reducing air emissions is through an air pollution permitting program for stationary sources. New York's air permitting program identifies and controls sources of air pollution, ranging in size from large industrial facilities and power plants to small commercial operations, such as dry cleaners.

Before 1970, few emission limitations were placed on the pollutants that could be discharged to the air. When the first federal air quality standards were issued, New York's air was more polluted than the standards allowed in several areas. Today, however, air quality in most areas of New York meet standards that are much more rigorous than those of 1970. As new information on the health and environmental effects of air pollution has become available, new state and federal standards have been established and emission limits have been tightened to protect public health and the environment. By requiring the use of effective pollution control technology and enforcing compliance with these requirements through permitting, the Department’s air permitting program has been a vital means of reducing air emissions to meet ever more stringent air quality standards.

Title V of the Clean Air Act (CAA) requires states to implement a permitting program for major stationary sources. Section 19-0311 of Article 19 of the Environmental Conservation Law directs the Department to establish a permitting program to implement Title V of the CAA. In addition, the Department has implemented a permitting program for minor sources of air pollution. The Department’s permitting regulations are set forth at 6 NYCRR Part 201, "Permits and Certificates". The two most common types of permits for air contamination sources are described in 6 NYCRR Part 201 include State Facility permits (Subpart 201-5) and Title V permits (Subpart 201-6).

State Facility permits are issued to facilities whose emissions are below the major source threshold (as defined in Part 201), but meet the criteria for permitting under Subpart 201-5. These are generally facilities which meet any of the following characteristics:

- stationary sources which require and have accepted an emission cap pursuant to Subpart 201-7 to limit their potential to emit to avoid the requirement to obtain a Title V permit or other applicable requirement

- stationary sources which have been granted a variance pursuant to an air regulation implemented by the Department

- stationary sources which are new facilities subject to a New Source Performance Standard

- stationary sources which emit hazardous air pollutants and have a potential to emit that is below major stationary source thresholds.

Title V facilities are required for major facilities under the CAA and the ECL and implementing regulations at 40 CFR Part 70 and 6 NYCRR Subpart 201-6. These include facilities which:

- have a potential to emit which is major as defined in Part 201

- are subject to a NSPS and/or are not a deferred source category

- are subject to a standard or other requirement regulating a hazardous air pollutant

- are subject to federal acid rain program requirements.

Title V permits have greatly assisted the Department's efforts to ensure that major sources are operating in compliance with applicable air pollution control laws and regulations. Notably, the Title V permit, in one document, contains all applicable requirements for a major stationary source, the approved test methods by which a source will determine whether it is in compliance with those requirements and conditions requiring prompt reporting of all violations and emission limit exceedances. The Title V permit also includes conditions for recordkeeping, monitoring and reporting, including the requirement for facilities to prepare semi annual and annual reports of their emissions and an annual certification that they have operated in compliance with all applicable requirements. All of this information is accessible to the public. Thus, the Title V permit provides both the Department and members of the public with a clear picture of what a facility does, what requirements are applicable to a facility, what measures the facility must implement to control its emissions of air pollutants, and how the facility will determine whether it is operating in compliance with those applicable requirements. The terms of the Title V permit are also federally enforceable which means that citizens can bring suit to address violations of the permit.

To obtain a permit, a facility owner or operator must apply to the Department using a form designated for this purpose. Applicants must supply information on the facility's emissions, the processes operating at the facility, the raw materials being used, the height and location of stacks or vents, the requirements that apply to the facility, and the controls being applied. The Department develops air pollution permits based on the information in the applications and the Department's own assessment of the rules that apply.

The information generated by the permit process is also used by the Department in its air quality planning to ensure the effective implementation of control measures needed to curb air pollution. Air permits play a direct role in the implementation of emission reduction requirements at stationary sources. For example, RACT requirements intended to reduce VOC and NOx emissions, as well as NOx budget and other requirements applicable to large sources, are set forth in regulations which serve as the source of conditions in permits issued by the Department. Permit terms and condition in turn ensure that the facility is in fact complying with applicable regulatory requirements. The result is that the Department can document that it is achieving the emission reduction targets contemplated by the SIP which are necessary to improve air quality in New York State.

All other non-major facilities that meet the criteria of Subpart 201-4 can obtain a minor facility registration, rather than a permit. These facilities typically have actual emissions which are less than one-half of the major source threshold.

Facilities with registrations are still required to meet any applicable requirements that are subject to in accordance with the Department's regulations. The Department, in addition, can enforce these regulatory obligations through its authority under New York State Environmental Conservation Law and the CAA.

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6.0 SECTION 110 MEASURES

Pursuant to CAA sections 110(a)(1) and (2), states are required to address basic SIP requirements related to the attainment of new or revised NAAQS, including emission inventories, monitoring and modeling to assure attainment, maintenance and enforcement of the standards. Section 110(a)(1) contains the general requirements for submitting a SIP to address a new or revised primary NAAQS. Section 110(a)(2) contains specific elements to be included in the SIPs.

Pursuant to EPA guidance issued on October 2, 2007, SIPs must include the following elements of CAA section 110(a)(2):

- Enforceable Emission Limitations and Other Control Measures (110(a)(2)(A))
- Ambient Air Quality Monitoring, Compilation, Analysis and Reporting (110(a)(2)(B)
- Enforcement and Stationary Source Permitting (110(a)(2)(C)
- Interstate Transport (110(a)(2)(D))
- Assurance of Adequate Resources (110(a)(2)(E))
- Stationary Source Monitoring System and Reporting (110(a)(2)(F))
- Emergency Powers and Contingency Plans (110(a)(2)(G))
- Authority for SIP Revisions for Revised NAAQS (110(a)(2)(H))
- Authority for SIP Revisions for New Nonattainment Areas (110(a)(2)(I))
- Consultation, Public Notification and Prevention of Significant Deterioration (PSD)/Visibility (110(a)(2)(J))
- Air Quality Monitoring and Reporting (110(a)(2)(K))
- Permitting Fees (110(a)(2)(L))
- Consultation/Participation with Affected Local Entities (110(a)(2)(M))

The Department’s December 13, 2007 submittal addressed each of the required elements of CAA section 110(a)(2), and affirmed that New York State’s SIPs meet the requirements of CAA sections 110(a)(1) and (2). It is included as Appendix I.

In a separate related action, on January 24, 2008 (73 FR 4109), EPA approved “Revision to the New York State Implementation Plan Clean Air Interstate Rule (CAIR) and Transport (110(a)(2)(D))” that the Department submitted to EPA on March 29, 2007. EPA determined that the SIP revision fully implements the CAIR requirements for New York and satisfies New York’s obligation under section 110(a)(2)(D)(i) of the CAA to prohibit air emissions that would interfere with provisions to prevent significant deterioration of air quality.

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7.0 CONTINGENCY MEASURES

Under the CAA, 8-hour ozone areas subject only to subpart 1, as well as those classified under subpart 2 as moderate, serious, severe and extreme must include in their SIPs contingency measures consistent with Sections 172(c)(9) and 182(c)(9), as applicable. Contingency measures are additional controls to be implemented in the event the area fails to meet an RFP milestone or fails to attain by its attainment date. Such measures shall take effect in any such case without further action by the state or the Administrator.

EPA requires that contingency measures identified by the state must be sufficient to secure an additional 3 percent reduction in ozone precursor emissions in the year following the year in which the failure has been identified. For a non-attainment area that fails to meet RFP percent reduction requirements, and where it has been demonstrated that NO_x controls are needed to attain the primary NAAQS for ozone, measures that produce a combination of NO_x and VOC reductions may serve as 15 percent contingency measures. EPA requires at least 0.3 percent out of every reduction of 3 percent be attributable to a reduction in VOC measures.

The New York State portion of the New York – N. New Jersey – Long Island, NY-NJ-CT non-attainment area meets RFP percent reduction requirements as demonstrated in Chapter 10.

In order to demonstrate compliance with the contingency measures provision applicable to the attainment demonstration, the Department has opted to include measures that have been or will be adopted for its contingency measures for the New York State portion of the New York – N. New Jersey – Long Island, NY-NJ-CT non-attainment area.

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8.0 NEW MOBILE SOURCE MEASURES

8.1 Introduction

New mobile source measures will have a large effect on NO_x and VOC emissions. Improvement in combustion efficiency and fuel quality, as well as the use of control devices, will reduce these emissions significantly. These measures are described in this section.

8.2 Low Emission Vehicles (LEV)

Section 177 of the CAA permits states to adopt new motor vehicle emissions standards that are identical to California's. New York has exercised this option in 6 NYCRR Part 218, "Emission Standards for Motor Vehicles and Motor Vehicle Engines," which incorporates California's emissions standards for light-duty vehicles.

The LEV regulations provide flexibility to auto manufacturers by allowing them to certify their vehicle models to one of several different emissions standards. These consist of several different tiers of increasingly stringent LEV emission standards to which a manufacturer may certify a vehicle, including LEV, ultra-low-emission vehicle (ULEV), super-ultra low-emission vehicle (SULEV), and zero-emission vehicle (ZEV). The different standards are intended to provide flexibility to manufacturers in meeting program requirements. However, manufacturers must demonstrate that the overall fleet for each model year meets the specified NMOG standard for that year. These requirements are progressively lower with each model year.

8.3 Personal Watercraft

New York adopted California's emissions standards for personal watercraft in 2003. These standards reduce emissions of hydrocarbons, NO_x and PM beyond the levels achieved by federal standards. This is accomplished by imposing lower emission certification levels beginning with model year 2006 and which become increasingly stringent. In addition, the personal watercraft engine program includes test procedures for new and in-use engines, which guarantees compliance with the standards, establishes an environmental label program and extends emission warranty requirements.

Manufacturers of personal watercraft engines can choose the standard among which they wish to certify their engines as long as the emissions of their entire product line meet the corporate average requirement. CARB's average requirement declines through the 2008 model year. On a sales and kW-weighted basis, manufacturers' engine production must, on average, comply with requirements set in the rule. There is, however, an upper bound limit on higher emission engines. This federal emission limit (FEL) cap is necessary to encourage manufacturers to abandon conventional high emitting carbureted two stroke technology, thereby reducing individual exposure to extremely high polluting engines.

A spark ignition marine engine manufacturer may exchange emission credits with another manufacturer. Traded credits expire if they are not used in averaging within three model years following the model year in which they were generated.

At the end of the model year, the manufacturer must have a net positive or zero emission credit balance to be in compliance. In addition, each engine family must comply with its certification FEL. Emission credits may not be used to offset an engine family's emissions that exceed its applicable FEL, or to remedy nonconformity determined by Production Line Testing (PLT), Selective Enforcement Audit (SEA), or a recall.

At the start of each model year, the engine manufacturer will begin to randomly select engines from the end of the assembly line from each engine family for PLT at a rate of one percent in accordance with CARB's June 14, 2000 "Final Regulation Order."

The Personal Watercraft program also provides for in use compliance testing, recalls, and warranty statements, as well as the use of permanent and temporary (i.e., hang tags) emission control labels for spark ignition marine engines which have been certified to the emission standards.

8.4 NYMA I/M Programs (NYVIP and NYTEST)

In the downstate NYMA, which consists of New York City, Nassau, Suffolk, Rockland and Westchester counties, a high enhanced I/M emissions test is required annually and with any change of vehicle ownership. The emissions inspection is completed in conjunction with a safety inspection. Depending on vehicle model year, a NYTEST tailpipe emission test or a NYVIP on-board diagnostics (OBD II) check is required.

Vehicles that are 25 model years old and newer up to model year 1995, with a gross vehicle weight (GVW) of 8,500 pounds or less, go through a series of procedures which check for tailpipe emissions (NYTEST), anti-tampering visual checks, and gas cap leaks. The visual inspections require an expanded anti-tampering check of a vehicle's air pollution control components including the catalytic converter, positive crankcase ventilation (PCV) system, exhaust gas recirculation (EGR) valve, thermostatic air cleaner (TAC), air injection system, evaporative emission control system, and fuel inlet restrictor. NYTEST test standards (cutpoints) are based on a sliding scale such that older vehicles will have more lenient standards than newer vehicles. OBD checks (NYVIP) are completed on model year 1996 and newer vehicles along with the anti-tampering visual inspection of the air pollution control devices. The OBD check detects a malfunction through the vehicle's computer system of the air pollution control devices through NYVIP.

On March 27, 1996, the Department submitted “New York State Implementation Plan - Enhanced Motor Vehicle Inspection/Maintenance Program” to outline the NYTEST tailpipe testing I/M program in NYMA. On May 7, 2001, EPA approved a SIP revision that demonstrated the effectiveness of the NYMA decentralized testing I/M network and approved New York's alternate tailpipe test, NYTEST. Final cutpoints for the NYTEST program were implemented on April 1, 2003. In March 2006, the Department submitted "New York State Implementation Plan - New York Vehicle Inspection Program (NYVIP)" to outline the statewide OBD-based NYVIP I/M program. On February 21, 2007, EPA approved this SIP revision.

New York implements it's I/M programs through 6 NYCRR Part 217, “Motor Vehicle Enhanced Inspection and Maintenance Program Requirements,” and Title 15 NYCRR Part 79, “Motor Vehicle Inspection Regulations,” to comply with EPA regulations and to improve performance of its I/M program. The intended effect of this action is to maintain consistency between the state-adopted rules and the federally-approved SIP, and to apply a control strategy that will result in emission reductions that will help achieve attainment of the NAAQS for ozone.

8.5 Federal Diesel Fuel (with State Backstop)

New York State’s motor vehicle diesel fuel program is identical to the EPA motor vehicle diesel fuel regulations, which treat diesel engine systems and fuels as a system. The EPA motor vehicle diesel fuel regulation is an integral part of EPA regulations establishing new emission standards that will begin to take effect in model year 2007 and will apply to heavy-duty highway engines and vehicles greater than 8,500 pounds GVWR. New York adopted California regulations that are numerically identical. These standards are based on the use of high efficiency catalytic exhaust emission control devices or comparably effective advanced technologies.

In addition to setting emission limits for PM, the requirements establish standards for NO_x and non-methane hydrocarbons (NMHC) of 0.20 grams per brake horsepower-hr (g/bhp-hr) and 0.14 g/bhp-hr, respectively. The NO_x and NMHC standards will be phased in between 2007 and 2010 for diesel engines. The phase-in will be on a percent-of-sales basis from 2007 into 2010. Gasoline engines will also be subject to these standards, with a phase-in provision that requires 50 percent compliance in the 2008 model year and 100 percent compliance in the 2009 model year. Flexibility provisions to assist the transition to the new standards are included that will provide an incentive for the early introduction of clean technologies. They will also provide for flexibility in adapting new technologies and existing engine-based technologies.

Because many control devices are damaged by sulfur, it is necessary to reduce the level of sulfur in motor vehicle diesel fuel by 97 percent, to 15 ppm. This rule provides for production of 15 ppm motor vehicle diesel fuel beginning on June 1, 2006. The rule is effective at downstream locations (such as terminals) on July 15, 2006, and at retail locations and wholesale purchaser-consumer facilities on October 15, 2006.

8.6 Federal Non-Highway Diesel Fuel and Heavy Duty Diesel On-Road Requirements

The Department's non-road program, based on the application of the federal rules, will reduce emissions NO_x and PM from non-road diesel engines by combining engine and fuel controls as a system to obtain emission reductions. Overall, a 90 percent reduction in emissions from these engines is expected.

The non-road standards apply to diesel engines that are used in construction, agricultural, industrial, and airport equipment, and set emission standards for different sizes of non-road engines. Standards vary by engine size with implementation dates ranging from 2008 - 2014. Mobile engines greater than 750 horsepower will have one additional year of flexibility to meet their emission standards. These emission standards will not apply to diesel engines used in locomotives and marine vessels, which are being addressed by an EPA rulemaking proposed April 3, 2007. Fuel requirements for these engines have been promulgated with the non-road standards.

Integral to the new provisions are the new fuel requirements that will reduce the allowable levels of sulfur in fuel used in non-road diesel engines, locomotives, and marine vessels. The current sulfur levels will be reduced from about 3,000 ppm to 15 ppm, which is a reduction of greater than 99 percent. This reduction will take place in two phases. In the first, beginning in 2007, fuel sulfur levels in non-road diesel fuel will be limited to a maximum of 500 ppm. This includes the use of the fuel in locomotive and marine applications. Beginning in 2010, sulfur levels in most non-road diesel fuel will be reduced to 15 ppm. Locomotive and marine diesel fuel will be restricted to this level in 2012.

9.0 NEW STATIONARY SOURCE MEASURES

9.1 Introduction

In accordance with Part D of Title I of the CAA, states containing non-attainment areas are required to implement Reasonably Available Control Measures (RACM) to provide a means to attain the NAAQS for the pollutant in question.

The Department worked closely with the OTC to develop a series of model stationary source control measures to help alleviate the ozone problem within the non-attainment areas across the state. An initial list of approximately 1,000 control measures was compiled by the OTC and participating states. After a number of meetings, a short list of effective control measures was decided upon, which served as a basis for many of the rule changes featured in this chapter.

In addition to the reductions to be made by implementing these OTC-assisted measures, the Department also initiated rulemakings such as CAIR, a multi-state program that will target ozone problems around and downwind of areas with excessive precursor emissions.

Table 10.1 lists tentative milestone dates for the adoption of these new and/or revised stationary source control measures.

Table 10.1: Key Adoption Dates for New Stationary Source Measures

6 NYCRR Part	Rule Name	Proposal Published in State Register	Regulatory Package to Environmental Board	File Regulation with Secretary of State	Regulation Effective
228, 235	Adhesives and Sealants	**06-02-08**	09-16-08	11-03-08	12-19-08
235	Consumer Products	**06-02-08**	09-16-08	11-03-08	12-19-08
234	Graphic Arts	**06-02-08**	09-16-08	11-03-08	12-19-08
241	Asphalt Formulation	**06-02-08**	09-16-08	11-03-08	12-19-08
243, 244, 245	Clean Air Interstate Rule (CAIR)	**04-11-07**	07-11-07	09-19-07	10-19-07
220-1	Portland Cement Plants	**06-02-08**	09-16-08	11-03-08	12-19-08
220-2	Glass Manufacturing	**06-02-08**	09-16-08	11-03-08	12-19-08
227-4	Asphalt Paving Production	**06-02-08**	09-16-08	11-03-08	12-19-08
227-2, 227-3	ICI Boilers RACT	**06-02-08**	09-16-08	11-03-08	12-19-08
200	MACT	**06-02-08**	09-16-08	11-03-08	12-19-08
222	Distributed Generation	**06-02-08**	09-16-08	11-03-08	12-19-08
227-2	HEDD	**06-15-08**	12-15-08	06-01-09	06-01-09

9.2 Part 228: Surface Coating Processes; Part 235: Consumer Products

In 2006 the OTC released its model rule for adhesives, sealants, adhesive primers and sealant primers. The Department intends to use this model rule as a guide in revising 6 NYCRR Part 228, “Surface Coating Processes,” and Part 235, “Consumer Products.”

EPA’s consumer and commercial products rule was published September 11, 1998 (40 CFR Part 59 Subpart D). This Part 59 rule applied only to household adhesive use, and did not regulate adhesives used in commercial and industrial applications. The OTC’s 2001 model rule proposed additional product categories and stricter standards, but its definitions of products generally exempted those products being sold in large containers.

The OTC 2006 model rule, based upon 1998 RACT and Best Available Retrofit Control Technology (BARCT) developments by CARB, places stricter VOC limits on a greater range of products. The proposed rule prohibits the sale or use of adhesives, sealants, adhesive primers or sealant primers in excess of its proposed VOC content limits after January 1, 2009. It also requires that labels have the product’s VOC content clearly expressed, and presents an option for add-on control systems to meet the required content limit.

Emissions reductions should be observed for area sources as well as point sources, due to the variety of industrial and commercial applications for the subject products. Of the VOC reductions projected within the Ozone Transport Region (OTR), approximately 96 percent will come from area source reductions, while point sources are responsible for the remaining 4 percent reduction.

OTC’s model rule will provide very effective reductions in VOC levels throughout New York State and the OTR. For area source VOC emissions, the OTC assumed a 64.4 percent reduction from uncontrolled levels, based upon the reduction estimations initially performed by CARB in 1998. Many point sources have been successful in installing control equipment yielding very high destruction efficiencies; for any of these sources with control systems exceeding 85 percent overall capture/destruction efficiency, no additional reductions were calculated, as they already meet the VOC control criteria. For point sources lacking control equipment, 64.4 percent was again assumed. As a result of these reductions, in 2009, OTC calculations predict that New York State will see a savings of 21.5 tons of VOC each summer day, or 3290 tons over the 153-day ozone season lasting from May 1-September 30.

Projected 2009 baseline inventory:	33.4 tons VOC per summer day
Assumed savings:	64.4% [conservative CARB estimate[1]]
2009 Control Inventory	= 33.4 tons – (33.4 tons * .644)
	= 11.9 tons
2009 Benefit	= 33.4 tons – 11.9 tons
	= 21.5 tons VOC per summer day

9.3 Part 235: Consumer Products

The Department will modify 6 NYCRR Part 235, "Consumer Products," under which a VOC content limit is placed on a range of consumer and commercial products. The products regulated include personal care, household, and automotive aftermarket products, as well as products purchased for use in commercial or institutional settings such as schools and hospitals.

A federal consumer and commercial products rule was published on September 11, 1998 as 40 CFR Part 59 Subpart D. In 2001 the OTC, feeling this rule regulated an inadequate portion of the consumer and commercial products inventory, developed model regulations for additional product categories and more stringent VOC limits. These suggestions were used as a basis for the VOC limits contained in Part 235, which took effect on January 1, 2005.

The OTC developed its 2006 model rule, finalized September 13, 2006, to again expand the VOC content limitations that participating states may adopt for their own programs. Included are limits to 13 new product categories, a more restrictive limit on one previously regulated category, and additional requirements for two other previously regulated categories. The OTC rule is influenced by amendments put forth by CARB in July 2005. The Department will again use the OTC's proposed model rule as a guideline for its amendment of Part 235.

CARB calculated per capita VOC reductions in conjunction with its 2005 rule. Because the proposed rule mirrors that of CARB so closely, it is assumed that a similar per capita savings will result, which equates to a yearly reduction of 0.122 lb/capita. These reductions come in addition to the 6.06 lb/capita witnessed from the 2001 model rule. Adoption and implementation of the OTC 2006 model rule will result in VOC emissions reductions of 3.7 tons per summer day and 566 tons over the ozone season in New York State in 2009. CARB estimated the average cost effectiveness of these amendments to be $4,000 per ton VOC reduced.

[1] CARB 1998: California Air Resources Board, "Determination of Reasonably Available Control Technology and Best Available Retrofit Control Technology for Adhesives and Sealants," December 1998, p.18.

Projected 2009 baseline inventory: 183.3 tons VOC per summer day
Current Emission Factor: 6.06 lb per capita
Benefit from CARB 2005 amendments: 0.122 lb per capita

Assumed savings:	= 1 – (6.06 - .122)/6.06
	= 2.0%
2009 Control Inventory	= 183.3 tons – (183.3 tons * .02)
	= 179.6
2009 Benefit	= 183.3 tons – 179.6 tons
	= 3.7 tons VOC per summer day

9.4 Part 239: Portable Fuel Containers

EPA recently finalized the rule, "Control of Hazardous Air Pollutants From Mobile Sources" (72 FR 8427-8570). This federal rule, required by Section 183(e) of the Clean Air Act, directs EPA to regulate consumer and commercial products that are significant sources of VOC emissions. The Department is planning to use this federal rule as a basis for amending the existing 6 NYCRR Part 239, "Portable Fuel Container Spillage Control."

With this federal rule, EPA sets regulations for portable fuel containers (PFCs), as well as for gasoline and passenger vehicles. The purpose is to significantly reduce emissions of hazardous air pollutants from mobile sources, referred to as "mobile source air toxics" (MSATs), to which exposure is known or suspected to cause serious health effects, including cancer. The PFC controls will considerably reduce such MSATs as benzene, 1,3-butadiene, formaldehyde, acetaldehyde, acrolein, and naphthalene.

Since the Department issued Part 239 in October 2002, a number of problems have been identified, as follows:

1. An automatic shutoff feature, intended to cut off fuel flow when the tank reaches a prescribed level, has proven to be incompatible with many types of fuel tanks. This leads to additional spillage and has frustrated many consumers;

2. Poor production quality of the PFCs, as demonstrated by a CARB compliance test resulting in nearly 50 percent failure of PFCs that have already been introduced to the market; and

3. Storage of gasoline in non-regulated containers designed for other fluids, such as kerosene.

As a result of these issues, emissions will still be lost due to evaporation through the diurnal cycle, as well as through spillage. The federal rule contains methods considered “best available controls” to correct these problems. The anticipated modifications to Part 239 will:

1. Eliminate the existing automatic shutoff feature, fill height and flow rate standards to simplify fueling and lessen spillage;

2. Require certification and compliance of PFCs prior to their introduction to the market; and

3. Expand the definition of a non-compliant container, effectively regulating diesel and kerosene containers in the same manner as PFCs

Along with these modifications, EPA has issued a standard of 0.3 grams per gallon per day (g/gal/day) of hydrocarbons. This standard was established based upon the emissions from a can over a diurnal test cycle, and requires stringent compliance testing to ensure emissions control over the life of the product. This standard must be met for containers manufactured on or after January 1, 2009. These new requirements will reduce hydrocarbon emissions from uncontrolled fuel containers by approximately 75 percent.

Both area and non-road source inventories are expected to be affected by these amendments. Of the projected VOC emission reductions, approximately 70 percent will be attributed to the area source inventory. These changes come from reductions in diurnal and permeation emissions from storage, and transport/spillage emissions from re-fueling at gas pumps. The remaining 30 percent will be accounted for in the non-road source inventory, where emissions will be reduced during re-fueling of non-road sources (e.g. lawnmowers, personal watercraft, etc.).

9.5 Part 234: Graphic Arts

Amendments are being made to the graphic arts industry regulations under 6 NYCRR Part 234, “Graphic Arts.” These amendments are in response to two Control Techniques Guidelines (CTG) documents published by the EPA in September 2006: “Control Techniques Guidelines for Flexible Package Printing” and “Control Techniques Guidelines for Offset Lithographic Printing and Letterpress Printing.” CAA Section 182(b)(2)(A) provides that for non-attainment areas designated moderate or worse, RACT provisions must be included in the applicable SIP for “each category of VOC sources in the area covered by a CTG document issued by the Administrator between the date of the enactment of the Clean Air Act Amendments of 1990 and the date of attainment.” These

CTGs present guidance in determining RACT for VOC emissions from inks, coatings, adhesives and cleaning materials within facilities that conduct the aforementioned printing processes.

Flexible package printing facilities incorporate rotogravure printing and flexographic printing. These processes result in two major sources of VOC emissions: evaporation of VOCs from inks, coatings, and adhesives; and evaporation of VOCs from cleaning materials. There are two approaches to target VOC emissions from inks, coatings and adhesives. One approach involves the addition or optimization of add-on controls such as capture systems (in a dryer, or through floor sweeps and hoods) and control devices (carbon adsorbers, thermal oxidizers, and catalytic oxidizers). The flexible package printing CTG presents the EPA's recommended control levels, which are based on the first installation date of the equipment. The second approach calls for the substitution of low-VOC inks such as waterborne inks assuming they do not compromise the quality of the process. The CTG suggests applying the control recommendations for inks, coatings, and adhesives to those presses with the potential to emit from the dryer, prior to controls, 25 tpy of VOCs or more (inks, coatings, and adhesives combined), a level chosen for its cost effectiveness.

The flexible package printing CTG suggests applying good work practices for cleaning materials, which entail keeping solvent containers closed whenever they are not in use, enclosing shop towels in containers, and transporting cleaning materials in closed containers or pipes. These recommendations apply to those flexible package printing operations that emit 15 lb/day or more of VOCs with no control, or an equivalent level on an alternate time basis (such as 450 lb/month or 3 tons per 12-month rolling period).

EPA's lithographic and letterpress CTG provides control recommendations for the use of fountain solutions, cleaning materials, and inks in offset lithographic printing; and cleaning materials and inks in letterpress printing, all of which contribute to VOC emissions through evaporation. Add-on controls, process modifications/work practices, and material reformulation/substitution are all ways to reduce emissions from these sources. Add-on controls in the form of capture systems and control devices are recommended for emissions from heatset web offset lithographic inks and heatset web letterpress inks, with specified control efficiencies dependent upon the first installation date. Because of low VOC emissions, the EPA proposes no controls for sheet-fed or coldset web inks or varnishes, waterborne coatings or radiation-cured materials. Keeping fountain solutions cool, or replacing their traditional alcohol component (isopropyl alcohol, n-propyl alcohol and ethanol) with a substitute such as glycol ethers, can reduce VOC evaporation. The CTG recommends cleaning materials with a specific vapor pressure, along with work practices as previously described.

For cost-effectiveness, the EPA recommends applying add-on controls to those facilities with heatset web offset lithographic and heatset web letterpress printing presses with a PTE of 25 tpy VOCs. The fountain solution and cleaning material controls are recommended for any offset lithographic or letterpress printing facilities that emit 15 lb of VOC per day or more, not considering controls.

Cost analyses were performed by the EPA, for which details can be found in the CTG documents. These calculations included equipment, instrument and installation costs, as well as estimations of labor, maintenance, utility, and overhead costs. For flexible package printing, a catalytic oxidizer was analyzed under different operating scenarios, leading to estimated costs of $1,300-$5,700 per ton VOC removed. Lithographic and letterpress printing presses will see estimated costs of $2,010 per ton of VOC removed by controls on heatset inks; costs of $855/ton for cleaning materials; and an actual savings due to alcohol substitutes in fountain solutions. Consumers are not expected to incur any significant price increases.

9.6 Part 241: Asphalt Formulation

The Department is considering changes to the use of cutback and emulsified asphalts in paving operations. The proposed ban on cutback asphalts and increased restrictions on emulsified asphalts will be made in 6 NYCRR Part 241, “Asphalt Formulation.”

While cutback and emulsified asphalts are used in similar applications, they differ in how they are prepared. In preparing cutback asphalt, asphalt cement is blended with a diluent that is typically 25 to 45 percent by volume petroleum distillate. Emulsified asphalt preparation involves mixing asphalt cement with water and an emulsifying agent, such as soap. It is possible for emulsified asphalts to contain no VOCs, though some may contain up to 12 percent VOC by volume.

Currently, New York permits the use of cutback asphalt only during the cooler portion of the year from October 16 to May 1, and allows for emulsified asphalt to contain 2 to 12 percent VOCs, depending on the grade established by the American Society for Testing and Materials (ASTM). This proposed rule will have a similar, ozone-season ban on cutback asphalt; and will also limit the use of emulsified asphalt to that which contains not more than 0.5mL oil distillate from a 200mL sample—effectively 0.25 percent VOC content. Certain exemptions when necessary may be granted by the State Commissioner.

In calculating reductions resulting from these anticipated rule changes, an average baseline VOC content of 2.5 percent for emulsified asphalt was assumed. Thus, reducing the average VOC content from 2.5 percent to 0.25 percent represents a 90 percent reduction in emissions. This would lead to a projected savings of 16.5 tons VOC per summer day, or 2525 tons per ozone season for New York State in 2009. It is believed that no additional costs would be incurred from the use of low-VOC emulsified asphalts due to their current availability.

Projected 2009 baseline inventory: 18.3 tons VOC per summer day
Assumed baseline VOC content: 2.5%
Proposed VOC content limit: 0.25%

Assumed savings:	= (2.5% - 0.25%)/2.5%
	= 90%
2009 Control Inventory	= 18.3 tons – (18.3 tons * .90)
	= 1.83 tons
2009 Benefit	= 18.3 tons – 1.83 tons
	= 16.5 tons VOC per summer day

9.7 Part 243: NO_x Emissions Budget Ozone Season Trading Program; Part 244: NO_x Emissions Budget Annual Trading Program; Part 245: SO_2 Emissions Budget Annual Trading Program

On May 15, 2005, EPA published a final administrative action finding that 28 states and the District of Columbia contribute significantly to non-attainment of the NAAQS for fine particles ($PM_{2.5}$) and/or 8-hour ozone in downwind states. CAA Section 110(a)(2)(D) specifies the states' requirements to address this interstate transport. Under this obligation, EPA is requiring the upwind states to introduce control measures to reduce their emissions of SO_2 and/or NO_x, which are precursors of PM and ozone, within certain time constraints. Citing the possibility of highly cost-effective controls on EGUs, EPA introduced a cap-and-trade program within the CAIR states to ensure substantial reductions of SO_2 and NO_x. The entire EPA final action is generally known as the Clean Air Interstate Rule (CAIR).

New York is one of the states that contributes to both PM and ozone non-attainment in downwind states, and is therefore required to reduce SO_2 and NO_x levels. New York State's NO_x-emitting sources significantly contribute to ground-level ozone pollution in Connecticut, New Jersey and Rhode Island. In turn, 10 states, along with the District of Columbia, directly contribute to New York State's own ozone pollution. The CAIR program was designed to ensure a collective effort in controlling this far-reaching problem.

To mirror the three model rules adopted by the EPA with CAIR, the Department adopted three new regulations: 6 NYCRR Part 243, "CAIR NO_X Ozone Season Trading Program;" 6 NYCRR Part 244, "CAIR NO_x Annual Trading Program;" and 6 NYCRR Part 245, "CAIR SO_2 Trading Program." Additionally, Part 200, "General Provisions," was also revised in order to facilitate the administration of these programs. Assuming all the affected states choose to achieve these reductions through EGU controls, then EGU SO_2 emissions in the affected states would be capped at 3.6 million tons in 2010 and 2.5 million tons in 2015; and EGU annual NO_x emissions would be capped at 1.5 million tons in 2009 and 1.3 million tons in 2015.

The EPA predicts widespread success in the reduction of NO_x and SO_2 through the implementation of CAIR. In the 23 states and District of Columbia affected by the annual NO_x requirements, EPA estimates that CAIR will reduce annual NO_x emissions by 1.2 million tons in 2009 and by 1.5 million tons in 2015. These region-wide emission reductions are indicative of the success estimated for New York State's reductions: state-wide, the EPA projects a 48 percent reduction from 2003 NO_x levels by 2015. In conjunction with existing air quality regulations, CAIR will help 19 counties within the state reach attainment for 8-hr ozone by 2010. CAIR will also aid in bringing Erie and Niagara counties into attainment for 8-hr ozone by 2015. The nine remaining non-attainment counties will also see reductions of ground level ozone, albeit to levels still above the NAAQS. Assuming that upwind states are also able to achieve reductions through CAIR, these non-attainment areas will likely be more successful in reaching the NAAQS through further implementation of local emission controls.

The "Regulatory Impact Analysis for the Final Clean Air Interstate Rule" (RIA) released by EPA in March 2005 reported the costs associated with implementing CAIR if all affected states in the region make the required emissions reductions through the electric generating industry, and included a benefit-cost analysis demonstrating the substantial net economic benefits to society yielded by the rulemaking. The RIA estimates annual private compliance costs (1999 dollars) of $2.4 billion ($83.2 million NY) for 2010 and $3.6 billion ($123.8 million NY) for 2015. EPA analysis shows that this action will generate annual net benefits of $60.4-$71.4 billion (approximately $2.1 billion NY) in 2010 and $83.2-$98.5 billion (approximately $2.9 billion NY) in 2015.

Although the power industry will be impacted by the regulations on EGUs, the EPA claims that regional electricity prices will not be significantly impacted, and are actually predicted to be below 2000 levels in 2010 and 2015.

9.8 Subpart 220-1: Portland Cement Plants

The Department will target the reduction of NO_x emissions with updates made to 6 NYCRR Part 220, "Portland Cement Plants." NO_x is created during fuel combustion for the energy-intensive formation of cement. The state will investigate RACT controls to identify a feasible way to meet these reductions. In updating the rule, the regulations concerning portland cement plants will be identified as Subpart 220-1, as new regulations for glass manufacturing plants will be introduced as Subpart 220-2.

There are currently three portland cement plants in New York State (two long wet kilns, and one long dry kiln). Upon the introduction of NO_x RACT in 1995, the Department promulgated revisions to Part 220 that required owners of these facilities to submit a plan that identified RACT and included a schedule for installation of RACT. An all-inclusive regulation could not be established, as the variation in technology demanded a distinct analysis and application of NO_x controls that were reasonably available at the time. Despite advancements in NO_x control technology and knowledge of portland cement plants, the uniqueness in plant designs still requires independent analyses. Therefore, DAR is proposing taking the same approach where each plant owner will be required to perform a RACT analysis that will identify the technology and level of control with a schedule for installation.

The OTC presented a 2006 model rule which encouraged states to study the variety of control technologies and implement those that were efficient and reasonable. The OTC guidelines proposed emissions limits of 3.88 lbs NO_x per ton of clinker produced in long wet kilns, and 3.44 lbs NO_x per ton of clinker for long dry kilns, both representing 60 percent reductions from uncontrolled levels. The exact reduction levels may vary as the Department works with the portland cement plants to achieve an economically and technologically reasonable level of control. To get an approximation of the reductions, MACTEC Inc. calculated the 2002 emission rate from each kiln and compared it to the guidelines proposed in the OTC 2006 model rule. Through this kiln-specific percent reduction analysis, reductions of 15.3 tons NO_x per summer day, or 2,340 tons for the ozone season in 2009 were estimated. Manufacturer costs will vary widely depending on kiln type, fuel type, and other unique factors that affect the type of control technology that can be applied.

9.9 Subpart 220-2: Glass Manufacturing

The Department is proposing to implement a new regulation to limit the emissions of NO_x formed by the high temperatures required in glass melting furnaces. The current 6 NYCRR Part 220, "Portland Cement

Plants," will be altered to include a Subpart 220-2, under which the glass manufacturing plants within the state will be subject to certain restrictions. New York State currently does not contain specific emission limitation requirements, but will implement those NO_x limits proposed by the OTC in their 2006 model rule.

There are several alternate control technology options to reduce NO_x from glass furnaces. These include combustion modifications (low NO_x burners, oxy-fuel firing, oxygen-enriched air staging), process modifications (fuel switching, batch preheat, electric boost), and post-combustion modifications (fuel reburn, selective catalytic reduction, selective non-catalytic reduction). Oxy-firing has proved to be the most effective control measure by reducing NO_x emissions up to 85 percent, as well as reducing energy consumption, increasing production rates and improving glass quality.

The Department will implement the following NO_x emission rate limits, as proposed by the OTC: For the production of container glass, pressed/blown glass, and fiberglass, 4.0 lbs NO_x per ton of glass pulled, on a block 24-hr average; for the production of flat glass, 9.2 lbs NO_x per ton of glass pulled on a block 24-hr average, or 7.0 lbs NO_x per ton of glass pulled on a rolling 30-day average. The Department will work with glass plants to come up with an efficient use of technology to meet these standards.

An 85 percent reduction can be expected for glass furnaces within New York State. When applied to the projected 2009 base inventory, this percentage translates to a NO_x reduction of 5.8 tons per summer day or 887 tons per ozone season.

Projected 2009 baseline inventory: 6.8 tons NO_x per summer day

Assumed savings:	85%
2009 Control Inventory	= 6.8 tons – (6.8 tons * .85)
	= 1.0 ton
2009 Benefit	= 6.8 tons – 1.0 ton
	= 5.8 tons NO_x per summer day

9.10 Subpart 227-4: Asphalt Paving Production

The Department is planning to revise 6 NYCRR Part 227, "Stationary Combustion Installations," to include new provisions to control emissions from hot mix asphalt production, identified as Subpart 227-4. The dryer operation is the main source of emissions in asphalt production plants, as high temperatures amid the presence of nitrogen and oxygen result in formation of NO_x.

These NO_x emissions reductions can efficiently be realized through the implementation of low-NO_x burners and flue gas recirculation. The OTC, with its 2006 model rule, has proposed emission rate limits based on process type (batch or drum mix) and type of fuel, with each limit equating to a 35 percent reduction from uncontrolled levels. Also proposed is a requirement for minor sources to implement low-NO_x burners. Best Management Practices are also encouraged. They could yield a substantial reduction in fuel use, benefiting the business and ultimately reducing NO_x emissions.

These Best Management Practices include the following:

1. Burner tune-ups: would possibly reduce NO_x emissions by 10 percent;

2. Stockpile management: covering, sloping, or paving beneath stockpiles could reduce moisture content by 25 percent, leading to a fuel consumption savings of 10-15 percent;

3. Lowering mix temperature: ongoing research suggests that decreasing mix temperature by up to 20 percent may be possible, resulting in reduced fuel consumption; and

4. Other general best practices, such as routine equipment inspections.

NO_x emissions can be reduced by 25-40 percent with low-NO_x burners, and by an additional 10 percent through addition of flue gas recirculation. For modeling purposes, a 35 percent NO_x reduction was assumed, and applied to a database that represented only point sources, leading to some uncertainty over actual reduction numbers.
Non-major area source asphalt plant emissions are not explicitly included in the area source inventory, and are therefore included under the ICI boiler category. In terms of reductions from point sources, New York State should see approximate NO_x reductions of 70 lbs per summer day, or 5.4 tons for the ozone season in 2009.

The proposed control methods come at reasonable costs. Low-NO_x burner costs are in the range of $500-$1,250 per ton of NO_x reduced, and combining these with flue gas recirculation leads to costs of $1,000-$2,000 per ton of NO_x removed, as calculated by the Department.

Projected 2009 baseline inventory: 0.1 tons NO_x per summer day	
Assumed savings:	35%
2009 Control Inventory	= 0.1 tons – (0.1 tons * .35)
	= .065 tons
2009 Benefit	= 0.1 tons – .065 tons
	= .035 tons NO_x per summer day

9.11 Subpart 227-2: Reasonably Available Control Technology (RACT) for Major Sources of Oxides of Nitrogen (NO_x); Subpart 227-3: Reasonably Available Control Technology (RACT) for Minor Sources of Oxides of Nitrogen (NO_x)

With the modification of 6 NYCRR Subpart 227-2, “Reasonably Available Control Technology (RACT) for Major Sources of Oxides of Nitrogen (NO_x),” stricter control requirements are being implemented for major stationary sources that contain natural gas and/or oil-fired Industrial/Commercial/Institutional (ICI) boilers, or combined cycle/cogeneration combustion turbines. Additionally, the existing 6 NYCRR Subpart 227-3, “Pre-2003 Nitrogen Oxides Emissions Budget and Allowance Program,” will be repealed because the program’s limited duration ended five years ago; in its place will be established a new Subpart 227-3, “Reasonably Available Control Technology (RACT) for Minor Sources of Oxides of Nitrogen (NO_x),” that will set NO_x emission controls for natural gas and/or oil-fired ICI boilers and simple cycle combustion turbines that are deemed minor sources. Those minor sources that are expected to be covered under Part 222, “Distributed Generation,” will be exempt from Subpart 227-3.

Boilers combust fuel to produce heat and process steam. Industrial uses, such as those in chemical, paper, or petroleum plants, typically call for a heat input of 10-250 mmBtu/hr. Commercial and institutional facilities such as office buildings and hospitals are smaller on average, generally requiring boilers with a heat input less than 100 mmBtu/hr. Eighty percent of commercial and institutional boilers are smaller than 15 mmBtu/hr. The wide range of boiler uses lead to a variety of boiler designs, fuel types, and control systems, and as a result, there is high variability in emission rates and control options. The size classifications according to heat input are as follow:

Small boilers:	10 to 25 mmBtu/hr
Mid-size boilers:	>25 to 100 mmBtu/hr
Large boilers:	>100 to 250 mmBtu/hr
Very large boilers:	>250 mmBtu/hr

The emission limits to be implemented with this rule revision will be based upon a combination of boiler size and fuel type. Unique boiler configurations may lead to problems meeting the proposed presumptive emission limits; in such events, case-by-case RACT determinations will be made.

Typically, all ICI boilers located at major facilities will be included in the point source emissions inventory. This inventory lists boilers individually, with their size and actual emissions expressed directly. ICI boilers at minor facilities are included in the area source emissions inventory. Emissions from these units are not listed individually, but are calculated from a record of total fuel consumption within the state.

Cost figures were collected by the Department and OTC from companies involved with the manufacture, installation and/or maintenance of combustion equipment. These figures are inclusive of installation and maintenance costs, and are presented below for the various size classifications, in terms of dollars per ton of NO_x removed:

Small boilers - up to $1,000
Mid-size boilers (at major sources) - $2,500 to $4,500
Mid-size boilers (at minor sources) - $4,500 to $9,000
Large boilers - $1,500 to $3,000
Simple cycle combustion turbines - $2,500 to $4,500

9.12 Subpart 227-2: High Electric Demand Day Units

The Department currently plans to introduce provisions for High Electric Demand Day (HEDD) units into 6 NYCRR Subpart 227-2. HEDD units include EGUs that typically operate on peak ozone days when demand for electricity is very high. These peak-demand units can be among the dirtiest in the region. The Department is planning to propose regulations establishing appropriate operating parameters and emission controls for these units. Part 227-2 will reduce HEDD emissions from sources that are not located at major sources.

9.13 Part 222: Distributed Generation

The Department currently plans to introduce provisions for Distributed Generation into 6 NYCRR Part 222. Distributed generation sources are stationary internal combustion engines (ICEs) used to produce energy, and in some cases hot water or heat, for use within the facility at which it is located. These units serve to increase the reliability of electricity supply and help reduce overall energy costs for consumers. Distributed generation sources can add to ozone pollution issues as they are typically located in urban areas and generally have shorter stacks than central station power plants, causing emissions to impact those people living in the vicinity of the source. Due to the expanding distributed generation market, the Department is proposing a new rule, 6 NYCRR Part 222, “Distributed Generation.” Modifications will also be made to 6 NYCRR Parts 200 and 201, and Subpart 227-2.

Included in the distributed generation category are “emergency power generating stationary internal combustion engines” and “demand response sources.” Emergency generators operate for no more than 500 hours per year, and only when the usual supply of power is unavailable. Demand response sources operate under similar time constraints and act as a power source when the usual source is unavailable, or when called upon to reduce demand on the electric grid.

9.14 Part 200: General Provisions

The EPA has delegated authority to the Department to implement the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for major stationary sources which are subject to these requirements. Currently, Table 4 of 6 NYCRR Part 200, “General Provisions,” contains NESHAP standards as of July 1, 2003. The EPA has promulgated several new NESHAP standards since this time. The Department has proposed, and expects to finalize adoption this fall (2007), amendments to section 200.10 to incorporate NESHAPs adopted since 2003.

Part 200 is also being updated to reflect new MACT guidelines for existing Other Solid Waste Incinerator (OSWI) units and large (unit capacity >250 tons per day (tpd)) Municipal Waste Combustors (MWCs). As mandated by CAA Sections 111 and 129, the EPA promulgated on December 16, 2005 Emission Guidelines for existing OSWI units under 40 CFR 60 Subpart FFFF; and promulgated on May 10, 2006 amendments to its previous guidelines for existing large MWCs under 40 CFR 60 Subpart Cb. The Department has proposed amendments to 6 NYCRR Part 200, Section 200.10 Table 2 to incorporate by reference the requirements of these updated guidelines which should be finally adopted by the Fall of

2007. Incorporating the referenced requirements will give the Department the needed authority to implement and enforce the requirements.

10.0 REASONABLE FURTHER PROGRESS (RFP)

10.1 Introduction

The CAA, in Section 182, requires ozone non-attainment areas with air quality classified as moderate or higher to submit plans showing RFP towards attainment of the NAAQS. RFP is defined, under Section 171(1) of the Act, to mean ‘‘such annual incremental reductions in emissions of the relevant air pollutant as are required by [part D of title I] or may reasonably be required by the Administrator for the purpose of ensuring attainment of the applicable [NAAQS] by the applicable date.’’ The demonstration of RFP is based on guidelines contained in the Phase II Eight-Hour Ozone Implementation Rule (40 CFR 51.910) which specifies the base year emissions inventory upon which RFP is to be planned for and implemented, the increments of emissions reductions required over specified time periods, and the process for establishing whether RFP milestones were achieved. Emissions from stationary, area and mobile sources must all be included.

For the New York – N. New Jersey – Long Island, NY-NJ-CT ozone non-attainment area, the Department’s RFP demonstration exceeds the requirements in the Phase II Eight-Hour Ozone Implementation Rule (40 CFR 51.910). This is more fully described below.

For clarification purposes, RFP means for the purposes of the 8-hour NAAQS, the progress reductions required under Section 172(c)(2) and Section 182(b)(1) and (c)(2)(B) and (c)(2)(C) of the CAA. Rate of Progress (ROP) means for the purposes of the 1-hour NAAQS, the progress reductions required under Section 172(c)(2) and Section 182(b)(1) and (c)(2)(B) and (c)(2)(C) of the CAA.

10.2 2008 15% RFP Plan

The 2008 RFP demonstration must provide at least a 15 percent reduction in the New York – N. New Jersey – Long Island, NY-NJ-CT non-attainment area 2002 base year anthropogenic VOC emissions by 2008. This percentage reduction is calculated from the adjusted baseline inventory that excludes: the emissions reduction benefits of the January 1, 1990 Federal Motor Vehicle Control Program (FMVCP), the June 11, 1990 federal RVP requirements of 9.0 psi, and the post-1990 “fix-up” of pre-1990 RACT rules and/or motor vehicle inspection programs. Further additional reductions must also be identified to compensate for any growth in emissions after 2002. EPA’s document entitled “Guidance on the Adjusted Base Year Emissions Inventory and the Target for the 15 Percent Rate-of-Progress Plans,” dated October 1992, provided the guidance for calculating the adjusted base year inventory and the 2008 target level of emissions. The target level of emissions for 2008 is the maximum amount of anthropogenic VOC emissions within the non-attainment area permitted to occur.

10.2.1 2008 Target Level VOC Emissions

The calculation of the 15 percent VOC reductions and the 2008 target level of emissions are summarized in the following steps:

Step 1: The compilation of the base year inventory for VOC emissions in the New York – N. New Jersey – Long Island, NY-NJ-CT non-attainment area, including biogenic emissions. See Chapter 4 for the 2002 base year inventory.

Step 2: The biogenic emissions were removed to develop the 2002 ROP base year anthropogenic emission inventory.

Step 3: The adjusted base year inventory was developed by removing the non-creditable FMVCP. Following EPA supplemental guidance, the Department also assumed the gasoline to have an RVP of 9.0 psi. Details of the mobile model inputs and procedures for estimating the benefits of the FMVCP are in the Appendix. The post-1990 RACT “fix-up” requirements were met previously and surpassed with the implementation of RACT statewide as required by CAA Section 184(b)(1)(B); therefore, the adjustment for this in 2002 is zero.

Step 4: The adjusted baseline inventory (Step 3) was multiplied by 0.85 to identify the required 2008 VOC emissions to demonstrate RFP.

Step 5: The 2008 VOC projection inventory, which includes emission growth and controls, was compared to the required 2008 VOC emissions target level to demonstrate RFP (Step 4).

The total VOC reduction needed to demonstrate the 15% RFP requirement is the difference between the 2008 projected base case emission (without controls) and the 2008 target emission level. If the 2008 VOC projection inventory is less than the 2008 VOC RFP target level, then RFP is met. For the New York State portion of the New York – N. New Jersey – Long Island, NY-NJ-CT non-attainment area, the calculations are as follows:

Step 1: 2002 Base Year VOC Inventory (tpd)

Point (Non-EGU)	11.2
EGU	2.7
Area	461.3
Non-Road	283.5
On-Road	236.8
Biogenic	204.4
Total	1199.9

Step 2: 2002 Base Year Anthropogenic VOC Inventory (tpd)

Point (Non-EGU)	11.2
EGU	2.7
Area	461.3
Non-Road	283.5
On-Road	236.8
Total	995.5

Step 3: Remove 2008 VOC Federal Motor Vehicle Control Program (FMVCP)

Suffolk County	7.3	tpd
Nassau County	5.2	tpd
Queens County	4.1	tpd
Kings County	2.6	tpd
Richmond County	0.9	tpd
New York County	4.7	tpd
Bronx County	2.0	tpd
Westchester County	4.4	tpd
Rockland County	1.3	tpd
Total	32.5	tpd

2002 Adjusted Base Year Anthropogenic VOC Inventory

995.5 – 32.5 = 963.0 tpd

Step 4: Calculate 2008 Projected VOC Emissions to Demonstrate RFP

963.0 x 0.85 = 818.6 tpd

Step 5: Compare 2008 Projected VOC Anthropogenic Emissions Inventory to 2008 Projected VOC Emissions to Demonstrate RFP

2008 Projected VOC Emissions Anthropogenic Inventory (tpd)

Point (Non-EGU)	13.2
EGU	2.5
Area	406.3
Non-Road	214.9
On-Road	148.9
Total	785.8

The comparison of the 2008 Projected VOC Anthropogenic Emissions Inventory to 2008 Projected VOC Emissions to Demonstrate RFP shows that reasonable further progress is met with VOC emission reductions alone. The Department has exceeded the 2008 RFP requirement by 32.8 tpd (4.6%).

10.2.2 2008 NO_x Reductions

The following calculations and charts demonstrate the NO_x reductions that are projected though 2008.

2002 Base Year Anthropogenic NO_x Inventory (tpd)

Point (Non-EGU)	50.9
EGU	117.6
Area	78.3
Non-Road	178.5
On-Road	327.3
Total	752.6

Remove 2008 NOx FMVCP

Suffolk County	7.5	tpd
Nassau County	4.9	tpd
Queens County	4.0	tpd
Kings County	2.5	tpd
Richmond County	1.1	tpd
New York County	2.6	tpd
Bronx County	2.0	tpd
Westchester County	4.7	tpd
Rockland County	1.4	tpd
Total	30.7	tpd

2002 Adjusted Base Year Anthropogenic NO_x Inventory (tpd)

752.6 – 30.7 = 721.9 tpd

2008 Projected NO_x Emissions Anthropogenic Inventory (tpd)

Point (Non-EGU)	65.0
EGU	108.9
Area	76.7
Non-Road	161.5
On-Road	211.8
Total	623.9

Therefore, in addition to meeting the 15 percent RFP requirement for total VOC reduction, the New York State portion of the New York – N. New Jersey – Long Island, NY-NJ-CT non-attainment area is projected to realize a 13.6 percent reduction in NO_x emissions between 2002 and 2008.

10.2.3 Contingency Measures

CAA Section 172(c)(9) requires the state to adopt specific contingency measures that will take effect without further action by the state or EPA if the state fails to achieve its RFP requirements.

In order to demonstrate compliance with the contingency measures provision applicable to the attainment demonstration, the Department has opted to include measures that have been or will be adopted for its contingency measures for the New York State portion of the New York-N. New Jersey-Long Island, NY-NJ-CT non-attainment area.

The EPA requires that the contingency measures identified by the State must be sufficient to secure an additional 3 percent reduction in ozone precursor emissions in the year following the year in which the failure has been identified.

For a non-attainment area that fails to meet RFP percent reduction requirements, and where it has been demonstrated that NO_x controls are needed to attain the primary NAAQS for ozone, measures that produce a combination of NO_x and VOC reductions may serve as contingency measures. EPA requires at least 0.3 percent out of every reduction of 3 percent be attributable to a reduction in VOC measures.

For the New York State portion of the New York – N. New Jersey – Long Island, NY-NJ-CT non-attainment area, the Department needs to show that it has secured an additional 24.6 tpd (0.03 x 818.6) reduction of VOC, or an equivalent combination of VOC and NO_x.

The 2008 RFP contingency requirement is met through the 32.8 tpd VOC reduced beyond the 15 percent RFP requirement.

10.3 2011 RFP Plan

The 2011 RFP demonstration shows an additional 9 percent anthropogenic VOC emission reduction in the New York State portion of the New York – N. New Jersey – Long Island, NY-NJ-CT non-attainment area between 2008 and 2011. This accounts for a total anthropogenic VOC emission reduction of 24 percent from 2002 base year anthropogenic VOC emissions.

10.3.1 2011 Target Level VOC Emissions

The calculation of the 24 percent VOC reductions and the 2011 level of emissions are summarized in the following steps below:

Step 1: The compilation of the base year inventory for VOC emissions in the New York – N. New Jersey – Long Island, NY-NJ-CT non-attainment area, including biogenic emissions. See Chapter 4 for the 2002 base year inventory.

Step 2: The biogenic emissions were removed to develop the 2002 ROP base year anthropogenic emission inventory.

Step 3: The adjusted base year inventory was developed by removing the non-creditable FMVCP. Following EPA supplemental guidance, the Department also assumed the gasoline to have an RVP of 9.0 psi. Details of the mobile model inputs and procedures for estimating the benefits of the FMVCP are in the Appendix. The post-1990 RACT "fix-up" requirements were met previously and surpassed with the implementation of RACT statewide as required by CAA Section 184(b)(1)(B), therefore, the adjustment for this in 2002 is zero.

Step 4: The adjusted baseline inventory (Step 3) was multiplied by 0.76 to identify the required 2011 VOC emissions to demonstrate RFP.

Step 5: The 2011 VOC projection inventory, which includes emission growth and controls, was compared to the required 2011 VOC emissions target level to demonstrate RFP (Step 4).

The total VOC reduction needed to demonstrate the 24 percent RFP requirement is the difference between the 2011 projected base case emission (without controls) and the 2011 target emission level. If the 2011 VOC projection inventory is less than the 2011 VOC RFP target level, then RFP is met. For New York – N. New Jersey – Long Island, NY-NJ-CT, the calculations are as follows:

Step 1: 2002 Base Year VOC Inventory (tpd)

Point (Non-EGU)	11.2
EGU	2.7
Area	461.3
Non-Road	283.5
On-Road	236.8
Biogenic	204.4
Total	1199.9

Step 2: 2002 Base Year Anthropogenic VOC Inventory (tpd)

Point (Non-EGU)	11.2
EGU	2.7
Area	461.3
Non-Road	283.5
On-Road	236.8
Total	995.5

Step 3: Remove 2011 VOC FMVCP

Suffolk County	9.1	tpd
Nassau County	6.6	tpd
Queens County	5.1	tpd
Kings County	3.2	tpd
Richmond County	1.2	tpd
New York County	5.5	tpd
Bronx County	2.4	tpd
Westchester County	5.3	tpd
Rockland County	1.6	tpd
Total	40.0	tpd

2002 Adjusted Base Year Anthropogenic VOC Inventory (tpd)

995.5 – 40.0 = 955.5 tpd

Step 4: Calculate 2011 Projected VOC Emissions to Demonstrate RFP

955.5 x 0.76 = 726.2 tpd

Step 5: Compare 2011 Projected VOC Anthropogenic Emissions Inventory to 2011 Projected VOC Emissions to Demonstrate RFP

2011 Projected VOC Emissions Anthropogenic Inventory (tpd)

Point (Non-EGU)	13.7
EGU	2.5
Area	398.9
Non-Road	191.7
On-Road	120.9
Total	727.7

The comparison of the 2011 Projected VOC Anthropogenic Emissions Inventory to 2011 Projected VOC Emissions to demonstrate RFP shows that there is a 1.5 tpd shortfall to demonstrate RFP through 2011 and the Department must rely on substitution of NO_x reductions to meet the requirement.

10.3.2 2011 NO_x Reductions

The following calculations and charts demonstrate the NO_x reductions that are projected though 2011.

2002 Base Year Anthropogenic NO_x Inventory (tpd)

Point (Non-EGU)	50.9
EGU	117.6
Area	78.3
Non-Road	178.5
On-Road	327.3
Total	752.6

Remove 2011 NOx FMVCP

Suffolk County	8.2	tpd
Nassau County	5.5	tpd
Queens County	4.3	tpd
Kings County	2.6	tpd
Richmond County	1.1	tpd
New York County	2.7	tpd
Bronx County	2.1	tpd
Westchester County	5.3	tpd
Rockland County	1.5	tpd
Total	33.3	tpd

2002 Adjusted Base Year Anthropogenic NO_x Inventory (tpd)

752.6 – 33.3 = 719.3 tpd

2011 Projected NO_x Emissions Anthropogenic Inventory (tpd)

Point (Non-EGU)	64.1
EGU	108.9
Area	77.1
Non-Road	149.9
On-Road	163.8
Total	563.8

The New York portion of the New York – N. New Jersey – Long Island, NY-NJ-CT non-attainment area is projected to realize a 21.6 percent reduction in NO_x emissions between 2002 and 2011.

In order to make the 2011 RFP demonstration, 1.2 tpd NOx of the available 155.5 tpd total NOx reduction must be used, leaving a net reduction of 154.3 tpd NOx beyond the 24 percent RFP requirement. The 1.2 tpd NOx reduction was calculated using EPA's "NOx Substitution Guidance" dated December, 1993 on a percentage to percentage basis (563.8 x 1.5 / (727.7 +1.5)).

10.3.3 Contingency Measures

CAA Section 172(c)(9) requires the state to adopt specific contingency measures that will take effect without further action by the state or EPA if the State fails to achieve its RFP requirements.

In order to demonstrate compliance with the contingency measures provision applicable to the attainment demonstration, the Department has opted to include measures that have been or will be adopted for its contingency measures for the New York State portion of the New York-N. New Jersey-Long Island, NY-NJ-CT non-attainment area.

EPA requires that the contingency measures identified by the state must be sufficient to secure an additional 3 percent reduction in ozone precursor emissions in the year following the year in which the failure has been identified.

For the New York State portion of the New York – N. New Jersey – Long Island, NY-NJ-CT non-attainment area, the Department needs to show that it has secured an additional 21.8 tpd (0.03 x 726.2) reduction of VOC, or an equivalent combination of VOC and NO_x.

The 2011 RFP contingency requirement is met through the 154.3 tpd NO_x reduced beyond the 24 percent RFP requirement.

10.4 2012 RFP Plan

The 2012 RFP demonstration requires an additional 3 percent anthropogenic VOC and NO_x emission reductions in the New York State portion of the New York – N. New Jersey – Long Island, NY-NJ-CT non-attainment area between 2011 and 2012. This accounts for a total anthropogenic VOC and NO_x emission reduction of 27 percent from 2002 base year anthropogenic VOC and NO_x emissions.

10.4.1 2012 Target Level VOC Emissions

The calculation of the VOC reductions and the 2012 level of emissions are summarized in the following steps below:

Step 1: The compilation of the base year inventory for VOC emissions in the New York – N. New Jersey – Long Island, NY-NJ-CT non-attainment area, including biogenic emissions. See Chapter 4 for the 2002 base year inventory.

Step 2: The biogenic emissions were removed to develop the 2002 base year anthropogenic emission inventory.

Step 3: The adjusted base year inventory was developed by removing the non-creditable FMVCP. Following EPA supplemental guidance, the Department also assumed the gasoline to have an RVP of 9.0 psi. Details of the mobile model inputs and procedures for estimating the benefits of the FMVCP are in the Appendix. The post-1990 RACT “fix-up” requirements were met previously and surpassed with the implementation of RACT statewide as required by CAA Section 184(b)(1)(B), therefore, the adjustment for this in 2002 is zero.

Step 4: The adjusted baseline inventory (Step 3) was multiplied by 0.73 to identify the required 2012 VOC emissions to demonstrate RFP.

Step 5: The 2012 VOC projection inventory, which includes emission growth and controls, was compared to the required 2012 VOC emissions target level to demonstrate RFP (Step 4).

The total VOC reduction needed to show the 27 percent RFP requirement is the difference between the 2012 projected base case emission (without controls) and the 2012 target emission level. If the 2012 VOC projection inventory is less than the 2012 VOC RFP target level, then RFP is met. For New York – N. New Jersey – Long Island, NY-NJ-CT, the calculations are as follows:

Step 1: 2002 Base Year VOC Inventory (tpd)

Point (Non-EGU)	11.2
EGU	2.7
Area	461.3
Non-Road	283.5
On-Road	236.8
Biogenic	204.4
Total	1199.9

Step 2: 2002 Base Year Anthropogenic VOC Inventory (tpd)

Point (Non-EGU)	11.2
EGU	2.7
Area	461.3
Non-Road	283.5
On-Road	236.8
Total	995.5

Step 3: Remove 2012 VOC FMVCP

Suffolk County	9.5	tpd
Nassau County	6.9	tpd
Queens County	5.3	tpd
Kings County	3.3	tpd
Richmond County	1.3	tpd
New York County	5.6	tpd
Bronx County	2.5	tpd
Westchester County	5.5	tpd
Rockland County	1.7	tpd
Total	41.6	tpd

2002 Adjusted Base Year Anthropogenic VOC Inventory (tpd)

995.5 – 41.6 = 950.9 tpd

Step 4: Calculate 2012 Projected VOC Emissions to Demonstrate RFP

950.9 x 0.73 = 694.2 tpd

Step 5: Compare 2012 Projected VOC Anthropogenic Emissions Inventory to 2012 Projected VOC Emissions to Demonstrate RFP.

2012 Projected VOC Emissions Anthropogenic Inventory (tpd)

Point (Non-EGU)	13.8
EGU	2.5
Area	399.8
Non-Road	187.2
On-Road	120.9
Total	724.2

The comparison of the 2012 Projected VOC Anthropogenic Emissions Inventory to 2012 Projected VOC Emissions to demonstrate RFP shows that there is a 30.0 tpd shortfall to demonstrate RFP through 2012 and the Department must rely on substitution of NO_x reductions to meet the requirement.

10.4.2 2012 NO_x Reductions

The following calculations and charts demonstrate the NO_x reductions that are projected though 2012.

2002 Base Year Anthropogenic NO_x Inventory (tpd)

Point (Non-EGU)	50.9
EGU	117.6
Area	78.3
Non-Road	178.5
On-Road	327.3
Total	752.6

Remove 2012 NOx FMVCP

Suffolk County	8.5	tpd
Nassau County	5.7	tpd
Queens County	4.3	tpd
Kings County	2.6	tpd
Richmond County	1.1	tpd
New York County	2.8	tpd
Bronx County	2.1	tpd
Westchester County	5.5	tpd
Rockland County	1.6	tpd
Total	34.2	tpd

2002 Adjusted Base Year Anthropogenic NOx Inventory (tpd)

752.6 – 34.2 = 718.4 tpd

2012 Projected NO_x Emissions Anthropogenic Inventory (tpd)

Point (Non-EGU)	62.8
EGU	108.9
Area	77.3
Non-Road	145.7
On-Road	163.8
Total	558.5

The New York portion of the New York – N. New Jersey – Long Island, NY-NJ-CT non-attainment area is projected to realize a 22.3 percent (159.9 tpd) reduction in NO_x emissions between 2002 and 2012. In order to make the 2012 RFP demonstration, 22.2 tpd NO_x of the available 159.9 tpd total NO_x reduction must be used, leaving a net reduction of 137.7 tpd NO_x beyond the 27 percent RFP requirement. The 22.2 tpd NO_X reduction was calculated using EPA's "NO_x Substitution Guidance" dated December, 1993 on a percentage to percentage basis.

10.4.3 Contingency Measures

CAA Section 172(c)(9) requires the state to adopt specific contingency measures that will take effect without further action by the state or EPA if the State fails to achieve its RFP requirements.

In order to demonstrate compliance with the contingency measures provision applicable to the attainment demonstration, the

Department has opted to include measures that have been or will be adopted for its contingency measures for the New York State portion of the New York-N. New Jersey-Long Island, NY-NJ-CT non-attainment area.

EPA requires that the contingency measures identified by the state must be sufficient to secure an additional 3 percent reduction in ozone precursor emissions in the year following the year in which the failure has been identified.

For the New York State portion of the New York – N. New Jersey – Long Island, NY-NJ-CT non-attainment area, the Department needs to show that it has secured an additional 20.8 tpd (0.03 x 694.2) reduction of VOC, or an equivalent combination of VOC and NO_x.

The 2012 RFP contingency requirement is met through the 137.7 tpd NO_x reduced beyond the 27 percent RFP requirement.

10.5 Motor Vehicle Emissions Budgets

Year	VOC (tpd)	NOx (tpd)
2008	148.85	211.77
2011	120.93	163.84
2012	111.08	147.43

10.6 Emissions Reductions by Control Strategy

Proposed Revisions

6 NYCRR Part	Rule Name	Implementation Year	Contaminant	% Reduction (2012 CF)	Reduction Ton / OSD NYMA 2008	Reduction Ton / OSD NYMA 2011	Reduction Ton / OSD NYMA 2012
228, 235	Adhesives and Sealants	2009	VOC	64.4	5.58	6.08	5.86
235	Consumer Products (2)	2009	VOC	2.0	15.04[1]	16.73	16.31
241	Asphalt Paving	2009	VOC	20	2.31	2.45	2.32
220-1	Portland Cement Plants	2009	NOx	70	0	0	0
220-2	Glass Manufacturing	2009	NOx	70	0	0	0
227-4	Asphalt Production	2009	NOx	35	-0.01	-0.01	-0.03
239	Portable Fuel Containers (1)	2009	VOC	23.2	16.02[2]	25.29	28.59

[1] For Consumer Products, tons/OSD reduction includes both rule revisions
[2] For Portable Fuel Containers, tons/OSD reduction includes both rule revisions

Adopted Rules

6 NYCRR Part	Rule Name	Implementation Year	Contaminant	% Reduction	Reduction Ton / OSD NYMA 2008	Reduction Ton / OSD NYMA 2011	Reduction Ton / OSD NYMA 2012
205	AIM Coatings	2005	VOC	31	9.97	9.45	8.36
235	Consumer Products (1)	2005	VOC	14.2	15.04	16.73	16.31
228	Mobile Equipment Repair	2004	VOC	38	8.50	8.89	8.38
226	Solvent Metal Cleaning	2005	VOC	66	3.78	4.27	4.20
239	Portable Fuel Containers (1)	2003	VOC	71.3	16.02	25.29	28.59

11.0 NEW SOURCE REVIEW (NSR)

Major stationary sources of air pollution, as defined by the CAA, and major stationary sources which undertake major modifications are required to obtain a permit before commencing construction. The review process through which permits are issued is known as New Source Review (NSR). NSR is required for major sources whether the source or modification is located in an area that is not in attainment, or is classified as attainment or unclassifiable.

For non-attainment areas, the permits are called non-attainment NSR (NNSR) permits. Permits for sources in attainment areas are referred to as Prevention of Significant Deterioration (PSD) permits. The entire program, including both NNSR and PSD permit reviews, is usually referred to as the NSR program.

The NSR program is in place to protect the air quality of the areas in which the sources or modifications are located as well as areas that might be affected by transport. These programs are integral to the success of the various SIP efforts, ensuring that new major sources and modifications to these sources do not interfere with attainment and maintenance of the NAAQS, or exacerbate air quality problems in existing non-attainment areas.

As a result of changes to the federal PSD program, permitting responsibilities that had been delegated to New York related to PSD were returned to EPA in May 2004. Thus, EPA presently has the responsibility for administering the PSD program in New York.

The NSR permitting program in New York is implemented through the provisions of 6 NYCRR Part 231, “New Source Review In Nonattainment Areas and Ozone Transport Region.” The Department is revising Part 231 in part to comply with the 2002 federal NSR rule that EPA promulgated and correct deficiencies that EPA identified in regards to New York’s existing NNSR regulation as well as implement additional measures protective of the New York State environment. The 2002 federal NSR rule modified both the NNSR and PSD regulations at 40 CFR 51.165 and 52.21, respectively, and requires states with SIP approved NSR programs to revise their regulations in accordance with the 2002 federal NSR rule and submit the revisions to EPA for approval into the SIP. The Department’s existing NNSR program at Part 231 is subject to this requirement. Another purpose of the rulemaking is to adopt a State PSD program for proposed new major facilities and major modifications to existing facilities located in attainment areas. The proposed Part 231 rule incorporates provisions from the federal PSD regulations in significant part with additional provisions to ensure enforceability of the rule and effective monitoring, recordkeeping and reporting.

From the State's perspective, major NSR is a critical tool in meeting the Legislature's air quality objectives. The program ensures that air quality is preserved in areas of the state that meet the NAAQS and does not further degrade, but actually improves, in areas of the State which currently are not in attainment of the NAAQS. The State of New York currently has areas that are designated non-attainment for ozone, particulate matter less than 10 micrometers (PM_{10}), and $PM_{2.5}$. As a result, the Department must have a NNSR program that meets the requirements of Part D of Title I of the CAA to adopt permit programs for the construction, modification, and operation of major stationary sources in non-attainment areas.

The proposed regulation is one in a series of programs intended to track pollution, ensure that sources are meeting their regulatory obligations, and maintain permits. These permits contain provisions to limit emissions of ozone precursors (VOCs and NO_x), $PM_{2.5}$, SO_2, CO, and lead.

12.0 REASONABLY AVAILABLE CONTROL TECHNOLOGY (RACT)

The CAA requires SIPs to "provide for the implementation of all reasonably available control measures as expeditiously as practicable (including such reductions in emissions from existing sources in the area as may be obtained through the adoption, at a minimum, of reasonably available control technology) and shall provide for attainment of the national primary ambient air quality standards." In EPA's Phase 2 ozone rule, 40 CFR 51.912 was revised to require non-attainment areas to demonstrate, through a SIP submission, that the state's RACT requirements for NO_x and VOC were current and appropriate to meet 8-hour ozone requirements. This SIP submission was to be provided to EPA no later than 27 months after designation for the 8-hour ozone NAAQS, or September 15, 2006.

The Department prepared the RACT SIP, provided for a public process, and submitted it to EPA by the deadline. The RACT analysis' conclusion was that the RACT rules presently in place continue to meet the criteria for RACT for 8-hour ozone due to the updating of a number of rules in recent years . Additionally, the Department determined that source-specific RACT provisions presently in place also meet 8-hour RACT requirements for all applicable EPA source categories in operation in New York. Many permits in which these requirements appear contain conditions requiring the reassessment of RACT for the affected sources, resulting in the frequent updating of these requirements.

Although the Phase 2 rules required only that sources whose emissions exceed 50 and 100 tpy of VOCs and NO_x, respectively, be included in this assessment, the Department included sources whose emissions exceeded the lower, 1-hour ozone-based major source thresholds to prevent "backsliding."

It was noted that several source categories were in the process of being evaluated by the OTC and New York and, as a result of this assessment, will result in new controls. New controls in New York will be implemented under the schedule of rule revisions described in Chapter 9.

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13.0 REASONABLY AVAILABLE CONTROL MEASURES (RACM)

Sections 172(a)(2)(A) and 181(a) of the CAA require ozone non-attainment areas to attain the NAAQS as expeditiously as practicable, including such reductions as may be obtained through RACT, and to provide outer-limit dates for attainment based on an area's classification. Furthermore, CAA Section 172(c)(1) states, "IN GENERAL - Such plan provisions shall provide for the implementation of all reasonably available control measures as expeditiously as practicable (including such reductions in emissions from existing sources in the area as may be obtained through the adoption, at a minimum, of reasonably available control technology) and shall provide for attainment of the national primary ambient air quality standards." The Department submitted a RACT SIP revision to EPA on September 15, 2006.

The RACM requirement applies to all non-attainment areas that are required to submit an attainment demonstration, whether covered under only CAA Subpart 1 or also Subpart 2.

EPA issued several guidance documents for implementing the RACM provisions of the CAA that interpret that provision to require a demonstration that the state has adopted all reasonable measures to meet RFP requirements and to demonstrate attainment as expeditiously as practicable and thus, that no additional measures that are reasonably available will advance the attainment date or contribute to RFP for the area:

- "State Implementation Plans; General Preamble for Proposed Rulemaking on Approval of Plan Revisions for Nonattainment Areas" (44 FR 20372 – 20375).
- "State Implementation Plans; General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990; Proposed Rule" (57 FR 13498 – 13560 (April 16, 1992)).
- "Guidance on the Reasonably Available Control Measures (RACM) Requirement and Attainment Demonstration Submissions for Ozone Nonattainment Areas." John S. Sietz, Director, Office of Air Quality Standards and Planning, November 30, 1999
- "Additional Submission on RACM for States with Severe One-Hour Ozone Nonattainment Areas SIPs." John S. Sietz, Director, Office of Air Quality Standards and Planning, December 14, 2000.
- "Guidance on Incorporating Bundled Measures in a State Implementation Plan." Stephen D. Page, Director, Office of Air Quality Standards and Planning, August 15, 2005.

OTC staff and member states, including New York, formed and participated in several workgroups to identify and evaluate candidate control measures that could be used to demonstrate attainment of the 8-hour ozone NAAQS. Initially, the workgroups compiled and reviewed a list of approximately 1,000 candidate control measures. These control measures were identified through published sources such as EPA's CTGs, National Association of Clean Air Agencies (NACAA) "Menu of Options" documents, the AirControlNET database, emission control initiatives in member states as well as other states including California, state/regional consultations, and stakeholder input. The workgroups evaluated data regarding emissions benefits, cost-effectiveness (economic feasibility) and implementation issues (technological feasibility) to develop a preliminary list of 30 candidate control measures to be considered for more detailed analysis. These measures were selected to focus on the pollutants and source categories that are thought to be the most effective in reducing ozone levels in the Northeastern and Mid-Atlantic regions. "Identification and Evaluation of Candidate Control Measures – Final Technical Support Document," dated February 28, 2007 is included in this SIP revision as an Appendix as supporting documentation of the process and product of the workgroups.

Based on the analysis conducted by the workgroups, the OTC Commissioners recommended that states consider reductions from the following source categories:

Consumer Products
Portable Fuel Containers
Adhesives and Sealants Applications
Diesel Engine Chip Reflash
Cutback and Emulsified Asphalt Paving
Asphalt Production Plants
Cement Kilns
Glass Furnaces
Industrial, Commercial and Institutional (ICI) Boilers
Regional Fuels

With the exception of Diesel Engine Chip Reflash and Regional Fuels, the State of New York is developing new or revised regulations for all of the source categories recommended by the OTC Commissioners that will provide for the implementation of all reasonably available control measures and attainment of the NAAQS as expeditiously as practicable. Hence, New York State believes that these measures represent RACM as they are reasonably available and can be expected to advance the attainment date and contribute to RFP. These measures, referred to as "Beyond On The Way" measures in the modeling scenarios, are anticipated to provide an additional 1 to 2 ppb reduction benefit in the projected 2009 and/or 2012 design values beyond what was projected for "On The Books / On the Way" measures as detailed in the modeling section of this SIP.

Additionally, the Commissioners directed the OTC to evaluate control measures for EGUs and HEDD units.

Despite significant reductions of ozone precursor emissions achieved to date, a significant portion of the ozone problem continues to be caused by NO_x transported into and generated within the OTR by EGUs. HEDD operation of EGUs generally has not been addressed under existing air quality control requirements, and these units are operated on very hot summer days when air pollution levels are highest. Department staff has participated in discussions with OTC staff, other state environmental and utility regulators, EPA staff, EGU owners and operators and independent regional systems operators to assess emissions associated with HEDD during the ozone season and to address excess NO_x emissions on HEDDs.

The OTC has developed the "Memorandum of Understanding Among the States of the Ozone Transport Commission Concerning the Incorporation of High Electrical Demand Day Emission Reduction Strategies into Ozone Attainment State Implementation Planning" (HEDD MOU) to address NO_x emissions on days when electricity demand is highest. These HEDDs have a strong correlation to days with the highest potential for ozone formation. Given the high emissions and the favorable meteorology for ozone formation, the OTC states have resolved to pursue reductions from units operating on HEDDs during the ozone season. The reductions are to be achieved beginning with the 2009 ozone season or as soon as feasible thereafter, but not later than 2012.

The State of New York is currently evaluating the potential mechanisms and strategies for achieving these emission reductions. The OTC HEDD MOU lists potential mechanisms and strategies. They are:

- Regulatory emission caps on HEDD units on HEDDs
- Performance standards
- State/Generator Partnership Agreements
- Energy efficiency programs
- Demand response programs, provided that these programs do not shift emissions to units with unacceptably high pollutant emissions
- Regulatory standards or controls for distributed generation
- NO_x allowance retirements at adjusted ratios that provide for effective reductions on HEDDs

The Department will implement measures to meet its obligations under the OTC HEDD MOU. These measures are expected to impact ozone levels on the days when the potential for ozone formation are the greatest. It is, however, not possible through the planning and attainment demonstrations performed within this document to predict the impact of these measures. In addition, it is not possible to develop estimates of creditable emissions reductions that will result from the mechanisms and strategies needed to achieve reductions on HEDDs.

Ozone SIP inventories are based on typical daily emissions during the peak ozone season (“Emission Inventory Requirements for Ozone State Implementation Plans,” EPA-450/4-91-010, USEPA OAQPS, March 1991). HEDD units do not operate on typical ozone season days. Emissions from HEDD units are not fully accounted for using this methodology to quantify ozone season day emissions. HEDD measures will, therefore, likely reduce ozone levels on ozone exceedance days, but emission reductions from these measures will not be accounted for as creditable emission reductions in the rate-of-progress or attainment year inventories.

The HEDD emission reductions will provide additional weight-of-evidence towards attaining the ozone NAAQS in 2012.

Department of Environmental Conservation
Division of Air Resources

NEW YORK STATE IMPLEMENTATION PLAN FOR OZONE (8-HOUR NAAQS)

ATTAINMENT DEMONSTRATION FOR NEW YORK METRO AREA

APPENDIX A

FINAL PROPOSED REVISION FEBRUARY 2008

New York State Department of Environmental Conservation
ELIOT SPITZER, GOVERNOR ALEXANDER GRANNIS, COMMISSIONER

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Table 1 Ambient ozone and other precursor pollutant monitor stations in New York CMSA

AQS ID	County	Monitor	Pollutant		AQS ID	County	Monitor	Pollutant
090010017	Fairfield	Greenwich	ozone		090010004	Fairfield	Bridgeport	CO
090011123	Fairfield	Danbury	ozone		090010020	Fairfield	Stamford	CO
090013007	Fairfield	Stratford	ozone		090090025	New Haven	New Haven	CO
090019003	Fairfield	Sherwood Island	ozone		340030004	Bergen	Fort Lee	CO
090070007	Middlesex	Middletown	ozone		340035001	Bergen	Hackensack	CO
090090027	New Haven	New Haven	ozone		340171002	Hudson	Jersey City	CO
090093002	New Haven	Madison	ozone		340232003	Middlesex	Perth Amboy	CO
090099005	New Haven	Hamden	ozone		340252001	Monmouth	Freehold	CO
340030005	Bergen	Teaneck	ozone		340270023	Morris	Morristown	CO
340170006	Hudson	Bayonne	ozone		340390003	Union	Elizabeth	CO
340190001	Hunterdon	Flemington	ozone		360050083	Bronx	Botanical Gardens	CO
340230011	Middlesex	New Brunswick	ozone		360470071	Kings	Flatbush Ave	CO
340250005	Monmouth	Monmouth Univ.	ozone		360590005	Nassau	Eisenhower Park	CO
340273001	Morris	Chester	ozone		360610056	New York	PS59	CO
340315001	Passaic	Ramapo	ozone		360610062	New York	Canal Street	CO
360050083	Bronx	Botanical Garden	ozone		360610081	New York	Bloomingdales	CO
360050110	Bronx	IS 52	ozone		360610092	New York	E34th street	CO
360810098	Queens	College Point	ozone		360810097	Queens	Springfield Blvd	CO
360810124	Queens	Queens College	ozone		360810124	Queens	Queens College	CO
360850067	Richmond	Susan Wagner	ozone		361030009	Suffolk	Holtsville	CO
361030002	Suffolk	Babylon	ozone		090019003	Fairfield	Sherwood Island	NO, NO2
361030004	Suffolk	Riverhead	ozone		340170006	Hudson	Bayonne	NO2
361030009	Suffolk	Holtsville	ozone		340230011	Middlesex	New Brunswick	NO, NO2
361192004	Westchester	White Plains	ozone		340273001	Morris	Chester	NO, NO2
090019003	Fairfield	Sherwood Island	PAMS		340390004	Union	Elizabeth	NO2
340230011	Middlesex	New Brunswick	PAMS		360050083	Bronx	Botanical Gardens	NO, NO2

360050083	Bronx	Botanical Gardens	PAMS		360590005	Nassau	Eisenhower Park	NO, NO2
					360610056	New York	PS59	NO, NO2

Table 2 Listing of 4-highest measured 1-h and 8-h ozone concentrations (ppb) and the number of exceedance days in New York CMSA

AQS ID	Monitor	County	year	1H1	1H2	1H3	1H4	1H-Days	8H1	8H2	8H3	8H4	8H-days
90010017	Greenwich	Fairfield	2000	124	123	114	111	0	113	95	85	84	3
90010017	Greenwich	Fairfield	2001	154	130	126	125	4	131	117	107	98	13
90010017	Greenwich	Fairfield	2002	168	150	131	125	4	120	110	106	103	18
90010017	Greenwich	Fairfield	2003	144	137	126	125	4	124	106	105	99	7
90010017	Greenwich	Fairfield	2004	108	102	101	98	0	85	84	79	75	1
90010017	Greenwich	Fairfield	2005	153	124	118	115	1	110	99	93	89	8
90010017	Greenwich	Fairfield	2006	134	134	128	124	3	100	99	99	97	5
90011123	Danbury	Fairfield	2000	131	124	106	105	1	97	96	92	90	7
90011123	Danbury	Fairfield	2001	140	133	125	122	3	112	107	98	96	9
90011123	Danbury	Fairfield	2002	152	141	141	129	5	121	120	110	109	17
90011123	Danbury	Fairfield	2003	113	110	109	104	0	103	88	86	85	4
90011123	Danbury	Fairfield	2004	108	104	103	102	0	98	92	86	86	4
90011123	Danbury	Fairfield	2005	158	146	145	135	5	110	109	106	104	11
90011123	Danbury	Fairfield	2006	144	123	112	106	1	103	98	88	87	4
90013007	Stratford	Fairfield	2000	140	122	111	110	1	124	94	91	90	4
90013007	Stratford	Fairfield	2001	148	144	143	129	4	131	120	110	102	10
90013007	Stratford	Fairfield	2002	145	135	133	125	4	129	115	104	103	19
90013007	Stratford	Fairfield	2003	155	144	135	127	4	125	114	106	101	8
90013007	Stratford	Fairfield	2004	135	105	103	99	1	110	88	81	81	2
90013007	Stratford	Fairfield	2005	136	111	111	109	1	96	96	92	90	8
90013007	Stratford	Fairfield	2006	138	136	125	120	3	110	99	97	95	7
90019003	Westport	Fairfield	2000	136	116	114	110	1	120	89	85	84	3
90019003	Westport	Fairfield	2001	150	144	139	123	3	133	122	114	97	15
90019003	Westport	Fairfield	2002	143	138	133	128	5	117	114	111	98	19
90019003	Westport	Fairfield	2003	141	133	132	118	3	113	112	108	97	6
90019003	Westport	Fairfield	2004	129	106	98	97	1	99	87	82	81	2
90019003	Westport	Fairfield	2005	146	119	119	115	1	100	92	91	91	10
90019003	Westport	Fairfield	2006	148	137	130	104	3	119	109	102	89	6
90070007	Middletown	Middlesex	2000	121	116	111	107	0	103	92	90	89	6
90070007	Middletown	Middlesex	2001	150	138	137	134	8	111	111	108	102	11
90070007	Middletown	Middlesex	2002	141	138	135	128	4	110	110	110	102	16

90070007	Middletown	Middlesex	2003	138	113	113	108	1	111	96	93	92	7
90070007	Middletown	Middlesex	2004	124	102	101	99	0	102	84	83	82	1
90070007	Middletown	Middlesex	2005	136	134	130	122	3	110	106	99	96	7
90070007	Middletown	Middlesex	2006	144	108	107	107	1	110	98	94	89	5
90090027	New Haven	New Haven	2000										
90090027	New Haven	New Haven	2001										
90090027	New Haven	New Haven	2002										
90090027	New Haven	New Haven	2003										
90090027	New Haven	New Haven	2004	104	96	93	92	0	85	78	77	73	1
90090027	New Haven	New Haven	2005	149	119	112	105	1	108	85	84	80	2
90090027	New Haven	New Haven	2006	121	111	101	96	0	100	83	80	79	1
90093002	Madison	New Haven	2000	146	136	118	111	2	121	104	93	87	6
90093002	Madison	New Haven	2001	162	146	145	129	4	133	126	105	100	11
90093002	Madison	New Haven	2002	155	146	132	130	4	134	126	114	107	19
90093002	Madison	New Haven	2003	139	134	129	123	3	124	117	115	101	9
90093002	Madison	New Haven	2004	137	104	100	95	1	111	86	84	77	2
90093002	Madison	New Haven	2005	145	141	128	116	3	99	96	93	92	8
90093002	Madison	New Haven	2006	131	117	115	115	1	114	100	95	95	6
90099005	Hamden	New Haven	2000	124	118	116	104	0	104	88	83	81	2
90099005	Hamden	New Haven	2001	136	134	131	128	4	110	104	102	101	9
90099005	Hamden	New Haven	2002	162	133	130	128	6	124	106	103	102	14
90099005	Hamden	New Haven	2003	136	119	101	101	1	105	96	92	91	7
90099005	Hamden	New Haven	2004										
90099005	Hamden	New Haven	2005										
90099005	Hamden	New Haven	2006										
AQS ID	**Monitor**	**County**	**year**	**1H1**	**1H2**	**1H3**	**1H4**	**1H-Days**	**8H1**	**8H2**	**8H3**	**8H4**	**8H-days**
340030005	Teaneck	Bergen	2000	105	101	98	98	0	89	81	77	76	1
340030005	Teaneck	Bergen	2001	127	125	120	110	2	115	110	108	96	9
340030005	Teaneck	Bergen	2002	143	135	128	123	3	105	104	103	101	16
340030005	Teaneck	Bergen	2003	107	105	104	96	0	98	97	90	85	4
340030005	Teaneck	Bergen	2004	115	97	92	89	0	88	88	83	82	2
340030005	Teaneck	Bergen	2005	122	120	110	107	0	100	93	92	91	8
340030005	Teaneck	Bergen	2006									86	
340170006	Bayonne	Hudson	2000	108	103	103	100	0	103	89	89	82	3
340170006	Bayonne	Hudson	2001	137	132	130	116	3	116	109	103	91	6

340170006	Bayonne	Hudson	2002	109	108	108	105	0	98	90	90	86	4
340170006	Bayonne	Hudson	2003	131	107	107	104	1	102	97	82	80	2
340170006	Bayonne	Hudson	2004	114	113	92	92	0	88	82	81	79	1
340170006	Bayonne	Hudson	2005	141	120	115	113	1	96	93	92	91	6
340170006	Bayonne	Hudson	2006									87	
340190001	Flemington	Hunterdon	2000	116	110	107	105	0	106	102	95	91	8
340190001	Flemington	Hunterdon	2001	130	128	128	123	3	112	103	102	100	12
340190001	Flemington	Hunterdon	2002	131	117	113	108	1	115	109	99	97	17
340190001	Flemington	Hunterdon	2003	123	118	114	98	0	115	110	92	92	6
340190001	Flemington	Hunterdon	2004	109	109	100	99	0	98	90	89	87	6
340190001	Flemington	Hunterdon	2005	115	110	108	107	0	100	93	92	92	12
340190001	Flemington	Hunterdon	2006									87	
340230011	Rutgers univ	Middlesex	2000	118	112	111	108	0	112	101	100	94	10
340230011	Rutgers univ	Middlesex	2001	142	136	133	114	3	120	110	106	106	16
340230011	Rutgers univ	Middlesex	2002	132	124	124	123	1	115	104	103	103	24
340230011	Rutgers univ	Middlesex	2003	122	120	103	100	0	117	113	91	86	4
340230011	Rutgers univ	Middlesex	2004	119	112	102	91	0	99	88	81	80	2
340230011	Rutgers univ	Middlesex	2005	132	125	115	111	2	97	94	94	92	10
340230011	Rutgers univ	Middlesex	2006									92	
340250005	W. Long Branch	Monmouth	2000	130	129	119	102	2	118	104	101	98	5
340250005	W. Long Branch	Monmouth	2001	127	124	117	105	1	114	112	97	91	8
340250005	W. Long Branch	Monmouth	2002	126	123	122	121	1	104	102	102	101	14
340250005	W. Long Branch	Monmouth	2003	151	143	139	128	4	130	127	111	99	10
340250005	W. Long Branch	Monmouth	2004	108	104	94	94	0	99	94	80	80	2
340250005	W. Long Branch	Monmouth	2005	139	115	112	104	1	99	95	88	88	8
340250005	W. Long Branch	Monmouth	2006									88	
340273001	Chester	Morris	2000	118	110	109	107	0	114	99	98	90	6
340273001	Chester	Morris	2001	123	121	114	110	0	108	108	107	101	13
340273001	Chester	Morris	2002	144	142	118	113	2	129	123	107	105	25
340273001	Chester	Morris	2003	122	118	116	96	0	109	108	91	90	4
340273001	Chester	Morris	2004	93	89	89	84	0	81	78	75	75	0
340273001	Chester	Morris	2005	100	95	95	92	0	91	87	85	81	3
340273001	Chester	Morris	2006									91	
340315001	Ramapo	Passaic	2000	102	101	93	91	0	97	82	81	81	1
340315001	Ramapo	Passaic	2001	105	104	103	99	0	92	91	91	88	8

340315001	Ramapo	Passaic	2002	133	116	116	114	1	109	101	97	97	11
340315001	Ramapo	Passaic	2003	117	107	101	97	0	88	85	83	81	2
340315001	Ramapo	Passaic	2004	110	103	99	91	0	95	91	79	74	2
340315001	Ramapo	Passaic	2005	108	102	102	98	0	94	90	90	88	7
AQS ID	**Monitor**	**County**	**year**	**1H1**	**1H2**	**1H3**	**1H4**	**1H-Days**	**8H1**	**8H2**	**8H3**	**8H4**	**8H-days**
360050083	Bot.Gardens	Bronx	2000	112	95	88	87	0	103	79	76	71	1
360050083	Bot.Gardens	Bronx	2001	98	95	92	89	0	86	84	79	77	1
360050083	Bot.Gardens	Bronx	2002	132	126	126	122	3	105	100	96	96	6
360050083	Bot.Gardens	Bronx	2003	105	104	102	100	0	89	85	79	79	2
360050083	Bot.Gardens	Bronx	2004	102	96	93	92	0	87	81	79	74	1
360050083	Bot.Gardens	Bronx	2005	109	105	100	95	0	82	80	75	74	0
360050083	Bot.Gardens	Bronx	2006	109	107	106	101	0	95	90	89	76	3
360050110	IS52	Bronx	2000	110	94	86	81	0	102	81	74	68	1
360050110	IS52	Bronx	2001	91	83	76	76	0	69	68	66	63	0
360050110	IS52	Bronx	2002	133	116	115	112	1	102	93	93	89	6
360050110	IS52	Bronx	2003	109	107	98	94	0	100	90	84	82	2
360050110	IS52	Bronx	2004	94	91	89	89	0	80	80	77	70	0
360050110	IS52	Bronx	2005	108	101	101	99	0	97	79	78	77	1
360050110	IS52	Bronx	2006	114	94	90	89	0	99	81	80	72	1
360810098	College Point	Queens	2000	106	87	87	83	0	100	80	72	69	1
360810098	College Point	Queens	2001	105	105	97	96	0	93	81	76	72	1
360810098	College Point	Queens	2002	122	110	106	104	0	85	84	83	82	1
360810098	College Point	Queens	2003	103	96	91	89	0	93	83	82	72	1
360810098	College Point	Queens	2004	82	81	76	76	0	69	68	66	64	0
360810098	College Point	Queens	2005	109	103	97	93	0	84	78	75	73	0
360810098	College Point	Queens	2006									NA	
360810124	Queens College	Queens	2000									NA	
360810124	Queens College	Queens	2001	129	123	120	102	1	101	93	76	74	2
360810124	Queens College	Queens	2002	141	127	116	112	2	98	97	90	89	7
360810124	Queens College	Queens	2003	116	106	105	103	0	104	93	90	86	4
360810124	Queens College	Queens	2004	104	95	95	94	0	83	82	80	75	0
360810124	Queens College	Queens	2005	123	118	114	111	0	92	91	88	86	4
360810124	Queens College	Queens	2006	110	104	100	100	0	89	86	81	78	2
360850067	Susan Wagner	Richmond	2000	123	116	113	111	0	118	103	101	94	11
360850067	Susan Wagner	Richmond	2001	133	127	121	117	2	110	108	97	97	10

360850067	Susan Wagner	Richmond	2002	132	123	115	114	1	111	106	104	99	19
360850067	Susan Wagner	Richmond	2003	127	120	108	103	1	114	111	90	86	5
360850067	Susan Wagner	Richmond	2004	127	108	97	94	1	106	86	84	83	2
360850067	Susan Wagner	Richmond	2005	136	117	111	111	1	101	98	97	94	8
360850067	Susan Wagner	Richmond	2006	125	114	112	106	1	113	98	96	92	8
361030002	Babylon	Suffolk	2000	134	112	108	106	1	115	100	86	86	4
361030002	Babylon	Suffolk	2001	128	126	100	98	2	103	101	84	84	2
361030002	Babylon	Suffolk	2002	143	141	132	126	4	111	110	109	108	9
361030002	Babylon	Suffolk	2003	151	130	125	109	3	114	110	105	94	6
361030002	Babylon	Suffolk	2004	103	101	97	94	0	90	89	82	81	2
361030002	Babylon	Suffolk	2005	130	124	118	115	1	101	100	99	98	6
361030002	Babylon	Suffolk	2006	139	129	128	115	3	107	96	93	90	5
361030004	Riverhead	Suffolk	2000	145	116	114	98	1	120	95	93	85	4
361030004	Riverhead	Suffolk	2001	122	111	99	98	0	98	95	95	82	3
361030004	Riverhead	Suffolk	2002	129	127	126	119	3	111	106	95	90	6
361030004	Riverhead	Suffolk	2003	118	114	100	93	0	92	91	91	82	3
361030004	Riverhead	Suffolk	2004	104	85	83	80	0	85	71	70	69	1
361030004	Riverhead	Suffolk	2005	126	113	112	105	1	95	93	90	86	6
361030004	Riverhead	Suffolk	2006	168	146	126	120	3	130	103	103	101	5
361030009	Holtsville	Suffolk	2000	139	127	112	105	2	120	109	95	92	4
361030009	Holtsville	Suffolk	2001	147	138	120	117	2	117	114	98	97	8
361030009	Holtsville	Suffolk	2002	148	139	137	123	3	128	110	109	103	18
361030009	Holtsville	Suffolk	2003	155	132	128	110	3	117	114	112	102	6
361030009	Holtsville	Suffolk	2004	111	102	100	93	0	90	87	80	79	2
361030009	Holtsville	Suffolk	2005	127	120	113	105	1	99	96	95	93	8
361030009	Holtsville	Suffolk	2006	144	135	128	124	3	117	101	97	96	5
361192004	White Plains	Westchester	2000	116	108	95	91	0	110	86	78	78	2
361192004	White Plains	Westchester	2001	127	127	120	109	2	107	95	92	91	8
361192004	White Plains	Westchester	2002	156	133	133	129	5	120	108	103	102	15
361192004	White Plains	Westchester	2003	128	111	110	102	1	97	93	92	91	4
361192004	White Plains	Westchester	2004	105	99	96	91	0	79	79	78	78	0
361192004	White Plains	Westchester	2005	133	123	119	118	1	106	98	97	95	9
361192004	White Plains	Westchester	2006	145	110	106	103	1	112	87	83	83	2

Table 3 Measured 8-h ozone design values (ppb) for 2000 to 2004 for monitors in New York CMSA

County	Location	AQS ID	DV02	DV03	DV04	DVC
Fairfield	Greenwich	90010017	95	100	92	95.6
Fairfield	Danbury	90011123	98	96	93	95.6
Fairfield	Stratford	90013007	98	102	95	98.3
Fairfield	Westport	90019003	93	97	92	94.0
Middlesex	Middletown	90070007	97	98	92	95.6
New Haven	Madison	90093002	98	102	95	98.3
New Haven	Hamden	90099005	94	98		96.0
Bergen	Teaneck	340030005	92	94	89	91.6
Hudson	Bayonne	340170006	86	86	82	84.6
Hunterdon	Flemington	340190001	97	97	92	95.3
Middlesex	New Brunswick	340230011	101	98	89	96.0
Monmouth	W. Long Branch	340250005	97	97	93	95.6
Morris	Chester	340273001	98	98	90	95.3
Passaic	Ramapo	340315001	88	88	84	86.6
Bronx	Botanical Gardens	360050083	81	84	83	82.6
Bronx	IS52	360050110	73	78	80	77.0
Queens	College Point	360810098	74	75	72	73.0
Queens	Queens College	360810124		83	83	83.0
Richmond	Susan Wagner	360850067	96	94	89	93.0
Suffolk	Babylon	361030002	92	95	94	93.6
Suffolk	Riverhead	361030004	85	84	80	83.0
Suffolk	Holtsville	361030009	97	100	94	97.0
Westchester	White Plains	361192004	90	94	90	91.3

Table 4 Average 6 to 9 AM measured concentrations and standard deviation of ozone precursors for the period 1995 to 2006 for monitors in New York CMSA

Nitric oxide NO (ppb)

AQS ID	1995		1996		1997		1998		1999		2000		2001		2002		2003		2004		2005		2006	
	Avg	sd	Avg	sd	Avg	sd	Avg	sd	Avg	sd	Avg	sd	Avg	sd	Avg	sd	Avg	sd	Avg	sd	Avg	sd	Avg	sd
90019003	N.A.	0.0	11.2	18.3	12.0	17.7	11.2	17.7	8.5	14.4	9.0	12.7	11.1	18.2	9.6	18.4	9.8	17.6	8.4	15.1	7.5	13.4	5.8	9.9
340230011	15.1	21.9	15.6	24.9	14.0	21.2	11.1	20.2	11.1	19.6	13.8	19.1	10.5	16.7	8.5	12.4	7.8	13.4	7.7	12.3	7.0	7.4	N.A.	0.0
340273001	2.5	2.9	2.4	1.8	3.0	3.9	2.8	2.4	2.2	2.7	2.5	2.4	2.0	1.6	2.8	2.3	4.2	1.2	3.7	1.2	3.3	1.5	N.A.	0.0
360050083	25.3	27.9	27.7	29.1	22.1	25.2	16.8	15.2	16.8	19.6	21.4	27.4	15.9	24.4	14.7	13.4	24.7	75.9	16.9	16.5	15.5	16.3	14.2	13.3
360590005	35.0	43.4	27.5	31.7	28.8	35.0	27.2	26.5	24.3	32.4	22.0	24.0	21.9	25.0	15.8	16.4	15.7	21.0	16.9	17.8	15.7	18.2	15.5	16.9
360610056	61.7	47.9	57.8	43.4	58.4	43.4	51.6	33.4	55.2	41.0	55.8	40.7	48.8	30.6	40.8	29.5	45.5	33.8	43.4	31.3	41.7	30.2	32.0	22.7

Nitrogen dioxide NO2 (ppb)

AQS ID	Avg	sd	Avg	sd	Avg	sd	Avg	sd	Avg	sd	Avg	sd	Avg	sd	Avg	sd	Avg	sd	Avg	sd	Avg	sd	Avg	sd
90019003	N.A.	0.0	13.7	8.6	15.4	8.8	15.0	9.2	14.9	8.7	13.6	7.3	16.7	9.2	17.3	9.0	14.2	9.0	10.7	7.4	11.7	8.2	11.6	6.4
340170006	28.5	15.0	29.8	16.9	30.3	15.1	28.2	14.2	29.0	14.8	27.2	11.9	29.0	14.0	24.7	12.9	28.8	18.1	20.1	11.4	20.7	11.9	N.A.	0.0
340230011	19.2	10.7	20.8	11.2	19.8	9.1	17.6	10.5	16.4	10.4	18.3	8.7	14.8	7.9	16.2	7.8	16.4	8.3	14.9	7.4	15.7	7.4	N.A.	0.0
340273001	8.4	5.4	7.5	4.9	8.5	6.4	9.1	5.0	8.8	5.1	8.4	4.8	8.0	4.3	7.9	4.2	6.1	3.8	5.5	3.2	8.6	4.2	N.A.	0.0
340390004	41.1	15.7	40.4	14.1	46.8	16.3	43.7	14.2	42.2	13.7	39.1	13.7	42.8	13.0	39.5	15.6	33.8	13.9	29.9	13.0	31.8	13.0	N.A.	0.0
360050083	32.6	14.2	31.9	12.6	31.3	12.8	29.9	13.0	29.0	12.5	27.9	11.7	27.5	12.5	28.1	13.0	28.7	11.6	23.3	11.5	25.0	10.8	25.4	11.5
360610056	41.6	16.9	43.3	13.8	43.8	15.9	42.1	14.2	47.0	17.0	39.5	13.3	41.1	13.9	43.8	16.3	39.0	16.0	38.0	14.3	39.1	14.8	37.9	14.5

Carbon monoxide CO (ppm)

AQS ID	1995		1996		1997		1998		1999		2000		2001		2002		2003		2004		2005		2006	
	Avg	sd	Avg	sd	Avg	sd	Avg	sd	Avg	sd	Avg	sd	Avg	sd	Avg	sd	Avg	sd	Avg	sd	Avg	sd	Avg	sd
90010004	1.2	0.5	1.2	0.4	1.0	0.4	1.1	0.3	1.0	0.3	0.9	0.2	0.8	0.2	0.8	0.2	0.7	0.2	N.A.	0.0	N.A.	0.0	N.A.	0.0
90010020	1.4	0.6	1.4	0.5	1.3	0.5	1.3	0.4	1.1	0.4	0.9	0.4	1.0	0.3	0.9	0.4	1.0	0.3	0.7	0.3	0.6	0.3	0.5	0.2
90090025	1.0	0.3	1.0	0.4	0.9	0.3	1.0	0.3	0.7	0.3	0.6	0.2	0.6	0.2	0.6	0.2	0.7	0.2	0.5	0.2	N.A.	0.0	N.A.	0.0
340030004	1.7	0.6	1.8	0.7	N.A.	0.0	2.0	0.8	1.7	0.6	1.4	0.6	1.5	0.5	1.3	0.5	1.1	0.4	0.9	0.3	0.9	0.3	N.A.	0.0
340035001	1.0	0.4	1.0	0.4	0.7	0.4	0.8	0.4	0.7	0.3	0.6	0.3	0.6	0.3	0.6	0.2	0.7	0.2	0.5	0.3	0.6	0.2	N.A.	0.0
340171002	1.8	1.0	1.9	0.9	1.5	0.8	1.7	0.8	1.3	0.7	1.2	0.7	1.1	0.5	1.2	0.5	1.1	0.5	1.1	0.5	1.1	0.4	N.A.	0.0
340232003	1.2	0.5	1.2	0.5	1.1	0.4	1.0	0.3	0.9	0.5	0.9	0.4	0.7	0.3	0.6	0.2	0.7	0.3	0.5	0.2	0.6	0.2	N.A.	0.0
340252001	1.3	0.6	1.1	0.6	1.5	0.7	1.1	0.5	1.2	0.5	1.0	0.4	0.9	0.4	0.9	0.3	0.9	0.4	0.7	0.3	0.6	0.2	N.A.	0.0
340270003	1.7	0.9	1.8	0.9	1.6	0.8	1.4	0.7	1.3	0.7	1.4	0.6	1.1	0.5	1.0	0.4	0.9	0.3	0.7	0.3	0.6	0.2	N.A.	0.0
340390003	1.9	0.9	1.7	0.9	1.5	0.8	1.4	0.8	1.3	0.6	1.4	0.8	1.1	0.5	1.0	0.5	1.1	0.6	0.8	0.4	0.9	0.3	N.A.	0.0
360050083	0.7	0.4	0.7	0.4	0.7	0.4	0.7	0.3	0.7	0.3	0.7	0.3	0.7	0.3	0.8	0.2	0.8	0.2	0.7	0.2	0.6	0.2	0.4	0.2

360470071	2.7	1.4	2.7	1.3	2.6	1.1	2.0	0.8	1.8	0.7	1.8	0.7	1.3	0.5	1.3	0.4	1.4	0.4	1.1	0.4	1.0	0.3	1.0	0.3
360590005	0.8	0.5	0.8	0.4	0.6	0.4	0.5	0.3	0.6	0.4	N.A.	0.0	N.A.	0.0	N.A.	0.0	N.A.	0.0	N.A.	0.0	N.A.	0.0	N.A.	0.0
360610056	1.2	0.6	1.0	0.5	1.0	0.5	1.0	0.5	1.0	0.4	0.9	0.4	0.9	0.3	0.8	0.3	0.9	0.3	0.7	0.2	0.7	0.2	0.7	0.2
360610062	2.0	0.8	1.9	0.7	1.7	0.7	1.8	0.6	1.5	0.6	1.5	0.6	1.3	0.4	N.A.	0.0	N.A.	0.0	N.A.	0.0	N.A.	0.0	N.A.	0.0
360610081	2.6	1.3	2.6	1.1	2.3	0.9	2.2	1.3	1.7	0.7	1.6	0.6	1.2	0.4	N.A.	0.0	N.A.	0.0	N.A.	0.0	N.A.	0.0	N.A.	0.0
360610092	1.6	0.7	1.6	0.8	1.6	0.8	1.4	0.6	1.3	0.5	1.3	0.5	1.0	0.4	1.0	0.4	1.2	0.4	1.0	0.3	N.A.	0.0	N.A.	0.0
360810097	N.A.	0.0	N.A.	0.0	N.A.	0.0	0.8	0.3	0.8	0.3	0.7	0.3	0.5	0.3	N.A.	0.0	N.A.	0.0	N.A.	0.0	N.A.	0.0	N.A.	0.0
360810124	N.A.	0.0	N.A.	0.0	N.A.	0.0	N.A.	0.0	N.A.	0.0	N.A.	0.0	0.6	0.2	0.5	0.2	0.7	0.3	0.6	0.3	0.5	0.2	0.5	0.2
361030009	N.A.	0.0	N.A.	0.0	N.A.	0.0	N.A.	0.0	N.A.	0.0	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1

missing data N.A.

Table 5a 2002 Base Year anthropogenic emissions by major category by county for New York CMSA

FIPS	Sector	County	CO [tons/yr]	NOX [tons/yr]	VOC [tons/yr]	NH3 [tons/yr]	SO2 [tons/yr]	PM10 [tons/yr]	PM2_5 [tons/yr]	PMC [tons/yr]
09001	Area	Fairfield	9691	3134	16853	537	2951	4596	1942	2655
09007	Area	Middlesex	5867	610	5718	325	734	1640	928	711
09009	Area	New Haven	12220	2937	17691	493	2849	3919	2152	1767
34003	Area	Bergen	4746	2859	14450	1429	823	1471	985	485
34013	Area	Essex	3978	2475	12055	1380	1081	1136	779	357
34017	Area	Hudson	2808	1766	8299	1047	627	987	551	436
34019	Area	Hunterdon	6005	450	5134	773	395	2077	937	1141
34023	Area	Middlesex	4548	2385	13625	1261	692	1942	915	1027
34025	Area	Monmouth	5535	1799	11075	1081	501	2328	1070	1258
34027	Area	Morris	7713	1749	11041	865	735	1820	1231	589
34031	Area	Passaic	4618	1377	8937	797	453	986	755	231
34035	Area	Somerset	7297	1111	8339	780	281	2119	1177	942
34037	Area	Sussex	7435	480	6063	581	563	1641	1052	589
34039	Area	Union	2337	1642	9241	968	603	796	484	312
34041	Area	Warren	4422	369	4048	553	344	1361	684	677
36005	Area	Bronx	1486	3710	13479	644	2196	2275	815	1460
36047	Area	Kings	3078	7560	26169	1223	3688	4047	1629	2418
36059	Area	Nassau	2354	6458	19705	766	4086	5316	1522	3794
36061	Area	New York	5351	15971	23441	982	7579	5258	2786	2473
36081	Area	Queens	2467	6888	25061	1077	3498	4000	1553	2447

36085	Area	Richmond	528	1282	7551	209	439	2530	449	2080
36087	Area	Rockland	815	1299	3835	175	639	1068	375	693
36103	Area	Suffolk	5310	7013	24839	1251	15634	15608	2885	12723
36119	Area	Westchester	2445	4786	13960	581	3844	3283	1119	2164
	Total		113055	80110	310610	19778	55236	72204	28774	43431
09001	Nonroad	Fairfield	90294	7099	9305	5	608	558	512	45
09007	Nonroad	Middlesex	14877	1138	2571	1	76	104	95	8
09009	Nonroad	New Haven	56678	7887	6476	4	756	476	438	38
34003	Nonroad	Bergen	89576	5835	6863	4	468	455	414	41
34013	Nonroad	Essex	59601	8357	4347	4	880	427	377	50
34017	Nonroad	Hudson	24683	5151	2910	2	1420	314	289	26
34019	Nonroad	Hunterdon	15378	1238	1742	1	106	121	110	11
34023	Nonroad	Middlesex	59779	5049	4761	3	576	393	362	32
34025	Nonroad	Monmouth	53453	4122	5968	3	848	388	356	32
34027	Nonroad	Morris	52311	2950	4551	3	212	278	252	27
34031	Nonroad	Passaic	29426	2051	2971	2	147	168	155	14
34035	Nonroad	Somerset	36601	2276	2786	2	169	197	180	17
34037	Nonroad	Sussex	12356	749	2167	1	71	106	96	10
34039	Nonroad	Union	36126	4538	2727	2	1460	253	232	21
34041	Nonroad	Warren	7834	571	1061	0	45	61	56	5
36005	Nonroad	Bronx	30868	2546	2707	2	289	240	221	19
36047	Nonroad	Kings	74936	7602	6042	5	1641	622	572	49
36059	Nonroad	Nassau	89770	4186	7386	4	371	385	354	30
36061	Nonroad	New York	146840	10951	8917	8	1313	865	796	69
36081	Nonroad	Queens	74087	10808	6198	4	1746	779	722	57

36085	Nonroad	Richmond	17680	3768	1729	1	1546	254	234	20
36087	Nonroad	Rockland	19675	1300	2104	1	98	113	104	9
36103	Nonroad	Suffolk	146580	7681	18434	8	620	780	715	65
36119	Nonroad	Westchester	72461	3619	6601	4	342	399	365	34
	Total		1311870	111469	121323	75	15805	8738	8008	730
09001	Point	Fairfield	508	3892	1161	0	5070	267	190	77
09007	Point	Middlesex	353	1536	220	0	965	69	61	8
09009	Point	New Haven	677	2305	2479	0	5512	231	202	29
34003	Point	Bergen	605	956	700	0	82	169	151	18
34013	Point	Essex	624	2102	579	0	2110	208	182	27
34017	Point	Hudson	2051	9767	1481	0	19250	1713	1077	635
34019	Point	Hunterdon	259	491	135	0	18	51	49	2
34023	Point	Middlesex	2907	3608	3524	0	504	527	466	61
34025	Point	Monmouth	381	240	150	0	55	50	43	7
34027	Point	Morris	259	283	236	0	52	52	35	17
34031	Point	Passaic	68	122	232	0	26	22	18	4
34035	Point	Somerset	216	307	180	0	40	111	97	13
34037	Point	Sussex	83	38	36	0	0	18	11	7
34039	Point	Union	965	4013	4472	0	1253	590	538	53
34041	Point	Warren	444	580	471	0	101	256	233	23
36005	Point	Bronx	273	1006	78	5	484	57	35	22
36047	Point	Kings	959	3848	402	45	1194	170	151	19
36059	Point	Nassau	1134	4487	700	48	739	220	188	31
36061	Point	New York	1470	5042	221	94	2574	373	291	82

36081	Point	Queens	3134	10180	604	222	4018	752	619	133
36085	Point	Richmond	541	1278	251	23	29	175	132	43
36087	Point	Rockland	720	5996	101	53	9371	252	170	82
36103	Point	Suffolk	2249	12617	693	221	33079	687	552	135
36119	Point	Westchester	253	1343	29	2	209	90	57	32
	Total		21134	76037	19133	713	86734	7110	5551	1560
09001	Mobile	Fairfield	150917	17587	8866	785	383	384	255	129
09007	Mobile	Middlesex	36657	4474	1991	183	91	92	61	30
09009	Mobile	New Haven	138844	16514	7826	708	350	352	234	117
34003	Mobile	Bergen	166267	17190	12689	816	367	386	250	136
34013	Mobile	Essex	100856	11660	7601	489	245	270	183	88
34017	Mobile	Hudson	45399	5363	3516	221	112	125	85	40
34019	Mobile	Hunterdon	39178	4434	2689	187	95	106	72	34
34023	Mobile	Middlesex	152630	15794	11279	760	343	361	234	127
34025	Mobile	Monmouth	120749	11765	9258	624	265	270	170	100
34027	Mobile	Morris	119430	10727	8219	568	236	236	146	90
34031	Mobile	Passaic	59066	6286	4509	290	134	142	93	49
34035	Mobile	Somerset	64761	6671	4682	315	145	154	101	53
34037	Mobile	Sussex	28100	2532	2003	134	58	59	38	22
34039	Mobile	Union	83187	8656	6282	421	187	196	126	70
34041	Mobile	Warren	32726	3730	2246	152	76	86	58	27
36005	Mobile	Bronx	96211	8795	6910	479	213	208	132	76
36047	Mobile	Kings	96616	9287	7018	497	224	220	141	79
36059	Mobile	Nassau	232141	23495	17620	1184	577	564	367	196
36061	Mobile	New York	86086	8320	6342	441	199	195	124	70
36081	Mobile	Queens	158702	14783	10962	792	352	344	218	126
36085	Mobile	Richmond	40517	3770	2857	202	90	88	56	32
36087	Mobile	Rockland	57207	5571	3780	269	133	130	85	45
36103	Mobile	Suffolk	386450	37087	29485	1991	935	900	577	324
36119	Mobile	Westchester	189118	18736	12480	897	451	441	290	151
	Total		2681814	273224	191110	13405	6262	6309	4097	2212

Table 5b Summary of emissions for Base Year 2002 for New York CMSA

Sector	CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
Area	113055	80110	310610	19778	55236	72204	28774	43431
Nonroad	1311870	111469	121323	75	15805	8738	8008	730
Point	21134	76037	19133	713	86734	7110	5551	1560
Mobile	2681814	273224	191110	13405	6262	6309	4097	2212

Table 6a 2009 Future Year anthropogenic emissions by major category by county for New York CMSA

FIPS	Sector	County	CO [tons/yr]	NOX [tons/yr]	VOC [tons/yr]	NH3 [tons/yr]	SO2 [tons/yr]	PM10 [tons/yr]	PM2_5 [tons/yr]	PMC [tons/yr]
9001	Area	Fairfield	9176	3272	14328	531	2991	4623	1873	2750
9007	Area	Middlesex	5471	623	4968	317	743	1611	876	735
9009	Area	New Haven	11514	3061	15883	487	2887	3883	2056	1827
34003	Area	Bergen	4564	2551	12715	1547	820	1461	964	497
34013	Area	Essex	3832	2224	10563	1520	1073	1127	761	366
34017	Area	Hudson	2706	1599	7245	1158	623	985	539	447
34019	Area	Hunterdon	5607	411	4639	908	390	2046	887	1160
34023	Area	Middlesex	4360	2110	12131	1373	690	1946	893	1053
34025	Area	Monmouth	5124	1633	9692	1188	499	2311	1026	1285
34027	Area	Morris	7259	1552	9819	930	730	1773	1173	601
34031	Area	Passaic	4355	1252	7937	858	450	956	721	234
34035	Area	Somerset	6826	987	7473	880	280	2066	1115	951
34037	Area	Sussex	6933	445	5490	650	556	1588	990	599
34039	Area	Union	2256	1478	8303	1071	599	794	475	319
34041	Area	Warren	4136	338	3671	637	340	1340	648	691
36005	Area	Bronx	1589	4053	11690	783	2402	2473	893	1581
36047	Area	Kings	3276	8258	22814	1488	4063	4392	1776	2616
36059	Area	Nassau	2448	6977	17685	922	4386	5551	1624	3927
36061	Area	New York	5667	17198	22183	1172	8128	5639	2983	2656
36081	Area	Queens	2642	7514	22491	1309	3837	4363	1689	2674
36085	Area	Richmond	566	1414	7374	256	500	2828	499	2329
36087	Area	Rockland	824	1417	3367	209	713	1143	399	744
36103	Area	Suffolk	5255	7543	22779	1504	16628	16241	3014	13227

36119	Area	Westchester	2489	5174	12567	693	4104	3511	1193	2318
	Area	TOTAL	108872	83083	277807	22391	58432	74653	29067	45586
9001	Area BOTW	Fairfield	9176	3025	13832	531	2991	4623	1873	2750
9007	Area BOTW	Middlesex	5471	584	4842	317	743	1611	876	735
9009	Area BOTW	New Haven	11514	2850	15517	487	2887	3883	2056	1827
34003	Area BOTW	Bergen	4564	2551	12260	1547	820	1461	964	497
34013	Area BOTW	Essex	3832	2224	10170	1520	1073	1127	761	366
34017	Area BOTW	Hudson	2706	1599	6952	1158	623	985	539	447
34019	Area BOTW	Hunterdon	5607	411	4559	908	390	2046	887	1160
34023	Area BOTW	Middlesex	4360	2110	11744	1373	690	1946	893	1053
34025	Area BOTW	Monmouth	5124	1633	9351	1188	499	2311	1026	1285
34027	Area BOTW	Morris	7259	1552	9555	930	730	1773	1173	601
34031	Area BOTW	Passaic	4355	1252	7690	858	450	956	721	234
34035	Area BOTW	Somerset	6826	987	7309	880	280	2066	1115	951
34037	Area BOTW	Sussex	6933	445	5400	650	556	1588	990	599
34039	Area BOTW	Union	2256	1478	8040	1071	599	794	475	319
34041	Area BOTW	Warren	4136	338	3603	637	340	1340	648	691
36005	Area BOTW	Bronx	1589	3798	11416	783	2402	2473	893	1581
36047	Area BOTW	Kings	3276	7700	22129	1488	4063	4392	1776	2616
36059	Area BOTW	Nassau	2448	6234	16824	922	4386	5551	1624	3927
36061	Area BOTW	New York	5667	14638	20653	1172	8128	5639	2983	2656
36081	Area BOTW	Queens	2642	6996	21808	1309	3837	4363	1689	2674
36085	Area BOTW	Richmond	566	1326	7292	256	500	2828	499	2329
36087	Area BOTW	Rockland	824	1252	3234	209	713	1143	399	744
36103	Area BOTW	Suffolk	5255	6743	21980	1504	16628	16241	3014	13227
36119	Area BOTW	Westchester	2489	4636	11984	693	4104	3511	1193	2318
	Area BOTW	TOTAL	108872	76361	268144	22391	58432	74653	29067	45586

9001	Non-Road	Fairfield	93619	5720	6365	5	269	472	434	38
9007	Non-Road	Middlesex	14806	862	1954	1	14	85	78	7
9009	Non-Road	New Haven	57314	6404	4529	4	454	402	370	32
34003	Non-Road	Bergen	102190	4702	5043	5	104	389	353	35
34013	Non-Road	Essex	45422	5247	2688	3	332	280	241	39
34017	Non-Road	Hudson	27326	4539	2209	2	296	254	233	21
34019	Non-Road	Hunterdon	16930	1012	1228	1	20	100	90	9
34023	Non-Road	Middlesex	66727	4053	3319	4	112	323	297	26
34025	Non-Road	Monmouth	59104	3636	4257	4	172	321	294	27
34027	Non-Road	Morris	58259	2341	3357	3	46	243	218	24
34031	Non-Road	Passaic	32713	1613	2166	2	27	139	128	11
34035	Non-Road	Somerset	40986	1782	1890	2	32	171	157	15
34037	Non-Road	Sussex	13693	662	1806	1	13	91	82	9
34039	Non-Road	Union	40405	3877	2026	2	309	221	203	18
34041	Non-Road	Warren	8682	462	903	1	8	52	48	5
36005	Non-Road	Bronx	33433	2182	2056	2	52	188	173	15
36047	Non-Road	Kings	82574	6615	4500	6	328	495	455	39
36059	Non-Road	Nassau	98263	3605	5202	5	68	327	302	26
36061	Non-Road	New York	166400	9360	6841	10	248	701	646	55
36081	Non-Road	Queens	80916	9973	4783	5	615	682	632	50
36085	Non-Road	Richmond	18932	3494	1281	2	324	212	195	17
36087	Non-Road	Rockland	21222	1068	1586	1	18	96	88	8
36103	Non-Road	Suffolk	152620	6944	13217	9	126	639	586	53
36119	Non-Road	Westchester	78709	3115	4737	4	67	344	314	30
	Nonroad	TOTAL	1411245	93268	87943	82	4053	7227	6617	609
9001	EGU-Point	Fairfield	1265	2379	49	93	4783	491	489	2
9007	EGU-Point	Middlesex	0	0	0	0	0	0	0	0

9009	EGU-Point	New Haven	1452	243	37	114	0	117	117	0
34003	EGU-Point	Bergen	1800	1026	46	141	0	145	145	0
34013	EGU-Point	Essex	37	33	1	3	0	3	3	0
34017	EGU-Point	Hudson	579	1618	63	36	10958	902	730	172
34019	EGU-Point	Hunterdon	5	9	0	0	0	0	0	0
34023	EGU-Point	Middlesex	733	334	19	57	0	59	59	0
34025	EGU-Point	Monmouth	0	0	0	0	0	0	0	0
34027	EGU-Point	Morris	0	0	0	0	0	0	0	0
34031	EGU-Point	Passaic	0	0	0	0	0	0	0	0
34035	EGU-Point	Somerset	0	0	0	0	0	0	0	0
34037	EGU-Point	Sussex	0	0	0	0	0	0	0	0
34039	EGU-Point	Union	139	93	4	11	0	11	11	0
34041	EGU-Point	Warren	0	0	0	0	0	0	0	0
36005	EGU-Point	Bronx	160	101	4	13	0	13	13	0
36047	EGU-Point	Kings	261	214	7	20	0	21	21	0
36059	EGU-Point	Nassau	476	949	12	37	0	38	38	0
36061	EGU-Point	New York	5	26	0	0	0	0	0	0
36081	EGU-Point	Queens	222	262	6	17	0	18	18	0
36085	EGU-Point	Richmond	94	116	5	5	0	8	8	0
36087	EGU-Point	Rockland	314	2842	38	19	1293	529	432	97
36103	EGU-Point	Suffolk	2105	4958	100	118	0	162	162	0
36119	EGU-Point	Westchester	1	1	0	0	0	0	0	0
	EGU-Point	TOTAL	9649	15203	391	685	17035	2519	2248	271
9001	Point	Fairfield	169	1846	1115	0	261	143	131	11
9007	Point	Middlesex	155	664	177	0	252	43	41	2
9009	Point	New Haven	371	826	2066	0	1192	203	183	21

34003	Point	Bergen	389	486	643	0	66	104	84	20
34013	Point	Essex	499	1126	704	0	1879	167	137	29
34017	Point	Hudson	427	554	936	0	165	108	94	13
34019	Point	Hunterdon	92	221	139	0	5	27	25	2
34023	Point	Middlesex	2830	2302	3880	0	363	478	411	67
34025	Point	Monmouth	623	322	202	0	83	62	52	11
34027	Point	Morris	412	356	243	0	66	70	46	24
34031	Point	Passaic	104	155	260	0	28	30	24	5
34035	Point	Somerset	324	399	254	0	73	143	121	21
34037	Point	Sussex	133	35	37	0	0	22	13	8
34039	Point	Union	881	2224	2675	0	1242	585	525	60
34041	Point	Warren	470	333	643	0	100	254	225	28
36005	Point	Bronx	285	940	67	4	462	60	37	23
36047	Point	Kings	528	1052	358	2	122	32	30	2
36059	Point	Nassau	395	533	641	5	117	81	71	10
36061	Point	New York	624	1575	116	16	550	92	66	26
36081	Point	Queens	639	1626	287	13	675	130	84	46
36085	Point	Richmond	139	140	230	1	26	132	85	47
36087	Point	Rockland	249	497	27	4	30	69	40	29
36103	Point	Suffolk	564	1030	398	2	1743	53	44	8
36119	Point	Westchester	268	1429	31	2	225	95	61	34
	Point	TOTAL	11572	20670	16129	49	9723	3181	2632	548
9001	Point BOTW	Fairfield	169	1807	1115	0	261	143	131	11
9007	Point BOTW	Middlesex	155	621	177	0	252	43	41	2
9009	Point BOTW	New Haven	371	733	2066	0	1192	203	183	21
34003	Point BOTW	Bergen	389	486	693	0	66	104	84	20
34013	Point BOTW	Essex	499	1125	704	0	1879	167	137	29

34017	Point BOTW	Hudson	427	554	1050	0	165	108	94	13
34019	Point BOTW	Hunterdon	92	221	139	0	5	27	25	2
34023	Point BOTW	Middlesex	2830	2302	4004	0	363	478	411	67
34025	Point BOTW	Monmouth	623	322	202	0	83	62	52	11
34027	Point BOTW	Morris	412	356	243	0	66	70	46	24
34031	Point BOTW	Passaic	104	155	260	0	28	30	24	5
34035	Point BOTW	Somerset	324	399	254	0	73	143	121	21
34037	Point BOTW	Sussex	133	35	37	0	0	22	13	8
34039	Point BOTW	Union	881	2135	3513	0	1242	585	525	60
34041	Point BOTW	Warren	470	333	643	0	100	254	225	28
36005	Point BOTW	Bronx	285	881	67	4	462	60	37	23
36047	Point BOTW	Kings	528	987	358	2	122	32	30	2
36059	Point BOTW	Nassau	395	531	641	5	117	81	71	10
36061	Point BOTW	New York	624	1347	116	16	550	92	66	26
36081	Point BOTW	Queens	639	1510	287	13	675	130	84	46
36085	Point BOTW	Richmond	139	131	230	1	26	132	85	47
36087	Point BOTW	Rockland	249	399	27	4	30	69	40	29
36103	Point BOTW	Suffolk	564	998	395	2	1743	53	44	8
36119	Point BOTW	Westchester	268	1405	31	2	225	95	61	34
	Point BOTW	TOTAL	11571	19774	17252	49	9723	3181	2632	548
9001	N.F. EGU	Fairfield	0	41	0	0	16	0	0	0
9007	N.F. EGU	Middlesex	0	41	0	0	16	0	0	0
9009	N.F. EGU	New Haven	3	41	0	0	16	0	3	3
36005	N.F. EGU	Bronx	0	0	0	0	0	0	0	0
36047	N.F. EGU	Kings	62	20	2	0	0	0	3	3
36059	N.F. EGU	Nassau	0	0	0	0	0	0	0	0
36061	N.F. EGU	New York	0	0	0	0	0	0	0	0
36081	N.F. EGU	Queens	0	0	0	0	0	0	0	0
36085	N.F. EGU	Richmond	0	0	0	0	0	0	0	0

36087	N.F. EGU	Rockland	0	0	0	0	0	0	0	0
36103	N.F. EGU	Suffolk	0	0	0	0	0	0	0	0
36119	N.F. EGU	Westchester	0	0	0	0	0	0	0	0
	N.F. EGU	TOTAL	65	143	2	0	49	0	7	7
9001	Mobile	Fairfield	90766	9179	4710	844	85	303	174	129
9007	Mobile	Middlesex	22178	2370	1071	198	20	72	42	31
9009	Mobile	New Haven	83934	8798	4165	763	78	278	160	118
34003	Mobile	Bergen	98717	8096	6565	862	75	281	152	129
34013	Mobile	Essex	61522	5494	4096	520	48	186	104	81
34017	Mobile	Hudson	27786	2556	1913	239	22	87	49	38
34019	Mobile	Hunterdon	25518	2289	1582	215	20	78	45	34
34023	Mobile	Middlesex	96100	7905	6272	845	74	277	151	127
34025	Mobile	Monmouth	74180	5701	4946	665	57	206	109	97
34027	Mobile	Morris	73711	5337	4347	620	52	188	98	90
34031	Mobile	Passaic	35847	2999	2388	312	27	104	57	47
34035	Mobile	Somerset	41120	3367	2624	353	31	117	64	53
34037	Mobile	Sussex	18543	1352	1112	153	13	48	26	23
34039	Mobile	Union	50997	4165	3358	451	39	146	79	67
34041	Mobile	Warren	21310	1933	1300	174	16	64	37	28
36005	Mobile	Bronx	47697	4139	3227	452	37	152	84	68
36047	Mobile	Kings	60774	5548	4353	592	49	202	113	89
36059	Mobile	Nassau	140772	13496	10236	1367	119	488	277	211
36061	Mobile	New York	52696	4959	4576	469	39	160	89	71
36081	Mobile	Queens	98712	8839	7112	959	79	324	180	144
36085	Mobile	Richmond	28410	2539	2035	278	23	94	52	42
36087	Mobile	Rockland	39533	3509	2408	361	32	127	71	56
36103	Mobile	Suffolk	216547	20029	14170	2117	185	744	420	325
36119	Mobile	Westchester	122177	11200	7408	1123	100	402	228	174
	Mobile	TOTAL	1629547	145799	105975	14931	1317	5128	2860	2269

Table 6b Summary of emissions for Future Year 2009 for New York CMSA

Sector	CO	NOX	VOC	NH3	SO2	PM10	PM2_5	PMC
Area	108872	83083	277807	22391	58432	74653	29067	45586
Nonroad	1411245	93268	87943	82	4053	7227	6617	609
EGU-Point	9713	15346	393	685	17084	2519	2255	277
Point	11572	20670	16129	49	9723	3181	2632	548
N.F.EGU	65	143	2	0	49	0	7	7
Mobile	1629547	145799	105975	14931	1317	5128	2860	2269
Total	3171014	358309	488248	38138	90660	92707	43438	49296
Area BOTW	108872	76361	268144	22391	58432	74653	29067	45586
Nonroad	1411245	93268	87943	82	4053	7227	6617	609
EGU-Point	9713	15346	393	685	17084	2519	2255	277
Point BOTW	11571	19774	17252	49	9723	3181	2632	548
N.F.EGU	65	143	2	0	49	0	7	7
Mobile	1629547	145799	105975	14931	1317	5128	2860	2269
Total	3171014	350691	479709	38138	90660	92707	43437	49296

Table 7a 2012 Future Year anthropogenic emissions by major category by county for New York CMSA

FIPS	Sector	County	CO [tons/yr]	NOX [tons/yr]	VOC [tons/yr]	NH3 [tons/yr]	SO2 [tons/yr]	PM10 [tons/yr]	PM2_5 [tons/yr]	PMC [tons/yr]
9001	Area	Fairfield Co	8927	3067	13363	527	2997	4611	1837	2774
9007	Area	Middlesex Co	5295	588	4673	313	745	1593	852	740
9009	Area	New Haven Co	11183	2887	14996	484	2893	3850	2010	1840
34003	Area	Bergen Co	4457	2328	11687	1590	370	1415	921	494
34013	Area	Essex Co	3746	2019	9804	1572	407	1072	710	363
34017	Area	Hudson Co	2644	1468	6703	1198	245	952	507	444
34019	Area	Hunterdon Co	5430	375	4363	959	141	2011	854	1157
34023	Area	Middlesex Co	4255	1915	11205	1414	320	1904	855	1049
34025	Area	Monmouth Co	4987	1509	8912	1227	217	2271	990	1281
34027	Area	Morris Co	7046	1400	9101	953	293	1716	1118	598
34031	Area	Passaic Co	4228	1156	7391	880	188	922	689	233
34035	Area	Somerset Co	6612	901	6986	917	139	2026	1077	949
34037	Area	Sussex Co	6709	406	5190	676	182	1544	947	597
34039	Area	Union Co	2207	1351	7755	1109	249	765	447	318
34041	Area	Warren Co	4008	308	3455	669	122	1313	623	690
36005	Area	Bronx Co	1606	3690	11385	838	1269	2408	814	1594
36047	Area	Kings Co	3313	7580	22075	1593	2424	4291	1659	2631
36059	Area	Nassau Co	2459	6017	16813	983	2409	5373	1456	3917
36061	Area	New York Co	5735	14245	20781	1246	4595	5219	2590	2630
36081	Area	Queens Co	2678	6872	21934	1401	2267	4284	1580	2704
36085	Area	Richmond Co	574	1319	7461	274	315	2911	495	2416

36087	Area	Rockland Co	821	1246	3218	223	506	1140	385	755
36103	Area	Suffolk Co	5207	6497	22001	1603	11225	16166	2839	13327
36119	Area	Westchester Co	2482	4475	11917	737	1991	3398	1065	2333
	Area	TOTAL	106609	73618	263167	23384	36508	73155	27321	45834
9001	Nonroad	Fairfield Co	96139	5463	5881	6	221	447	411	36
9007	Nonroad	Middlesex Co	14930	833	1753	1	3	77	71	6
9009	Nonroad	New Haven Co	58334	6395	4148	4	427	380	349	30
34003	Nonroad	Bergen Co	106610	4159	4767	5	36	368	334	34
34013	Nonroad	Essex Co	46941	5011	2584	3	265	267	228	39
34017	Nonroad	Hudson Co	28248	4205	2009	2	84	233	214	19
34019	Nonroad	Hunterdon Co	17533	910	1135	1	4	93	84	9
34023	Nonroad	Middlesex Co	68952	3519	3104	4	25	301	277	24
34025	Nonroad	Monmouth Co	61286	3356	3942	4	44	298	273	25
34027	Nonroad	Morris Co	60283	2025	3137	3	16	231	208	23
34031	Nonroad	Passaic Co	33662	1377	1984	2	5	129	118	11
34035	Nonroad	Somerset Co	42563	1553	1809	2	6	164	150	14
34037	Nonroad	Sussex Co	14146	607	1644	1	2	83	75	8
34039	Nonroad	Union Co	41724	3528	1910	2	91	210	193	17
34041	Nonroad	Warren Co	8917	402	830	1	1	48	44	4
36005	Nonroad	Bronx Co	34894	1931	1930	3	8	170	157	14
36047	Nonroad	Kings Co	86515	5936	4245	6	81	450	415	36
36059	Nonroad	Nassau Co	102880	3237	4900	5	14	308	283	24
36061	Nonroad	New York Co	175790	8334	6546	10	50	641	590	50
36081	Nonroad	Queens Co	84514	9556	4582	5	419	660	612	47

36085	Nonroad	Richmond Co	19740	3283	1211	2	94	198	182	16
36087	Nonroad	Rockland Co	22023	948	1466	1	3	89	82	7
36103	Nonroad	Suffolk Co	156760	6406	12033	9	40	594	544	50
36119	Nonroad	Westchester Co	82262	2801	4470	4	17	324	296	28
	Nonroad	TOTAL	1465646	85773	82022	86	1957	6761	6188	573
9001	EGU-Point	Fairfield Co	1147	2350	46	84	4783	0	479	0
9007	EGU-Point	Middlesex Co	0	0	0	0	0	0	0	0
9009	EGU-Point	New Haven Co	1232	221	32	96	0	0	99	0
34003	EGU-Point	Bergen Co	2719	1721	70	213	0	0	219	0
34013	EGU-Point	Essex Co	76	71	2	6	0	0	6	0
34017	EGU-Point	Hudson Co	608	1653	64	38	10958	0	733	0
34019	EGU-Point	Hunterdon Co	28	58	1	2	0	0	2	0
34023	EGU-Point	Middlesex Co	1276	549	33	100	0	0	103	0
34025	EGU-Point	Monmouth Co	0	0	0	0	0	0	0	0
34027	EGU-Point	Morris Co	0	0	0	0	0	0	0	0
34031	EGU-Point	Passaic Co	0	0	0	0	0	0	0	0
34035	EGU-Point	Somerset Co	0	0	0	0	0	0	0	0
34037	EGU-Point	Sussex Co	0	0	0	0	0	0	0	0
34039	EGU-Point	Union Co	245	164	6	19	0	0	20	0
34041	EGU-Point	Warren Co	0	0	0	0	0	0	0	0
36005	EGU-Point	Bronx Co	91	55	2	7	0	0	7	0
36047	EGU-Point	Kings Co	244	219	6	19	0	0	20	0
36059	EGU-Point	Nassau Co	258	505	7	20	0	0	21	0
36061	EGU-Point	New York Co	4	20	0	0	0	0	0	0

36081	EGU-Point	Queens Co	165	206	4	13	0	0	13	0
36085	EGU-Point	Richmond Co	17	37	0	1	0	0	1	0
36087	EGU-Point	Rockland Co	317	887	38	19	1293	0	433	0
36103	EGU-Point	Suffolk Co	413	966	11	32	0	0	33	0
36119	EGU-Point	Westchester Co	5	7	0	0	0	0	0	0
	EGU-Point	TOTAL	8846	9690	321	671	17035	0	2190	0
9001	Point	Fairfield Co	173	1896	1133	0	270	149	138	12
9007	Point	Middlesex Co	154	612	171	0	248	43	41	2
9009	Point	New Haven Co	383	751	2090	0	1198	208	187	21
34003	Point	Bergen Co	402	495	736	0	67	109	89	21
34013	Point	Essex Co	560	1182	755	0	1903	177	146	31
34017	Point	Hudson Co	512	568	1114	0	170	114	100	14
34019	Point	Hunterdon Co	91	209	147	0	4	27	26	2
34023	Point	Middlesex Co	2957	2266	4252	0	368	504	433	71
34025	Point	Monmouth Co	694	308	224	0	90	67	54	13
34027	Point	Morris Co	471	346	262	0	59	74	49	25
34031	Point	Passaic Co	117	144	281	0	25	30	24	5
34035	Point	Somerset Co	379	384	292	0	88	155	129	25
34037	Point	Sussex Co	177	34	40	0	0	23	14	9
34039	Point	Union Co	887	2149	3686	0	1201	607	546	61
34041	Point	Warren Co	484	281	683	0	100	268	239	29
36005	Point	Bronx Co	287	876	67	4	458	58	36	22
36047	Point	Kings Co	538	995	371	2	123	33	31	3
36059	Point	Nassau Co	401	507	673	5	106	83	73	10

36061	Point	New York Co	639	1376	120	16	556	93	67	26
36081	Point	Queens Co	651	1520	300	13	655	132	84	48
36085	Point	Richmond Co	141	130	240	1	20	90	46	44
36087	Point	Rockland Co	271	436	28	4	30	72	42	30
36103	Point	Suffolk Co	582	1012	414	2	1738	53	45	8
36119	Point	Westchester Co	282	1471	33	3	232	100	64	36
	Point	TOTAL	12233	19949	18113	50	9709	3269	2702	567
9001	Mobile	Fairfield Co	81339	6462	3549	865	77	277	147	130
9007	Mobile	Middlesex Co	20028	1679	821	205	18	67	36	31
9009	Mobile	New Haven Co	75507	6219	3162	785	70	254	136	118
34003	Mobile	Bergen Co	89657	5709	4885	868	75	261	133	128
34013	Mobile	Essex Co	54997	3873	3060	525	48	169	89	80
34017	Mobile	Hudson Co	25202	1809	1441	242	22	79	42	37
34019	Mobile	Hunterdon Co	24302	1670	1237	223	20	73	39	34
34023	Mobile	Middlesex Co	88359	5694	4756	868	76	262	134	128
34025	Mobile	Monmouth Co	66611	4097	3723	680	58	197	99	98
34027	Mobile	Morris Co	69205	3882	3338	639	54	182	91	91
34031	Mobile	Passaic Co	32677	2129	1789	316	28	96	50	47
34035	Mobile	Somerset Co	38627	2451	2022	367	32	112	57	54
34037	Mobile	Sussex Co	18097	1017	878	162	14	48	24	24
34039	Mobile	Union Co	45452	2943	2483	454	39	136	69	67
34041	Mobile	Warren Co	20343	1411	1024	180	17	59	32	28
36005	Mobile	Bronx Co	52009	3678	2961	560	46	168	86	82
36047	Mobile	Kings Co	50400	3697	2926	557	46	168	86	82
36059	Mobile	Nassau Co	123933	9563	7674	1372	120	429	223	206
36061	Mobile	New York Co	46772	3593	3211	488	40	147	76	72
36081	Mobile	Queens Co	81404	5852	4639	895	73	268	137	131
36085	Mobile	Richmond Co	21838	1557	1209	240	20	72	37	35
36087	Mobile	Rockland Co	34259	2519	1699	354	32	112	58	54
36103	Mobile	Suffolk Co	218566	15842	12366	2430	210	740	380	360

36119	Mobile	Westchester Co	113662	8490	5721	1187	106	376	196	180
	Mobile	TOTAL	1493245	105836	80573	15462	1338	4751	2455	2296

Table 7b Summary of 2012 Future Year anthropogenic emissions by major category by county for New York CMSA

Sector	CO [tons/yr]	NOX [tons/yr]	VOC [tons/yr]	NH3 [tons/yr]	SO2 [tons/yr]	PM10 [tons/yr]	PM2_5 [tons/yr]	PMC [tons/yr]
Area	106609	73618	263167	23384	36508	73155	27321	45834
Nonroad	1465646	85773	82022	86	1957	6761	6188	573
EGU-Point	8846	9690	321	671	17035	0	2190	0
Point	12233	19949	18113	50	9709	3269	2702	567
Mobile	1493245	105836	80573	15462	1338	4751	2455	2296
Total	3086579	294866	444196	39654	66547	87935	40855	49270

Table 8 Biogenic emissions by pollutant by county for New York CMSA

State	FIPS	County	NO [TPY]	CO [TPY]	VOC [TPY]
Connecticut	009001	Fairfield	52	894	7150
	009007	Middlesex	54	615	5587
	009009	New Haven	80	876	7544
New Jersey	034003	Bergen	37	239	2455
	034013	Essex	57	199	1831
	034017	Hudson	26	125	701
	034019	Hunterdon	81	706	5743
	034023	Middlesex	98	456	5267
	034025	Monmouth	125	1152	15423
	034027	Morris	63	604	7288
	034031	Passaic	41	339	3841
	034035	Somerset	49	518	5548
	034037	Sussex	67	718	7768
	034039	Union	21	168	2191
	034041	Warren	125	517	4505
New York	036005	Bronx	25	100	657
	036047	Kings	15	60	309
	036059	Nassau	81	408	2859
	036061	New York	16	76	473
	036081	Queens	20	105	543
	036085	Richmond	47	173	1292
	036087	Rockland	26	300	4006
	036103	Suffolk	368	1328	12886
	036119	Westchester	35	549	5347

Table 9 Statistical estimates based on measured and predicted 8-h ozone concentrations over New York CMSA

(a) Threshold of 40 ppb

AQS ID	Obs avg ppb	Pred avg ppb	R^2	NME %	RMSE ppb	FE %	MAGE ppb	MNGE %	MB ppb	MNB %	MFB %	NMB %	N
090010017	63.36	64.77	0.66	13.5	11.54	13.3	8.53	13.9	1.41	3.7	2.1	2.2	102
090011123	65.16	61.98	0.66	14.9	12.39	15.4	9.68	15.3	-3.18	-2.8	-4.7	-4.9	90
090013007	63.59	63.13	0.59	15.9	14.04	15.5	10.08	15.8	-0.46	-0.1	-2.2	-0.7	102
090019003	65.56	65.84	0.63	13.4	12.59	13.8	8.79	14.7	0.28	2.2	0.1	0.4	86
090070007	62.35	63.01	0.70	12.4	10.80	12.6	7.72	13.3	0.67	2.2	0.6	1.1	97
090093002	65.77	68.14	0.62	15.0	13.35	14.3	9.86	15.3	2.37	5.2	3.3	3.6	95
090099005	62.77	61.82	0.60	15.2	13.28	15.4	9.56	16.0	-0.95	-0.7	-3.0	-1.5	92
340030005	65.18	58.73	0.55	16.7	14.46	18.1	10.86	16.7	-6.45	-8.6	-11.1	-9.9	96
340130016	61.41	62.42	0.44	15.7	13.24	15.6	9.62	15.9	1.01	3.2	0.9	1.7	66
340170006	60.92	59.73	0.60	14.7	11.36	15.6	8.97	15.2	-1.18	-2.0	-3.8	-1.9	85
340190001	65.96	61.28	0.73	11.8	10.25	12.2	7.76	11.6	-4.68	-5.6	-6.6	-7.1	110
340230011	68.80	65.82	0.76	10.6	9.66	10.8	7.31	10.5	-2.98	-2.8	-3.7	-4.3	107
340250005	64.77	74.40	0.69	17.4	14.82	16.0	11.24	18.5	9.63	16.3	13.7	14.9	98
340273001	68.02	60.08	0.68	15.7	13.93	16.1	10.64	14.9	-7.94	-9.3	-11.0	-11.7	112
340315001	62.54	59.74	0.55	15.2	11.84	15.7	9.51	15.3	-2.80	-2.8	-4.6	-4.5	95
360050083	60.99	51.16	0.36	22.1	17.21	24.6	13.49	21.6	-9.83	-14.4	-18.5	-16.1	72
360050110	60.98	47.02	0.42	27.1	19.28	32.5	16.51	27.6	-13.95	-22.3	-28.2	-22.9	65
360810098	57.30	46.69	0.46	23.3	15.75	27.8	13.35	23.9	-10.61	-18.6	-23.2	-18.5	69
360810124	61.67	57.57	0.44	17.2	12.96	18.4	10.61	17.6	-4.10	-5.7	-8.1	-6.7	77
360850067	66.41	66.24	0.73	11.3	9.80	11.5	7.52	11.6	-0.17	0.2	-0.9	-0.3	95
361030002	61.19	62.93	0.39	18.5	14.81	17.4	11.31	18.2	1.74	5.4	2.9	2.9	86
361030004	61.31	71.77	0.58	20.4	15.45	18.7	12.48	21.5	10.46	18.6	15.5	17.1	70
361030009	63.61	59.04	0.72	13.6	10.84	14.4	8.64	13.5	-4.58	-6.7	-8.1	-7.2	103
361192004	63.58	55.80	0.57	18.7	15.41	20.3	11.91	18.4	-7.78	-10.6	-13.4	-12.2	84

(b) Threshold of 60 ppb

AQS ID	Obs avg ppb	Pred avg ppb	R^2	NME %	RMSE ppb	FE %	MAGE ppb	MNGE %	MB ppb	MNB %	MFB %	NMB %	N
090010017	78.19	77.74	0.38	13.2	13.72	13.6	10.32	13.8	-0.45	0.3	-1.4	-0.6	51
090011123	80.93	73.40	0.59	13.5	13.22	14.5	10.89	13.4	-7.54	-8.8	-10.2	-9.3	46
090013007	80.82	79.92	0.23	16.8	17.39	17.1	13.56	17.1	-0.90	-0.1	-2.4	-1.1	46
090019003	80.69	78.81	0.46	11.6	13.11	12.1	9.36	12.2	-1.88	-1.8	-3.2	-2.3	45
090070007	80.50	77.84	0.72	10.0	10.04	11.1	8.06	10.6	-2.67	-3.8	-4.7	-3.3	40
090093002	83.13	83.73	0.33	14.4	15.04	14.2	11.99	14.5	0.60	1.6	0.1	0.7	45
090099005	79.43	77.92	0.40	12.8	13.36	12.9	10.20	12.9	-1.52	-1.0	-2.4	-1.9	41
340030005	81.23	70.83	0.24	16.4	17.26	18.2	13.32	16.2	-10.40	-12.1	-14.6	-12.8	47
340130016	73.17	72.73	0.05	15.5	15.19	15.9	11.35	15.6	-0.44	0.8	-1.5	-0.6	35
340170006	72.83	72.03	0.19	13.8	12.79	14.2	10.04	13.9	-0.81	-0.4	-2.1	-1.1	43
340190001	78.95	70.89	0.44	11.4	12.16	11.9	8.98	10.8	-8.06	-9.6	-10.7	-10.2	61
340230011	80.95	75.15	0.54	10.6	11.23	10.9	8.58	10.3	-5.81	-6.7	-7.6	-7.2	66
340250005	78.30	86.89	0.54	13.9	14.26	12.6	10.90	13.9	8.59	11.2	9.8	11.0	53
340273001	81.13	68.37	0.45	16.6	16.89	17.7	13.48	15.8	-12.76	-14.8	-16.8	-15.7	66
340315001	76.24	69.56	0.33	15.4	14.20	16.5	11.74	15.4	-6.68	-8.4	-10.2	-8.8	47
360050083	74.53	60.25	0.07	21.5	19.87	24.4	16.04	20.9	-14.28	-18.1	-21.9	-19.2	36
360050110	74.81	56.43	0.18	24.6	21.70	28.9	18.37	24.1	-18.37	-24.1	-28.9	-24.6	32
360810098	70.15	56.05	0.28	20.4	17.26	24.0	14.29	20.4	-14.10	-20.1	-23.8	-20.1	30
360810124	73.40	66.36	0.21	16.1	14.48	17.8	11.84	16.3	-7.04	-9.4	-11.6	-9.6	39
360850067	77.98	76.98	0.51	10.2	10.12	10.3	7.94	10.1	-1.00	-1.0	-1.8	-1.3	57
361030002	75.86	72.82	0.10	18.9	18.15	19.1	14.31	19.0	-3.04	-2.2	-5.0	-4.0	40
361030004	75.18	84.09	0.36	16.2	14.79	15.2	12.18	16.8	8.91	12.6	10.7	11.9	31
361030009	78.98	71.65	0.53	13.6	13.07	14.8	10.70	13.6	-7.33	-9.0	-10.6	-9.3	50
361192004	80.67	68.21	0.29	19.8	19.56	22.5	16.00	19.9	-12.46	-14.6	-17.8	-15.4	40

Table 10 Statistical estimates based on measured and predicted concentrations (ppb) of ozone precursors and other species over New York CMSA

AQS ID	CO Obs avg ppb	Pred avg ppb	R^2	NME %	RMSE ppb	FE %	MAGE ppb	MNGE %	MB ppb	MNB %	MFB %	NMB %	N
090010004	663.65	333.55	0.31	49.8	352.94	65.2	330.14	48.1	-330.10	-48.1	-65.2	-49.7	121
090010020	852.54	333.69	0.29	60.9	550.34	86.4	518.85	59.6	-518.85	-59.6	-86.4	-60.9	135
090090025	571.88	288.80	0.33	49.5	305.56	65.0	283.09	48.1	-283.09	-48.1	-65.0	-49.5	131
340030004	994.27	536.35	0.09	46.9	519.16	60.3	466.00	44.8	-457.93	-43.4	-59.0	-46.1	47
340035001	540.06	536.73	0.45	19.9	133.76	21.8	107.21	22.9	-3.34	4.8	0.7	-0.6	135
340130016	551.54	576.89	0.24	20.0	141.63	19.9	110.34	21.6	25.35	7.9	4.2	4.6	130
340171002	1117.67	567.30	0.01	51.6	665.07	65.8	576.40	51.8	-550.37	-37.7	-59.0	-49.2	135
340175002	659.71	600.07	0.37	19.3	147.53	20.1	127.19	19.2	-59.64	-6.7	-9.3	-9.0	49
340232003	539.05	455.69	0.17	24.9	163.62	27.6	134.15	25.8	-83.35	-10.3	-15.6	-15.5	131
340252001	639.40	257.72	0.35	59.7	403.56	84.2	381.68	58.7	-381.68	-58.7	-84.2	-59.7	135
340270003	721.44	310.09	0.05	57.1	469.77	76.9	411.55	53.5	-411.35	-53.4	-76.8	-57.0	135
340390003	929.41	457.29	0.23	51.3	559.46	64.2	476.86	47.2	-472.12	-45.3	-62.7	-50.8	126
360050083	690.71	761.80	0.28	22.4	200.32	21.7	154.93	24.9	71.09	13.8	9.1	10.3	135
360470071	1058.78	657.44	0.27	37.9	450.15	46.5	401.67	36.5	-401.33	-36.5	-46.4	-37.9	134
360610056	719.46	870.25	0.14	29.7	267.14	28.5	213.57	38.3	150.79	31.0	20.5	21.0	135
360610092	925.50	873.24	0.29	21.2	261.90	21.9	196.26	22.7	-52.26	1.7	-2.7	-5.7	135
360810124	469.17	622.72	0.14	45.0	255.15	41.3	211.29	66.0	153.55	58.2	32.3	32.7	130
361030009	112.17	340.94	0.16	206.3	247.39	112.5	231.36	481.2	228.77	480.5	111.7	203.9	111

AQS ID	NO Obs avg ppb	Pred avg ppb	R^2	NME %	RMSE ppb	FE %	MAGE ppb	MNGE %	MB ppb	MNB %	MFB %	NMB %	N
090019003	9.42	1.09	0.36	89.7	13.17	129.4	8.45	93.0	-8.33	-46.5	-114.0	-88.4	110
090091123	12.35	1.34	0.30	89.2	13.13	154.6	11.01	86.7	-11.01	-86.7	-154.6	-89.2	129
090099005	2.27	1.30	0.13	62.7	2.20	73.0	1.43	104.9	-0.97	38.6	-23.7	-42.7	133
340030005	10.68	7.10	0.36	51.4	7.72	59.7	5.49	51.1	-3.58	-17.3	-38.1	-33.5	132
340130016	13.44	10.08	0.30	47.5	10.47	47.5	6.39	49.3	-3.35	5.2	-12.8	-25.0	130
340230011	4.45	2.28	0.17	58.6	5.32	57.6	2.61	44.2	-2.18	-31.3	-50.1	-48.9	135
340273001	2.37	0.69	0.08	76.0	2.26	114.9	1.80	72.1	-1.69	-64.2	-109.3	-71.1	129

360050083	8.07	18.22	0.33	132.0	13.49	86.4	10.65	256.5	10.15	253.4	82.4	125.8	124
360050110	11.85	37.24	0.32	214.4	28.01	113.3	25.40	390.0	25.40	390.0	113.3	214.4	98
360590005	10.40	4.94	0.33	59.6	11.14	68.0	6.20	59.0	-5.46	-20.3	-46.6	-52.5	134
360610056	19.30	38.10	0.30	100.0	22.29	73.2	19.30	170.4	18.80	168.9	71.6	97.4	126
360810098	14.78	36.29	0.45	148.0	23.99	96.2	21.86	247.2	21.52	246.8	95.6	145.6	130
360810124	9.17	10.24	0.16	70.7	9.99	66.5	6.49	120.0	1.07	96.9	34.1	11.6	135
361030009	6.76	1.96	0.23	71.7	7.71	94.8	4.85	63.3	-4.80	-57.2	-91.8	-71.0	130

	NO2												
AQS ID	**Obs avg**	**Pred avg**	**R^2**	**NME**	**RMSE**	**FE**	**MAGE**	**MNGE**	**MB**	**MNB**	**MFB**	**NMB**	**N**
	ppb	**ppb**		**%**	**ppb**	**%**	**ppb**	**%**	**ppb**	**%**	**%**	**%**	
090019003	16.80	11.94	0.38	35.3	7.24	41.0	5.94	35.2	-4.86	-20.5	-30.0	-28.9	130
090091123	23.93	13.63	0.37	43.6	12.21	54.3	10.44	41.1	-10.30	-40.1	-53.3	-43.1	135
090099005	13.90	13.64	0.55	20.9	3.80	20.4	2.90	21.6	-0.26	4.3	0.7	-1.9	135
340030005	17.65	28.76	0.57	64.2	13.15	52.0	11.33	86.4	11.11	85.4	50.9	63.0	132
340130016	25.26	31.19	0.39	30.3	9.67	28.9	7.66	38.4	5.93	33.9	23.9	23.5	130
340131003	25.64	31.20	0.34	28.9	9.46	27.8	7.42	35.4	5.56	29.8	21.6	21.7	135
340170006	19.09	38.06	0.39	99.4	20.14	70.3	18.97	128.3	18.97	128.3	70.3	99.4	131
340230011	12.55	14.62	0.46	25.3	4.49	23.1	3.18	28.7	2.07	22.0	15.7	16.5	135
340273001	8.12	7.43	0.32	35.9	3.88	33.8	2.91	33.6	-0.69	-4.5	-12.6	-8.5	130
340390004	40.51	25.79	0.09	39.6	19.60	45.8	16.04	36.2	-14.72	-30.9	-41.3	-36.3	131
360050083	25.02	41.72	0.54	66.8	19.02	49.3	16.70	73.7	16.70	73.7	49.3	66.8	124
360050110	30.04	49.85	0.68	65.9	20.80	51.9	19.81	73.9	19.81	73.9	51.9	65.9	98
360590005	20.83	24.07	0.60	24.8	6.43	25.2	5.17	30.9	3.24	22.7	16.2	15.6	135
360610056	40.28	50.65	0.60	27.4	12.94	25.7	11.04	31.6	10.37	30.4	24.4	25.7	135
360810098	25.84	50.07	0.62	93.8	25.12	66.5	24.23	107.0	24.23	107.0	66.5	93.8	130
360810124	26.30	34.11	0.67	31.5	9.89	27.4	8.28	33.5	7.81	31.9	25.8	29.7	135
361030009	15.28	14.70	0.44	21.5	4.24	23.3	3.29	23.8	-0.58	1.6	-2.9	-3.8	135

	SO2												
AQS ID	**Obs avg**	**Pred avg**	**R^2**	**NME**	**RMSE**	**FE**	**MAGE**	**MNGE**	**MB**	**MNB**	**MFB**	**NMB**	**N**
	ppb	**ppb**		**%**	**ppb**	**%**	**ppb**	**%**	**ppb**	**%**	**%**	**%**	
0900100121	1.98	3.18	0.48	73.4	1.82	69.2	1.46	181.2	1.19	175.9	62.8	60.2	132
0900111231	1.17	1.91	0.60	71.3	1.11	69.7	0.83	197.8	0.74	192.4	63.1	63.7	127
0900121241	2.06	2.51	0.71	33.3	0.98	36.5	0.69	65.1	0.45	54.0	23.5	21.9	134

0900190031	1.03	2.28	0.58	125.5	1.58	93.7	1.29	347.7	1.25	345.3	90.7	121.5	96
0900911232	3.24	2.11	0.54	39.3	1.61	54.0	1.28	40.1	-1.13	-36.0	-50.5	-35.0	135
0900921231	3.55	1.91	0.18	59.3	2.44	86.5	2.11	101.9	-1.64	9.4	-53.3	-46.2	129
3400350012	2.93	4.42	0.55	55.6	2.32	39.9	1.63	62.7	1.49	57.5	33.9	50.8	135
3401300161	3.04	4	0.23	56.1	2.46	48.2	1.70	76.8	0.96	67.2	36.2	31.6	127
3401700061	5.45	9.46	0.26	74.4	4.65	56.7	4.05	95.4	4.01	94.9	56.2	73.5	135
3401710022	4.67	9.47	0.13	104.1	5.70	76.9	4.86	197.6	4.80	197.0	76.3	102.7	135
3402320032	3.72	3.19	0.43	28.6	1.32	32.9	1.06	29.5	-0.53	-11.7	-18.7	-14.2	131
3402730011	3.12	2.12	0.53	42.4	1.92	59.6	1.32	45.3	-1.00	-30.1	-48.0	-32.0	135
3403900032	4.12	4.6	0.18	37.5	2.06	36.2	1.54	45.2	0.47	28.9	15.8	11.5	127
3403900042	8.22	4.63	0.20	45.1	4.83	53.3	3.70	39.7	-3.59	-37.7	-51.5	-43.7	132
3600500831	4.71	7.38	0.52	62.5	3.72	50.3	2.94	82.6	2.68	77.5	44.3	56.9	134
3600501101	6.54	12.98	0.31	100.5	7.34	69.6	6.57	127.1	6.43	126.1	68.5	98.3	131
3605900053	2.09	4.05	0.53	99.7	2.51	75.2	2.08	181.2	1.97	177.6	70.9	94.3	132
3606100561	7.75	12.92	0.31	69.0	6.25	52.1	5.35	81.2	5.18	79.1	49.6	66.9	135
3608101241	3.49	5.7	0.59	68.7	3.00	54.6	2.40	88.8	2.21	86.6	51.9	63.4	135
3610300092	3.3	3.63	0.35	39.2	1.67	41.6	1.29	63.8	0.33	38.3	9.7	9.9	135

Selective Precursors

	ETHANE												
AQS ID	**Obs avg**	**Pred avg**	**R^2**	**NME**	**RMSE**	**FE**	**MAGE**	**MNGE**	**MB**	**MNB**	**MFB**	**NMB**	**N**
	Ppb	**ppb**		**%**	**ppb**	**%**	**ppb**	**%**	**ppb**	**%**	**%**	**%**	
090019003	1.03	1.31	0.36	39.1	0.49	37.2	0.40	53.7	0.28	45.9	28.5	27.5	88
090099005	0.60	1.40	0.28	132.9	0.88	87.4	0.80	237.2	0.80	236.9	87.2	132.5	85
340230011	1.06	1.56	0.16	56.0	0.71	47.1	0.59	70.9	0.50	66.8	42.5	47.4	85
360050083	2.20	3.27	0.17	64.1	1.97	54.8	1.41	89.9	1.06	86.6	50.2	48.2	86

	ISOPRENE												
AQS ID	**Obs avg**	**Pred avg**	**R^2**	**NME**	**RMSE**	**FE**	**MAGE**	**MNGE**	**MB**	**MNB**	**MFB**	**NMB**	**N**
	Ppb	**ppb**		**%**	**ppb**	**%**	**ppb**	**%**	**ppb**	**%**	**%**	**%**	
090019003	0.57	0.46	0.54	38.6	0.30	45.4	0.22	43.0	-0.11	-8.4	-22.4	-18.9	88
090099005	0.56	0.98	0.45	83.6	0.69	60.7	0.47	120.7	0.41	113.7	52.7	73.1	85
340230011	0.59	2.19	0.81	267.9	1.79	117.2	1.59	317.3	1.59	317.3	117.2	267.9	85

360050083	0.64	0.67	0.54	32.7	0.27	34.1	0.21	40.7	0.02	18.9	7.1	3.6	86

FORMALDEHYDE

AQS ID	Obs avg	Pred avg	R^2	NME	RMSE	FE	MAGE	MNGE	MB	MNB	MFB	NMB	N
	Ppb	ppb		%	ppb	%	ppb	%	ppb	%	%	%	
340230006	4.08	2.80	0.47	35.7	2.39	38.3	1.45	30.8	-1.28	-23.5	-31.6	-31.3	9
340273001	5.27	2.84	0.86	46.2	2.83	65.9	2.43	48.0	-2.43	-48.0	-65.9	-46.2	8
340390004	3.32	3.79	0.80	18.7	1.03	17.9	0.62	20.4	0.47	10.6	6.8	14.2	14
360050083	4.58	3.80	0.70	23.4	1.35	32.6	1.07	25.8	-0.78	-20.3	-27.8	-17.0	15
360810124	3.93	3.48	0.93	15.1	0.66	24.9	0.59	20.5	-0.45	-15.7	-20.5	-11.4	13

Table 11 Projected future design values (DVF) for ozone monitors in New York CMSA

(a) For Scenario 2009

AQS ID	County	Monitor	Latitude	Longitude	CMAQ Column	CMAQ Row	DVC ppb	DVF ppb	RRF	#Days in RRF	Threshold ppb
90010017	Fairfield	Greenwich	41.0036	-73.5853	140	105	95.7	87	0.913	30	85
90011123	Fairfield	Danbury	41.4014	-73.4447	140	108	95.7	85	0.897	18	85
90013007	Fairfield	Stratford	41.1519	-73.1036	142	107	98.3	90	0.919	38	85
90019003	Fairfield	Sherwood Island	41.1189	-73.3369	141	106	94	85	0.909	37	85
90070007	Middlesex	Middletown	41.5519	-72.6308	145	111	95.7	84	0.888	21	85
90093002	New Haven	Madison	41.2583	-72.5506	146	109	98.3	88	0.905	39	85
90099005	New Haven	Hamden	41.3411	-72.9214	143	109	96	87	0.912	25	85
340030005	Bergen	Teaneck	40.9	-74.03	137	103	91.7	85	0.928	18	85
340170006	Hudson	Bayonne	40.6708	-74.1258	137	101	84.7	77	0.911	22	85
340190001	Hunterdon	Flemington	40.5167	-74.81	132	98	95.3	83	0.877	15	85
340230011	Middlesex	New Brunswick	40.4733	-74.4256	135	98	96	83	0.874	22	85
340250005	Monmouth	W. Long Branch	40.1881	-74.0061	139	97	95.7	84	0.88	45	85
340273001	Morris	Chester	40.7872	-74.6775	133	101	95.3	84	0.882	13	85
340315001	Passaic	Ramapo	41.0522	-74.2581	135	104	86.7	77	0.898	19	85
360050083	Bronx	Botanical Gardens	40.8659	-73.8808	138	103	82.7	77	0.939	20	85
360050110	Bronx	IS52	40.8162	-73.9021	138	102	77	69	0.908	20	85
360810098	Queens	College Point	40.7842	-73.8476	138	102	73.7	66	0.908	20	85
360810124	Queens	Queens College	40.7362	-73.8232	139	102	83	74	0.894	26	85
360850067	Richmond	Susan Wagner	40.5973	-74.1262	137	100	93	84	0.904	42	85
361030002	Suffolk	Babylon	40.7465	-73.4189	141	103	93.7	85	0.917	22	85
361030004	Suffolk	Riverhead	40.9612	-72.7127	146	106	83	74	0.901	36	85

361030009	Suffolk	Holtsville	40.8275	-73.0569	144	104	97	89	0.926	34	85
361192004	Westchester	White Plains	41.052	-73.764	138	105	91.3	85	0.935	22	85

(b) For Scenario 2012

AQS ID	County	Monitor	Latitude	Longitude	CMAQ Column	CMAQ Row	DVC ppb	DVF ppb	RRF	#Days in RRF	Threshold ppb
90010017	Fairfield	Greenwich	41.0036	-73.5853	140	105	95.7	83	0.874	30	85
90011123	Fairfield	Danbury	41.4014	-73.4447	140	108	95.7	81	0.853	18	85
90013007	Fairfield	Stratford	41.1519	-73.1036	142	107	98.3	86	0.878	38	85
90019003	Fairfield	Sherwood Island	41.1189	-73.3369	141	106	94	81	0.868	37	85
90070007	Middlesex	Middletown	41.5519	-72.6308	145	111	95.7	80	0.839	21	85
90093002	New Haven	Madison	41.2583	-72.5506	146	109	98.3	83	0.853	39	85
90099005	New Haven	Hamden	41.3411	-72.9214	143	109	96	83	0.874	25	85
340030005	Bergen	Teaneck	40.9	-74.03	137	103	91.7	81	0.892	18	85
340170006	Hudson	Bayonne	40.6708	-74.1258	137	101	84.7	75	0.891	22	85
340190001	Hunterdon	Flemington	40.5167	-74.81	132	98	95.3	78	0.825	15	85
340230011	Middlesex	New Brunswick	40.4733	-74.4256	135	98	96	79	0.826	22	85
340250005	Monmouth	W. Long Branch	40.1881	-74.0061	139	97	95.7	80	0.836	45	85
340273001	Morris	Chester	40.7872	-74.6775	133	101	95.3	79	0.83	13	85
340315001	Passaic	Ramapo	41.0522	-74.2581	135	104	86.7	73	0.853	19	85
360050083	Bronx	Botanical Gardens	40.8659	-73.8808	138	103	82.7	75	0.908	20	85
360050110	Bronx	IS52	40.8162	-73.9021	138	102	77	67	0.881	20	85
360810098	Queens	College Point	40.7842	-73.8476	138	102	73.7	64	0.881	20	85
360810124	Queens	Queens College	40.7362	-73.8232	139	102	83	71	0.861	26	85
360850067	Richmond	Susan Wagner	40.5973	-74.1262	137	100	93	80	0.868	42	85

361030002	Suffolk	Babylon	40.7465	-73.4189	141	103	93.7	82	0.884	22	85
361030004	Suffolk	Riverhead	40.9612	-72.7127	146	106	83	70	0.845	36	85
361030009	Suffolk	Holtsville	40.8275	-73.0569	144	104	97	86	0.889	34	85
361192004	Westchester	White Plains	41.052	-73.764	138	105	91.3	82	0.904	22	85

Table 12 Estimated future design values (ppb) for grid cells that are within the nonattainment area or adjacent counties of New York CMSA

(a) For scenario 2009

State	County	County Name	CMAQ Column	CMAQ Row	DVF Hybrid (ppb)	DVF MATS (ppb)	Monitor in grid	Percent in water
9	1	Fairfield	142	107	89	90	Y	18.6
9	1	Fairfield	139	105	85	83	N	2.6
9	1	Fairfield	141	106	85	86	Y	32.9
9	1	Fairfield	141	107	85	84	N	0
9	1	Fairfield	141	108	85	83	N	0
9	1	Fairfield	142	108	85	85	N	0
9	1	Fairfield	140	106	84	84	N	0
9	1	Fairfield	140	107	84	83	N	0
9	1	Fairfield	141	109	84	82	N	0
9	1	Fairfield	140	108	83	83	Y	0
9	1	Fairfield	139	109	82	82	N	1
9	1	Fairfield	140	109	82	82	N	0
9	1	Fairfield	139	108	81	81	N	0
9	7	Middlesex	146	109	88	87	Y	20.2
9	7	Middlesex	145	110	85	84	N	0
9	7	Middlesex	146	110	83	82	N	0
9	7	Middlesex	145	111	82	83	Y	0
9	7	Middlesex	146	111	82	82	N	0
9	7	Middlesex	144	111	81	81	N	0
9	7	Middlesex	145	112	80	79	N	0
9	9	New Haven	145	109	89	89	N	8.6
9	9	New Haven	143	108	86	86	N	25.5
9	9	New Haven	142	109	85	83	N	0
9	9	New Haven	143	109	85	84	Y	0.2
9	9	New Haven	143	110	85	83	N	0
9	9	New Haven	144	109	85	85	N	4.1
9	9	New Haven	144	110	85	84	N	0
9	9	New Haven	142	110	82	81	N	0

9	9	New Haven	142	111	78	78	N	0
34	3	Bergen	137	104	92	91	N	0
34	3	Bergen	136	104	88	88	N	0
34	3	Bergen	137	103	85	85	Y	1.2
34	3	Bergen	137	102	81	81	N	4.9
34	13	Essex	135	101	86	86	N	0
34	13	Essex	136	102	83	83	N	2
34	13	Essex	135	102	79	81	N	1
34	13	Essex	136	101	75	79	N	0
34	17	Hudson	137	101	79	78	Y	16.1
34	19	Hunterdon	132	98	81	79	Y	0
34	19	Hunterdon	132	99	81	80	N	6.8
34	19	Hunterdon	132	97	80	79	N	0
34	19	Hunterdon	132	100	80	79	N	0
34	19	Hunterdon	131	99	79	78	N	3.6
34	19	Hunterdon	131	98	77	76	N	0.1
34	23	Middlesex	135	98	84	83	Y	0.3
34	23	Middlesex	135	99	83	84	N	0
34	23	Middlesex	135	97	82	81	N	0
34	23	Middlesex	136	98	81	77	N	2.6
34	23	Middlesex	136	99	81	80	N	4.2
34	25	Monmouth	135	95	87	87	N	0
34	25	Monmouth	138	98	86	84	N	8.9
34	25	Monmouth	138	97	82	80	N	4.9
34	25	Monmouth	136	96	81	82	N	0
34	25	Monmouth	137	98	81	79	N	6.4
34	25	Monmouth	136	97	80	79	N	0
34	25	Monmouth	137	96	78	79	N	1.9
34	25	Monmouth	137	97	78	78	N	0.3
34	25	Monmouth	138	96	78	77	N	7.7
34	27	Morris	135	103	85	83	N	0
34	27	Morris	133	101	82	81	Y	0
34	27	Morris	134	101	81	82	N	0
34	27	Morris	134	103	80	78	N	0
34	27	Morris	134	102	79	81	N	2

34	27	Morris	132	101	78	78	N	0
34	27	Morris	133	102	77	79	N	1.6
34	27	Morris	133	103	76	75	N	0.3
34	31	Passaic	136	103	85	86	N	0
34	31	Passaic	135	104	77	76	Y	0
34	31	Passaic	134	104	75	74	N	0
34	35	Somerset	134	98	83	82	N	0
34	35	Somerset	133	98	82	82	N	0
34	35	Somerset	133	99	82	83	N	0
34	35	Somerset	133	100	81	81	N	0
34	35	Somerset	134	99	80	81	N	0
34	35	Somerset	134	100	80	81	N	0
34	37	Sussex	132	102	76	76	N	0
34	37	Sussex	132	103	75	74	N	0
34	37	Sussex	131	103	74	74	N	0.3
34	37	Sussex	131	104	73	72	N	0.7
34	37	Sussex	132	104	73	73	N	0
34	37	Sussex	133	104	73	73	N	0
34	37	Sussex	131	105	72	71	N	0
34	37	Sussex	132	105	71	72	N	0
34	37	Sussex	133	105	71	71	N	0
34	39	Union	135	100	86	86	N	0
34	39	Union	136	100	82	81	N	0.1
34	41	Warren	130	99	79	79	N	1
34	41	Warren	130	100	79	79	N	0.1
34	41	Warren	131	100	79	78	N	0
34	41	Warren	131	101	77	77	N	0
34	41	Warren	130	101	76	77	N	0
34	41	Warren	131	102	76	76	N	0
34	41	Warren	130	102	75	76	N	0
36	5	Bronx	138	103	75	80	Y	9.5
36	47	Kings	138	101	75	76	N	1.8
36	59	Nassau	140	101	93	92	N	35.4
36	59	Nassau	140	103	88	90	N	17.8
36	59	Nassau	141	103	84	87	Y	2.4

36	59	Nassau	141	102	83	85	N	10.5
36	59	Nassau	140	102	80	86	N	0.8
36	81	Queens	139	101	83	84	N	15.6
36	81	Queens	139	102	74	79	Y	14.3
36	81	Queens	138	102	64	67	N	12.9
36	85	Richmond	137	100	83	82	Y	28.8
36	87	Rockland	137	105	89	89	N	16.4
36	87	Rockland	136	105	87	85	N	0
36	87	Rockland	136	106	80	79	N	2.2
36	103	Suffolk	143	105	102	104	N	62.3
36	103	Suffolk	143	104	92	91	N	2.4
36	103	Suffolk	141	104	89	89	N	42.7
36	103	Suffolk	142	104	88	89	N	9.6
36	103	Suffolk	143	103	87	88	N	28.8
36	103	Suffolk	144	105	86	85	N	28.3
36	103	Suffolk	144	104	85	86	Y	0.4
36	103	Suffolk	142	103	82	86	N	4.3
36	103	Suffolk	145	104	81	81	N	14.1
36	103	Suffolk	145	105	79	79	N	14.1
36	103	Suffolk	148	106	78	76	N	43.4
36	103	Suffolk	146	105	77	77	N	8.2
36	103	Suffolk	146	106	77	76	Y	49
36	103	Suffolk	149	107	77	74	N	49.2
36	119	Westchester	139	104	91	90	N	39.8
36	119	Westchester	138	104	87	86	N	7.2
36	119	Westchester	139	107	86	84	N	0
36	119	Westchester	138	106	85	83	N	0
36	119	Westchester	139	106	85	84	N	0
36	119	Westchester	137	106	84	84	N	13.3
36	119	Westchester	138	105	83	82	Y	0.4
36	119	Westchester	138	107	83	85	N	0
36	119	Westchester	137	107	82	81	N	0

(b) For scenario 2012

State	County	County Name	CMAQ Column	CMAQ Row	DVF Hybrid (ppb)	DVF MATS (ppb)	Monitor in grid	Percent in water
9	1	Fairfield	142	107	85	86	Y	18.6
9	1	Fairfield	139	105	82	80	N	2.6
9	1	Fairfield	141	108	82	78	N	0
9	1	Fairfield	140	107	81	78	N	0
9	1	Fairfield	141	106	81	82	Y	32.9
9	1	Fairfield	142	108	81	81	N	0
9	1	Fairfield	140	106	80	80	N	0
9	1	Fairfield	141	107	80	80	N	0
9	1	Fairfield	140	108	79	78	Y	0
9	1	Fairfield	141	109	79	77	N	0
9	1	Fairfield	139	109	78	77	N	1
9	1	Fairfield	140	109	78	77	N	0
9	1	Fairfield	139	108	77	77	N	0
9	7	Middlesex	146	109	83	82	Y	20.2
9	7	Middlesex	145	110	80	79	N	0
9	7	Middlesex	145	111	78	78	Y	0
9	7	Middlesex	146	110	78	77	N	0
9	7	Middlesex	144	111	77	77	N	0
9	7	Middlesex	146	111	77	77	N	0
9	7	Middlesex	145	112	75	74	N	0
9	9	New Haven	145	109	83	84	N	8.6
9	9	New Haven	143	108	82	82	N	25.5
9	9	New Haven	143	109	81	80	Y	0.2
9	9	New Haven	144	109	81	81	N	4.1
9	9	New Haven	142	109	80	79	N	0
9	9	New Haven	143	110	80	78	N	0
9	9	New Haven	144	110	80	80	N	0
9	9	New Haven	142	110	78	76	N	0
9	9	New Haven	142	111	74	73	N	0
34	3	Bergen	137	104	88	87	N	0
34	3	Bergen	136	104	84	83	N	0

34	3	Bergen	137	103	82	81	Y	1.2
34	3	Bergen	137	102	78	78	N	4.9
34	13	Essex	135	101	82	81	N	0
34	13	Essex	136	102	80	79	N	2
34	13	Essex	135	102	75	76	N	1
34	13	Essex	136	101	72	76	N	0
34	17	Hudson	137	101	77	75	Y	16.1
34	19	Hunterdon	132	98	76	74	Y	0
34	19	Hunterdon	132	97	75	74	N	0
34	19	Hunterdon	132	99	75	74	N	6.8
34	19	Hunterdon	132	100	75	74	N	0
34	19	Hunterdon	131	99	73	73	N	3.6
34	19	Hunterdon	131	98	72	72	N	0.1
34	23	Middlesex	135	98	79	78	Y	0.3
34	23	Middlesex	135	99	78	79	N	0
34	23	Middlesex	135	97	77	76	N	0
34	23	Middlesex	136	98	77	73	N	2.6
34	23	Middlesex	136	99	77	76	N	4.2
34	25	Monmouth	138	98	83	80	N	8.9
34	25	Monmouth	135	95	82	83	N	0
34	25	Monmouth	137	98	78	74	N	6.4
34	25	Monmouth	136	96	77	77	N	0
34	25	Monmouth	138	97	77	75	N	4.9
34	25	Monmouth	136	97	75	74	N	0
34	25	Monmouth	137	96	75	74	N	1.9
34	25	Monmouth	138	96	75	72	N	7.7
34	25	Monmouth	137	97	74	73	N	0.3
34	27	Morris	135	103	80	78	N	0
34	27	Morris	133	101	77	76	Y	0
34	27	Morris	134	101	76	77	N	0
34	27	Morris	134	102	75	76	N	2
34	27	Morris	134	103	75	73	N	0
34	27	Morris	132	101	74	72	N	0
34	27	Morris	133	102	73	74	N	1.6
34	27	Morris	133	103	71	70	N	0.3

34	31	Passaic	136	103	81	82	N	0
34	31	Passaic	135	104	74	71	Y	0
34	31	Passaic	134	104	70	69	N	0
34	35	Somerset	134	98	78	77	N	0
34	35	Somerset	133	98	77	76	N	0
34	35	Somerset	133	99	77	78	N	0
34	35	Somerset	133	100	76	76	N	0
34	35	Somerset	134	99	75	77	N	0
34	35	Somerset	134	100	75	76	N	0
34	37	Sussex	132	102	72	71	N	0
34	37	Sussex	132	103	70	69	N	0
34	37	Sussex	133	104	69	68	N	0
34	37	Sussex	131	103	68	68	N	0.3
34	37	Sussex	131	104	68	67	N	0.7
34	37	Sussex	132	104	68	68	N	0
34	37	Sussex	131	105	67	66	N	0
34	37	Sussex	133	105	67	67	N	0
34	37	Sussex	132	105	66	67	N	0
34	39	Union	135	100	81	82	N	0
34	39	Union	136	100	78	77	N	0.1
34	41	Warren	130	99	74	74	N	1
34	41	Warren	130	100	74	74	N	0.1
34	41	Warren	131	100	73	73	N	0
34	41	Warren	131	101	72	72	N	0
34	41	Warren	130	101	71	72	N	0
34	41	Warren	131	102	71	70	N	0
34	41	Warren	130	102	70	70	N	0
36	5	Bronx	138	103	72	79	Y	9.5
36	47	Kings	138	101	73	74	N	1.8
36	59	Nassau	140	101	89	88	N	35.4
36	59	Nassau	140	103	86	87	N	17.8
36	59	Nassau	141	103	81	85	Y	2.4
36	59	Nassau	141	102	79	82	N	10.5
36	59	Nassau	140	102	77	84	N	0.8
36	81	Queens	139	101	81	81	N	15.6

36	81	Queens	139	102	72	78	Y	14.3
36	81	Queens	138	102	63	65	N	12.9
36	85	Richmond	137	100	80	78	Y	28.8
36	87	Rockland	137	105	86	84	N	16.4
36	87	Rockland	136	105	82	80	N	0
36	87	Rockland	136	106	76	74	N	2.2
36	103	Suffolk	143	105	99	99	N	62.3
36	103	Suffolk	143	104	88	87	N	2.4
36	103	Suffolk	141	104	85	85	N	42.7
36	103	Suffolk	142	104	85	85	N	9.6
36	103	Suffolk	143	103	83	85	N	28.8
36	103	Suffolk	144	104	82	82	Y	0.4
36	103	Suffolk	144	105	82	81	N	28.3
36	103	Suffolk	142	103	79	84	N	4.3
36	103	Suffolk	145	104	77	77	N	14.1
36	103	Suffolk	145	105	75	75	N	14.1
36	103	Suffolk	146	105	73	73	N	8.2
36	103	Suffolk	148	106	73	72	N	43.4
36	103	Suffolk	146	106	72	72	Y	49
36	103	Suffolk	149	107	72	70	N	49.2
36	119	Westchester	139	104	88	87	N	39.8
36	119	Westchester	138	104	84	83	N	7.2
36	119	Westchester	138	106	83	78	N	0
36	119	Westchester	139	106	82	79	N	0
36	119	Westchester	139	107	82	79	N	0
36	119	Westchester	137	106	81	80	N	13.3
36	119	Westchester	138	105	80	79	Y	0.4
36	119	Westchester	138	107	80	80	N	0
36	119	Westchester	137	107	78	76	N	0

Table 13 Measured 8-h ozone design values (ppb) from 2002 to 2006 in New York CMSA

Monitor	County	AQS ID	DV02	DV03	DV04	DV05	DV06
Greenwich	Fairfield	90010017	95.0	100.0	92.3	87.7	87.0
Danbury	Fairfield	90011123	98.3	96.7	93.3	91.7	92.3
Stratford	Fairfield	90013007	98.3	102.0	95.0	90.7	88.7
Sherwood Island	Fairfield	90019003	93.0	97.3	92.0	89.7	87.0
Middletown	Middlesex	90070007	97.7	98.7	92.0	90.0	89.0
New Haven	New Haven	90090027					77.3
Madison	New Haven	90093002	98.0	102.7	95.0	90.0	88.0
Hamden	New Haven	90099005	94.7	98.0			
Teaneck	Bergen	340030005	92.0	94.0	89.0	86.0	86.0
Bayonne	Hudson	340170006	86.0	86.0	82.0	84.0	86.0
Flemington	Hunterdon	340190001	97.0	97.0	92.0	90.0	89.0
New Brunswick	Middlesex	340230011	101.0	98.0	89.0	86.0	88.0
W. Long Branch	Monmouth	340250005	97.0	97.0	93.0	89.0	85.0
Chester	Morris	340273001	98.0	98.0	90.0	82.0	82.0
Ramapo	Passaic	340315001	88.0	88.0	84.0	81.0	78.0
Botanical Gardens	Bronx	360050083	81.3	84.0	83.0	75.7	74.7
IS52	Bronx	360050110	73.3	78.0	80.3	76.3	73.0
College Point	Queens	360810098	74.3	75.3	72.7	69.7	
Queens College	Queens	360810124		83.0	83.3	82.3	79.7
Susan Wagner	Richmond	360850067	96.7	94.0	89.3	87.7	89.7
Babylon	Suffolk	361030002	92.7	95.3	94.3	91.0	89.7
Riverhead	Suffolk	361030004	85.7	84.7	80.3	79.0	85.3
Holtsville	Suffolk	361030009	97.3	100.7	94.7	91.3	89.3
White Plains	Westchester	361192004	90.3	94.7	90.3	88.0	85.3

Table 14 Base year design value (ppb) based upon an average of the 4th highest 8-h ozone concentrations for the 2000 to 2004 period and the projected design value (ppb) for monitors in New York CMSA

Location	County	AQS ID	DV02 Avg	RRF	DVF
Greenwich	Fairfield	90010017	75.0	0.913	68
Danbury	Fairfield	90011123	80.5	0.897	72
Stratford	Fairfield	90013007	80.7	0.919	74
Sherwood Island	Fairfield	90019003	80.8	0.909	73
Middletown	Middlesex	90070007	81.0	0.888	71
Madison	New Haven	90093002	81.4	0.905	73
Teaneck	Bergen	340030005	80.6	0.928	74
Bayonne	Hudson	340170006	80.2	0.911	73
Flemington	Hunterdon	340190001	81.4	0.877	71
New Brunswick	Middlesex	340230011	81.0	0.874	70
W. Long Branch	Monmouth	340250005	81.6	0.88	71
Chester	Morris	340273001	80.2	0.882	70
Ramapo	Passaic	340315001	79.2	0.898	71
Botanical Gardens	Bronx	360050083	76.6	0.939	71
IS52	Bronx	360050110	74.6	0.908	67
College Point	Queens	360810098	71.4	0.908	64
Queens College	Queens	360810124	71.4	0.894	63
Susan Wagner	Richmond	360850067	73.2	0.904	66
Babylon	Suffolk	361030002	74.6	0.917	68
Riverhead	Suffolk	361030004	74.4	0.901	67
Holtsville	Suffolk	361030009	77.4	0.926	71
White Plains	Westchester	361192004	78.0	0.935	72

Table 15 Estimated trends based on measured hourly ozone concentrations (ppb) with and without meteorological adjustments using the K-Z filter approach for four time periods between 1990 and 2005

AQS ID	County	Location	1985-2005 RAW TRENDS Slope (%/yr)	1985-2005 RAW TRENDS 95% CI	1990-2005 RAW TRENDS Slope (%/yr)	1990-2005 RAW TRENDS 95% CI	1995-2005 RAW TRENDS Slope (%/yr)	1995-2005 RAW TRENDS 95% CI	2000-2005 RAW TRENDS Slope (%/yr)	2000-2005 RAW TRENDS 95% CI
090010017	Fairfield	Greenwich	-0.118	0.015	0.165	0.022			-1.670	0.051
090011123	Fairfield	Danbury	0.041	0.019	0.591	0.024	0.807	0.037	-0.111	0.052
090013007	Fairfield	Stratford	-0.558	0.017	0.078	0.018	-0.037	0.034	-1.191	0.060
090070007	Middlesex	Middletown	-0.097	0.014	0.225	0.017	0.111	0.033	-0.486	0.056
090093002	New Haven	Madison	0.056	0.015	-0.203	0.022	-0.610	0.035	-1.786	0.078
340170006	Hudson	Bayonne	-0.988	0.014	-1.137	0.019	-0.987	0.035	-2.175	0.038
340190001	Hunterdon	Flemington	-0.326	0.013	-0.208	0.019	-0.250	0.026	-0.700	0.050
340273001	Morris	Chester	-0.823	0.015	-0.863	0.024	-1.293	0.043	-2.929	0.104
360850067	Richmond	Susan Wagner	-0.643	0.018	-0.400	0.027	-1.031	0.030	-2.593	0.076
361030002	Suffolk	Babylon	-0.315	0.018	-0.927	0.016	-0.706	0.024	-0.482	0.080
361030004	Suffolk	Riverhead	-0.163	0.051	-0.170	0.051	-1.590	0.057	-0.543	0.070
361192004	Westchester	White Plains	-0.424	0.018	-0.250	0.026	-0.352	0.048	-1.199	0.115

AQS ID	County	Location	1985-2005 MET-ADJ Slope (%/yr)	1985-2005 MET-ADJ 95% CI	1990-2005 MET-ADJ Slope (%/yr)	1990-2005 MET-ADJ 95% CI	1995-2005 MET-ADJ Slope (%/yr)	1995-2005 MET-ADJ 95% CI	2000-2005 MET-ADJ Slope (%/yr)	2000-2005 MET-ADJ 95% CI
090010017	Fairfield	Greenwich	-0.234	0.017	0.202	0.024	-0.288	0.033	-0.749	0.096
090011123	Fairfield	Danbury	-0.083	0.021	0.646	0.023	0.506	0.038	0.750	0.090
090013007	Fairfield	Stratford	-0.823	0.019	-0.123	0.019	-0.398	0.035	-0.313	0.088
090070007	Middlesex	Middletown	-0.197	0.011	0.171	0.012	0.067	0.023	-0.333	0.093
090093002	New Haven	Madison			-0.167	0.025	-0.913	0.040	-0.994	0.092
340170006	Hudson	Bayonne	-0.784	0.015	-0.782	0.022	-1.198	0.036	-1.603	0.077
340190001	Hunterdon	Flemington	-0.118	0.016	0.121	0.023	-0.358	0.026	-0.384	0.073
340273001	Morris	Chester	-0.645	0.017	-0.575	0.029	-1.491	0.040	-2.419	0.112

360850067	Richmond	Susan Wagner	-0.399	0.022			-1.261	0.048	-1.704	0.064
361030002	Suffolk	Babylon	-0.678	0.014	-1.101	0.016	-0.958	0.031	-0.367	0.061
361030004	Suffolk	Riverhead	-0.089	0.038	-0.089	0.038	-1.312	0.035	-0.714	0.128
361192004	Westchester	White Plains	-0.330	0.018	0.084	0.024	-0.371	0.042	-0.631	0.158

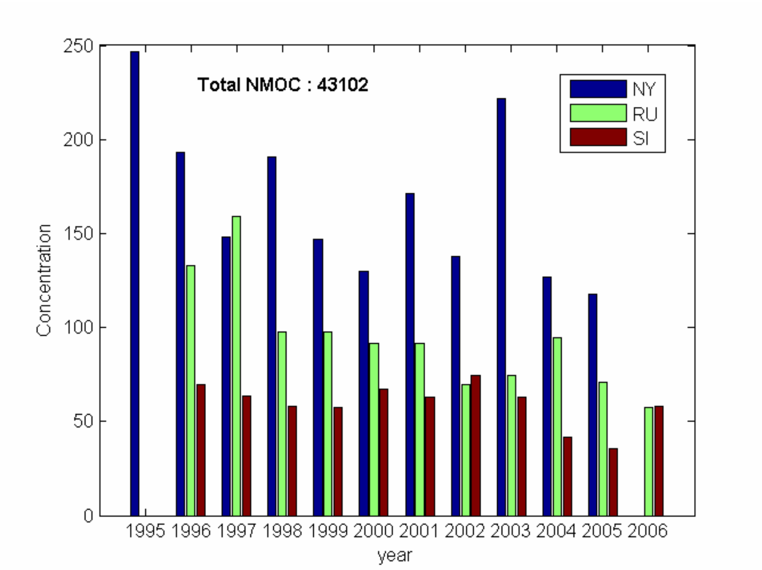

Figure 3-1: Seasonal average Total NMOC at NY, RU, and SI from 1995 to 2006.

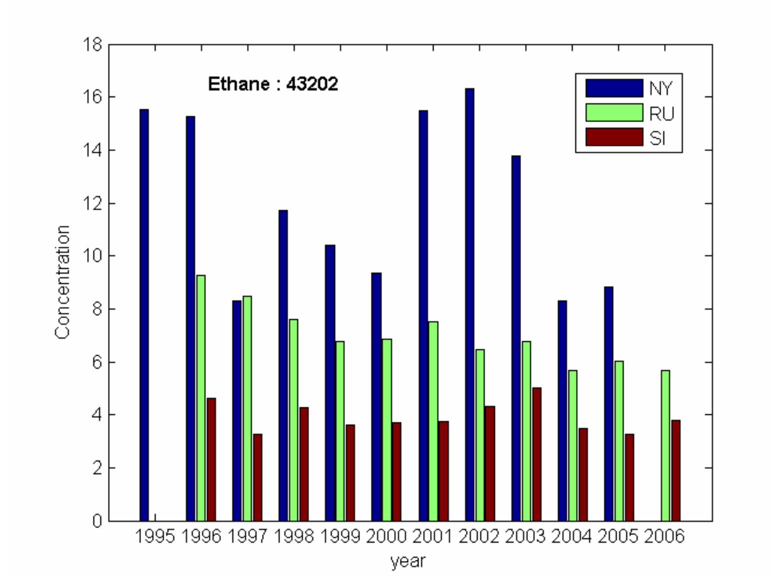

Figure 3-2: Seasonal average Ethane at NY, RU, and SI from 1995 to 2006.

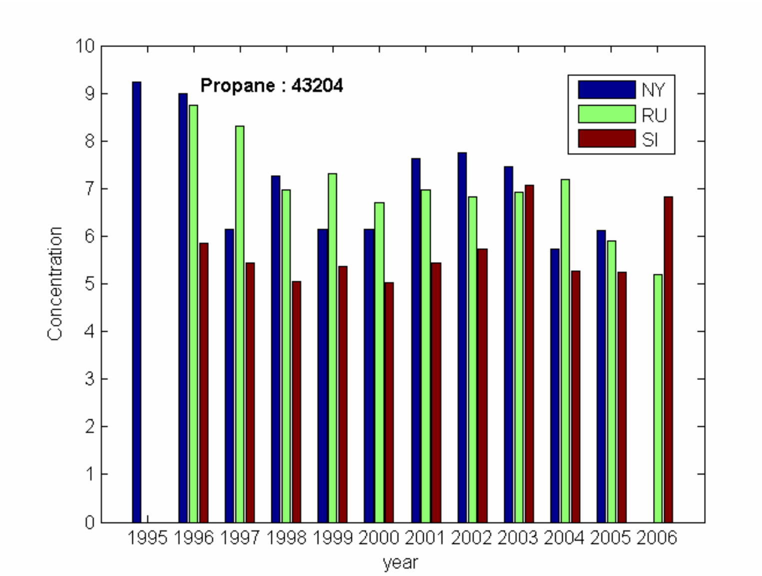

Figure 3-3: Seasonal average Propane at NY, RU, and SI. from 1995 to 2006

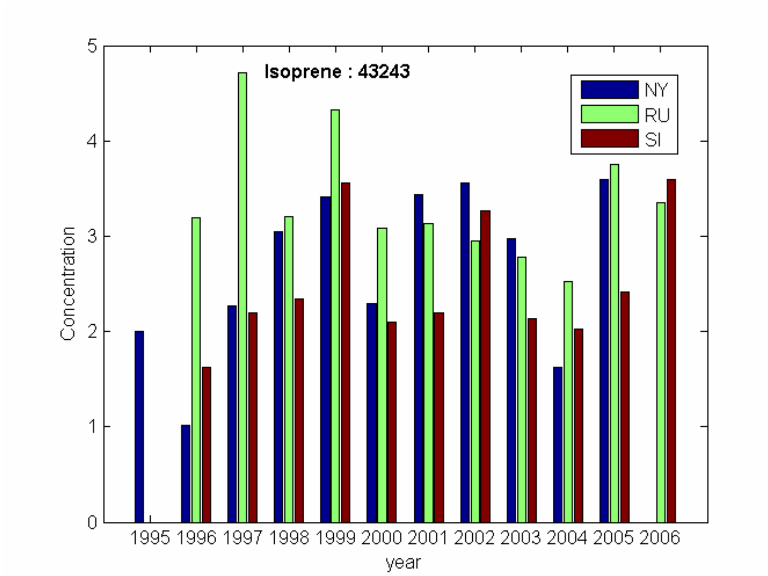

Figure 3-4: Seasonal average Isoprene at NY, RU, and SI from 1995 to 2006.

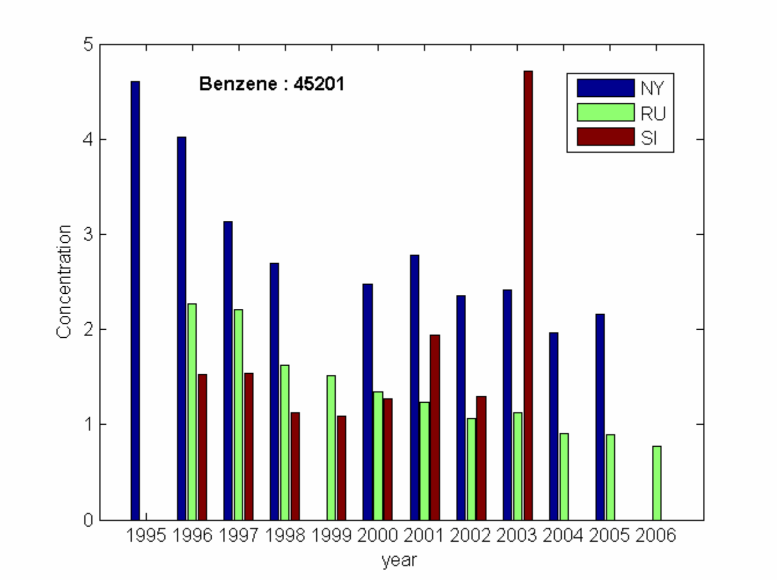

Figure 3-5: Seasonal average Benzene at NY, RU, and SI from 1995 to 2006.

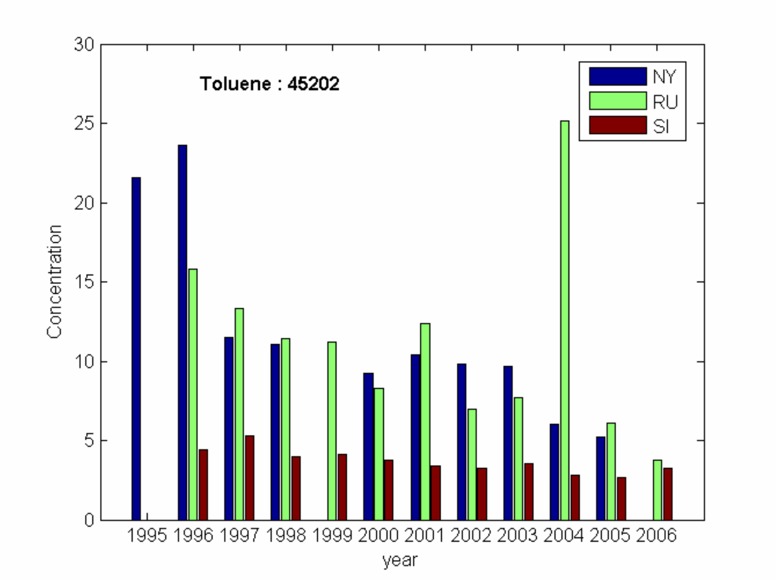

Figure 3-6: Seasonal average Toluene at NY, RU, and SI from 1995 to 2006.

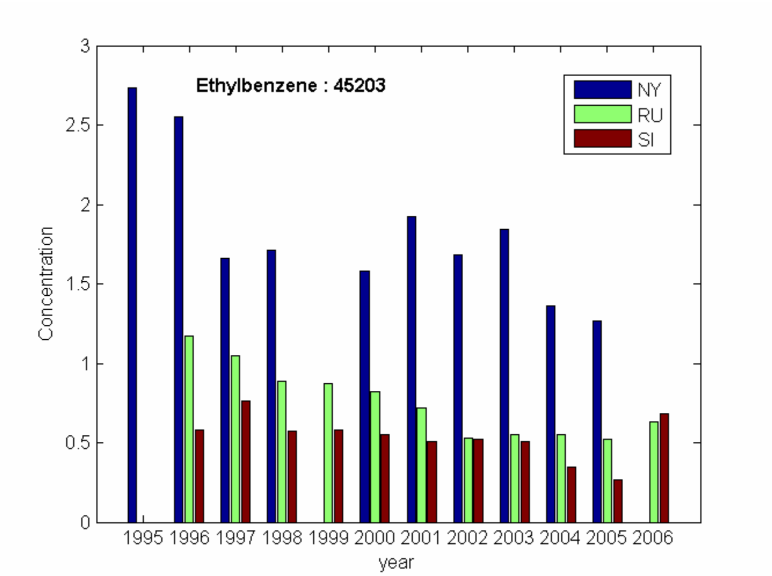

Figure 3-7: Seasonal average Ethylbenzene at NY, RU, and SI from 1995 to 2006.

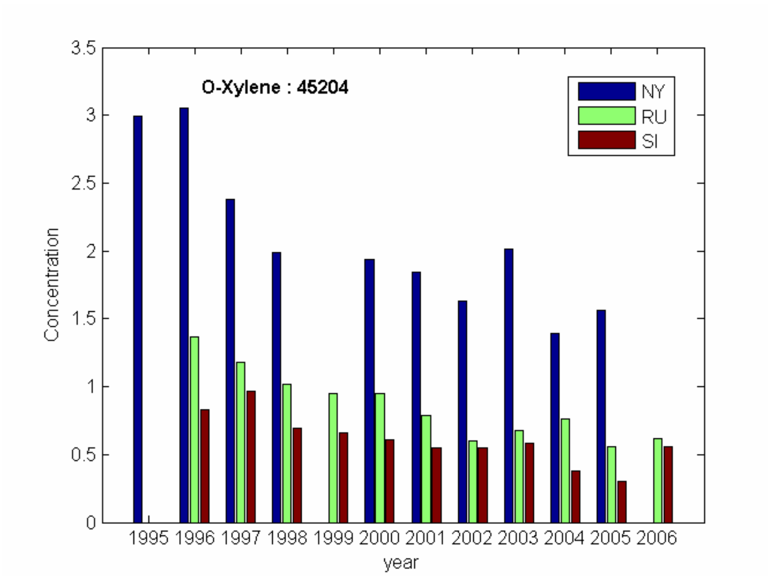

Figure 3-8: Seasonal average O-Xylene at NY, RU, and SI from 1995 to 2006.

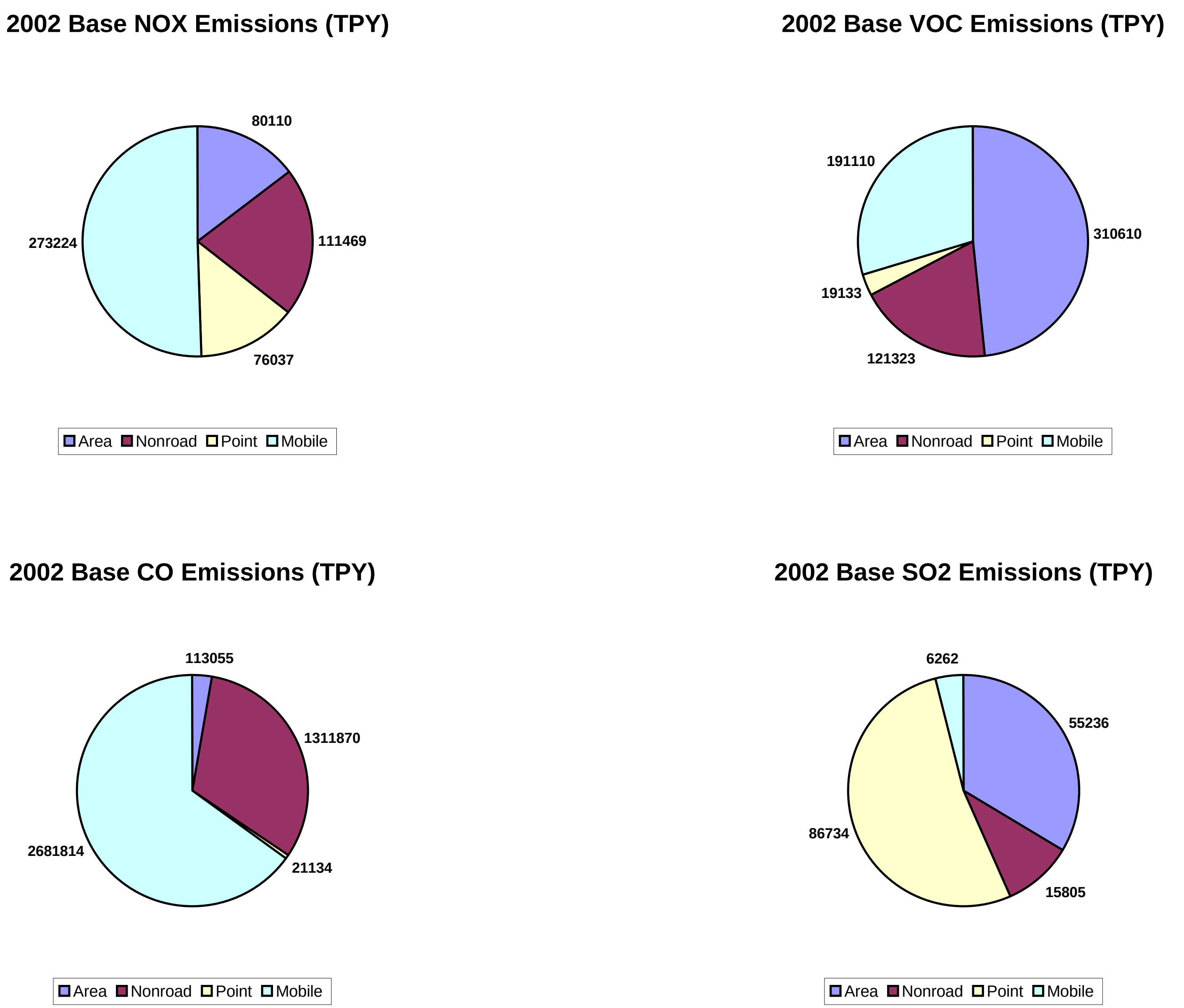

Figure 3-9 2002 Base year emissions for New York CMSA

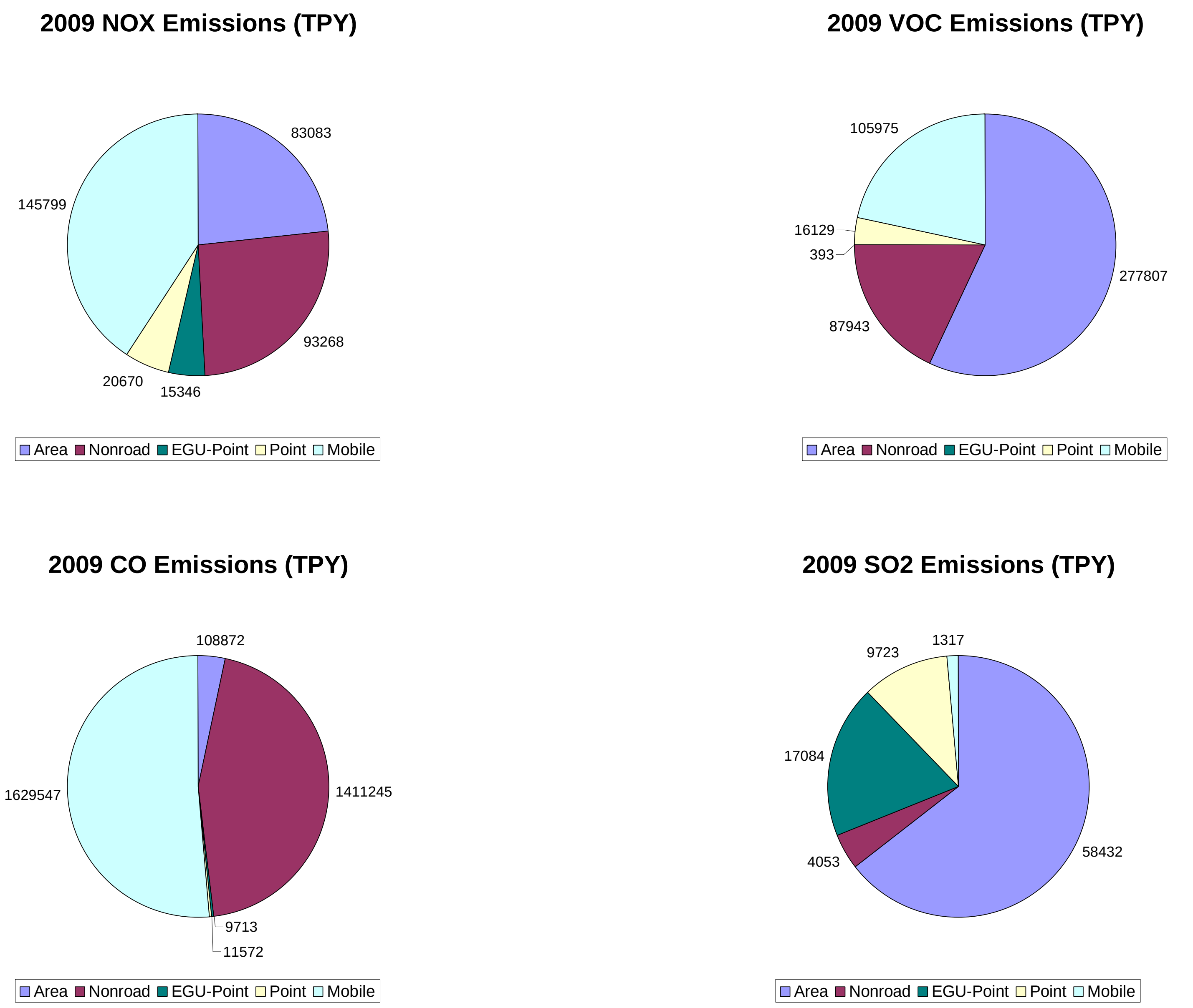

Figure 3-10 2009 OTW projected emissions for New York CMSA

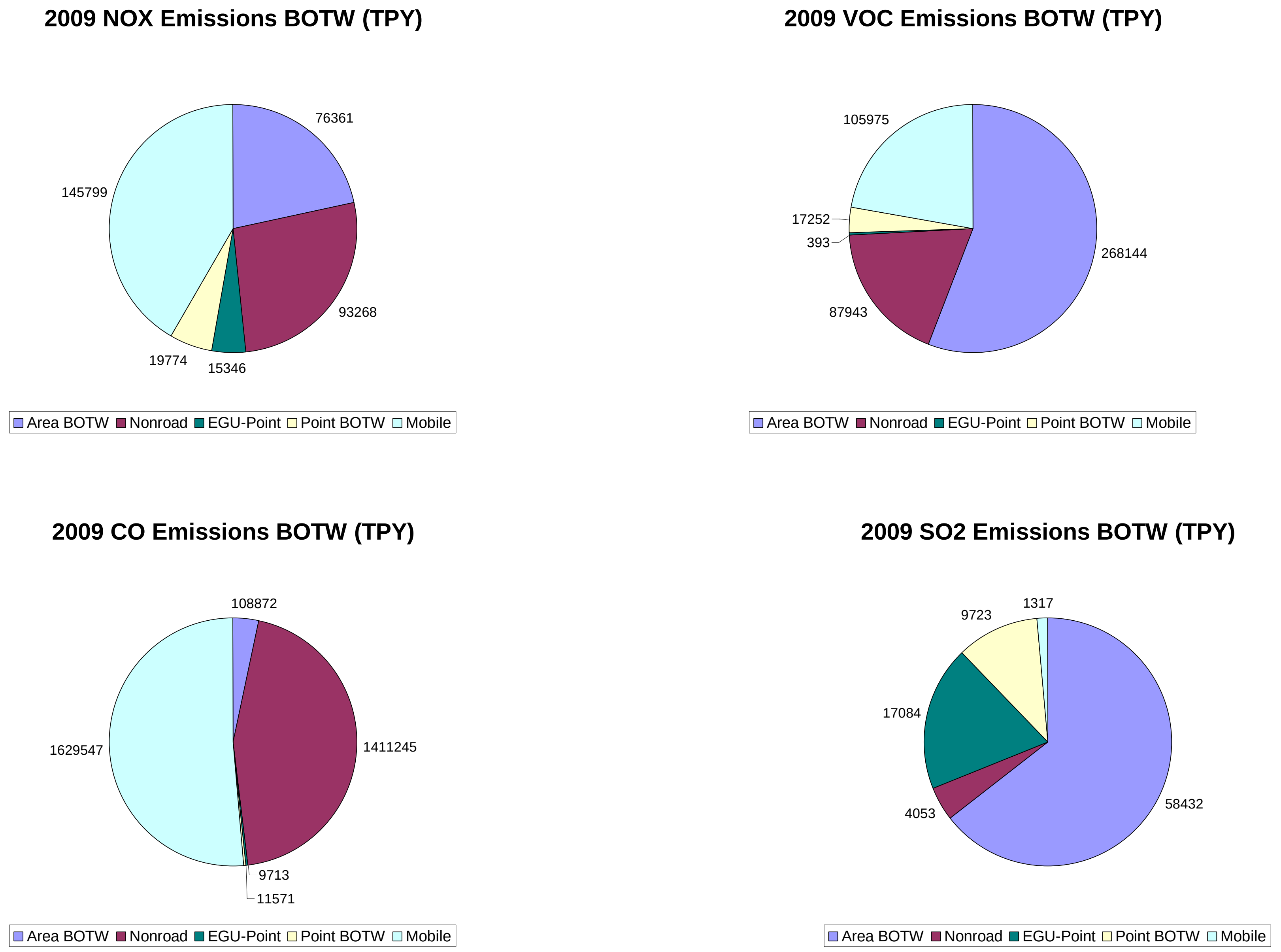

Figure 3-11 2009 BOTW projected emissions for New York CMSA

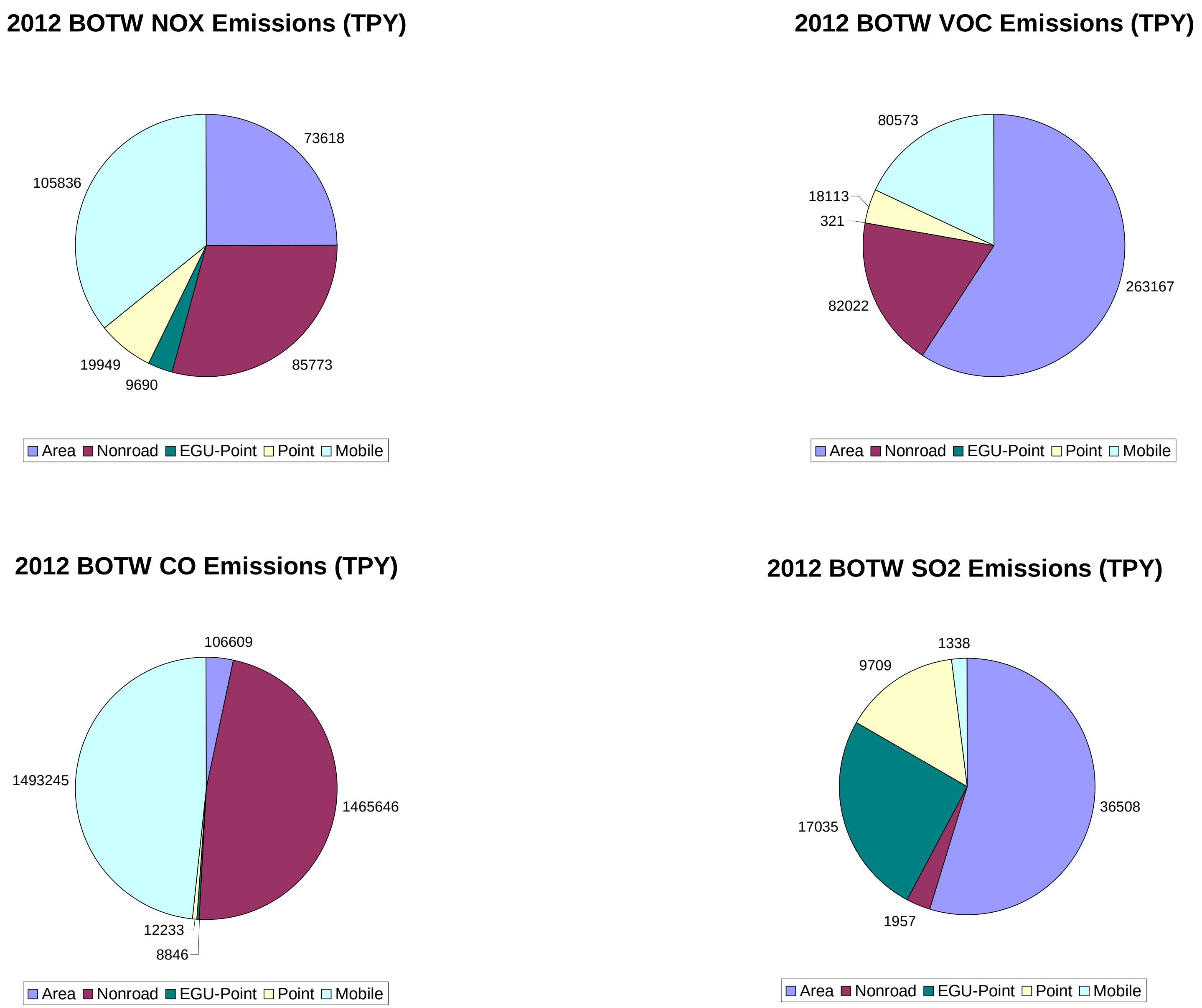

Figure 3-12 2012 BOTW projected emissions for New York CMSA

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Department of Environmental Conservation
Division of Air Resources

NEW YORK STATE IMPLEMENTATION PLAN FOR OZONE (8-HOUR NAAQS)

ATTAINMENT DEMONSTRATION FOR NEW YORK METRO AREA

APPENDIX B

FINAL PROPOSED REVISION FEBRUARY 2008

New York State Department of Environmental Conservation
ELIOT SPITZER, GOVERNOR ***ALEXANDER GRANNIS, COMMISSIONER***

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New York State
2002 Annual Emissions Inventory
NYMA Nonattainment Area

Statewide by County by Sector for all three contaminants (TPY)
- point (except for EGU) (1p.)
- EGU (electric generating units) (1p.)
- area (1p.)
- nonroad mobile (1p.)
- onroad mobile (1p.)
- biogenic (1p.)

Statewide County Level Annual CO Emissions From All Sectors (TPY) (1p.)
Statewide County Level Annual NOx Emissions From All Sectors (TPY) (1p.)
Statewide County Level Annual VOC Emissions From All Sectors (TPY) (1p.)

Statewide Point Source SCC Level Annual CO Emissions (lbs) (3pp.)
Statewide Point Source SCC Level Annual NOx Emissions (lbs) (3pp.)
Statewide Point Source SCC Level Annual non-HAP VOC Emissions (lbs) (9pp.)
Statewide Point Source SCC Level Annual HAP VOC Emissions (lbs) (6pp.)

Statewide Area Source SCC Level Annual CO Emissions (lbs) (1p.)
Statewide Area Source SCC Level Annual NOx Emissions (lbs) (1p.)
Statewide Area Source SCC Level Annual VOC Emissions (lbs) (2pp.)

Statewide NRMS CO Emissions for Aircraft, Marine, & Locomotive (TPY) (1p.)
Statewide NRMS NOx Emissions for Aircraft, Marine, & Locomotive (TPY) (1p.)
Statewide NRMS VOC Emissions for Aircraft, Marine, & Locomotive (TPY) (1p.)

Statewide NRMS CO, NOx & VOC for Off Road Equipment by SCC (TPY) (3pp.)

NYMA by County CO, NOx & VOC from all sectors (TPY) (1p.)

Appendix B
2002 Annual Statewide & NYMA

February 5, 2008

2002 Annual **Point**

Point

COUNTY	FIPS	CO	NOx	VOC
		Tons per year		
ALBANY	36001	631	5,913	418
ALLEGANY	36003	86	49	12
BRONX	36005	269	994	77
BROOME	36007	108	125	111
CATTARAUGUS	36009	0	0	0.0
CAYUGA	36011	252	655	92
CHAUTAUQUA	36013	143	222	194
CHEMUNG	36015	34	557	73
CHENANGO	36017	7	12	65
CLINTON	36019	25	58	45
COLUMBIA	36021	135	147	40
CORTLAND	36023	1	2	57
DELAWARE	36025	71	275	264
DUTCHESS	36027	201	60	54
ERIE	36029	1,979	1,041	1,494
ESSEX	36031	365	757	469
FRANKLIN	36033	0	0	0
FULTON	36035	2	14	72
GENESEE	36037	46	101	4
GREENE	36039	347	3,180	48
HAMILTON	36041	0	0	0
HERKIMER	36043	222	318	133
JEFFERSON	36045	82	36	103
KINGS	36047	426	868	387
LEWIS	36049	2	3	13
LIVINGSTON	36051	22	66	72
MADISON	36053	0	0	0
MONROE	36055	1,800	5,465	1,537
MONTGOMERY	36057	20	23	22
NASSAU	36059	344	424	716
NEW YORK	36061	808	2,180	159
NIAGARA	36063	3,915	1,660	331
ONEIDA	36065	103	55	272
ONONDAGA	36067	232	1,856	617
ONTARIO	36069	130	924	328
ORANGE	36071	216	643	1,003
ORLEANS	36073	4	5	101
OSWEGO	36075	134	343	204
OTSEGO	36077	0	0	0
PUTNAM	36079	15	58	5
QUEENS	36081	579	1,428	290
RENSSELAER	36083	18	75	194
RICHMOND	36085	137	136	209
ROCKLAND	36087	230	465	44
ST LAWRENCE	36089	36,115	355	181
SARATOGA	36091	171	357	574
SCHENECTADY	36093	67	105	411
SCHOHARIE	36095	76	82	14
SCHUYLER	36097	71	243	5
SENECA	36099	279	62	78
STEUBEN	36101	70	252	174
SUFFOLK	36103	494	1,368	459
SULLIVAN	36105	4	0.3	5
TIOGA	36107	0	0	0
TOMPKINS	36109	287	442	33
ULSTER	36111	18	357	301
WARREN	36113	1,329	1,198	129
WASHINGTON	36115	111	392	152
WAYNE	36117	61	60	463
WESTCHESTER	36119	255	1,348	38
WYOMING	36121	10	172	17
YATES	36123	0	0	0
STATEWIDE		**53,563**	**37,985**	**13,363**

EGU		2002 Annual Tons per year		EGU
COUNTY	FIPS	CO	NOx	VOC
ALBANY	36001	296	538	29
ALLEGANY	36003	17	32	1
BRONX	36005	0	0	0
BROOME	36007	96	2,758	12
CATTARAUGUS	36009	2	14	0
CAYUGA	36011	0	0	0
CHAUTAUQUA	36013	375	6,757	44
CHEMUNG	36015	0	0	0
CHENANGO	36017	0	0	0
CLINTON	36019	4	250	32
COLUMBIA	36021	0	0	0
CORTLAND	36023	0	0	0
DELAWARE	36025	0	0	0
DUTCHESS	36027	0	0	0
ERIE	36029	321	7,368	37
ESSEX	36031	0	0	0
FRANKLIN	36033	0	0	0
FULTON	36035	0	0	0
GENESEE	36037	5	28	5
GREENE	36039	0	0	0
HAMILTON	36041	0	0	0
HERKIMER	36043	0	33	0
JEFFERSON	36045	383	447	7
KINGS	36047	366	2,527	33
LEWIS	36049	10	12	7
LIVINGSTON	36051	0	0	0
MADISON	36053	0	0	0
MONROE	36055	152	3,065	18
MONTGOMERY	36057	0	0	0
NASSAU	36059	446	2,410	62
NEW YORK	36061	858	3,549	91
NIAGARA	36063	469	9,047	85
ONEIDA	36065	18	31	1
ONONDAGA	36067	724	1,374	47
ONTARIO	36069	0	0	0
ORANGE	36071	510	6,546	61
ORLEANS	36073	0	0	0
OSWEGO	36075	1,485	881	24
OTSEGO	36077	0	0	0
PUTNAM	36079	0	0	0
QUEENS	36081	2,538	9,178	264
RENSSELAER	36083	82	135	4
RICHMOND	36085	404	591	32
ROCKLAND	36087	490	5,526	65
ST LAWRENCE	36089	26	29	2
SARATOGA	36091	124	277	19
SCHENECTADY	36093	0	0	0
SCHOHARIE	36095	0	0	0
SCHUYLER	36097	0	0	0
SENECA	36099	0	0	0
STEUBEN	36101	0	0	0
SUFFOLK	36103	1,638	9,672	272
SULLIVAN	36105	0	0	0
TIOGA	36107	0	0	0
TOMPKINS	36109	214	4,015	26
ULSTER	36111	0	0	0
WARREN	36113	0	0	0
WASHINGTON	36115	0	0	0
WAYNE	36117	0	0	0
WESTCHESTER	36119	0	0	0
WYOMING	36121	26	107	3
YATES	36123	110	3,186	32
Statewide		**12,189**	**80,386**	**1,316**

		2002 Annual		Area
Area		Tons per year		
COUNTY	FIPS	CO	NOx	VOC
ALBANY	36001	3,893	2,234	7,269
ALLEGANY	36003	7,866	319	6,263
BRONX	36005	1,486	3,710	13,479
BROOME	36007	6,591	1,350	9,469
CATTARAUGUS	36009	11,342	592	9,366
CAYUGA	36011	5,481	461	5,062
CHAUTAUQUA	36013	9,990	906	10,032
CHEMUNG	36015	3,794	574	4,381
CHENANGO	36017	7,706	382	6,157
CLINTON	36019	6,826	629	6,041
COLUMBIA	36021	4,100	380	3,747
CORTLAND	36023	4,188	311	3,713
DELAWARE	36025	8,231	397	6,527
DUTCHESS	36027	4,868	1,622	9,089
ERIE	36029	10,855	5,825	22,696
ESSEX	36031	5,820	333	4,349
FRANKLIN	36033	7,657	402	6,058
FULTON	36035	5,621	404	4,788
GENESEE	36037	2,553	347	3,023
GREENE	36039	3,911	274	3,347
HAMILTON	36041	1,731	58	1,314
HERKIMER	36043	5,721	409	5,023
JEFFERSON	36045	9,490	649	8,201
KINGS	36047	3,078	7,560	26,169
LEWIS	36049	9,882	248	7,484
LIVINGSTON	36051	4,394	326	4,075
MADISON	36053	5,040	394	4,518
MONROE	36055	7,048	4,930	19,792
MONTGOMERY	36057	2,630	331	2,713
NASSAU	36059	2,354	6,458	19,705
NEW YORK	36061	5,351	15,971	23,441
NIAGARA	36063	3,564	1,187	7,263
ONEIDA	36065	10,708	1,557	11,817
ONONDAGA	36067	7,164	2,927	13,272
ONTARIO	36069	5,342	647	5,434
ORANGE	36071	3,955	1,595	7,838
ORLEANS	36073	2,609	226	2,465
OSWEGO	36075	9,692	656	8,799
OTSEGO	36077	7,641	413	6,289
PUTNAM	36079	1,932	383	2,402
QUEENS	36081	2,467	6,888	25,061
RENSSELAER	36083	7,402	792	7,300
RICHMOND	36085	528	1,282	7,551
ROCKLAND	36087	815	1,299	3,835
ST LAWRENCE	36089	14,701	763	11,740
SARATOGA	36091	12,180	1,229	11,253
SCHENECTADY	36093	1,803	843	3,508
SCHOHARIE	36095	4,421	187	3,543
SCHUYLER	36097	2,579	112	2,080
SENECA	36099	1,356	189	1,506
STEUBEN	36101	10,672	694	9,047
SUFFOLK	36103	5,310	7,013	24,839
SULLIVAN	36105	5,467	417	4,272
TIOGA	36107	5,457	347	4,556
TOMPKINS	36109	6,517	631	5,895
ULSTER	36111	8,626	993	8,543
WARREN	36113	7,125	559	5,533
WASHINGTON	36115	10,083	464	8,023
WAYNE	36117	6,697	545	6,097
WESTCHESTER	36119	2,445	4,786	13,960
WYOMING	36121	4,759	258	3,983
YATES	36123	2,770	137	2,300
STATEWIDE		356,287	98,804	507,292

		2002 Annual		Nonroad
Nonroad		Tons per year		
COUNTY	FIPS	CO	NOx	VOC
ALBANY	36001	17,534	4,250	1,559
ALLEGANY	36003	3,295	332	678
BRONX	36005	30,836	2,643	2,833
BROOME	36007	10,350	1,188	1,018
CATTARAUGUS	36009	6,545	660	1,114
CAYUGA	36011	7,769	868	1,912
CHAUTAUQUA	36013	12,091	2,475	2,006
CHEMUNG	36015	5,376	547	643
CHENANGO	36017	3,602	395	702
CLINTON	36019	78	310	2,561
COLUMBIA	36021	6,122	1,412	1,210
CORTLAND	36023	3,548	320	678
DELAWARE	36025	5,849	457	1,389
DUTCHESS	36027	17,488	2,735	2,165
ERIE	36029	54,493	7,267	4,434
ESSEX	36031	12,317	650	4,304
FRANKLIN	36033	7,723	771	2,592
FULTON	36035	426	87	1,413
GENESEE	36037	5,313	1,211	775
GREENE	36039	5,708	606	1,137
HAMILTON	36041	15,141	209	6,283
HERKIMER	36043	6,879	957	1,972
JEFFERSON	36045	15,057	1,943	4,152
KINGS	36047	74,634	7,617	6,038
LEWIS	36049	4,604	303	1,380
LIVINGSTON	36051	4,736	548	939
MADISON	36053	4,994	689	759
MONROE	36055	57,587	5,126	4,587
MONTGOMERY	36057	4,941	1,341	888
NASSAU	36059	89,391	4,479	7,354
NEW YORK	36061	146,416	11,044	9,194
NIAGARA	36063	14,019	1,761	1,677
ONEIDA	36065	14,129	1,862	2,216
ONONDAGA	36067	30,545	3,369	2,826
ONTARIO	36069	9,480	851	1,354
ORANGE	36071	17,898	2,092	2,005
ORLEANS	36073	3,840	336	877
OSWEGO	36075	12,164	1,306	3,064
OTSEGO	36077	4,285	541	921
PUTNAM	36079	7,304	486	991
QUEENS	36081	72,839	11,357	6,350
RENSSELAER	36083	7,279	1,287	978
RICHMOND	36085	17,588	3,771	1,748
ROCKLAND	36087	19,523	1,352	2,088
ST LAWRENCE	36089	13,497	1,959	4,356
SARATOGA	36091	12,650	1,500	1,958
SCHENECTADY	36093	6,137	1,069	579
SCHOHARIE	36095	3,119	277	895
SCHUYLER	36097	4,314	143	1,565
SENECA	36099	7,036	395	2,535
STEUBEN	36101	6,095	1,004	1,024
SUFFOLK	36103	145,045	9,522	18,492
SULLIVAN	36105	9,213	389	2,248
TIOGA	36107	4,412	393	757
TOMPKINS	36109	6,085	521	1,050
ULSTER	36111	11,980	1,116	2,035
WARREN	36113	11,548	653	3,132
WASHINGTON	36115	3,964	642	818
WAYNE	36117	7,960	1,397	1,322
WESTCHESTER	36119	71,468	4,198	6,539
WYOMING	36121	4,857	573	948
YATES	36123	5,252	243	1,875
STATEWIDE		1,206,370	119,808	157,892

2002 Annual **Onroad**

Onroad		Tons per day		
COUNTY	FIPS	CO	NOx	VOC
ALBANY	36001	94,709	8,885	5,125
ALLEGANY	36003	11,521	1,824	599
BRONX	36005	62,986	7,134	4,702
BROOME	36007	56,355	6,244	2,951
CATTARAUGUS	36009	22,280	2,963	1,103
CAYUGA	36011	21,465	2,135	1,113
CHAUTAUQUA	36013	37,884	5,037	1,951
CHEMUNG	36015	20,044	2,307	1,121
CHENANGO	36017	12,291	1,364	635
CLINTON	36019	22,221	2,708	1,124
COLUMBIA	36021	22,101	2,045	1,136
CORTLAND	36023	17,141	1,855	872
DELAWARE	36025	14,662	1,625	756
DUTCHESS	36027	58,243	5,590	3,475
ERIE	36029	208,934	20,217	10,793
ESSEX	36031	16,041	1,846	782
FRANKLIN	36033	12,050	1,199	619
FULTON	36035	10,566	981	576
GENESEE	36037	32,667	3,645	1,612
GREENE	36039	21,825	2,384	1,082
HAMILTON	36041	3,163	317	162
HERKIMER	36043	20,369	2,031	1,064
JEFFERSON	36045	30,457	3,850	1,574
KINGS	36047	84,765	9,875	6,652
LEWIS	36049	7,000	709	344
LIVINGSTON	36051	22,780	2,540	1,152
MADISON	36053	19,961	2,111	1,034
MONROE	36055	166,060	14,942	9,355
MONTGOMERY	36057	23,535	2,654	1,181
NASSAU	36059	194,701	21,968	14,952
NEW YORK	36061	77,353	8,733	7,690
NIAGARA	36063	38,346	3,497	2,015
ONEIDA	36065	56,332	5,369	3,048
ONONDAGA	36067	109,327	10,684	6,164
ONTARIO	36069	37,673	3,973	1,917
ORANGE	36071	89,891	9,661	5,237
ORLEANS	36073	8,837	868	460
OSWEGO	36075	32,031	3,346	1,597
OTSEGO	36077	17,595	2,127	897
PUTNAM	36079	41,376	4,183	2,538
QUEENS	36081	133,330	15,476	10,396
RENSSELAER	36083	37,463	3,584	2,077
RICHMOND	36085	39,155	4,492	2,977
ROCKLAND	36087	52,063	5,686	3,309
ST LAWRENCE	36089	23,827	2,445	1,279
SARATOGA	36091	59,757	5,709	3,307
SCHENECTADY	36093	33,913	3,298	1,784
SCHOHARIE	36095	10,111	1,122	534
SCHUYLER	36097	4,484	528	238
SENECA	36099	14,782	1,508	719
STEUBEN	36101	34,195	5,342	1,703
SUFFOLK	36103	300,650	33,046	20,738
SULLIVAN	36105	19,003	1,901	1,008
TIOGA	36107	15,482	1,845	808
TOMPKINS	36109	18,174	1,646	990
ULSTER	36111	55,284	5,388	2,866
WARREN	36113	22,756	2,403	1,198
WASHINGTON	36115	15,002	1,420	805
WAYNE	36117	19,646	1,928	1,016
WESTCHESTER	36119	161,917	18,229	10,082
WYOMING	36121	9,444	906	479
YATES	36123	4,754	562	255
STATEWIDE		2,942,730	313,890	179,731

2002 Annual **Biogenic**

Biogenic

County	FIPS	CO	NO	VOC
		Tons per year		
ALBANY	36001	730	59	6,253
ALLEGANY	36003	1,218	129	9,526
BRONX	36005	100	25	657
BROOME	36007	879	107	7,861
CATTARAUGUS	36009	1,654	148	13,540
CAYUGA	36011	986	227	7,928
CHAUTAUQUA	36013	1,260	202	8,144
CHEMUNG	36015	521	88	3,911
CHENANGO	36017	1,120	149	7,833
CLINTON	36019	1,631	138	13,341
COLUMBIA	36021	896	96	8,484
CORTLAND	36023	616	101	4,280
DELAWARE	36025	1,672	133	13,435
DUTCHESS	36027	1,096	90	10,288
ERIE	36029	1,127	165	6,898
ESSEX	36031	2,547	94	20,888
FRANKLIN	36033	2,337	228	17,197
FULTON	36035	764	90	5,275
GENESEE	36037	645	201	3,993
GREENE	36039	886	47	8,182
HAMILTON	36041	2,092	78	16,056
HERKIMER	36043	1,783	175	12,846
JEFFERSON	36045	1,754	251	12,503
KINGS	36047	60	15	309
LEWIS	36049	1,693	154	12,116
LIVINGSTON	36051	888	222	6,048
MADISON	36053	1,049	149	7,528
MONROE	36055	990	223	6,237
MONTGOMERY	36057	579	106	4,715
NASSAU	36059	408	81	2,859
NEW YORK	36061	76	16	473
NIAGARA	36063	940	335	5,182
ONEIDA	36065	1,515	214	10,021
ONONDAGA	36067	929	171	6,259
ONTARIO	36069	767	178	6,024
ORANGE	36071	1,065	110	13,024
ORLEANS	36073	635	195	3,314
OSWEGO	36075	1,277	119	7,911
OTSEGO	36077	1,190	157	7,958
PUTNAM	36079	473	32	5,243
QUEENS	36081	105	20	543
RENSSELAER	36083	894	96	7,316
RICHMOND	36085	173	47	1,292
ROCKLAND	36087	300	26	4,006
ST LAWRENCE	36089	3,876	376	28,960
SARATOGA	36091	1,125	76	9,010
SCHENECTADY	36093	377	39	3,032
SCHOHARIE	36095	737	95	5,496
SCHUYLER	36097	438	87	3,193
SENECA	36099	438	127	3,305
STEUBEN	36101	1,475	267	12,085
SUFFOLK	36103	1,328	368	12,886
SULLIVAN	36105	1,325	76	12,538
TIOGA	36107	730	102	5,400
TOMPKINS	36109	576	96	4,128
ULSTER	36111	1,493	82	15,714
WARREN	36113	1,396	46	11,568
WASHINGTON	36115	1,109	183	8,355
WAYNE	36117	920	270	5,940
WESTCHESTER	36119	549	35	5,347
WYOMING	36121	720	194	3,813
YATES	36123	507	107	4,017
STATEWIDE		**63,436**	**8,313**	**492,483**

2002 STATEWIDE COUNTY LEVEL ANNUAL CO EMISSIONS FROM ALL SECTORS (TPY)

COUNTY	FIPS	Point	EGU	Area	Nonroad	On-road	Biogenic	Total
ALBANY	36001	631	296	3,893	17,534	94,709	730	117,793
ALLEGANY	36003	86	17	7,866	3,295	11,521	1,218	24,004
BRONX	36005	269	0	1,486	30,836	62,986	100	95,677
BROOME	36007	108	96	6,591	10,350	56,355	879	74,379
CATTARAUGUS	36009	0	2	11,342	6,545	22,280	1,654	41,824
CAYUGA	36011	252	0	5,481	7,769	21,465	986	35,952
CHAUTAUQUA	36013	143	375	9,990	12,091	37,884	1,260	61,743
CHEMUNG	36015	34	0	3,794	5,376	20,044	521	29,769
CHENANGO	36017	7	0	7,706	3,602	12,291	1,120	24,726
CLINTON	36019	25	4	6,826	78	22,221	1,631	30,786
COLUMBIA	36021	135	0	4,100	6,122	22,101	896	33,354
CORTLAND	36023	1	0	4,188	3,548	17,141	616	25,494
DELAWARE	36025	71	0	8,231	5,849	14,662	1,672	30,486
DUTCHESS	36027	201	0	4,868	17,488	58,243	1,096	81,896
ERIE	36029	1,979	321	10,855	54,493	208,934	1,127	277,708
ESSEX	36031	365	0	5,820	12,317	16,041	2,547	37,090
FRANKLIN	36033	0	0	7,657	7,723	12,050	2,337	29,767
FULTON	36035	2	0	5,621	426	10,566	764	17,379
GENESEE	36037	46	5	2,553	5,313	32,667	645	41,229
GREENE	36039	347	0	3,911	5,708	21,825	886	32,678
HAMILTON	36041	0	0	1,731	15,141	3,163	2,092	22,126
HERKIMER	36043	222	0	5,721	6,879	20,369	1,783	34,974
JEFFERSON	36045	82	383	9,490	15,057	30,457	1,754	57,223
KINGS	36047	426	366	3,078	74,634	84,765	60	163,329
LEWIS	36049	2	10	9,882	4,604	7,000	1,693	23,190
LIVINGSTON	36051	22	0	4,394	4,736	22,780	888	32,820
MADISON	36053	0	0	5,040	4,994	19,961	1,049	31,044
MONROE	36055	1,800	152	7,048	57,587	166,060	990	233,637
MONTGOMERY	36057	20	0	2,630	4,941	23,535	579	31,705
NASSAU	36059	344	446	2,354	89,391	194,701	408	287,643
NEW YORK	36061	808	858	5,351	146,416	77,353	76	230,862
NIAGARA	36063	3,915	469	3,564	14,019	38,346	940	61,253
ONEIDA	36065	103	18	10,708	14,129	56,332	1,515	82,805
ONONDAGA	36067	232	724	7,164	30,545	109,327	929	148,922
ONTARIO	36069	130	0	5,342	9,480	37,673	767	53,393
ORANGE	36071	216	510	3,955	17,898	89,891	1,065	113,535
ORLEANS	36073	4	0	2,609	3,840	8,837	635	15,926
OSWEGO	36075	134	1,485	9,692	12,164	32,031	1,277	56,784
OTSEGO	36077	0	0	7,641	4,285	17,595	1,190	30,710
PUTNAM	36079	15	0	1,932	7,304	41,376	473	51,100
QUEENS	36081	579	2,538	2,467	72,839	133,330	105	211,859
RENSSELAER	36083	18	82	7,402	7,279	37,463	894	53,137
RICHMOND	36085	137	404	528	17,588	39,155	173	57,984
ROCKLAND	36087	230	490	815	19,523	52,063	300	73,421
ST LAWRENCE	36089	36,115	26	14,701	13,497	23,827	3,876	92,042
SARATOGA	36091	171	124	12,180	12,650	59,757	1,125	86,007
SCHENECTADY	36093	67	0	1,803	6,137	33,913	377	42,297
SCHOHARIE	36095	76	0	4,421	3,119	10,111	737	18,464
SCHUYLER	36097	71	0	2,579	4,314	4,484	438	11,886
SENECA	36099	279	0	1,356	7,036	14,782	438	23,891
STEUBEN	36101	70	0	10,672	6,095	34,195	1,475	52,507
SUFFOLK	36103	494	1,638	5,310	145,045	300,650	1,328	454,466
SULLIVAN	36105	4	0	5,467	9,213	19,003	1,325	35,012
TIOGA	36107	0	0	5,457	4,412	15,482	730	26,082
TOMPKINS	36109	287	214	6,517	6,085	18,174	576	31,853
ULSTER	36111	18	0	8,626	11,980	55,284	1,493	77,401
WARREN	36113	1,329	0	7,125	11,548	22,756	1,396	44,154
WASHINGTON	36115	111	0	10,083	3,964	15,002	1,109	30,269
WAYNE	36117	61	0	6,697	7,960	19,646	920	35,284
WESTCHESTER	36119	255	0	2,445	71,468	161,917	549	236,633
WYOMING	36121	10	26	4,759	4,857	9,444	720	19,817
YATES	36123	0	110	2,770	5,252	4,754	507	13,392
STATEWIDE		53,563	12,189	356,287	1,206,370	2,942,730	63,436	4,634,575

2002 STATEWIDE COUNTY LEVEL ANNUAL NOx EMISSIONS FROM ALL SECTORS (TPY)

COUNTY	FIPS	Point	EGU	Area	Nonroad	On-road	Biogenic	Total
ALBANY	36001	5,913	538	2,234	4,250	8,885	59	21,878
ALLEGANY	36003	49	32	319	332	1,824	129	2,686
BRONX	36005	994	0	3,710	2,643	7,134	25	14,506
BROOME	36007	125	2,758	1,350	1,188	6,244	107	11,771
CATTARAUGUS	36009	0	14	592	660	2,963	148	4,377
CAYUGA	36011	655	0	461	868	2,135	227	4,346
CHAUTAUQUA	36013	222	6,757	906	2,475	5,037	202	15,599
CHEMUNG	36015	557	0	574	547	2,307	88	4,073
CHENANGO	36017	12	0	382	395	1,364	149	2,301
CLINTON	36019	58	250	629	310	2,708	138	4,092
COLUMBIA	36021	147	0	380	1,412	2,045	96	4,080
CORTLAND	36023	2	0	311	320	1,855	101	2,589
DELAWARE	36025	275	0	397	457	1,625	133	2,888
DUTCHESS	36027	60	0	1,622	2,735	5,590	90	10,096
ERIE	36029	1,041	7,368	5,825	7,267	20,217	165	41,882
ESSEX	36031	757	0	333	650	1,846	94	3,680
FRANKLIN	36033	0	0	402	771	1,199	228	2,600
FULTON	36035	14	0	404	87	981	90	1,576
GENESEE	36037	101	28	347	1,211	3,645	201	5,534
GREENE	36039	3,180	0	274	606	2,384	47	6,491
HAMILTON	36041	0	0	58	209	317	78	662
HERKIMER	36043	318	33	409	957	2,031	175	3,924
JEFFERSON	36045	36	447	649	1,943	3,850	251	7,177
KINGS	36047	868	2,527	7,560	7,617	9,875	15	28,462
LEWIS	36049	3	12	248	303	709	154	1,428
LIVINGSTON	36051	66	0	326	548	2,540	222	3,703
MADISON	36053	0	0	394	689	2,111	149	3,343
MONROE	36055	5,465	3,065	4,930	5,126	14,942	223	33,751
MONTGOMERY	36057	23	0	331	1,341	2,654	106	4,455
NASSAU	36059	424	2,410	6,458	4,479	21,968	81	35,821
NEW YORK	36061	2,180	3,549	15,971	11,044	8,733	16	41,492
NIAGARA	36063	1,660	9,047	1,187	1,761	3,497	335	17,486
ONEIDA	36065	55	31	1,557	1,862	5,369	214	9,087
ONONDAGA	36067	1,856	1,374	2,927	3,369	10,684	171	20,381
ONTARIO	36069	924	0	647	851	3,973	178	6,573
ORANGE	36071	643	6,546	1,595	2,092	9,661	110	20,648
ORLEANS	36073	5	0	226	336	868	195	1,629
OSWEGO	36075	343	881	656	1,306	3,346	119	6,651
OTSEGO	36077	0	0	413	541	2,127	157	3,238
PUTNAM	36079	58	0	383	486	4,183	32	5,142
QUEENS	36081	1,428	9,178	6,888	11,357	15,476	20	44,348
RENSSELAER	36083	75	135	792	1,287	3,584	96	5,969
RICHMOND	36085	136	591	1,282	3,771	4,492	47	10,320
ROCKLAND	36087	465	5,526	1,299	1,352	5,686	26	14,355
ST LAWRENCE	36089	355	29	763	1,959	2,445	376	5,928
SARATOGA	36091	357	277	1,229	1,500	5,709	76	9,148
SCHENECTADY	36093	105	0	843	1,069	3,298	39	5,353
SCHOHARIE	36095	82	0	187	277	1,122	95	1,762
SCHUYLER	36097	243	0	112	143	528	87	1,113
SENECA	36099	62	0	189	395	1,508	127	2,280
STEUBEN	36101	252	0	694	1,004	5,342	267	7,560
SUFFOLK	36103	1,368	9,672	7,013	9,522	33,046	368	60,990
SULLIVAN	36105	0.3	0	417	389	1,901	76	2,784
TIOGA	36107	0	0	347	393	1,845	102	2,688
TOMPKINS	36109	442	4,015	631	521	1,646	96	7,351
ULSTER	36111	357	0	993	1,116	5,388	82	7,936
WARREN	36113	1,198	0	559	653	2,403	46	4,859
WASHINGTON	36115	392	0	464	642	1,420	183	3,101
WAYNE	36117	60	0	545	1,397	1,928	270	4,200
WESTCHESTER	36119	1,348	0	4,786	4,198	18,229	35	28,596
WYOMING	36121	172	107	258	573	906	194	2,211
YATES	36123	0	3,186	137	243	562	107	4,235
STATEWIDE		37,985	80,386	98,804	119,808	313,890	8,313	659,186

2002 STATEWIDE COUNTY LEVEL ANNUAL VOC EMISSIONS FROM ALL SECTORS (TPY)

COUNTY	FIPS	Point	EGU	AREA	Non-road	On-road	Biogenic	Total
ALBANY	36001	418	29	7,269	1,559	5,125	6,253	20,653
ALLEGANY	36003	12	1	6,263	678	599	9,526	17,079
BRONX	36005	77	0	13,479	2,833	4,702	657	21,747
BROOME	36007	111	12	9,469	1,018	2,951	7,861	21,423
CATTARAUGUS	36009	0.0	0	9,366	1,114	1,103	13,540	25,122
CAYUGA	36011	92	0	5,062	1,912	1,113	7,928	16,108
CHAUTAUQUA	36013	194	44	10,032	2,006	1,951	8,144	22,371
CHEMUNG	36015	73	0	4,381	643	1,121	3,911	10,128
CHENANGO	36017	65	0	6,157	702	635	7,833	15,392
CLINTON	36019	45	32	6,041	2,561	1,124	13,341	23,145
COLUMBIA	36021	40	0	3,747	1,210	1,136	8,484	14,617
CORTLAND	36023	57	0	3,713	678	872	4,280	9,600
DELAWARE	36025	264	0	6,527	1,389	756	13,435	22,371
DUTCHESS	36027	54	0	9,089	2,165	3,475	10,288	25,071
ERIE	36029	1,494	37	22,696	4,434	10,793	6,898	46,353
ESSEX	36031	469	0	4,349	4,304	782	20,888	30,793
FRANKLIN	36033	0	0	6,058	2,592	619	17,197	26,467
FULTON	36035	72	0	4,788	1,413	576	5,275	12,125
GENESEE	36037	4	5	3,023	775	1,612	3,993	9,413
GREENE	36039	48	0	3,347	1,137	1,082	8,182	13,796
HAMILTON	36041	0	0	1,314	6,283	162	16,056	23,814
HERKIMER	36043	133	0	5,023	1,972	1,064	12,846	21,038
JEFFERSON	36045	103	7	8,201	4,152	1,574	12,503	26,540
KINGS	36047	387	33	26,169	6,038	6,652	309	39,588
LEWIS	36049	13	7	7,484	1,380	344	12,116	21,345
LIVINGSTON	36051	72	0	4,075	939	1,152	6,048	12,287
MADISON	36053	0	0	4,518	759	1,034	7,528	13,839
MONROE	36055	1,537	18	19,792	4,587	9,355	6,237	41,526
MONTGOMERY	36057	22	0	2,713	888	1,181	4,715	9,519
NASSAU	36059	716	62	19,705	7,354	14,952	2,859	45,648
NEW YORK	36061	159	91	23,441	9,194	7,690	473	41,048
NIAGARA	36063	331	85	7,263	1,677	2,015	5,182	16,552
ONEIDA	36065	272	1	11,817	2,216	3,048	10,021	27,376
ONONDAGA	36067	617	47	13,272	2,826	6,164	6,259	29,185
ONTARIO	36069	328	0	5,434	1,354	1,917	6,024	15,055
ORANGE	36071	1,003	61	7,838	2,005	5,237	13,024	29,168
ORLEANS	36073	101	0	2,465	877	460	3,314	7,218
OSWEGO	36075	204	24	8,799	3,064	1,597	7,911	21,600
OTSEGO	36077	0	0	6,289	921	897	7,958	16,065
PUTNAM	36079	5	0	2,402	991	2,538	5,243	11,179
QUEENS	36081	290	264	25,061	6,350	10,396	543	42,904
RENSSELAER	36083	194	4	7,300	978	2,077	7,316	17,869
RICHMOND	36085	209	32	7,551	1,748	2,977	1,292	13,809
ROCKLAND	36087	44	65	3,835	2,088	3,309	4,006	13,347
ST LAWRENCE	36089	181	2	11,740	4,356	1,279	28,960	46,519
SARATOGA	36091	574	19	11,253	1,958	3,307	9,010	26,121
SCHENECTADY	36093	411	0	3,508	579	1,784	3,032	9,314
SCHOHARIE	36095	14	0	3,543	895	534	5,496	10,482
SCHUYLER	36097	5	0	2,080	1,565	238	3,193	7,080
SENECA	36099	78	0	1,506	2,535	719	3,305	8,143
STEUBEN	36101	174	0	9,047	1,024	1,703	12,085	24,032
SUFFOLK	36103	459	272	24,839	18,492	20,738	12,886	77,686
SULLIVAN	36105	5	0	4,272	2,248	1,008	12,538	20,071
TIOGA	36107	0	0	4,556	757	808	5,400	11,521
TOMPKINS	36109	33	26	5,895	1,050	990	4,128	12,122
ULSTER	36111	301	0	8,543	2,035	2,866	15,714	29,458
WARREN	36113	129	0	5,533	3,132	1,198	11,568	21,560
WASHINGTON	36115	152	0	8,023	818	805	8,355	18,153
WAYNE	36117	463	0	6,097	1,322	1,016	5,940	14,838
WESTCHESTER	36119	38	0	13,960	6,539	10,082	5,347	35,965
WYOMING	36121	17	3	3,983	948	479	3,813	9,242
YATES	36123	0	32	2,300	1,875	255	4,017	8,479
STATEWIDE		13,363	1,316	507,292	157,892	179,731	492,483	1,352,076

Annual Point Source Carbon Monoxide by SCC in lbs.

SCC	2002Annual	2005 Annual	2008 Annual	2009 Annual	2011 Annual	2012 Annual
10100205	25,426	27,008	28,589	29,116	29,710	30,007
10100401	66,421	82,714	99,006	104,437	103,115	102,454
10100405	11,450	14,259	17,067	18,004	17,776	17,662
10100501	951	1,421	1,892	2,048	1,535	1,278
10100505	970	1,450	1,930	2,090	1,566	1,304
10100601	242,894	254,387	265,881	269,712	297,978	312,111
10100602	55,617	58,249	60,881	61,758	68,231	71,467
10100604	374,777	392,511	410,245	416,156	459,770	481,576
10200202	108,988	111,405	113,822	114,627	114,905	115,044
10200203	190,942	195,176	199,410	200,822	201,309	201,552
10200204	111,065	113,528	115,991	116,812	117,095	117,236
10200205	275,964	282,084	288,203	290,243	290,947	291,298
10200206	1,120,691	1,145,543	1,170,395	1,178,679	1,181,535	1,182,963
10200401	843,588	920,175	996,763	1,022,292	1,023,446	1,024,024
10200402	66,857	72,926	78,996	81,019	81,111	81,157
10200501	17,402	17,481	17,559	17,585	17,375	17,269
10200502	9,192	9,233	9,274	9,288	9,177	9,121
10200503	1,522	1,529	1,536	1,538	1,520	1,510
10200504	17,616	17,695	17,775	17,801	17,588	17,481
10200601	846,297	866,097	885,896	892,496	907,879	915,571
10200602	1,506,103	1,541,339	1,576,575	1,588,320	1,615,697	1,629,385
10200603	104,317	106,758	109,199	110,012	111,908	112,856
10200704	149	137	126	122	115	112
10200707	181	167	153	148	140	136
10200799	23,904	24,398	24,892	25,057	25,141	25,182
10200802	15	15	15	15	15	15
10200901	369,446	393,077	416,708	424,585	431,306	434,667
10200902	51,000	54,262	57,524	58,612	59,540	60,003
10200903	83,928	89,297	94,665	96,455	97,982	98,745
10200905	33,398	35,534	37,671	38,383	38,990	39,294
10200906	20,000	21,279	22,559	22,985	23,349	23,531
10201002	718	697	676	669	673	675
10201301	5,265	5,602	5,939	6,051	6,147	6,194
10201302	2,970	3,021	3,072	3,089	3,110	3,120
10201401	3,987	4,080	4,173	4,204	4,277	4,313
10201403	4	4	4	4	4	4
10300203	70	71	72	73	73	72
10300206	55	56	57	57	57	57
10300209	34,557	35,270	35,982	36,220	36,063	35,985
10300401	193,001	186,236	179,471	177,216	179,938	181,299
10300402	80,424	77,605	74,786	73,846	74,981	75,548
10300501	9,451	9,747	10,043	10,141	10,232	10,278
10300502	7,177	7,401	7,626	7,701	7,770	7,805
10300503	1,342	1,384	1,426	1,440	1,453	1,460
10300504	1,637	1,688	1,739	1,756	1,772	1,780
10300601	798,203	801,812	805,421	806,624	819,883	826,513
10300602	775,135	778,640	782,144	783,313	796,189	802,627
10300603	96,247	96,682	97,117	97,262	98,861	99,660
10300701	64,686	66,373	68,061	68,623	69,934	70,589
10300901	20,200	20,154	20,107	20,092	20,092	20,092
10300902	130,915	130,615	130,314	130,214	130,214	130,214
10300903	29,717	29,649	29,581	29,558	29,558	29,558
10301002	159	162	165	167	168	169
10301302	3,034	3,093	3,153	3,172	3,203	3,218
10500105	3,192	3,226	3,259	3,270	3,262	3,258
10500106	154,904	158,528	162,152	163,360	166,175	167,583
10500110	2,105	2,044	1,983	1,962	1,974	1,981
10500113	3	4	4	4	4	4
10500205	623	642	662	668	674	677
10500206	6,341	6,370	6,399	6,408	6,513	6,566
10500209	600	599	597	597	597	597
10500210	44	45	46	46	46	47
10500214	11	11	12	12	12	12
20100101	55	82	109	118	88	73
20100102	34,495	51,572	68,648	74,340	55,710	46,394
20100201	247,590	259,306	271,021	274,926	303,739	318,145
20100202	201,776	211,324	220,872	224,055	247,536	259,276

Annual Point Source Carbon Monoxide by SCC in lbs.

SCC	2002Annual	2005 Annual	2008 Annual	2009 Annual	2011 Annual	2012 Annual
20200101	16	16	16	16	16	16
20200102	85,371	85,755	86,140	86,268	85,235	84,718
20200103	325	327	328	329	325	323
20200104	2,506	2,518	2,529	2,533	2,502	2,487
20200201	364,919	373,457	381,994	384,840	391,473	394,790
20200202	2,010,266	2,057,297	2,104,328	2,120,005	2,156,546	2,174,817
20200203	127,868	130,859	133,851	134,848	137,172	138,335
20200204	46,224	47,305	48,386	48,747	49,587	50,007
20200252	3,149	3,223	3,296	3,321	3,378	3,407
20200253	39,674	40,602	41,530	41,840	42,561	42,921
20200254	48,209	49,337	50,464	50,840	51,717	52,155
20200301	282,331	282,303	282,275	282,266	283,692	284,406
20200401	594,235	597,039	599,842	600,777	593,791	590,298
20200402	874,540	874,540	874,540	874,540	874,540	874,540
20201001	337	328	318	314	316	317
20201707	7,099	7,098	7,098	7,097	7,133	7,151
20300101	170,211	175,514	180,817	182,584	184,220	185,038
20300102	31	32	33	33	33	33
20300201	86,409	86,800	87,190	87,321	88,756	89,474
20300202	47,013	47,226	47,438	47,509	48,290	48,681
20300204	6,079	6,106	6,134	6,143	6,244	6,294
20300301	16,257	16,237	16,218	16,211	16,206	16,203
20300702	293,350	292,676	292,002	291,778	291,778	291,778
20300801	247,380	246,812	246,244	246,055	246,055	246,055
20300807	530,391	529,173	527,955	527,549	527,549	527,549
20301001	72	74	75	76	76	77
20400401	256,498	278,567	300,636	307,992	323,337	331,009
30100899	94	106	117	121	128	132
30101814	177	199	221	229	242	249
30101860	306	344	382	395	418	430
30101891	6,990	7,863	8,736	9,028	9,555	9,819
30101899	237	267	296	306	324	333
30103499	1,253	1,238	1,224	1,219	1,239	1,249
30103553	25	28	31	32	34	35
30106099	5,042	5,996	6,950	7,268	7,784	8,041
30182003	29,000	32,595	36,189	37,388	39,628	40,748
30190004	4,464	5,022	5,579	5,765	6,102	6,271
30190013	932	930	927	927	944	952
30199999	148,729	167,165	185,601	191,746	203,235	208,980
30290003	445	455	464	467	479	485
30300101	25,692,588	27,371,472	29,050,360	29,609,988	31,068,726	31,798,098
30300102	45,825,377	48,819,840	51,814,310	52,812,464	55,414,273	56,715,182
30300105	273,836	291,730	309,624	315,588	331,136	338,910
30300331	49,255	48,387	47,519	47,230	48,454	49,067
30300503	6,527	6,954	7,380	7,522	7,893	8,078
30300702	171,805	168,778	165,751	164,742	169,012	171,148
30300933	55,763	54,781	53,798	53,471	54,857	55,550
30300934	894	878	862	857	879	891
30300936	7,910	7,771	7,631	7,585	7,781	7,880
30390003	178,704	175,742	172,781	171,794	168,172	166,361
30400101	856	1,000	1,144	1,192	1,273	1,313
30400103	13,486	15,757	18,028	18,785	20,055	20,690
30400108	28,672	33,500	38,329	39,938	42,639	43,989
30400109	129,523	151,335	173,147	180,417	192,617	198,716
30400112	14,540	16,989	19,437	20,253	21,623	22,308
30400115	38,502	44,986	51,470	53,631	57,257	59,070
30400301	7,582	8,474	9,366	9,663	10,258	10,555
30400732	482,149	538,872	595,596	614,504	652,319	671,227
30400740	447	500	552	570	605	622
30402005	6,819,383	8,120,552	9,421,724	9,855,447	10,656,701	11,057,329
30490003	24,228	25,243	26,257	26,595	27,412	27,820
30500205	5,278	5,810	6,342	6,520	6,910	7,105
30500251	120,992	133,193	145,394	149,461	158,406	162,878
30500606	2,029,025	2,231,280	2,433,536	2,500,954	2,622,419	2,683,152
30500613	790	869	947	974	1,021	1,045
30500706	879,897	939,581	999,266	1,019,161	1,052,922	1,069,803
30500899	16,636	16,519	16,403	16,364	16,611	16,735

Annual Point Source Carbon Monoxide by SCC in lbs.

SCC	2002Annual	2005 Annual	2008 Annual	2009 Annual	2011 Annual	2012 Annual
30501202	4,380	4,349	4,319	4,308	4,373	4,406
30501204	340,089	337,707	335,324	334,530	339,584	342,111
30501205	2,733	2,713	2,694	2,688	2,729	2,749
30501206	21,441	21,291	21,141	21,091	21,410	21,569
30501402	55,589	58,537	61,485	62,468	64,742	65,879
30501403	55,957	58,925	61,892	62,881	65,171	66,315
30501406	578	609	640	650	673	685
30502021	242	261	281	287	300	307
30590001	350	359	367	370	367	365
30590003	756	786	817	827	826	826
30599999	9,577	10,260	10,942	11,170	11,676	11,930
30700115	316,148	324,365	332,583	335,322	345,958	351,276
30700718	37,000	38,846	40,692	41,307	42,481	43,069
30801005	25	28	31	32	34	35
31000412	1,253	1,098	944	892	890	890
31000414	1,985	2,064	2,144	2,171	2,169	2,169
31306599	801	997	1,193	1,258	1,393	1,460
31604003	66	64	63	62	62	62
31605001	56,218	54,930	53,641	53,212	53,024	52,930
31612002	99	97	94	94	93	93
31615001	306,259	299,240	292,221	289,882	288,858	288,347
31616003	138	135	132	131	130	130
39000289	460	455	449	447	432	425
39000489	8,330	9,087	9,843	10,095	10,106	10,112
39000589	2,923	2,936	2,949	2,954	2,918	2,900
39000689	3,342,986	3,421,196	3,499,406	3,525,476	3,586,243	3,616,626
39000699	4,511	4,616	4,722	4,757	4,839	4,880
39000889	94,737	90,956	87,175	85,915	80,982	78,516
39000989	129	137	145	148	150	152
39001089	1,864	1,809	1,755	1,737	1,748	1,753
39001099	16,592	16,110	15,628	15,467	15,563	15,611
39001399	41,432	44,082	46,732	47,616	48,369	48,746
39900601	5,792	6,035	6,277	6,358	6,553	6,651
39990003	16,849	17,555	18,261	18,496	19,063	19,347
39990004	18	19	19	20	20	20
39990014	323	339	354	360	370	375
39999994	7,689	9,352	11,015	11,569	12,234	12,566
39999995	289	351	414	434	459	472
40201001	6,042	6,183	6,325	6,372	6,482	6,537
40500301	64,890	64,978	65,067	65,096	66,604	67,358
40600131	7,060	7,047	7,033	7,029	6,976	6,950
50100102	377,585	388,244	398,903	402,456	415,419	421,900
50100103	1,494	1,491	1,487	1,486	1,486	1,486
50100104	87,518	89,989	92,459	93,283	96,287	97,790
50100105	117,406	120,720	124,035	125,139	129,170	131,185
50100106	400,506	411,812	423,118	426,887	440,636	447,511
50100410	701,211	699,601	697,991	697,454	697,454	697,454
50100421	464,595	463,528	462,461	462,106	462,106	462,106
50100505	10,552	10,721	10,889	10,945	10,933	10,927
50100515	941,852	968,440	995,027	1,003,890	1,036,225	1,052,392
50100789	96,789	99,521	102,254	103,164	106,487	108,149
50200101	174	188	202	206	215	219
50200504	3,479	3,535	3,590	3,609	3,604	3,602
50200515	98,094	106,023	113,952	116,595	121,253	123,582
50200601	184,223	183,799	183,376	183,235	183,235	183,235
50300112	41,595	47,944	54,294	56,411	60,398	62,391
50300501	25,323	29,189	33,055	34,343	36,771	37,984
50300503	605	697	790	821	878	907
50300506	28,089	32,377	36,665	38,095	40,787	42,133
50300701	4,318	4,977	5,636	5,856	6,270	6,477
50410560	671	690	709	715	738	750
STATEWIDE	**107,125,537**	**114,073,532**	**121,021,543**	**123,337,542**	**128,891,015**	**131,667,761**
State (tons)	53,563	57,037	60,511	61,669	64,446	65,834

Annual Point Source Nitrogen Oxides by SCC in lbs.

SCC	2002 Annual	2005 Annual	2008 Annual	2009 Annual	2011 Annual	2012 Annual
10100205	31,783	33,760	35,737	36,396	37,138	37,509
10100401	644,505	802,600	960,695	1,013,393	1,000,566	994,152
10100405	133,305	166,004	198,704	209,603	206,950	205,624
10100501	4,562	6,821	9,079	9,832	7,368	6,136
10100505	4,454	6,659	8,864	9,599	7,193	5,990
10100601	601,590	630,057	658,523	668,012	738,020	773,024
10100602	57,916	60,657	63,397	64,311	71,051	74,421
10100604	1,199,800	1,256,573	1,313,347	1,332,271	1,471,893	1,541,705
10200202	2,370,969	2,423,547	2,476,124	2,493,650	2,499,693	2,502,714
10200203	6,244,607	6,383,085	6,521,563	6,567,722	6,583,637	6,591,595
10200204	270,437	276,434	282,431	284,430	285,119	285,464
10200205	411,807	420,939	430,071	433,115	434,165	434,689
10200206	1,355,017	1,385,065	1,415,114	1,425,130	1,428,583	1,430,310
10200401	1,655,404	1,805,694	1,955,985	2,006,081	2,008,347	2,009,480
10200402	715,232	780,166	845,101	866,745	867,724	868,214
10200501	74,378	74,713	75,048	75,160	74,260	73,810
10200502	37,949	38,120	38,291	38,348	37,889	37,659
10200503	6,088	6,116	6,143	6,152	6,078	6,042
10200504	165,591	166,337	167,082	167,331	165,327	164,325
10200601	2,363,292	2,418,581	2,473,871	2,492,301	2,535,260	2,556,739
10200602	2,045,277	2,093,127	2,140,976	2,156,926	2,194,104	2,212,693
10200603	142,374	145,705	149,035	150,146	152,734	154,028
10200704	909	838	767	743	703	682
10200707	109,477	100,932	92,387	89,539	84,630	82,176
10200799	194,145	198,159	202,173	203,512	204,189	204,528
10200802	108	110	112	112	113	113
10200901	168,375	179,145	189,915	193,505	196,568	198,100
10200902	5,625	5,985	6,345	6,465	6,567	6,618
10200903	9,257	9,849	10,441	10,638	10,807	10,891
10200905	115,374	122,754	130,133	132,593	134,692	135,742
10200906	3,400	3,617	3,835	3,907	3,969	4,000
10201002	4,261	4,138	4,014	3,972	3,997	4,009
10201301	86,385	91,910	97,436	99,278	100,849	101,635
10201302	11,286	11,480	11,674	11,739	11,817	11,856
10201401	15,946	16,319	16,692	16,816	17,106	17,251
10300203	4,698	4,795	4,892	4,924	4,903	4,892
10300206	404	412	421	423	422	421
10300209	255,528	260,797	266,067	267,823	266,666	266,087
10300401	1,690,125	1,630,884	1,571,642	1,551,895	1,575,734	1,587,653
10300402	852,146	822,277	792,408	782,451	794,470	800,480
10300501	42,865	44,207	45,550	45,997	46,411	46,618
10300502	30,464	31,418	32,372	32,690	32,984	33,131
10300503	5,369	5,537	5,706	5,762	5,813	5,839
10300504	6,546	6,751	6,956	7,025	7,088	7,119
10300601	1,477,498	1,484,178	1,490,859	1,493,085	1,517,629	1,529,900
10300602	861,022	864,915	868,808	870,105	884,408	891,559
10300603	144,078	144,729	145,381	145,598	147,991	149,188
10300701	83,357	85,532	87,706	88,431	90,120	90,965
10300901	34,800	34,720	34,640	34,614	34,614	34,614
10300902	48,002	47,892	47,782	47,745	47,745	47,745
10300903	24,269	24,213	24,158	24,139	24,139	24,139
10301002	1,172	1,195	1,219	1,227	1,240	1,246
10301302	11,529	11,754	11,980	12,055	12,171	12,229
10500105	12,769	12,903	13,036	13,081	13,048	13,032
10500106	185,901	190,251	194,600	196,050	199,429	201,118
10500110	12,326	11,967	11,609	11,490	11,561	11,596
10500113	26	27	27	27	28	28
10500205	2,241	2,311	2,382	2,405	2,427	2,437
10500206	31,574	31,717	31,860	31,907	32,432	32,694
10500209	4	4	4	4	4	4
10500210	323	329	336	338	341	343
10500214	72	73	75	75	76	76
20100101	14,564	21,774	28,984	31,388	23,521	19,588
20100102	200,485	299,732	398,979	432,061	323,780	269,639
20100201	515,644	540,044	564,444	572,577	632,583	662,586
20100202	553,404	579,591	605,777	614,506	678,906	711,107
20200101	4,205	4,224	4,243	4,249	4,199	4,173
20200102	1,162,539	1,167,774	1,173,009	1,174,754	1,160,686	1,153,653
20200103	86,664	87,054	87,444	87,574	86,526	86,001
20200104	12,033	12,087	12,141	12,159	12,014	11,941
20200201	347,812	355,949	364,086	366,799	373,121	376,282
20200202	2,496,879	2,555,294	2,613,709	2,633,181	2,678,568	2,701,261
20200203	501,233	512,960	524,686	528,595	537,706	542,262

Annual Point Source Nitrogen Oxides by SCC in lbs.

SCC	2002 Annual	2005 Annual	2008 Annual	2009 Annual	2011 Annual	2012 Annual
20200204	99,940	102,278	104,616	105,395	107,212	108,120
20200252	3,776	3,864	3,952	3,982	4,050	4,085
20200253	29,752	30,448	31,144	31,376	31,917	32,187
20200254	73,291	75,006	76,720	77,292	78,624	79,290
20200301	12,079	12,078	12,077	12,076	12,137	12,168
20200401	1,645,161	1,652,920	1,660,678	1,663,264	1,643,917	1,634,244
20200402	1,312,980	1,312,980	1,312,980	1,312,980	1,312,980	1,312,980
20201001	363	353	342	339	341	342
20201707	185	185	185	185	186	186
20300101	545,831	562,801	579,771	585,428	590,663	593,281
20300102	8,183	8,439	8,695	8,781	8,860	8,899
20300201	296,375	297,715	299,055	299,502	304,425	306,886
20300202	124,186	124,748	125,309	125,496	127,559	128,591
20300204	2,410	2,421	2,432	2,435	2,475	2,495
20300301	422	422	421	421	421	421
20300702	61,247	61,107	60,966	60,919	60,919	60,919
20300801	266,040	265,429	264,818	264,615	264,615	264,615
20300807	89,246	89,041	88,836	88,768	88,768	88,768
20301001	78	79	81	82	82	83
20400401	6,640	7,212	7,783	7,973	8,371	8,569
30100899	112	126	140	145	153	157
30101809	0	0	0	0	0	0
30101814	36	40	45	46	49	51
30102499	4,289	4,825	5,361	5,539	5,863	6,025
30103499	3,059	3,023	2,987	2,975	3,025	3,049
30106008	531	631	732	765	820	847
30106011	171	203	235	246	264	272
30190004	7,276	8,185	9,094	9,397	9,946	10,221
30190013	1,110	1,107	1,104	1,103	1,124	1,134
30199999	1,064,644	1,196,613	1,328,583	1,372,573	1,454,816	1,495,938
30290003	742	758	773	778	798	808
30300101	18,598	19,813	21,029	21,434	22,490	23,018
30300102	17,815	18,979	20,143	20,531	21,543	22,049
30300105	37,580	40,036	42,491	43,310	45,444	46,510
30300331	197,022	193,551	190,080	188,923	193,820	196,269
30300503	36,865	39,274	41,683	42,486	44,579	45,625
30300702	428,976	421,419	413,861	411,342	422,004	427,336
30300910	23,214	22,805	22,396	22,260	22,837	23,125
30300933	147,332	144,736	142,141	141,275	144,938	146,769
30300934	532	523	513	510	523	530
30300936	2,109	2,072	2,035	2,022	2,075	2,101
30300998	53	52	51	51	52	53
30390003	5,650	5,557	5,463	5,432	5,317	5,260
30400101	1,807	2,111	2,416	2,517	2,687	2,772
30400102	134	156	179	186	199	205
30400103	11,473	13,405	15,337	15,981	17,062	17,602
30400108	1,066	1,246	1,425	1,485	1,585	1,635
30400109	39,874	46,589	53,304	55,542	59,298	61,175
30400112	24,234	28,315	32,396	33,756	36,039	37,180
30400114	372	404	435	445	470	483
30400115	45,835	53,554	61,272	63,845	68,162	70,321
30400301	3,917	4,378	4,838	4,992	5,299	5,453
30400320	75	83	92	95	101	104
30400402	497,518	581,301	665,083	693,011	739,870	763,300
30400414	94,472	110,381	126,290	131,593	140,491	144,940
30400499	14,990	17,514	20,039	20,880	22,292	22,998
30400732	95,233	106,437	117,641	121,375	128,845	132,579
30400740	21,878	24,452	27,026	27,884	29,600	30,458
30490003	50,038	52,134	54,229	54,928	56,614	57,457
30500205	6,786	7,470	8,155	8,383	8,884	9,135
30500251	22,201	24,440	26,678	27,425	29,066	29,887
30500503	12,000	11,916	11,832	11,804	11,982	12,071
30500606	1,489,172	1,637,614	1,786,056	1,835,537	1,924,685	1,969,259
30500613	3,159	3,474	3,789	3,894	4,083	4,177
30500706	16,995,572	18,148,402	19,301,235	19,685,512	20,337,620	20,663,675
30500899	19,805	19,666	19,528	19,481	19,776	19,923
30500915	503,534	500,007	496,479	495,304	502,786	506,527
30501202	120,010	119,169	118,328	118,048	119,831	120,723
30501204	135,972	135,019	134,067	133,749	135,770	136,780
30501205	927	920	914	912	926	932
30501206	6,304	6,259	6,215	6,201	6,294	6,341
30501401	214,981	226,382	237,783	241,583	250,379	254,776
30501402	2,269,711	2,390,079	2,510,447	2,550,570	2,643,429	2,689,859

Annual Point Source Nitrogen Oxides by SCC in lbs.

SCC	2002 Annual	2005 Annual	2008 Annual	2009 Annual	2011 Annual	2012 Annual
30501403	1,547,532	1,629,601	1,711,670	1,739,027	1,802,340	1,833,997
30501416	114,681	120,763	126,845	128,872	133,564	135,910
30502021	1,119	1,209	1,299	1,329	1,390	1,421
30515002	18,232	18,104	17,977	17,934	18,205	18,340
30590001	1,400	1,434	1,469	1,480	1,466	1,460
30590003	1,260	1,311	1,361	1,378	1,377	1,377
30599999	200,844	215,158	229,472	234,243	244,869	250,182
30700106	29,410	30,174	30,939	31,194	32,183	32,678
30700110	563,073	577,708	592,344	597,222	616,165	625,637
30700718	1,960	2,058	2,156	2,188	2,250	2,281
30790003	10,920	10,728	10,535	10,471	10,545	10,582
30990003	896	970	1,044	1,069	1,109	1,130
31000412	13,778	12,079	10,380	9,814	9,795	9,786
31000414	7,939	8,257	8,576	8,682	8,678	8,675
31306599	1	1	1	1	1	1
31603002	182	178	174	172	172	171
31604002	2	2	2	2	2	2
31604003	53	52	51	50	50	50
31605001	91,762	89,659	87,556	86,855	86,548	86,395
31605003	9,001	8,795	8,588	8,520	8,490	8,475
31612001	7,126	6,963	6,799	6,745	6,721	6,709
31612002	80	78	76	76	75	75
31615001	55,132	53,868	52,605	52,184	52,000	51,907
31616002	11,890	11,618	11,345	11,254	11,214	11,195
31616003	100	98	95	95	94	94
31616004	1	1	1	1	1	1
39000289	9,198	9,089	8,980	8,944	8,644	8,495
39000489	62,291	67,946	73,602	75,487	75,572	75,615
39000589	11,539	11,591	11,643	11,660	11,521	11,451
39000689	1,453,498	1,487,503	1,521,508	1,532,843	1,559,263	1,572,474
39000699	5,370	5,496	5,621	5,663	5,761	5,810
39000798	273	279	284	286	287	288
39000889	355,263	341,084	326,905	322,179	303,683	294,435
39000989	22	23	25	25	26	26
39001089	13,732	13,333	12,934	12,801	12,880	12,920
39001099	6,637	6,444	6,251	6,187	6,225	6,244
39001399	139,838	148,783	157,727	160,709	163,253	164,525
39900601	18,910	19,702	20,494	20,758	21,395	21,714
39990003	15,178	15,814	16,450	16,662	17,173	17,429
39990004	40	42	43	44	45	46
39990014	13,300	13,946	14,592	14,807	15,225	15,434
39999989	10	12	14	15	16	16
39999994	15,010	18,256	21,503	22,585	23,882	24,531
39999995	115	140	165	174	184	189
40200701	9,020	10,559	12,098	12,611	13,580	14,065
40201001	7,193	7,361	7,530	7,586	7,716	7,782
40500301	2,350	2,353	2,356	2,357	2,412	2,439
40500401	2	2	2	2	2	2
40600131	8,200	8,184	8,169	8,164	8,102	8,072
50100102	4,237,350	4,356,967	4,476,584	4,516,456	4,661,929	4,734,667
50100103	343,620	342,831	342,042	341,779	341,779	341,779
50100104	1,634,714	1,680,861	1,727,007	1,742,389	1,798,511	1,826,572
50100105	898,012	923,362	948,712	957,162	987,992	1,003,407
50100106	254,222	261,398	268,575	270,967	279,695	284,059
50100410	150,579	150,234	149,888	149,773	149,773	149,773
50100421	374,949	374,088	373,227	372,940	372,940	372,940
50100505	11,985	12,176	12,367	12,431	12,417	12,410
50100515	83,588	85,948	88,307	89,094	91,963	93,398
50100789	52,536	54,019	55,502	55,996	57,800	58,702
50200101	52	56	60	62	64	66
50200504	31,184	31,682	32,179	32,345	32,308	32,290
50200505	2	2	2	2	2	2
50200515	15,822	17,101	18,379	18,806	19,557	19,933
50200601	38,992	38,903	38,813	38,783	38,783	38,783
50300112	457,540	527,389	597,239	620,522	664,375	686,302
50300501	133,113	153,434	173,756	180,529	193,288	199,667
50300503	4,518	5,208	5,897	6,127	6,560	6,777
50300506	86,960	100,236	113,511	117,936	126,271	130,439
50300701	69,954	80,633	91,313	94,873	101,577	104,930
50410560	799	822	844	852	879	893
STATEWIDE	**75,970,260**	**79,211,554**	**82,452,854**	**83,533,285**	**85,454,355**	**86,414,893**
state (tons)	37,985	39,606	41,226	41,767	42,727	43,207

Annual Point Source non-hazardous VOC by SCC in lbs.

SCC	2002 Annual	2005 Annual	2008 Annual	2009 Annual	2011 Annual	2012 Annual
10100205	296	314	333	339	346	349
10100401	9,555	11,899	14,242	15,024	14,833	14,738
10100405	664	827	990	1,044	1,031	1,024
10100501	29	43	57	62	47	39
10100505	147	220	293	318	238	198
10100601	12,247	12,827	13,407	13,600	15,025	15,738
10100602	2,804	2,937	3,070	3,114	3,440	3,604
10100604	66,141	69,271	72,400	73,444	81,141	84,989
10200202	13,079	13,369	13,659	13,755	13,789	13,805
10200203	42,007	42,939	43,870	44,181	44,288	44,341
10200205	2,300	2,351	2,402	2,419	2,425	2,428
10200206	132,445	135,382	138,319	139,298	139,636	139,805
10200401	12,904	14,076	15,247	15,638	15,656	15,664
10200402	3,744	4,084	4,424	4,537	4,542	4,545
10200501	959	963	968	969	957	952
10200502	379	381	383	383	379	377
10200503	61	61	61	62	61	60
10200504	705	708	711	712	704	699
10200601	50,423	51,603	52,783	53,176	54,093	54,551
10200602	77,309	79,118	80,926	81,529	82,935	83,637
10200603	7,822	8,005	8,188	8,249	8,392	8,463
10200704	65	60	55	53	50	49
10200707	724	667	611	592	560	543
10200799	1,756	1,792	1,829	1,841	1,847	1,850
10200802	4	4	4	4	4	4
10200901	3,801	4,044	4,287	4,368	4,437	4,472
10200902	390	415	440	448	455	459
10200903	642	683	724	738	749	755
10200905	1,053	1,120	1,187	1,210	1,229	1,238
10200906	6,920	7,363	7,805	7,953	8,079	8,142
10201002	67	65	63	63	63	63
10201301	1,113	1,184	1,256	1,279	1,300	1,310
10201302	589	599	610	613	617	619
10201401	319	326	334	336	342	345
10201403	0	0	0	0	0	0
10300203	15	16	16	16	16	16
10300206	51	52	53	53	53	53
10300401	41,978	40,506	39,035	38,544	39,137	39,433
10300402	18,176	17,539	16,902	16,689	16,946	17,074
10300501	547	564	581	587	592	595
10300502	486	501	516	522	526	529
10300503	91	94	97	98	99	99
10300504	111	115	118	119	120	121
10300601	44,952	45,156	45,359	45,427	46,173	46,547
10300602	40,000	40,181	40,362	40,422	41,087	41,419
10300603	5,095	5,118	5,141	5,148	5,233	5,275
10300701	5,325	5,464	5,603	5,649	5,757	5,811
10300901	25	25	25	25	25	25
10300902	2,501	2,495	2,489	2,488	2,488	2,488
10300903	0	0	0	0	0	0
10301002	25	26	26	26	27	27
10301302	607	619	631	634	641	644
10500105	77	78	79	79	79	80
10500106	10,150	10,388	10,625	10,704	10,889	10,981
10500110	193	188	182	180	181	182
10500113	2	2	2	2	2	2
10500205	87	90	93	94	94	95
10500206	1,662	1,670	1,677	1,680	1,707	1,721
10500209	7	7	7	7	7	7
10500210	7	7	7	7	7	7
10500214	6	6	7	7	7	7
20100101	5	7	10	11	8	7
20100102	13,332	19,931	26,531	28,731	21,530	17,930
20100106	68	102	135	147	110	91
20100201	6,326	6,625	6,925	7,025	7,761	8,129
20100202	88,698	92,895	97,092	98,491	108,813	113,974
20200101	0	0	0	0	0	0
20200102	23,237	23,342	23,446	23,481	23,200	23,060

Annual Point Source non-hazardous VOC by SCC in lbs.

SCC	2002 Annual	2005 Annual	2008 Annual	2009 Annual	2011 Annual	2012 Annual
20200103	40	40	40	41	40	40
20200104	624	627	630	631	623	620
20200106	31	31	31	31	31	31
20200201	1,913	1,958	2,003	2,018	2,053	2,070
20200202	297,805	304,772	311,739	314,062	319,475	322,182
20200203	2,783	2,848	2,913	2,935	2,985	3,011
20200204	13,438	13,753	14,067	14,172	14,416	14,538
20200252	377	386	395	398	405	408
20200253	1,211	1,239	1,268	1,277	1,299	1,310
20200254	4,041	4,135	4,230	4,261	4,335	4,372
20200301	8,751	8,751	8,750	8,749	8,794	8,816
20200401	57,552	57,823	58,095	58,185	57,508	57,169
20200402	198,442	198,442	198,442	198,442	198,442	198,442
20201001	217	211	204	202	204	204
20201707	1	1	1	1	1	1
20300101	64,449	66,457	68,465	69,134	69,753	70,063
20300102	0	0	0	0	0	0
20300201	37,940	38,112	38,283	38,340	38,971	39,286
20300202	2,750	2,762	2,775	2,779	2,825	2,847
20300204	602	605	608	609	619	624
20300301	786	785	784	784	783	783
20300702	10,940	10,914	10,889	10,881	10,881	10,881
20300801	6,677	6,662	6,647	6,642	6,642	6,642
20300807	32,228	32,154	32,080	32,055	32,055	32,055
20301001	46	47	48	49	49	49
20400401	9,635	10,464	11,293	11,569	12,146	12,434
30100899	6	7	7	8	8	8
30100908	1,559	1,754	1,949	2,013	2,131	2,190
30101401	48,480	53,868	59,256	61,052	64,365	66,021
30101402	100	112	125	129	136	140
30101404	10	11	12	12	13	13
30101805	87,504	98,435	109,367	113,011	119,615	122,918
30101808	233	262	291	300	318	327
30101809	80,995	91,113	101,232	104,604	110,718	113,774
30101810	1,241	1,396	1,551	1,603	1,696	1,743
30101811	1,657	1,864	2,071	2,140	2,265	2,328
30101814	6,979	7,851	8,723	9,014	9,540	9,804
30101817	596	670	745	770	815	837
30101818	33,554	37,746	41,938	43,335	45,867	47,134
30101819	49	55	61	63	67	69
30101822	14,374	16,169	17,965	18,563	19,648	20,191
30101847	25,711	28,923	32,135	33,206	35,146	36,117
30101852	21,392	24,064	26,737	27,628	29,242	30,050
30101860	2,080	2,340	2,600	2,686	2,843	2,922
30101891	1,736	1,953	2,170	2,242	2,373	2,439
30101892	286	322	357	369	391	402
30101893	59	66	74	76	81	83
30101894	52	58	65	67	71	73
30101899	4,389	4,937	5,486	5,668	6,000	6,165
30102499	10,280	11,564	12,848	13,277	14,052	14,440
30102630	79,638	89,587	99,536	102,852	108,863	111,869
30102699	11,835	13,314	14,792	15,285	16,178	16,625
30103499	2,617	2,586	2,555	2,545	2,588	2,609
30103553	6	7	7	8	8	8
30103554	915	904	893	890	905	912
30104005	370	416	462	478	506	520
30106002	1,299	1,544	1,790	1,872	2,005	2,071
30106004	18,558	22,070	25,582	26,753	28,649	29,598
30106008	14,854	17,665	20,476	21,413	22,931	23,690
30106009	46,817	55,676	64,536	67,489	72,274	74,667
30106010	819	974	1,129	1,181	1,264	1,306
30106011	26,175	31,128	36,081	37,733	40,408	41,746
30106012	1,188	1,413	1,638	1,713	1,835	1,895
30106099	301,389	358,422	415,456	434,467	465,273	480,676
30107002	27,261	30,667	34,072	35,207	37,265	38,294
30112199	705	697	688	686	697	703
30113299	1,046	1,034	1,021	1,017	1,034	1,043
30130101	948	1,066	1,185	1,224	1,296	1,332

Annual Point Source non-hazardous VOC by SCC in lbs.

SCC	2002 Annual	2005 Annual	2008 Annual	2009 Annual	2011 Annual	2012 Annual
30180001	989	1,112	1,234	1,275	1,351	1,390
30182001	1	1	1	1	1	1
30182002	22,024	24,754	27,485	28,395	30,096	30,947
30182003	18	21	23	24	25	26
30183001	22,108	24,850	27,592	28,505	30,211	31,063
30184001	494	556	618	639	676	695
30187097	1,182	1,329	1,475	1,524	1,615	1,661
30187098	48	47	47	46	47	48
30188801	7,670	8,628	9,586	9,906	10,485	10,774
30188805	1,841	2,069	2,297	2,373	2,516	2,587
30190004	226	255	283	292	309	318
30190013	62	62	62	62	63	63
30199999	50,820	57,120	63,419	65,519	69,445	71,408
30200903	118,152	118,661	119,171	119,340	119,755	119,963
30200911	72,893	73,207	73,521	73,626	73,882	74,010
30200912	16	16	16	16	16	16
30200999	32,114	32,252	32,391	32,437	32,550	32,606
30201501	73	74	75	76	77	78
30203201	84,345	85,580	86,816	87,228	88,174	88,648
30203202	59,015	59,981	60,947	61,270	62,574	63,227
30203299	2,619	2,657	2,696	2,709	2,738	2,753
30282001	9	9	9	9	9	9
30290003	15	15	15	16	16	16
30299998	36,939	37,544	38,149	38,350	39,167	39,575
30300102	167,131	178,052	188,973	192,614	202,103	206,848
30300105	6,443	6,864	7,285	7,425	7,791	7,974
30300199	434	462	491	500	525	537
30300312	3,415	3,355	3,295	3,275	3,359	3,402
30300331	29,634	29,112	28,590	28,416	29,152	29,521
30300399	1,972	1,937	1,903	1,891	1,940	1,964
30300503	1,526	1,626	1,725	1,759	1,845	1,889
30300702	74,980	73,659	72,338	71,898	73,761	74,693
30300910	204	200	197	196	201	203
30300912	21	21	20	20	21	21
30300933	615	604	593	590	605	613
30300934	757	744	730	726	745	754
30300935	5,414	5,319	5,223	5,191	5,326	5,393
30300936	24,258	23,831	23,403	23,261	23,864	24,165
30300998	232	228	224	222	228	231
30390003	48	47	46	46	45	45
30400101	275	321	368	383	409	422
30400102	197	230	263	274	293	302
30400103	5,125	5,989	6,852	7,139	7,622	7,864
30400108	22,001	25,706	29,411	30,646	32,718	33,754
30400109	12,878	15,047	17,215	17,938	19,151	19,758
30400112	19,947	23,306	26,665	27,785	29,664	30,603
30400114	5,214	5,651	6,088	6,234	6,584	6,758
30400115	6,426	7,508	8,590	8,951	9,556	9,859
30400131	10,838	12,663	14,488	15,097	16,117	16,628
30400132	42,407	49,548	56,690	59,070	63,064	65,061
30400150	103,657	113,370	123,082	126,320	133,521	137,122
30400199	2,480	2,898	3,315	3,454	3,688	3,805
30400299	1,379	1,611	1,843	1,921	2,051	2,116
30400301	97	109	120	124	132	136
30400320	1,046	1,169	1,292	1,333	1,415	1,456
30400331	8,964	10,019	11,073	11,425	12,128	12,479
30400732	85,710	95,794	105,877	109,238	115,961	119,322
30401002	9,658	10,289	10,920	11,130	11,679	11,953
30402003	3,336	3,973	4,609	4,821	5,213	5,409
30402004	75	89	104	108	117	122
30402005	140,963	167,859	194,756	203,721	220,284	228,565
30402201	180	210	241	251	268	276
30404901	174	189	203	208	220	226
30405099	3	3	4	4	4	4
30490003	1,573	1,639	1,705	1,727	1,780	1,806
30500205	829	913	997	1,025	1,086	1,117
30500212	1,690	1,860	2,031	2,088	2,213	2,275
30500251	3,297	3,629	3,961	4,072	4,316	4,438

Annual Point Source non-hazardous VOC by SCC in lbs.

SCC	2002 Annual	2005 Annual	2008 Annual	2009 Annual	2011 Annual	2012 Annual
30500606	15,781	17,354	18,927	19,451	20,396	20,869
30500613	32	35	38	39	41	42
30500706	132,462	141,447	150,432	153,427	158,510	161,051
30500899	20,372	20,229	20,087	20,039	20,342	20,493
30500915	206,714	205,266	203,818	203,335	206,407	207,943
30501202	2,797	2,778	2,758	2,752	2,793	2,814
30501204	7,420	7,368	7,316	7,299	7,409	7,464
30501205	64	63	63	62	63	64
30501206	462	459	456	455	462	465
30501299	2,981	3,139	3,297	3,350	3,472	3,533
30501402	51,595	54,331	57,068	57,980	60,091	61,146
30501403	8,539	8,992	9,445	9,596	9,945	10,120
30501406	11,658	12,276	12,895	13,101	13,578	13,816
30501520	11,245	11,414	11,583	11,640	11,932	12,078
30502021	90	98	105	107	112	115
30590001	14	14	15	15	15	15
30590003	25	26	27	28	28	28
30599999	2,679	2,870	3,061	3,125	3,266	3,337
30600503	173	183	194	197	204	208
30600508	1,495	1,586	1,676	1,706	1,767	1,797
30600701	793	841	889	905	937	953
30600801	1,361	1,444	1,526	1,554	1,609	1,636
30600811	1,041	1,104	1,167	1,188	1,230	1,251
30688801	1,378	1,461	1,545	1,573	1,628	1,656
30700105	86,947	89,207	91,467	92,220	95,145	96,608
30700106	5,692	5,840	5,988	6,037	6,229	6,324
30700110	86,936	89,196	91,455	92,208	95,133	96,596
30700115	143,665	147,399	151,133	152,378	157,211	159,628
30700122	43,950	45,092	46,235	46,615	48,094	48,833
30700199	123,140	126,341	129,541	130,608	134,751	136,822
30700401	12,202	12,519	12,836	12,942	13,353	13,558
30700405	149,776	153,669	157,562	158,860	163,898	166,418
30700718	12,720	13,355	13,989	14,201	14,604	14,806
30700727	4,300	4,515	4,729	4,801	4,937	5,005
30700896	9,561	10,294	11,026	11,270	11,687	11,896
30700925	106,809	111,513	116,217	117,785	121,826	123,846
30700960	24,650	25,736	26,821	27,183	28,116	28,582
30701399	198,908	210,191	221,474	225,235	234,475	239,095
30702099	235,135	248,139	261,143	265,477	280,015	287,284
30788801	11,062	11,565	12,068	12,236	12,724	12,968
30790003	218	215	211	209	211	212
30799998	33,676	35,208	36,740	37,250	38,736	39,479
30799999	25,326	26,478	27,630	28,014	29,131	29,690
30800106	1,319	1,486	1,654	1,710	1,799	1,844
30800113	85,398	96,238	107,078	110,692	116,494	119,395
30800114	4,128	4,652	5,176	5,350	5,631	5,771
30800115	8,283	9,334	10,385	10,736	11,298	11,580
30800123	58,651	66,096	73,541	76,022	80,007	81,999
30800127	8,624	9,718	10,813	11,178	11,764	12,057
30800131	7,419	8,360	9,302	9,616	10,120	10,372
30800501	41,567	46,843	52,119	53,878	56,702	58,114
30800699	331,450	373,337	415,225	429,187	453,966	466,356
30800703	11,280	12,706	14,131	14,606	15,450	15,871
30800704	5,993	6,751	7,508	7,760	8,208	8,432
30800705	945	1,064	1,183	1,223	1,294	1,329
30800722	193	217	242	250	264	272
30801002	162,993	183,591	204,190	211,056	223,241	229,334
30801005	125,028	140,829	156,630	161,896	171,244	175,917
30801007	10,771	12,132	13,493	13,946	14,752	15,154
30899999	312,600	352,105	391,610	404,778	428,148	439,833
30901099	4,175	4,602	5,029	5,171	5,452	5,593
30901102	22	27	32	34	37	38
30903007	56,374	62,136	67,898	69,819	73,617	75,516
30904200	71,795	79,133	86,471	88,917	93,755	96,174
30904300	13,790	15,199	16,609	17,079	18,008	18,473
30982599	25	28	30	31	33	33
30988801	9,128	10,061	10,994	11,305	11,920	12,227
30990003	18	19	21	21	22	23

Annual Point Source non-hazardous VOC by SCC in lbs.

SCC	2002 Annual	2005 Annual	2008 Annual	2009 Annual	2011 Annual	2012 Annual
30999999	1,358	1,497	1,636	1,682	1,773	1,819
31000207	57,104	60,171	63,238	64,260	66,916	68,244
31000227	729	768	807	820	854	871
31000412	70	61	53	50	50	50
31000414	159	165	172	174	174	174
31088801	85,848	90,459	95,070	96,607	100,600	102,596
31299999	3,524	4,301	5,078	5,337	5,697	5,876
31303001	12,308	15,322	18,336	19,341	21,411	22,446
31303501	1,279	1,547	1,814	1,904	2,087	2,178
31303502	7,595	9,185	10,775	11,305	12,390	12,933
31306500	0	0	0	0	0	0
31306501	1,460	1,739	2,017	2,110	2,282	2,367
31306505	668	796	923	966	1,044	1,083
31306599	80,318	99,989	119,659	126,215	139,722	146,475
31307001	2,890	3,441	3,993	4,177	4,516	4,686
31399999	61	73	84	88	95	99
31401101	17,453	18,496	19,538	19,886	20,742	21,170
31401503	52	55	58	59	62	63
31499999	379	418	456	469	496	509
31501001	2	2	2	2	2	2
31502001	9	9	9	9	9	9
31503001	80	91	103	107	113	116
31603001	155,683	152,115	148,547	147,358	146,838	146,577
31603002	35,454	34,641	33,829	33,558	33,440	33,380
31604001	219,566	214,534	209,502	207,825	207,091	206,724
31604002	921	900	879	872	869	867
31604003	3,064	2,994	2,924	2,900	2,890	2,885
31605001	161,134	157,441	153,748	152,517	151,979	151,710
31605002	109	107	104	103	103	103
31605003	12	12	11	11	11	11
31612001	321	314	306	304	303	302
31612002	109	107	104	103	103	103
31612003	39	38	37	37	37	37
31613001	2,634	2,574	2,513	2,493	2,484	2,480
31613002	583	570	556	552	550	549
31613004	24	23	23	23	23	23
31614001	96	94	92	91	91	90
31614002	28	27	27	27	26	26
31615001	50,362	49,208	48,054	47,669	47,501	47,416
31615003	21,404	20,913	20,423	20,259	20,188	20,152
31616002	2,004	1,958	1,912	1,897	1,890	1,887
31616003	38,605	37,720	36,836	36,541	36,412	36,347
31616004	1	1	1	1	1	1
33000212	1,014	1,109	1,204	1,236	1,289	1,315
33000214	2,246	2,457	2,667	2,738	2,855	2,913
33000297	38,851	42,495	46,139	47,354	49,381	50,395
38500101	1	1	1	1	1	1
39000289	717	709	700	697	674	662
39000489	208	227	246	252	252	253
39000589	116	116	117	117	116	115
39000689	129,636	132,668	135,701	136,712	139,069	140,247
39000699	295	302	309	311	317	320
39000798	10	10	10	10	11	11
39000989	45	48	51	52	53	53
39001089	286	277	269	266	268	269
39001399	10,348	11,010	11,672	11,892	12,081	12,175
39090001	87	95	103	105	106	106
39090002	51	56	60	62	62	62
39090003	288	289	290	291	287	285
39090004	10	10	10	11	10	10
39090005	261	285	308	316	317	317
39090011	4	4	4	4	4	4
39090012	462	462	462	462	462	462
39900601	915	953	991	1,004	1,035	1,050
39990003	1,810	1,886	1,962	1,987	2,048	2,078
39990004	37	39	40	41	42	43
39990013	59	61	64	65	67	68
39990014	533	559	585	593	610	619

Annual Point Source non-hazardous VOC by SCC in lbs.

SCC	2002 Annual	2005 Annual	2008 Annual	2009 Annual	2011 Annual	2012 Annual
39999989	97,320	118,368	139,415	146,431	154,844	159,050
39999992	46,535	56,599	66,663	70,018	74,041	76,052
39999993	12,000	14,595	17,191	18,056	19,093	19,612
39999994	692,347	842,084	991,820	1,041,732	1,101,581	1,131,505
39999995	3,719	4,523	5,327	5,595	5,917	6,078
39999996	2,200	2,676	3,152	3,310	3,500	3,595
39999999	29,429	35,793	42,158	44,279	46,823	48,095
40100251	316,016	359,691	403,366	417,925	440,897	452,384
40100295	7,810	8,889	9,969	10,328	10,896	11,180
40100296	176	200	225	233	246	252
40100298	2,218	2,525	2,831	2,933	3,094	3,175
40100299	1,155	1,315	1,474	1,527	1,611	1,653
40100335	5,571	6,341	7,111	7,368	7,773	7,975
40100336	3,069	3,493	3,917	4,059	4,282	4,393
40100398	11,038	12,563	14,089	14,597	15,400	15,801
40100399	14,726	16,761	18,796	19,475	20,545	21,081
40100501	860	850	840	836	850	857
40188898	31	35	40	41	43	44
40200101	23,592	27,617	31,643	32,985	35,519	36,786
40200110	73,874	86,479	99,084	103,286	111,221	115,188
40200201	27,602	32,312	37,022	38,592	41,556	43,039
40200210	56,076	65,645	75,213	78,403	84,426	87,437
40200301	18,271	21,389	24,506	25,546	27,508	28,489
40200401	302,372	353,967	405,563	422,761	455,239	471,478
40200501	24,850	29,090	33,331	34,744	37,413	38,748
40200510	17,347	20,307	23,267	24,254	26,117	27,049
40200601	15,478	17,228	18,978	19,561	20,732	21,317
40200701	35,807	41,916	48,026	50,063	53,909	55,832
40200706	3,624	4,243	4,861	5,067	5,457	5,651
40200710	1,030	1,206	1,382	1,440	1,551	1,606
40200711	248	291	333	347	374	387
40200712	442	492	542	559	592	609
40200801	202,218	236,723	271,229	282,731	304,451	315,311
40200803	38,257	44,210	50,163	52,148	55,940	57,835
40200810	4,756	5,568	6,379	6,650	7,161	7,416
40200842	77,153	85,445	93,738	96,502	101,238	103,605
40200843	243,381	269,540	295,700	304,419	319,357	326,826
40200898	4,195	4,669	5,144	5,302	5,619	5,777
40200998	901	1,055	1,208	1,260	1,357	1,405
40201001	396	405	414	417	424	428
40201101	1,674	1,863	2,052	2,115	2,242	2,305
40201103	3,566	3,715	3,865	3,915	4,038	4,099
40201122	67,940	67,271	66,601	66,378	68,461	69,502
40201201	1,199	1,187	1,175	1,171	1,208	1,227
40201301	1,006,487	1,064,209	1,121,931	1,141,172	1,188,225	1,211,751
40201303	14,072	14,885	15,698	15,969	16,630	16,961
40201310	45	50	55	57	60	62
40201330	807	942	1,077	1,122	1,207	1,250
40201399	23,443	24,788	26,133	26,581	27,678	28,227
40201401	1,655	1,842	2,029	2,092	2,217	2,279
40201432	13,550	15,082	16,614	17,125	18,149	18,661
40201435	36,479	36,479	36,479	36,479	37,626	38,200
40201601	1,093	1,217	1,340	1,381	1,464	1,505
40201607	3,517	3,915	4,313	4,445	4,711	4,844
40201620	84	93	103	106	113	116
40201699	943	1,050	1,157	1,192	1,264	1,299
40201721	30,110	33,346	36,583	37,661	39,509	40,433
40201722	109,773	121,572	133,370	137,303	144,041	147,409
40201725	29,020	32,139	35,259	36,298	38,080	38,970
40201727	83,830	92,840	101,851	104,854	109,999	112,572
40201799	53,825	59,911	65,996	68,025	72,095	74,130
40201899	7,611	8,471	9,332	9,619	10,194	10,482
40201901	992,694	1,068,048	1,143,402	1,168,520	1,237,329	1,271,734
40202201	7,132	8,042	8,951	9,254	9,794	10,063
40202203	1,006	1,133	1,260	1,303	1,378	1,415
40202220	37,298	42,012	46,725	48,296	51,085	52,479
40202230	11,225	12,644	14,062	14,535	15,374	15,794
40202299	2,323	2,617	2,910	3,008	3,182	3,269

Annual Point Source non-hazardous VOC by SCC in lbs.

SCC	2002 Annual	2005 Annual	2008 Annual	2009 Annual	2011 Annual	2012 Annual
40202501	84,228	103,459	122,690	129,100	140,399	146,048
40202502	217	267	316	333	362	376
40202503	8,122	9,972	11,823	12,439	13,527	14,071
40202521	36,207	44,483	52,759	55,517	60,379	62,809
40202537	5,895	7,182	8,468	8,897	9,658	10,038
40202544	10,850	13,330	15,810	16,637	18,093	18,822
40202599	15,545	19,033	22,522	23,684	25,740	26,769
40203001	20,144	23,582	27,019	28,165	30,329	31,410
40204004	25,005	27,832	30,659	31,601	33,492	34,437
40204161	163	170	177	179	184	187
40204321	12,006	12,505	13,005	13,171	13,583	13,789
40204330	44,015	45,845	47,676	48,286	49,797	50,552
40204340	279,630	291,258	302,886	306,762	316,360	321,159
40204435	16,686	17,380	18,074	18,305	18,878	19,164
40206031	13,774	13,638	13,503	13,457	13,880	14,091
40206034	506	501	496	494	510	518
40288805	14,005	16,395	18,784	19,581	21,085	21,837
40288821	36,982	43,292	49,603	51,706	55,679	57,665
40288822	20	23	27	28	30	31
40288824	1,461	1,710	1,960	2,043	2,200	2,278
40299995	604,656	710,515	816,375	851,662	917,838	950,926
40299996	15	17	18	19	20	21
40299998	8,089	9,469	10,850	11,310	12,178	12,613
40299999	106	124	142	148	160	165
40300302	14,135	14,991	15,846	16,132	16,703	16,989
40301002	526	558	590	600	622	632
40301007	168	178	188	192	198	202
40301008	0	0	0	0	0	0
40301016	112	119	125	128	132	134
40301017	620	658	695	708	733	745
40301018	67	71	76	77	80	81
40301019	51,955	55,100	58,245	59,294	61,396	62,446
40301020	4,799	5,090	5,380	5,477	5,671	5,768
40301021	4,365	4,630	4,894	4,982	5,159	5,247
40301025	1	1	1	1	1	1
40301028	670	711	751	765	792	805
40301075	142	151	159	162	168	171
40301097	15,701	16,652	17,602	17,919	18,554	18,872
40301098	6,850	7,264	7,679	7,817	8,094	8,233
40301099	12,072	12,803	13,534	13,777	14,266	14,510
40301120	101	107	113	115	119	121
40301151	50,934	54,017	57,101	58,129	60,189	61,219
40301197	360	382	404	411	425	433
40400102	2,756	2,923	3,090	3,145	3,257	3,313
40400107	101	107	113	115	119	121
40400109	878	931	984	1,002	1,038	1,055
40400110	12	13	13	14	14	14
40400111	109,741	116,384	123,028	125,242	129,682	131,902
40400114	85,328	90,494	95,659	97,381	100,833	102,559
40400116	2,320	2,460	2,601	2,648	2,741	2,788
40400117	63,771	67,631	71,492	72,778	75,358	76,648
40400121	265	281	297	302	313	319
40400122	3,520	3,733	3,946	4,017	4,160	4,231
40400150	26,405	28,004	29,602	30,135	31,203	31,737
40400151	130,107	137,984	145,860	148,485	153,749	156,381
40400152	14,813	15,710	16,606	16,905	17,505	17,804
40400153	47,200	50,057	52,914	53,867	55,776	56,731
40400154	152,807	162,058	171,308	174,392	180,574	183,665
40400160	611,535	648,556	685,577	697,917	722,658	735,028
40400179	75,969	80,568	85,167	86,700	89,773	91,310
40400199	1,238	1,313	1,388	1,413	1,463	1,488
40400204	191	190	190	190	188	188
40400250	359,849	381,634	403,418	410,679	425,237	432,516
40400251	23,493	24,915	26,337	26,811	27,762	28,237
40400253	1,607	1,704	1,801	1,834	1,899	1,931
40400254	0	0	0	0	0	0
40400301	4,557	4,890	5,222	5,332	5,574	5,695
40400302	3,701	3,969	4,237	4,327	4,522	4,620

Annual Point Source non-hazardous VOC by SCC in lbs.

SCC	2002 Annual	2005 Annual	2008 Annual	2009 Annual	2011 Annual	2012 Annual
40400401	73	73	73	73	72	72
40400404	233	233	232	232	230	229
40400408	318	337	356	363	376	382
40400413	2	2	2	2	2	2
40400414	4,246	4,336	4,426	4,457	4,368	4,324
40400497	4	4	4	4	4	4
40400498	76	80	85	86	90	91
40500101	4,319	4,186	4,053	4,008	4,065	4,093
40500212	43,355	42,018	40,680	40,234	40,802	41,085
40500301	511,361	512,017	512,673	512,892	524,761	530,695
40500311	1,131,039	1,096,148	1,061,256	1,049,626	1,064,428	1,071,829
40500312	21,548	20,883	20,219	19,997	20,279	20,420
40500316	1,477	1,431	1,386	1,371	1,390	1,400
40500401	145,397	141,019	136,641	135,181	137,118	138,086
40500411	93,282	90,415	87,547	86,591	87,815	88,427
40500415	21	20	20	19	20	20
40500431	14,121	13,685	13,249	13,104	13,289	13,382
40500511	769,093	745,367	721,641	713,733	723,798	728,831
40500597	13,401	13,417	13,434	13,439	13,750	13,906
40500599	8,915	8,927	8,939	8,943	9,150	9,254
40500701	1,257	1,259	1,260	1,261	1,290	1,305
40500801	258	250	242	240	243	245
40588801	206,600	206,881	207,163	207,257	212,057	214,457
40600101	85	85	85	85	84	84
40600131	40,355	40,279	40,203	40,177	39,875	39,724
40600135	456	466	475	478	469	464
40600140	2,533	2,538	2,544	2,545	2,521	2,508
40600141	21,594	21,553	21,512	21,499	21,337	21,256
40600163	1,112	1,110	1,108	1,107	1,099	1,094
40600232	48,481	51,416	54,351	55,329	57,290	58,271
40600234	111,112	117,838	124,565	126,807	131,302	133,550
40600251	5,271	5,590	5,909	6,016	6,229	6,336
40600301	2,488	2,485	2,482	2,481	2,461	2,452
40600302	105	105	105	105	104	103
40600306	5,707	5,828	5,950	5,990	5,872	5,813
40600307	14	14	14	14	14	14
40600401	1,399	1,397	1,394	1,393	1,383	1,377
40600402	35	35	35	35	35	35
40600602	18	18	18	18	18	18
40600603	1,190	1,187	1,185	1,184	1,175	1,171
40600706	2,189	2,185	2,181	2,179	2,163	2,155
40600707	1	1	1	1	1	1
40688801	134	142	150	153	158	161
40700809	127	126	124	124	126	127
40700810	25	25	24	24	25	25
40701607	11,000	10,871	10,741	10,698	10,877	10,966
40701613	1,781	1,760	1,739	1,732	1,761	1,776
40701614	113	112	110	110	112	113
40701698	1,000	988	976	973	989	997
40704405	85	84	83	83	84	85
40704406	144	142	141	140	142	144
40704497	3	3	3	3	3	3
40704498	6	6	6	6	6	6
40708098	40	39	39	38	39	39
40714697	124	123	121	121	123	124
40714698	2,640	2,609	2,578	2,568	2,611	2,632
40715812	4,522	4,469	4,416	4,398	4,471	4,508
40717613	1,008	996	984	980	997	1,005
40722097	21	21	21	20	21	21
40786099	2	2	2	2	2	2
40799997	86,248	85,234	84,220	83,882	85,280	85,979
40799998	1,580	1,561	1,543	1,537	1,562	1,575
40799999	4,151	4,102	4,053	4,037	4,104	4,138
49000101	7,106	7,023	6,939	6,911	7,027	7,084
49000201	759	750	741	738	750	757
49000405	5,641	6,302	6,963	7,183	7,581	7,780
49000599	328	324	320	319	324	327
49099998	35,398	34,982	34,565	34,426	35,000	35,287

Annual Point Source non-hazardous VOC by SCC in lbs.

SCC	2002 Annual	2005 Annual	2008 Annual	2009 Annual	2011 Annual	2012 Annual
49099999	391,898	387,289	382,680	381,144	387,499	390,676
50100102	40,915	42,070	43,225	43,610	45,014	45,717
50100103	8	8	8	8	8	8
50100104	3,713	3,818	3,923	3,958	4,085	4,149
50100105	0	0	0	0	0	0
50100106	17,755	18,256	18,757	18,924	19,534	19,839
50100402	257,165	264,063	270,960	273,259	281,681	285,892
50100403	32,351	33,111	33,871	34,125	35,063	35,532
50100404	3,430	3,422	3,414	3,411	3,411	3,411
50100405	6,823	7,016	7,209	7,273	7,507	7,624
50100406	9,583	9,854	10,124	10,214	10,543	10,708
50100410	14,971	14,936	14,902	14,890	14,890	14,890
50100421	68,965	68,807	68,648	68,595	68,595	68,595
50100422	1,088	1,119	1,149	1,160	1,197	1,216
50100505	243	247	250	252	251	251
50100701	499	513	527	532	549	558
50100707	30	31	32	32	33	34
50100720	33	34	35	35	36	37
50100731	229	235	242	244	252	256
50100740	704	724	744	750	775	787
50100760	10	10	11	11	11	11
50100771	40	41	42	43	44	45
50100781	20	21	21	21	22	22
50100789	4,890	5,028	5,166	5,212	5,380	5,464
50100799	8,460	8,699	8,938	9,017	9,308	9,453
50200101	52	56	60	62	64	66
50200504	1,614	1,640	1,665	1,674	1,672	1,671
50200515	5,063	5,472	5,881	6,018	6,258	6,378
50200601	10,070	10,047	10,024	10,016	10,016	10,016
50200602	103,575	107,747	111,918	113,309	115,828	117,087
50200603	64,642	64,494	64,345	64,296	64,296	64,296
50200610	844	842	840	840	840	840
50300112	338	390	442	459	491	508
50300501	392	452	512	532	569	588
50300503	11	13	14	15	16	16
50300506	6,708	7,732	8,756	9,097	9,740	10,062
50300701	1,865	2,150	2,434	2,529	2,708	2,797
50300702	8,969	10,338	11,707	12,164	13,024	13,453
50300801	1,174	1,353	1,532	1,592	1,705	1,761
50300820	850	979	1,109	1,152	1,234	1,275
50300830	31	36	40	42	45	46
50300899	4	5	5	5	6	6
50382501	56	65	73	76	82	84
50410405	1,567	1,611	1,655	1,670	1,724	1,751
50410420	0	0	0	1	1	1
50410560	116	119	123	124	128	130
50410621	5	5	5	5	6	6
68240030	23,547	23,495	23,442	23,425	23,388	23,370
STATEWIDE	**20,551,532**	**21,918,311**	**23,285,093**	**23,740,686**	**24,732,834**	**25,228,909**
state(tons)	10,276	10,959	11,643	11,870	12,366	12,614

Annual Point Source HAPs VOC by SCC in lbs.

SCC	2002 Annual	2005 Annual	2008 Annual	2009 Annual	2011 Annual	2012 Annual
10100205	0.6	0.6	0.7	0.7	0.7	0.7
10100401	541.1	673.8	806.6	850.8	840.1	834.7
10100405	1,076.3	1,340.3	1,604.3	1,692.3	1,670.9	1,660.2
10100501	9.2	13.7	18.3	19.8	14.8	12.4
10100601	3,656.3	3,829.3	4,002.3	4,060.0	4,485.5	4,698.2
10100602	837.2	876.8	916.5	929.7	1,027.1	1,075.8
10100604	19,745.4	20,679.7	21,614.1	21,925.5	24,223.3	25,372.2
10200204	4.9	5.0	5.1	5.2	5.2	5.2
10200401	2,354.3	2,568.0	2,781.8	2,853.0	2,856.3	2,857.9
10200501	167.1	167.8	168.6	168.8	166.8	165.8
10200601	14,286.5	14,620.8	14,955.0	15,066.4	15,326.1	15,456.0
10200602	21,971.6	22,485.6	22,999.7	23,171.0	23,570.4	23,770.1
10200799	1.1	1.1	1.1	1.1	1.1	1.1
10200901	356.8	379.6	402.5	410.1	416.6	419.8
10200902	60.0	63.8	67.7	68.9	70.0	70.6
10200903	98.7	105.0	111.3	113.4	115.2	116.1
10200905	161.9	172.3	182.6	186.1	189.0	190.5
10200906	80.0	85.1	90.2	91.9	93.4	94.1
10201302	4.8	4.8	4.9	4.9	5.0	5.0
10300209	1,130.0	1,153.3	1,176.6	1,184.4	1,179.3	1,176.7
10300401	1,640.5	1,583.0	1,525.5	1,506.3	1,529.5	1,541.0
10300501	95.9	98.9	101.9	102.9	103.9	104.3
10300502	4.4	4.5	4.6	4.7	4.7	4.7
10300601	13,420.0	13,480.7	13,541.4	13,561.6	13,784.6	13,896.0
10300602	11,941.9	11,995.9	12,049.9	12,067.9	12,266.2	12,365.4
10300603	1,427.6	1,434.1	1,440.5	1,442.7	1,466.4	1,478.2
10300701	5.0	5.2	5.3	5.3	5.4	5.5
10300901	47.6	47.5	47.4	47.4	47.4	47.4
10300902	335.6	334.8	334.1	333.8	333.8	333.8
10300903	643.8	642.3	640.9	640.4	640.4	640.4
10500105	51.2	51.4	51.6	51.7	51.1	50.8
10500113	0.0	0.0	0.0	0.0	0.0	0.0
10500214	0.2	0.2	0.2	0.2	0.2	0.2
20100101	1.8	2.7	3.6	3.9	2.9	2.4
20100102	152.1	227.3	302.6	327.7	245.6	204.5
20100201	8.8	9.2	9.6	9.7	10.7	11.2
20200101	1.8	1.9	1.9	1.9	1.8	1.8
20200102	576.0	578.6	581.2	582.1	575.1	571.6
20200103	0.3	0.3	0.3	0.3	0.3	0.3
20200104	55.3	55.5	55.8	55.9	55.2	54.9
20200201	1,402.4	1,435.2	1,468.0	1,479.0	1,504.4	1,517.2
20200203	489.7	501.2	512.7	516.5	525.4	529.8
20200252	639.4	654.4	669.3	674.3	685.9	691.8
20200253	601.6	615.7	629.8	634.5	645.4	650.9
20200254	6,165.1	6,309.3	6,453.5	6,501.6	6,613.7	6,669.7
20200401	1,236.0	1,241.8	1,247.6	1,249.5	1,234.9	1,227.6
20200402	12,636.7	12,636.7	12,636.7	12,636.7	12,636.7	12,636.7
20300101	5.0	5.1	5.3	5.3	5.4	5.4
20300102	3.6	3.7	3.8	3.9	3.9	3.9
20300702	1.4	1.4	1.4	1.4	1.4	1.4
20300801	85.6	85.4	85.2	85.2	85.2	85.2
30101401	33,040.1	36,565.4	40,090.7	41,265.8	43,447.8	44,538.9
30101805	267,865.8	301,329.4	334,793.1	345,947.6	366,165.6	376,274.6
30101808	3,811.0	4,287.1	4,763.2	4,921.9	5,209.5	5,353.4
30101809	1.0	1.1	1.2	1.3	1.4	1.4
30101810	622.0	699.7	777.4	803.3	850.3	873.7
30101811	3,656.0	4,112.7	4,569.5	4,721.7	4,997.7	5,135.6
30101817	9,433.0	10,611.4	11,789.9	12,182.7	12,894.7	13,250.7
30101818	1,486.0	1,671.6	1,857.3	1,919.2	2,031.3	2,087.4
30101819	66.0	74.2	82.5	85.2	90.2	92.7
30101821	235.0	264.4	293.7	303.5	321.2	330.1
30101822	131,955.0	148,439.7	164,924.5	170,419.4	180,379.0	185,358.9
30101847	28,318.0	31,855.7	35,393.4	36,572.6	38,710.0	39,778.7
30101860	693.0	779.6	866.1	895.0	947.3	973.5
30101891	34,774.0	39,118.2	43,462.4	44,910.5	47,535.2	48,847.5
30101892	1.0	1.1	1.2	1.3	1.4	1.4
30101893	288.0	324.0	360.0	372.0	393.7	404.6
30101894	5,354.0	6,022.9	6,691.7	6,914.7	7,318.8	7,520.8

Annual Point Source HAPs VOC by SCC in lbs.

SCC	2002 Annual	2005 Annual	2008 Annual	2009 Annual	2011 Annual	2012 Annual
30101899	40,235.0	45,261.4	50,287.9	51,963.3	55,000.2	56,518.6
30102499	9,025.0	10,152.5	11,279.9	11,655.8	12,336.9	12,677.5
30102630	169,132.0	190,261.1	211,390.3	218,433.3	231,199.0	237,581.9
30102699	2,670.0	3,003.6	3,337.1	3,448.3	3,649.8	3,750.6
30103499	53.0	52.4	51.8	51.5	52.4	52.8
30106002	327.8	389.8	451.8	472.5	506.0	522.8
30106004	531.0	631.5	732.0	765.5	819.7	846.9
30106008	2,863.4	3,405.3	3,947.2	4,127.8	4,420.5	4,566.8
30106009	200.0	237.8	275.7	288.3	308.8	319.0
30106010	959.0	1,140.5	1,322.0	1,382.4	1,480.5	1,529.5
30106011	2,912.4	3,463.5	4,014.7	4,198.4	4,496.1	4,644.9
30106099	140,052.9	166,555.8	193,058.7	201,893.1	216,208.3	223,366.0
30107002	504.0	567.0	629.9	650.9	689.0	708.0
30112199	14,016.0	13,851.2	13,686.3	13,631.4	13,858.7	13,972.3
30113299	205.0	202.6	200.2	199.4	202.7	204.4
30117401	28.3	31.8	35.3	36.5	38.6	39.7
30130101	2,265.0	2,548.0	2,830.9	2,925.2	3,096.2	3,181.7
30180001	22.0	24.7	27.5	28.4	30.1	30.9
30182001	0.9	1.0	1.2	1.2	1.3	1.3
30182002	88,910.0	99,931.0	110,952.0	114,625.6	121,493.8	124,928.0
30182003	35.0	39.3	43.7	45.1	47.8	49.2
30183001	5,848.3	6,574.3	7,300.4	7,542.4	7,992.2	8,217.1
30184001	201.1	226.2	251.3	259.7	274.9	282.5
30187001	1,590.0	1,571.3	1,552.6	1,546.4	1,572.2	1,585.0
30188801	1,353.0	1,522.0	1,691.1	1,747.4	1,849.5	1,900.6
30188805	81,460.0	91,557.5	101,655.0	105,020.8	111,313.6	114,459.9
30199999	45,550.7	51,197.0	56,843.3	58,725.4	62,244.1	64,003.5
30200734	14,806.0	15,048.4	15,290.8	15,371.6	15,699.0	15,862.7
30203201	660,689.3	670,368.6	680,047.9	683,274.3	690,689.9	694,397.7
30299998	75,882.0	77,124.4	78,366.8	78,780.9	80,458.7	81,297.6
30300102	68,660.0	73,146.6	77,633.2	79,128.7	83,027.0	84,976.2
30300199	56.0	59.7	63.3	64.5	67.7	69.3
30300331	2,616.0	2,569.9	2,523.8	2,508.5	2,573.5	2,606.0
30300341	1,216.0	1,194.6	1,173.2	1,166.0	1,196.2	1,211.4
30300361	6.0	5.9	5.8	5.8	5.9	6.0
30300934	1.0	1.0	1.0	1.0	1.0	1.0
30400103	367.4	429.3	491.1	511.8	546.4	563.7
30400108	377.9	441.5	505.2	526.4	562.0	579.8
30400109	65.0	75.9	86.9	90.5	96.7	99.7
30400112	1,200.0	1,402.1	1,604.2	1,671.5	1,784.5	1,841.1
30400115	8,955.0	10,463.0	11,971.1	12,473.7	13,317.2	13,738.9
30400132	504.0	588.9	673.7	702.0	749.5	773.2
30400299	164.0	191.6	219.2	228.4	243.9	251.6
30400320	41.3	46.2	51.0	52.7	55.9	57.5
30400331	354.1	395.8	437.4	451.3	479.1	493.0
30401002	10,687.2	11,385.5	12,083.9	12,316.7	12,923.5	13,226.9
30402004	5,434.0	6,470.8	7,507.7	7,853.3	8,491.8	8,811.0
30402005	619.0	737.1	855.2	894.6	967.3	1,003.7
30500212	92.5	101.8	111.1	114.2	121.1	124.5
30500251	3,827.6	4,213.6	4,599.5	4,728.2	5,011.2	5,152.6
30501204	93,226.9	92,573.8	91,920.8	91,703.1	93,088.4	93,781.0
30501205	658.2	653.6	649.0	647.4	657.2	662.1
30501206	7,400.3	7,348.5	7,296.6	7,279.3	7,389.3	7,444.3
30501299	301.1	317.1	333.0	338.4	350.7	356.8
30501406	879.0	925.6	972.2	987.8	1,023.7	1,041.7
30501420	106.0	107.6	109.2	109.7	112.5	113.9
30600508	239.0	253.5	267.9	272.8	282.4	287.3
30600811	116.8	123.9	130.9	133.3	138.0	140.4
30622401	407.0	431.6	456.3	464.5	481.0	489.2
30622404	315.0	334.1	353.1	359.5	372.2	378.6
30700105	608.0	623.8	639.6	644.9	665.3	675.6
30700106	4,742.0	4,865.3	4,988.5	5,029.6	5,189.1	5,268.9
30700110	6,458.0	6,625.9	6,793.7	6,849.7	7,066.9	7,175.6
30700115	34,722.0	35,624.5	36,527.0	36,827.8	37,995.9	38,580.0
30700122	80,875.0	82,977.1	85,079.2	85,779.9	88,500.7	89,861.1
30700199	47,646.0	48,884.4	50,122.8	50,535.6	52,138.5	52,940.0
30700401	407.0	417.6	428.2	431.7	445.4	452.2
30700406	9.0	9.4	9.9	10.0	10.3	10.5

Annual Point Source HAPs VOC by SCC in lbs.

SCC	2002 Annual	2005 Annual	2008 Annual	2009 Annual	2011 Annual	2012 Annual
30700718	520.0	545.9	571.9	580.5	597.0	605.3
30700727	20.0	21.0	22.0	22.3	23.0	23.3
30700896	543.0	584.6	626.2	640.1	663.8	675.6
30700925	168,552.0	175,975.1	183,398.2	185,872.6	192,249.2	195,437.6
30700960	48,352.0	50,481.4	52,610.9	53,320.7	55,150.0	56,064.6
30701199	138.0	144.9	151.8	154.1	158.4	160.6
30701399	84,606.1	89,405.3	94,204.6	95,804.4	99,734.5	101,699.5
30702099	5,314.8	5,608.7	5,902.6	6,000.6	6,329.2	6,493.5
30799998	146,790.0	153,467.3	160,144.7	162,370.4	168,845.5	172,083.1
30799999	0.0	0.0	0.0	0.0	0.0	0.0
30800113	4,242.8	4,781.4	5,319.9	5,499.4	5,787.7	5,931.8
30800114	486.6	548.4	610.1	630.7	663.8	680.3
30800115	1,776.0	2,001.4	2,226.9	2,302.0	2,422.7	2,483.0
30800127	2,827.0	3,185.8	3,544.7	3,664.3	3,856.4	3,952.4
30800131	1,343.3	1,513.8	1,684.3	1,741.2	1,832.4	1,878.1
30800501	12,712.2	14,325.8	15,939.4	16,477.3	17,340.9	17,772.8
30800699	337,763.2	380,448.3	423,133.4	437,361.8	462,613.0	475,238.6
30800702	518.1	583.6	649.1	670.9	709.6	729.0
30800703	13,930.0	15,690.4	17,450.8	18,037.6	19,079.0	19,599.7
30800704	354.8	399.6	444.4	459.4	485.9	499.2
30800721	1,595.9	1,797.6	1,999.3	2,066.5	2,185.9	2,245.5
30800722	9,236.8	10,404.1	11,571.4	11,960.5	12,651.0	12,996.3
30800723	1,988.0	2,239.2	2,490.4	2,574.2	2,722.8	2,797.1
30800724	22,040.4	24,825.8	27,611.1	28,539.6	30,187.3	31,011.2
30800736	518.0	583.5	648.9	670.7	709.5	728.8
30800799	38.2	43.0	47.8	49.4	52.3	53.7
30801002	208.5	234.8	261.2	270.0	285.6	293.4
30801005	977.1	1,100.6	1,224.1	1,265.2	1,338.3	1,374.8
30801007	30,326.0	34,158.5	37,990.9	39,268.4	41,535.6	42,669.2
30899999	657.7	740.8	823.9	851.6	900.8	925.4
30901001	29.4	32.4	35.4	36.4	38.3	39.3
30901042	9.4	10.4	11.3	11.6	12.3	12.6
30901052	937.0	1,032.8	1,128.5	1,160.5	1,223.6	1,255.2
30901099	13,904.0	15,325.2	16,746.3	17,220.0	18,156.9	18,625.3
30901101	376.0	461.9	547.9	576.5	627.0	652.3
30901102	304.0	373.5	443.0	466.1	506.9	527.4
30982599	3.0	3.3	3.6	3.7	3.9	4.0
30988801	511.0	563.2	615.5	632.9	667.3	684.5
31000227	348.0	366.7	385.4	391.6	407.8	415.9
31000302	48.8	51.4	54.0	54.9	57.2	58.3
31303001	754.0	938.7	1,123.3	1,184.9	1,311.7	1,375.1
31303501	66.0	79.8	93.6	98.2	107.7	112.4
31306500	0.0	0.0	0.0	0.0	0.0	0.0
31306501	40.0	47.6	55.3	57.8	62.5	64.9
31306505	12.6	15.0	17.4	18.2	19.6	20.4
31306599	14,426.5	17,959.5	21,492.6	22,670.3	25,096.3	26,309.3
31307001	70.0	83.4	96.7	101.2	109.4	113.5
31401503	52.0	55.1	58.2	59.2	61.8	63.1
31499999	113.0	124.5	136.0	139.8	147.7	151.7
31502001	3,750.3	3,756.7	3,761.6	3,761.6	3,758.2	3,758.2
31503001	188.5	215.6	242.6	251.6	265.9	273.1
31603001	3,175.0	3,102.2	3,029.5	3,005.2	2,994.6	2,989.3
31603002	103,063.0	100,701.0	98,339.0	97,551.7	97,207.3	97,035.1
31604001	120,538.0	117,775.5	115,013.1	114,092.2	113,689.4	113,488.0
31604002	1,216.0	1,188.1	1,160.3	1,151.0	1,146.9	1,144.9
31604003	2,732.0	2,669.4	2,606.8	2,585.9	2,576.8	2,572.2
31605001	82,253.0	80,367.9	78,482.9	77,854.5	77,579.6	77,442.2
31605002	101.0	98.7	96.4	95.6	95.3	95.1
31605003	158.0	154.4	150.8	149.6	149.0	148.8
31605004	3,484.0	3,404.2	3,324.3	3,297.7	3,286.0	3,280.2
31612001	165.0	161.2	157.4	156.2	155.6	155.3
31612002	297.0	290.2	283.4	281.1	280.1	279.6
31612003	3,373.0	3,295.7	3,218.4	3,192.6	3,181.4	3,175.7
31613001	377.0	368.4	359.7	356.8	355.6	355.0
31613002	393.0	384.0	375.0	372.0	370.7	370.0
31613004	130.0	127.0	124.0	123.0	122.6	122.4
31614001	16.0	15.6	15.3	15.1	15.1	15.1
31614002	33.0	32.2	31.5	31.2	31.1	31.1

Annual Point Source HAPs VOC by SCC in lbs.

SCC	2002 Annual	2005 Annual	2008 Annual	2009 Annual	2011 Annual	2012 Annual
31615001	3,981.0	3,889.8	3,798.5	3,768.1	3,754.8	3,748.2
31615003	21,879.0	21,377.6	20,876.2	20,709.0	20,635.9	20,599.3
31616002	1,040.0	1,016.2	992.3	984.4	980.9	979.2
31616003	61,547.0	60,136.5	58,725.9	58,255.8	58,050.1	57,947.2
31616004	81.0	79.1	77.3	76.7	76.4	76.3
33000104	13.0	12.9	12.7	12.7	13.1	13.3
33000212	9,974.0	10,909.5	11,845.0	12,156.8	12,677.3	12,937.5
33000214	6,319.0	6,911.7	7,504.4	7,701.9	8,031.7	8,196.5
33000297	306.0	334.7	363.4	373.0	388.9	396.9
39000689	1,808.8	1,851.1	1,893.4	1,907.5	1,940.4	1,956.9
39990003	2,302.0	2,398.4	2,494.8	2,527.0	2,604.5	2,643.3
39990014	748.0	784.3	820.7	832.8	856.3	868.0
39999989	7,985.0	9,711.9	11,438.9	12,014.5	12,704.8	13,049.9
39999992	40.4	49.1	57.8	60.8	64.2	66.0
39999993	55,516.0	67,522.6	79,529.3	83,531.5	88,330.4	90,729.9
39999994	575,359.8	699,794.8	824,230.0	865,708.3	915,443.9	940,311.7
39999998	9,843.9	11,972.9	14,101.9	14,811.6	15,662.5	16,088.0
39999999	15,349.7	18,669.4	21,989.2	23,095.8	24,422.6	25,086.1
40100204	1,252.0	1,425.0	1,598.1	1,655.7	1,746.8	1,792.3
40100205	74,071.0	84,308.0	94,545.1	97,957.4	103,341.9	106,034.2
40100222	39,240.0	44,663.2	50,086.4	51,894.1	54,746.6	56,172.9
40100501	320.0	316.2	312.5	311.2	316.4	319.0
40200101	9,141.6	10,701.4	12,261.3	12,781.2	13,763.1	14,254.1
40200110	20,821.8	24,374.7	27,927.6	29,111.9	31,348.4	32,466.6
40200201	2,198.1	2,573.2	2,948.3	3,073.3	3,309.4	3,427.4
40200210	180.0	210.7	241.4	251.7	271.0	280.7
40200301	1,959.0	2,293.3	2,627.5	2,739.0	2,949.4	3,054.6
40200401	18,034.2	21,111.5	24,188.8	25,214.5	27,151.6	28,120.1
40200501	11,280.0	13,204.8	15,129.5	15,771.1	16,982.7	17,588.5
40200510	4,666.0	5,462.2	6,258.4	6,523.8	7,024.9	7,275.5
40200701	51,467.9	60,250.1	69,032.4	71,959.8	77,488.0	80,252.1
40200706	2,435.0	2,850.5	3,266.0	3,404.5	3,666.0	3,796.8
40200707	1.0	1.2	1.3	1.4	1.5	1.6
40200710	11,530.0	13,497.4	15,464.9	16,120.7	17,359.1	17,978.3
40200711	76.0	89.0	101.9	106.2	114.4	118.5
40200801	43,014.0	50,353.7	57,693.4	60,139.9	64,760.1	67,070.1
40200803	3,305.0	3,678.7	4,052.3	4,176.9	4,426.8	4,551.7
40200810	226.0	264.5	303.1	315.9	340.2	352.3
40200842	25,781.5	28,552.5	31,323.6	32,247.3	33,829.6	34,620.8
40200843	3,800.4	4,208.9	4,617.4	4,753.5	4,986.8	5,103.4
40200898	8,020.0	8,926.7	9,833.5	10,135.7	10,742.1	11,045.3
40200998	627.0	734.0	841.0	876.6	944.0	977.7
40201101	22,003.1	24,490.7	26,978.4	27,807.6	29,471.3	30,303.2
40201103	379.0	420.8	462.5	476.5	502.4	515.3
40201122	11,782.0	11,665.9	11,549.8	11,511.2	11,872.3	12,052.9
40201201	148.0	146.5	145.1	144.6	149.1	151.4
40201301	73,029.1	77,726.1	82,423.2	83,988.9	87,666.9	89,505.9
40201303	923.6	1,018.7	1,113.9	1,145.6	1,210.6	1,243.1
40201310	14.0	15.6	17.2	17.7	18.8	19.3
40201330	101.1	108.5	116.0	118.5	124.1	126.9
40201399	737.0	803.0	869.1	891.1	937.8	961.2
40201401	219.0	243.8	268.5	276.8	293.3	301.6
40201432	1,899.0	2,113.7	2,328.4	2,400.0	2,543.6	2,615.3
40201435	4,400.0	4,400.0	4,400.0	4,400.0	4,538.4	4,607.5
40201601	21.9	24.4	26.9	27.7	29.3	30.2
40201607	753.7	838.9	924.2	952.6	1,009.6	1,038.1
40201620	0.4	0.5	0.5	0.5	0.6	0.6
40201699	30.4	33.8	37.3	38.4	40.7	41.9
40201721	5,176.7	5,733.1	6,289.6	6,475.0	6,792.7	6,951.6
40201722	8,424.0	9,329.4	10,234.9	10,536.7	11,053.7	11,312.2
40201725	4,323.8	4,788.5	5,253.3	5,408.2	5,673.5	5,806.2
40201727	15,222.0	16,858.1	18,494.2	19,039.6	19,973.8	20,441.0
40201799	10,159.6	11,308.3	12,456.9	12,839.8	13,608.0	13,992.1
40201901	80,179.1	87,839.5	95,499.8	98,053.3	104,101.7	107,125.9
40202201	6,390.0	7,197.5	8,005.1	8,274.3	8,752.0	8,990.8
40202203	904.0	1,018.2	1,132.5	1,170.6	1,238.2	1,271.9
40202220	19,583.0	22,057.8	24,532.6	25,357.6	26,821.6	27,553.6
40202299	227.2	255.9	284.7	294.2	311.2	319.7

Annual Point Source HAPs VOC by SCC in lbs.

SCC	2002 Annual	2005 Annual	2008 Annual	2009 Annual	2011 Annual	2012 Annual
40202501	7,359.7	9,041.4	10,723.1	11,283.7	12,271.6	12,765.5
40202502	43.0	52.8	62.7	65.9	71.7	74.6
40202503	122.9	143.9	164.8	171.8	185.0	191.6
40202521	2,010.0	2,469.4	2,928.9	3,082.0	3,351.9	3,486.8
40202537	200.1	228.6	257.1	266.6	284.7	293.7
40202544	894.9	1,099.4	1,304.0	1,372.1	1,492.3	1,552.4
40202599	14,569.5	17,377.7	20,186.0	21,122.0	22,813.3	23,658.9
40203001	826.6	967.6	1,108.6	1,155.7	1,244.4	1,288.8
40204004	5,903.0	6,570.4	7,237.8	7,460.2	7,906.6	8,129.8
40204161	32.0	33.3	34.7	35.1	36.2	36.8
40204330	127.0	132.3	137.6	139.3	143.7	145.9
40204340	4,605.0	4,796.5	4,988.0	5,051.8	5,209.9	5,288.9
40206031	58.0	57.4	56.9	56.7	58.4	59.3
40206034	18.0	17.8	17.6	17.6	18.1	18.4
40288824	0.1	0.2	0.2	0.2	0.2	0.2
40299995	170,977.0	205,969.5	240,962.1	252,626.2	273,679.1	284,205.6
40299998	179.0	209.5	240.1	250.3	269.5	279.1
40300302	3,162.0	3,353.4	3,544.8	3,608.6	3,736.6	3,800.5
40301016	1.7	1.8	1.9	1.9	2.0	2.0
40301017	85.8	91.0	96.2	97.9	101.4	103.1
40301018	68.9	73.1	77.3	78.6	81.4	82.8
40301019	4,466.0	4,736.4	5,006.7	5,096.8	5,277.5	5,367.9
40301020	471.6	500.1	528.7	538.2	557.3	566.8
40301021	354.2	375.6	397.1	404.2	418.6	425.7
40301097	409.3	434.1	458.9	467.1	483.7	492.0
40301098	128.6	136.4	144.2	146.8	152.0	154.6
40301099	533.4	565.7	598.0	608.8	630.4	641.2
40301120	1.0	1.0	1.1	1.1	1.2	1.2
40301151	3,087.0	3,273.9	3,460.8	3,523.1	3,647.9	3,710.4
40301197	19.4	20.6	21.7	22.1	22.9	23.3
40400110	13,188.9	13,987.3	14,785.7	15,051.9	15,585.4	15,852.2
40400111	9,901.8	10,501.2	11,100.6	11,300.4	11,701.0	11,901.3
40400114	39,273.7	41,651.2	44,028.8	44,821.3	46,410.1	47,204.6
40400116	420.1	445.5	470.9	479.4	496.4	504.9
40400117	10,590.2	11,231.3	11,872.4	12,086.1	12,514.5	12,728.8
40400121	3.7	3.9	4.1	4.2	4.3	4.4
40400122	84.8	90.0	95.1	96.8	100.3	102.0
40400150	6,872.1	7,288.1	7,704.2	7,842.8	8,120.9	8,259.9
40400151	5,927.4	6,286.3	6,645.1	6,764.7	7,004.5	7,124.4
40400152	11,640.0	12,344.7	13,049.3	13,284.2	13,755.1	13,990.6
40400153	1,956.0	2,074.4	2,192.8	2,232.3	2,311.4	2,351.0
40400154	12,454.7	13,208.7	13,962.6	14,214.0	14,717.8	14,969.8
40400160	56,794.5	60,232.6	63,670.8	64,816.9	67,114.6	68,263.4
40400179	6,732.2	7,139.7	7,547.3	7,683.1	7,955.5	8,091.7
40400199	11,428.3	12,120.2	12,812.0	13,042.6	13,505.0	13,736.1
40400250	69,739.0	73,960.8	78,182.6	79,589.9	82,411.2	83,821.9
40400251	2,867.4	3,040.9	3,214.5	3,272.4	3,388.4	3,446.4
40400253	246.5	261.4	276.3	281.3	291.3	296.2
40400254	11,785.5	12,498.9	13,212.4	13,450.2	13,927.0	14,165.4
40400301	20.2	21.7	23.1	23.6	24.7	25.2
40400302	16.0	17.2	18.3	18.7	19.6	20.0
40400401	80.0	79.8	79.7	79.6	79.0	78.7
40400498	3.1	3.3	3.5	3.6	3.7	3.8
40500101	38.0	36.8	35.7	35.3	35.8	36.0
40500212	1,339.0	1,297.7	1,256.4	1,242.6	1,260.1	1,268.9
40500301	3,697.8	3,702.7	3,707.6	3,709.2	3,795.1	3,838.0
40500311	32,934.0	31,918.0	30,902.0	30,563.4	30,994.4	31,209.9
40500312	79.0	76.6	74.1	73.3	74.3	74.9
40500401	7,456.8	7,226.7	6,996.7	6,920.0	7,017.6	7,066.4
40500431	12,941.9	12,542.6	12,143.4	12,010.3	12,179.7	12,264.3
40500511	292,704.0	283,674.4	274,644.7	271,634.9	275,465.6	277,380.9
40500701	204.0	204.3	204.6	204.6	209.4	211.8
40500801	0.7	0.7	0.6	0.6	0.6	0.7
40588801	1,776.0	1,778.4	1,780.8	1,781.6	1,822.9	1,843.5
40600131	1,428.5	1,425.7	1,423.0	1,422.1	1,411.5	1,406.1
40600135	407.8	416.5	425.1	428.0	419.6	415.3
40600140	302.0	301.5	301.1	300.9	298.6	297.4
40600141	2,992.0	2,986.3	2,980.7	2,978.8	2,956.4	2,945.2

Annual Point Source HAPs VOC by SCC in lbs.

SCC	2002 Annual	2005 Annual	2008 Annual	2009 Annual	2011 Annual	2012 Annual
40600163	41,270.2	41,192.1	41,114.0	41,088.0	40,779.1	40,624.6
40600232	8,258.0	8,757.9	9,257.8	9,424.5	9,758.6	9,925.6
40600234	87,962.4	93,287.4	98,612.4	100,387.4	103,946.0	105,725.4
40600251	228.5	242.3	256.2	260.8	270.0	274.6
40600301	2.0	2.0	2.1	2.1	2.1	2.0
40600302	17.9	17.9	17.8	17.8	17.7	17.6
40600306	412.1	420.9	429.6	432.6	424.0	419.7
40600307	2.4	2.4	2.4	2.4	2.4	2.3
40600401	7.6	7.6	7.6	7.6	7.5	7.5
40600402	1.7	1.7	1.7	1.7	1.7	1.7
40600602	2.9	2.9	2.9	2.9	2.8	2.8
40600603	70.7	70.5	70.4	70.4	69.8	69.6
40600706	502.0	501.1	500.1	499.8	496.0	494.1
40700815	573.0	566.3	559.5	557.3	566.6	571.2
40701613	123.0	121.6	120.1	119.6	121.6	122.6
40703202	1.7	1.6	1.6	1.6	1.6	1.6
40703601	302.3	298.7	295.2	294.0	298.9	301.3
40703620	2.0	2.0	2.0	1.9	2.0	2.0
40704420	1,119.0	1,105.8	1,092.7	1,088.3	1,106.4	1,115.5
40708098	37.6	37.1	36.7	36.5	37.2	37.5
40714697	7.0	6.9	6.8	6.8	6.9	7.0
40714698	2,315.0	2,287.8	2,260.6	2,251.5	2,289.0	2,307.8
40715812	5,307.0	5,244.6	5,182.2	5,161.4	5,247.4	5,290.5
40717613	34,353.0	33,949.0	33,545.0	33,410.4	33,967.4	34,245.9
40722097	217.0	214.4	211.9	211.0	214.6	216.3
40786099	21.5	21.2	21.0	20.9	21.3	21.4
40799997	9,881.2	9,765.0	9,648.8	9,610.1	9,770.3	9,850.4
40799998	100.1	99.0	97.8	97.4	99.0	99.8
49000201	375.0	370.6	366.2	364.7	370.8	373.8
49000202	4.0	4.0	3.9	3.9	4.0	4.0
49000599	138.0	136.3	134.7	134.2	136.4	137.5
49099999	139.0	137.4	135.7	135.2	137.4	138.6
50100102	449.7	462.4	475.1	479.3	494.7	502.4
50100104	3,406.0	3,502.2	3,598.3	3,630.4	3,747.3	3,805.8
50100105	169.6	174.4	179.2	180.8	186.6	189.5
50100106	10.9	11.2	11.5	11.6	12.0	12.2
50100402	50,741.7	51,996.9	53,252.1	53,670.5	55,213.2	55,984.6
50100403	2,435.6	2,430.0	2,424.4	2,422.5	2,422.5	2,422.5
50100404	337.8	337.1	336.3	336.0	336.0	336.0
50100410	500.5	499.3	498.2	497.8	497.8	497.8
50100421	625.4	624.0	622.5	622.0	622.0	622.0
50100505	0.8	0.8	0.8	0.8	0.8	0.8
50100707	209.0	214.9	220.8	222.8	229.9	233.5
50100720	474.0	487.4	500.8	505.2	521.5	529.6
50100731	5,237.0	5,384.8	5,532.7	5,582.0	5,761.7	5,851.6
50100740	3,965.0	4,076.9	4,188.9	4,226.2	4,362.3	4,430.4
50100760	77.0	79.2	81.3	82.1	84.7	86.0
50100771	164.0	168.6	173.3	174.8	180.4	183.2
50100781	80.0	82.3	84.5	85.3	88.0	89.4
50100799	81.0	83.3	85.6	86.3	89.1	90.5
50200504	67.6	68.6	69.7	70.1	70.0	70.0
50200505	1.8	1.8	1.9	1.9	1.9	1.9
50200507	1,252.0	1,249.1	1,246.3	1,245.3	1,245.3	1,245.3
50200602	14,078.6	15,216.5	16,354.5	16,733.9	17,402.4	17,736.6
50300112	316.3	364.6	412.9	429.0	459.3	474.5
50300503	5.0	5.8	6.5	6.8	7.3	7.5
50300701	128.0	147.5	167.1	173.6	185.9	192.0
50300702	891.0	1,027.0	1,163.0	1,208.4	1,293.8	1,336.5
50382501	66.7	76.9	87.1	90.5	96.9	100.1
50410405	2,167.0	2,228.2	2,289.3	2,309.7	2,384.1	2,421.3
50410420	28.4	29.2	30.0	30.3	31.2	31.7
50410560	240.0	246.8	253.5	255.8	264.0	268.2
64615012	21,435.0	21,471.2	21,499.3	21,499.3	21,480.0	21,480.0
68240030	89.9	89.7	89.5	89.4	89.3	89.2
68480001	48.8	51.8	54.7	55.7	57.7	58.7
STATEWIDE	**6,173,481**	**6,697,348**	**7,221,207**	**7,395,816**	**7,720,382**	**7,882,678**
state (tons)	3,087	3,349	3,611	3,698	3,860	3,941

Annual Area Source Carbon Monoxide by SCC in lbs.

strSCC	02 Annual	05 Annual	08 Annual	09 Annual	11 Annual	12 Annual
2101001000	0	0	0	0	0	0
2101002000	140,671	149,421	158,171	161,087	164,374	166,017
2101004000	67,131	100,363	133,595	144,673	108,415	90,286
2101005000	514,396	640,575	766,755	808,814	798,578	793,459
2101006000	35	37	39	40	43	45
2102001000	0	0	0	0	0	0
2102002000	681,514	696,627	711,740	716,778	718,515	719,384
2102004000	656,222	659,177	662,132	663,117	655,175	651,205
2102005000	57,225	62,420	67,616	69,347	69,425	69,464
2102006000	4,701,646	4,811,642	4,921,639	4,958,305	5,043,767	5,086,498
2102007000	280,852	272,689	264,527	261,807	263,428	264,239
2102008000	0	0	0	0	0	0
2102011000	59,933	57,705	55,478	54,735	56,139	56,840
2103001000	0	0	0	0	0	0
2103002000	14,085	14,375	14,666	14,762	14,699	14,667
2103004001	2,800,263	3,040,868	3,281,474	3,361,676	3,401,602	3,421,566
2103004002	4,812,392	5,225,885	5,639,378	5,777,209	5,845,824	5,880,132
2103005000	1,597,675	1,541,674	1,485,673	1,467,006	1,489,540	1,500,808
2103006000	5,593,660	5,618,951	5,644,243	5,652,673	5,745,591	5,792,051
2103007000	66,770	68,116	69,463	69,912	70,646	71,014
2103008000	8,234,052	8,215,144	8,196,236	8,189,934	8,189,934	8,189,934
2103011000	103,530	117,835	132,141	136,909	138,293	138,986
2104001000	0	0	0	0	0	0
2104002000	6,000	6,161	6,323	6,376	6,269	6,216
2104004000	6,667,290	6,674,357	6,681,423	6,683,779	6,675,773	6,671,770
2104006010	15,040,000	15,582,155	16,124,312	16,305,030	16,587,170	16,728,240
2104007000	382,402	388,775	395,148	397,273	415,573	424,723
2104008001	442,744,650	428,703,334	414,661,985	409,981,546	400,536,337	395,813,718
2104008052	144,777,150	140,185,651	135,594,141	134,063,641	130,975,065	129,430,773
2104008070	38,837,250	38,729,510	38,621,769	38,585,856	37,830,654	37,453,052
2104011000	344,820	452,298	559,776	595,602	595,442	595,362
2302002100	832,787	846,117	859,446	863,889	869,073	871,666
2302002200	2,935,866	2,982,859	3,029,852	3,045,516	3,063,790	3,072,927
2302003100	242,812	246,699	250,585	251,881	253,392	254,148
2610000100	2,581,877	2,592,450	2,603,023	2,606,547	2,611,679	2,614,245
2610000400	3,254,646	3,267,895	3,281,144	3,285,560	3,291,973	3,295,179
2610030000	10,170,758	10,210,144	10,249,531	10,262,660	10,281,286	10,290,599
2610040400	0	0	0	0	0	0
2810001000	10,306,205	10,306,205	10,306,205	10,306,205	10,306,205	10,306,205
2810015000	311,629	270,355	229,081	215,323	215,323	215,323
2810030000	2,755,446	2,968,740	3,182,034	3,253,132	3,318,568	3,351,286
STATEWIDE	**712,573,637**	**695,707,209**	**678,840,742**	**673,218,599**	**660,607,562**	**654,302,025**
State (tons)	356,287	347,854	339,420	336,609	330,304	327,151

Annual Area Source NOx by SCC in lbs.

strSCC	02 Annual	05 Annual	08 Annual	09 Annual	11 Annual	12 Annual
2101001000	-	-	-	-	-	-
2101002000	3,376,101	3,586,097	3,796,093	3,866,092	3,944,966	3,984,403
2101004000	322,228	481,742	641,257	694,428	520,394	433,376
2101005000	4,835,323	6,021,410	7,207,500	7,602,863	7,506,630	7,458,514
2101006000	79	83	86	87	97	102
2102001000	-	-	-	-	-	-
2102002000	16,356,341	15,325,637	14,294,931	13,951,363	13,985,171	14,002,075
2102004000	3,149,864	2,906,229	2,662,592	2,581,380	2,550,468	2,535,012
2102005000	537,912	533,947	529,982	528,660	529,257	529,555
2102006000	5,597,197	5,250,023	4,902,849	4,787,124	4,869,637	4,910,893
2102007000	1,638,301	1,466,985	1,295,669	1,238,564	1,246,234	1,250,069
2102008000	-	-	-	-	-	-
2102011000	287,677	265,726	243,774	236,457	242,520	245,552
2103001000	-	-	-	-	-	-
2103002000	873,248	814,766	756,284	736,789	733,605	732,013
2103004001	13,441,262	13,247,658	13,054,053	12,989,518	13,143,792	13,220,930
2103004002	22,359,114	22,037,059	21,715,003	21,607,651	21,864,282	21,992,598
2103005000	15,018,144	13,339,299	11,660,449	11,100,834	11,271,353	11,356,613
2103006000	27,968,301	25,732,750	23,497,194	22,752,010	23,126,005	23,313,003
2103007000	527,128	491,634	456,140	444,309	448,978	451,312
2103008000	296,668	283,340	270,013	265,570	265,570	265,570
2103011000	496,944	537,446	577,948	591,449	597,429	600,419
2104001000	-	-	-	-	-	-
2104002000	144,000	147,872	151,743	153,034	150,468	149,186
2104004000	32,002,992	32,036,911	32,070,829	32,082,136	32,043,711	32,024,499
2104006010	35,344,000	36,618,064	37,892,130	38,316,818	38,979,849	39,311,365
2104007000	2,817,696	2,864,655	2,911,614	2,927,267	3,062,113	3,129,536
2104008001	4,557,150	4,412,623	4,268,096	4,219,921	4,122,702	4,074,092
2104008052	2,337,000	2,262,884	2,188,767	2,164,062	2,114,206	2,089,278
2104008070	399,750	398,641	397,532	397,162	389,389	385,503
2104011000	1,655,136	2,171,029	2,686,923	2,858,887	2,858,119	2,857,735
2610000100	142,925	143,511	144,096	144,291	144,575	144,718
2610000400	116,237	116,710	117,183	117,341	117,570	117,684
2610030000	717,244	720,022	722,799	723,725	725,038	725,695
2610040400	-	-	-	-	-	-
2810001000	219,687	219,687	219,687	219,687	219,687	219,687
2810015000	6,685	5,800	4,915	4,620	4,620	4,620
2810030000	65,783	70,875	75,967	77,664	79,226	80,007
STATEWIDE	**197,608,119**	**194,511,112**	**191,414,098**	**190,381,762**	**191,857,661**	**192,595,613**
State (tons)	98,804	97,256	95,707	95,191	95,929	96,298

Annual Area Source VOC by SCC in lbs.

strSCC	02 Annual	05 Annual	08 Annual	09 Annual	11 Annual	12 Annual
2101001000	-	-	-	-	-	-
2101002000	16,881	17,930	18,980	19,330	19,725	19,922
2101004000	2,685	4,014	5,344	5,787	4,336	3,611
2101005000	78,188	97,367	116,547	122,940	121,384	120,607
2101006000	2	2	2	2	2	2
2102001000	-	-	-	-	-	-
2102002000	81,782	83,595	85,409	86,014	86,223	86,327
2102004000	26,249	26,367	26,485	26,525	26,207	26,049
2102005000	3,205	3,496	3,787	3,884	3,888	3,890
2102006000	307,846	315,048	322,250	324,651	330,247	333,044
2102007000	20,284	19,694	19,105	18,909	19,025	19,084
2102008000	-	-	-	-	-	-
2102011000	2,397	2,308	2,219	2,190	2,246	2,274
2103001000	-	-	-	-	-	-
2103002000	1,127	1,150	1,173	1,181	1,176	1,174
2103004001	190,418	206,779	223,140	228,594	231,309	232,667
2103004002	1,825,007	1,981,816	2,138,626	2,190,895	2,216,916	2,229,927
2103005000	361,075	348,418	335,762	331,543	336,636	339,183
2103006000	1,538,257	1,545,212	1,552,167	1,554,485	1,580,038	1,592,814
2103007000	17,571	17,925	18,280	18,398	18,591	18,688
2103008000	7,871	7,853	7,835	7,829	7,829	7,829
2103011000	7,040	8,013	8,985	9,310	9,404	9,451
2104002000	840	863	885	893	878	870
2104004000	453,376	453,856	454,336	454,496	453,953	453,681
2104006010	2,068,000	2,142,547	2,217,093	2,241,942	2,280,736	2,300,133
2104007000	60,379	61,386	62,392	62,727	65,617	67,062
2104008001	401,379,750	388,650,291	375,920,803	371,677,650	363,114,890	358,833,498
2104008052	15,774,750	15,274,466	14,774,180	14,607,419	14,270,891	14,102,626
2104008070	35,208,750	35,111,076	35,013,402	34,980,845	34,296,199	33,953,876
2104011000	23,448	30,756	38,065	40,501	40,490	40,485
2302002100	249,377	253,369	257,361	258,692	260,244	261,020
2302002200	897,493	911,858	926,223	931,011	936,599	939,392
2302003000	132,378	134,497	136,616	137,322	138,146	138,557
2302003100	117,585	119,467	121,349	121,976	122,708	123,074
2302003200	4,345	4,415	4,484	4,508	4,535	4,549
2302050000	6,559,158	6,655,252	6,751,345	6,783,376	6,856,996	6,893,806
2401001000	62,206,421	57,794,116	53,381,800	51,911,032	53,846,488	54,814,219
2401005000	27,778,422	24,283,440	20,788,450	19,623,456	20,468,189	20,890,557
2401008000	347,880	301,208	254,535	238,978	237,181	236,283
2401020000	8,425,557	8,891,528	9,357,501	9,512,825	10,033,743	10,294,203
2401050000	11,292,990	12,447,246	13,601,504	13,986,256	14,747,169	15,127,626
2401055000	5,091,861	7,359,414	9,626,973	10,382,824	11,603,678	12,214,106
2401060000	19,413,996	19,413,996	19,413,996	19,413,996	20,024,501	20,329,754
2401065000	31,722,448	32,582,189	33,441,932	33,728,513	34,053,011	34,215,261
2401070000	4,439	4,941	5,443	5,610	5,946	6,114
2401075000	1,720,552	1,794,627	1,868,702	1,893,393	1,973,921	2,014,185
2401080000	613,767	618,730	623,693	625,347	635,641	640,788
2415020000	344,817	259,266	173,715	145,198	153,097	157,047
2415025000	823,854	715,562	607,270	571,173	638,334	671,915
2415035000	128,021	96,232	64,444	53,848	56,911	58,443
2415045000	1,338,916	1,058,649	778,381	684,959	724,310	743,985
2415055000	7,479,434	5,486,922	3,494,407	2,830,236	2,930,291	2,980,318
2415060000	2,786,320	2,066,816	1,347,310	1,107,476	1,152,832	1,175,510
2420010055	6,845,520	6,799,803	6,754,085	6,738,846	6,850,159	6,905,816
2420020055	164,420	163,321	162,222	161,856	164,531	165,869
2425000000	23,796,856	23,829,278	23,861,700	23,872,507	24,425,418	24,701,874
2430000000	3,102,680	3,483,621	3,864,562	3,991,542	4,214,866	4,326,529

Annual Area Source VOC by SCC in lbs.

strSCC	02 Annual	05 Annual	08 Annual	09 Annual	11 Annual	12 Annual
2440020000	17,915,000	13,944,112	9,973,216	8,649,586	9,260,862	9,566,501
2460000000	150,195,049	140,977,323	131,759,575	128,687,000	129,277,799	129,573,200
2461022000	11,134,197	9,670,751	8,207,302	7,719,487	8,027,875	8,182,070
2461800000	4,263,900	4,270,326	4,276,753	4,278,895	4,279,036	4,279,106
2501011011	3,470,305	2,713,105	1,955,902	1,703,502	1,090,127	783,439
2501011012	29,967,706	23,428,926	16,890,130	14,710,537	9,413,762	6,765,366
2501011016	1,644,658	1,285,803	926,948	807,329	516,637	371,291
2501012011	330,934	258,486	186,039	161,890	103,526	74,344
2501012012	2,708,900	2,115,871	1,522,842	1,325,166	847,424	608,552
2501012016	7,012,429	5,477,279	3,942,125	3,430,409	2,193,695	1,575,336
2501060051	14,133,252	14,106,510	14,079,768	14,070,854	13,965,062	13,912,166
2501060052	22,264,713	22,222,584	22,180,456	22,166,413	21,999,755	21,916,425
2501060053	580,819	579,719	578,620	578,254	573,906	571,733
2501060100	31,671,337	24,957,127	18,242,901	16,004,831	13,308,615	11,960,502
2501060201	5,808,186	5,797,196	5,786,207	5,782,543	5,739,067	5,717,329
2501080050	666,766	744,059	821,352	847,117	895,055	919,025
2501080100	40,527	45,225	49,923	51,489	54,403	55,859
2505020120	14,683,726	15,572,640	16,461,556	16,757,861	17,351,905	17,648,928
2505030120	435,614	434,789	433,965	433,690	430,429	428,799
2610000100	645,469	648,113	650,756	651,637	652,920	653,561
2610000400	441,702	443,500	445,298	445,898	446,768	447,203
2610030000	503,012	504,959	506,907	507,556	508,478	508,938
2610040400	-	-	-	-	-	-
2630000000	393,480	404,588	415,696	419,399	432,906	439,660
2630020000	8,021,650	8,248,095	8,474,539	8,550,020	8,825,414	8,963,111
2640000000	1,504,940	1,547,423	1,589,906	1,604,067	1,655,734	1,681,567
2810001000	481,894	481,894	481,894	481,894	481,894	481,894
2810015000	14,665	12,723	10,780	10,133	10,133	10,133
2810030000	505,165	544,269	583,373	596,408	608,405	614,403
2830000000	169,750	169,750	169,750	169,750	169,750	169,750
2850000010	126,900	128,925	130,949	131,624	131,475	131,401
STATEWIDE	**1,014,583,329**	**965,678,066**	**916,772,688**	**900,470,934**	**890,051,098**	**884,841,164**
State (tons)	507,292	482,839	458,386	450,235	445,026	442,421

2002 NEW YORK ANNUAL CO EMISSIONS FROM AIRCRAFT, COMMERCIAL MARINE AND LOCOMOTIVE (TPY)

COUNTY	AIRCRAFT	COMMERCIAL MARINE	LOCOMOTIVE	TOTAL
ALBANY	206.75	265.77	83.44	555.96
ALLEGANY	0.00	0.00	9.17	9.17
BRONX	0.00	24.72	10.92	35.64
BROOME	7.42	0.00	32.93	40.35
CATTARAUGUS	0.00	0.00	17.93	17.93
CAYUGA	0.00	1.86	26.48	28.34
CHAUTAUQUA	2.03	6.15	160.14	168.32
CHEMUNG	5.75	0.00	15.40	21.15
CHENANGO	0.00	0.00	12.08	12.08
CLINTON	1.67	0.00	19.40	21.07
COLUMBIA	0.00	8.56	110.23	118.79
CORTLAND	0.00	0.00	4.98	4.98
DELAWARE	0.00	0.00	3.30	3.30
DUTCHESS	0.00	20.17	134.77	154.94
ERIE	248.41	93.49	245.61	587.51
ESSEX	0.00	0.00	23.78	23.78
FRANKLIN	1.90	46.86	9.37	58.13
FULTON	0.00	0.00	0.00	0.00
GENESEE	0.00	0.00	82.05	82.05
GREENE	0.00	8.56	23.45	32.01
HAMILTON	0.00	0.00	0.00	0.00
HERKIMER	0.00	0.00	54.57	54.57
JEFFERSON	3.01	48.38	64.10	115.49
KINGS	0.00	259.08	0.47	259.55
LEWIS	0.00	0.00	1.26	1.26
LIVINGSTON	0.00	0.00	12.80	12.80
MADISON	0.00	0.00	34.97	34.97
MONROE	164.60	7.30	112.16	284.06
MONTGOMERY	0.00	0.00	92.16	92.16
NASSAU	0.66	28.22	27.40	56.29
NEW YORK	3.08	186.44	7.75	197.27
NIAGARA	0.01	1.89	64.76	66.66
ONEIDA	0.02	5.43	69.12	74.57
ONONDAGA	145.30	0.00	117.64	262.94
ONTARIO	0.00	0.00	3.48	3.48
ORANGE	34.16	10.71	78.17	123.04
ORLEANS	0.00	1.86	0.30	2.16
OSWEGO	0.00	1.92	78.73	80.65
OTSEGO	0.00	0.00	25.13	25.13
PUTNAM	0.00	10.71	58.94	69.65
QUEENS	4089.80	278.59	11.67	4380.05
RENSSELAER	0.00	3.62	71.24	74.86
RICHMOND	0.00	380.89	0.00	380.89
ROCKLAND	0.00	0.09	30.73	30.82
ST LAWRENCE	2.89	46.86	87.37	137.12
SARATOGA	0.00	0.58	38.17	38.75
SCHENECTADY	0.01	0.00	66.06	66.07
SCHOHARIE	0.00	0.00	9.99	9.99
SCHUYLER	0.00	0.00	1.71	1.71
SENECA	0.00	0.00	0.21	0.21
STEUBEN	0.00	0.00	33.78	33.78
SUFFOLK	119.76	10.16	185.56	315.48
SULLIVAN	0.00	0.00	1.91	1.91
TIOGA	0.00	0.00	15.39	15.39
TOMPKINS	6.65	0.00	1.67	8.32
ULSTER	0.00	15.23	39.26	54.49
WARREN	0.00	0.00	1.02	1.02
WASHINGTON	0.00	0.00	25.85	25.85
WAYNE	0.00	4.27	80.78	85.05
WESTCHESTER	87.20	11.40	56.25	154.84
WYOMING	0.00	0.00	20.97	20.97
YATES	0.00	0.00	1.34	1.34
TOTAL	5131.07	1789.76	2710.27	9631.09

2002 NEW YORK ANNUAL NOx EMISSIONS FROM AIRCRAFT, COMMERCIAL MARINE AND LOCOMOTIVE (TPY)

COUNTY	AIRCRAFT	COMMERCIAL MARINE	LOCOMOTIVE	TOTAL
ALBANY	136.90	2016.54	747.93	2901.37
ALLEGANY	0.00	0.00	84.86	84.86
BRONX	0.00	184.70	100.53	285.23
BROOME	5.09	0.00	300.56	305.65
CATTARAUGUS	0.00	0.00	168.40	168.40
CAYUGA	0.00	14.15	241.91	256.06
CHAUTAUQUA	0.21	46.74	1434.78	1481.73
CHEMUNG	4.02	0.00	137.58	141.60
CHENANGO	0.00	0.00	113.97	113.97
CLINTON	0.18	0.00	175.70	175.88
COLUMBIA	0.00	65.15	1007.90	1073.05
CORTLAND	0.00	0.00	50.48	50.48
DELAWARE	0.00	0.00	30.01	30.01
DUTCHESS	0.00	153.54	1304.67	1458.21
ERIE	210.99	709.47	2207.18	3127.64
ESSEX	0.00	0.00	216.63	216.63
FRANKLIN	0.19	356.56	83.72	440.47
FULTON	0.00	0.00	0.00	0.00
GENESEE	0.00	0.00	744.99	744.99
GREENE	0.00	65.15	209.50	274.65
HAMILTON	0.00	0.00	0.00	0.00
HERKIMER	0.00	0.00	494.28	494.28
JEFFERSON	0.29	368.13	574.10	942.52
KINGS	0.00	1638.61	4.78	1643.39
LEWIS	0.00	0.00	12.78	12.78
LIVINGSTON	0.00	0.00	123.03	123.03
MADISON	0.00	0.00	322.15	322.15
MONROE	144.65	55.58	1015.17	1215.40
MONTGOMERY	0.00	0.00	833.72	833.72
NASSAU	0.46	220.96	278.06	499.48
NEW YORK	0.29	1163.29	78.64	1242.22
NIAGARA	0.01	14.40	592.37	606.78
ONEIDA	0.01	41.20	633.35	674.56
ONONDAGA	114.67	0.00	1068.97	1183.64
ONTARIO	0.00	0.00	35.04	35.04
ORANGE	15.54	81.51	757.82	854.87
ORLEANS	0.00	14.15	3.08	17.23
OSWEGO	0.00	14.57	703.29	717.86
OTSEGO	0.00	0.00	224.44	224.44
PUTNAM	0.00	81.51	35.04	116.55
QUEENS	4053.35	1960.24	106.40	6119.99
RENSSELAER	0.00	27.53	658.76	686.29
RICHMOND	0.00	2292.44	0.00	2292.44
ROCKLAND	0.00	0.70	283.33	284.03
ST LAWRENCE	0.27	356.56	782.12	1138.95
SARATOGA	0.00	4.43	345.38	349.81
SCHENECTADY	0.00	0.00	594.81	594.81
SCHOHARIE	0.00	0.00	89.20	89.20
SCHUYLER	0.00	0.00	16.31	16.31
SENECA	0.00	0.00	2.14	2.14
STEUBEN	0.00	0.00	304.90	304.90
SUFFOLK	102.76	81.04	1883.49	2067.29
SULLIVAN	0.00	0.00	17.63	17.63
TIOGA	0.00	0.00	137.60	137.60
TOMPKINS	3.86	0.00	14.94	18.80
ULSTER	0.00	115.92	350.72	466.64
WARREN	0.00	0.00	9.09	9.09
WASHINGTON	0.00	0.00	236.68	236.68
WAYNE	0.00	32.45	731.65	764.10
WESTCHESTER	53.27	89.24	570.91	713.42
WYOMING	0.00	0.00	192.10	192.10
YATES	0.00	0.00	12.12	12.12
TOTAL	4847.00	12266.46	24491.69	41605.16

2002 NEW YORK ANNUAL VOC EMISSIONS FROM AIRCRAFT, COMMERCIAL MARINE AND LOCOMOTIVE (TPY)

COUNTY	AIRCRAFT	COMMERCIAL MARINE	LOCOMOTIVE	TOTAL
ALBANY	28.31	63.05	32.58	123.94
ALLEGANY	0.00	0.00	3.44	3.44
BRONX	0.00	6.66	4.11	10.77
BROOME	0.82	0.00	12.38	13.20
CATTARAUGUS	0.00	0.00	6.74	6.74
CAYUGA	0.00	0.44	9.96	10.40
CHAUTAUQUA	0.64	1.46	60.21	62.31
CHEMUNG	0.62	0.00	5.79	6.41
CHENANGO	0.00	0.00	4.55	4.55
CLINTON	0.52	0.00	7.30	7.82
COLUMBIA	0.00	2.04	41.45	43.49
CORTLAND	0.00	0.00	1.88	1.88
DELAWARE	0.00	0.00	1.24	1.24
DUTCHESS	0.00	4.80	50.66	55.46
ERIE	29.08	22.19	92.46	143.73
ESSEX	0.00	0.00	8.94	8.94
FRANKLIN	0.61	11.14	3.52	15.27
FULTON	0.00	0.00	0.00	0.00
GENESEE	0.00	0.00	30.85	30.85
GREENE	0.00	2.04	8.82	10.86
HAMILTON	0.00	0.00	0.00	0.00
HERKIMER	0.00	0.00	20.51	20.51
JEFFERSON	0.98	11.49	24.09	36.56
KINGS	0.00	58.14	0.18	58.32
LEWIS	0.00	0.00	0.47	0.47
LIVINGSTON	0.00	0.00	4.82	4.82
MADISON	0.00	0.00	13.15	13.15
MONROE	21.53	1.73	42.16	65.42
MONTGOMERY	0.00	0.00	34.65	34.65
NASSAU	0.11	10.01	10.29	20.41
NEW YORK	0.99	31.84	2.91	35.74
NIAGARA	0.00	0.45	24.35	24.80
ONEIDA	0.00	1.29	25.98	27.27
ONONDAGA	17.78	0.00	44.23	62.01
ONTARIO	0.00	0.00	1.31	1.31
ORANGE	4.11	2.55	29.38	36.04
ORLEANS	0.00	0.44	0.11	0.55
OSWEGO	0.00	0.46	29.60	30.06
OTSEGO	0.00	0.00	9.45	9.45
PUTNAM	0.00	2.55	22.16	24.71
QUEENS	805.42	82.99	4.91	893.32
RENSSELAER	0.00	0.86	26.78	27.64
RICHMOND	0.00	82.10	0.00	82.10
ROCKLAND	0.00	0.03	11.56	11.59
ST LAWRENCE	0.94	11.14	32.84	44.92
SARATOGA	0.00	0.14	14.34	14.48
SCHENECTADY	0.00	0.00	24.84	24.84
SCHOHARIE	0.00	0.00	3.75	3.75
SCHUYLER	0.00	0.00	0.64	0.64
SENECA	0.00	0.00	0.08	0.08
STEUBEN	0.00	0.00	12.71	12.71
SUFFOLK	13.28	3.49	69.76	86.54
SULLIVAN	0.00	0.00	0.72	0.72
TIOGA	0.00	0.00	5.84	5.84
TOMPKINS	1.23	0.00	0.63	1.86
ULSTER	0.00	3.62	14.76	18.38
WARREN	0.00	0.00	0.38	0.38
WASHINGTON	0.00	0.00	9.72	9.72
WAYNE	0.00	1.02	30.36	31.38
WESTCHESTER	10.41	4.04	21.14	35.59
WYOMING	0.00	0.00	7.89	7.89
YATES	0.00	0.00	0.50	0.50
TOTAL	937.38	424.21	1020.83	2382.42

SCC	EQUIP	CLASSIFICATION	Engine Type	VOC	NOX	CO
2260001010	Motorcycles: Off-Road	Recreational Equipment	2 Stroke	4,180.42	12.22	3,621.46
2260001020	Snowmobiles	Recreational Equipment	2 Stroke	17,896.97	140.89	40,643.29
2260001030	ATVs	Recreational Equipment	2 Stroke	4,164.75	12.19	3,570.59
2260001060	Specialty Vehicles/Carts	Recreational Equipment	2 Stroke	170.99	34.76	4,536.61
2260002006	Tampers/Rammers	Construction and Mining Equipment	2 Stroke	335.96	5.13	821.28
2260002009	Plate Compactors	Construction and Mining Equipment	2 Stroke	20.35	0.08	39.58
2260002021	Paving Equipment	Construction and Mining Equipment	2 Stroke	24.24	0.09	47.52
2260002027	Signal Boards/Light Plants	Construction and Mining Equipment	2 Stroke	0.17	0.00	0.35
2260002039	Concrete/Industrial Saws	Construction and Mining Equipment	2 Stroke	894.67	12.29	2,170.24
2260002054	Crushing/Proc. Equipment	Construction and Mining Equipment	2 Stroke	4.50	0.02	9.25
2260003030	Sweepers/Scrubbers	Industrial Equipment	2 Stroke	12.63	0.06	25.99
2260003040	Other General Industrial Eqp	Industrial Equipment	2 Stroke	0.99	0.00	2.07
2260004015	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Res)	2 Stroke	146.05	0.48	262.01
2260004016	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Com)	2 Stroke	294.76	0.98	555.11
2260004020	Chain Saws < 6 HP	Lawn and Garden Equipment (Res)	2 Stroke	2,104.00	6.20	3,419.65
2260004021	Chain Saws < 6 HP	Lawn and Garden Equipment (Com)	2 Stroke	3,757.99	44.51	8,167.00
2260004025	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Res)	2 Stroke	2,843.33	9.76	4,930.30
2260004026	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Com)	2 Stroke	2,867.90	13.32	5,517.20
2260004030	Leafblowers/Vacuums	Lawn and Garden Equipment (Res)	2 Stroke	1,791.08	5.77	3,077.24
2260004031	Leafblowers/Vacuums	Lawn and Garden Equipment (Com)	2 Stroke	2,612.57	21.19	5,563.81
2260004035	Snowblowers	Lawn and Garden Equipment (Res)	2 Stroke	1,126.93	2.19	1,892.98
2260004036	Snowblowers	Lawn and Garden Equipment (Com)	2 Stroke	1,033.02	1.54	2,015.94
2260004071	Commercial Turf Equipment	Lawn and Garden Equipment (Com)	2 Stroke	1.16	0.00	2.27
2260005035	Sprayers	Agricultural Equipment	2 Stroke	13.06	0.04	25.50
2260006005	Generator Sets	Commercial Equipment	2 Stroke	295.23	1.10	562.65
2260006010	Pumps	Commercial Equipment	2 Stroke	2,020.00	8.75	3,962.07
2260006015	Air Compressors	Commercial Equipment	2 Stroke	1.04	0.00	2.16
2260006035	Hydro Power Units	Commercial Equipment	2 Stroke	11.13	0.05	22.79
2260007005	Chain Saws > 6 HP	Logging Equipment	2 Stroke	153.14	1.89	366.36
2265001010	Motorcycles: Off-Road	Recreational Equipment	4 Stroke	159.97	18.00	1,577.46
2265001030	ATVs	Recreational Equipment	4 Stroke	1,652.18	161.73	14,220.06
2265001050	Golf Carts	Recreational Equipment	4 Stroke	737.46	234.22	35,288.88
2265001060	Specialty Vehicles/Carts	Recreational Equipment	4 Stroke	183.19	33.07	3,911.47
2265002003	Pavers	Construction and Mining Equipment	4 Stroke	18.38	9.84	721.07
2265002006	Tampers/Rammers	Construction and Mining Equipment	4 Stroke	0.16	0.05	5.65
2265002009	Plate Compactors	Construction and Mining Equipment	4 Stroke	70.96	11.69	1,331.53
2265002015	Rollers	Construction and Mining Equipment	4 Stroke	29.48	16.89	1,351.69
2265002021	Paving Equipment	Construction and Mining Equipment	4 Stroke	99.68	24.56	2,607.04
2265002024	Surfacing Equipment	Construction and Mining Equipment	4 Stroke	36.43	10.22	1,182.12
2265002027	Signal Boards/Light Plants	Construction and Mining Equipment	4 Stroke	2.54	0.48	60.38
2265002030	Trenchers	Construction and Mining Equipment	4 Stroke	72.03	29.69	2,210.34
2265002033	Bore/Drill Rigs	Construction and Mining Equipment	4 Stroke	42.15	9.33	651.06
2265002039	Concrete/Industrial Saws	Construction and Mining Equipment	4 Stroke	106.01	50.48	5,457.16
2265002042	Cement & Mortar Mixers	Construction and Mining Equipment	4 Stroke	106.87	19.09	2,282.65
2265002045	Cranes	Construction and Mining Equipment	4 Stroke	3.68	4.88	91.40
2265002054	Crushing/Proc. Equipment	Construction and Mining Equipment	4 Stroke	9.51	3.30	320.54
2265002057	Rough Terrain Forklifts	Construction and Mining Equipment	4 Stroke	5.49	8.42	119.52
2265002060	Rubber Tire Loaders	Construction and Mining Equipment	4 Stroke	13.25	20.83	285.86
2265002066	Tractors/Loaders/Backhoes	Construction and Mining Equipment	4 Stroke	35.70	15.81	1,718.47
2265002072	Skid Steer Loaders	Construction and Mining Equipment	4 Stroke	24.93	22.23	760.30
2265002078	Dumpers/Tenders	Construction and Mining Equipment	4 Stroke	15.21	3.13	355.50
2265002081	Other Construction Equipment	Construction and Mining Equipment	4 Stroke	4.73	7.27	100.24
2265003010	Aerial Lifts	Industrial Equipment	4 Stroke	90.35	93.13	2,459.45
2265003020	Forklifts	Industrial Equipment	4 Stroke	256.26	393.02	5,560.27
2265003030	Sweepers/Scrubbers	Industrial Equipment	4 Stroke	79.24	70.03	2,390.20
2265003040	Other General Industrial Eqp	Industrial Equipment	4 Stroke	279.94	61.89	6,096.44
2265003050	Other Material Handling Eqp	Industrial Equipment	4 Stroke	6.44	6.18	188.27
2265003060	AC\Refrigeration	Industrial Equipment	4 Stroke	5.16	1.84	203.28
2265003070	Terminal Tractors	Industrial Equipment	4 Stroke	26.36	40.61	577.71
2265004010	Lawn mowers	Lawn and Garden Equipment (Res)	4 Stroke	5,671.01	401.66	51,099.15
2265004011	Lawn mowers	Lawn and Garden Equipment (Com)	4 Stroke	1,546.76	150.97	19,524.47
2265004015	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Res)	4 Stroke	490.25	34.10	4,304.25
2265004016	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Com)	4 Stroke	781.51	76.09	9,511.98
2265004025	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Res)	4 Stroke	33.04	2.31	286.96
2265004026	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Com)	4 Stroke	29.16	3.91	484.89
2265004030	Leafblowers/Vacuums	Lawn and Garden Equipment (Res)	4 Stroke	57.74	4.43	548.54
2265004031	Leafblowers/Vacuums	Lawn and Garden Equipment (Com)	4 Stroke	575.88	258.36	19,406.55
2265004035	Snowblowers	Lawn and Garden Equipment (Res)	4 Stroke	484.03	50.28	5,444.25
2265004036	Snowblowers	Lawn and Garden Equipment (Com)	4 Stroke	192.76	52.60	5,796.37
2265004040	Rear Engine Riding Mowers	Lawn and Garden Equipment (Res)	4 Stroke	533.29	104.21	12,017.21
2265004041	Rear Engine Riding Mowers	Lawn and Garden Equipment (Com)	4 Stroke	57.43	20.94	2,512.95
2265004046	Front Mowers	Lawn and Garden Equipment (Com)	4 Stroke	93.48	22.12	2,713.43

SCC	EQUIP	CLASSIFICATION	Engine Type	VOC	NOX	CO
2265004051	Shredders < 6 HP	Lawn and Garden Equipment (Com)	4 Stroke	94.57	8.66	1,089.96
2265004055	Lawn & Garden Tractors	Lawn and Garden Equipment (Res)	4 Stroke	6,349.90	1,429.95	159,779.97
2265004056	Lawn & Garden Tractors	Lawn and Garden Equipment (Com)	4 Stroke	773.15	292.50	33,794.81
2265004066	Chippers/Stump Grinders	Lawn and Garden Equipment (Com)	4 Stroke	111.95	93.45	4,488.03
2265004071	Commercial Turf Equipment	Lawn and Garden Equipment (Com)	4 Stroke	2,727.90	1,024.29	104,534.12
2265004075	Other Lawn & Garden Eqp.	Lawn and Garden Equipment (Res)	4 Stroke	321.70	39.02	5,215.51
2265004076	Other Lawn & Garden Eqp.	Lawn and Garden Equipment (Com)	4 Stroke	181.22	22.75	2,955.47
2265005010	2-Wheel Tractors	Agricultural Equipment	4 Stroke	1.98	0.68	89.63
2265005015	Agricultural Tractors	Agricultural Equipment	4 Stroke	6.44	7.49	180.53
2265005020	Combines	Agricultural Equipment	4 Stroke	0.05	0.06	0.92
2265005025	Balers	Agricultural Equipment	4 Stroke	4.76	5.36	82.38
2265005030	Agricultural Mowers	Agricultural Equipment	4 Stroke	2.04	0.56	69.64
2265005035	Sprayers	Agricultural Equipment	4 Stroke	29.17	8.76	596.22
2265005040	Tillers > 6 HP	Agricultural Equipment	4 Stroke	59.30	8.50	1,482.74
2265005045	Swathers	Agricultural Equipment	4 Stroke	6.97	8.49	130.51
2265005055	Other Agricultural Equipment	Agricultural Equipment	4 Stroke	11.18	10.15	270.55
2265005060	Irrigation Sets	Agricultural Equipment	4 Stroke	11.78	14.71	253.22
2265006005	Generator Sets	Commercial Equipment	4 Stroke	6,029.24	1,494.68	160,160.45
2265006010	Pumps	Commercial Equipment	4 Stroke	1,797.43	452.14	37,036.20
2265006015	Air Compressors	Commercial Equipment	4 Stroke	717.79	311.36	18,390.92
2265006025	Welders	Commercial Equipment	4 Stroke	1,176.21	562.25	46,190.03
2265006030	Pressure Washers	Commercial Equipment	4 Stroke	3,179.69	659.07	70,152.96
2265006035	Hydro Power Units	Commercial Equipment	4 Stroke	108.66	33.03	3,562.03
2265007010	Shredders > 6 HP	Logging Equipment	4 Stroke	30.06	6.37	787.26
2265007015	Forest Eqp - Feller/Bunch/Skidder	Logging Equipment	4 Stroke	0.49	0.07	9.33
2265008005	Airport Ground Support Equipment	Airport Equipment	4 Stroke	15.65	14.83	365.12
2265010010	Other Oil Field Equipment	Industrial Equipment	4 Stroke	7.03	2.83	411.99
2267001060	Specialty Vehicle Carts	Recreational Equipment	LPG	2.77	10.05	40.20
2267002003	Pavers	Construction and Mining Equipment	LPG	1.29	4.70	18.97
2267002015	Rollers	Construction and Mining Equipment	LPG	2.20	7.96	32.41
2267002021	Paving Equipment	Construction and Mining Equipment	LPG	0.34	1.23	4.93
2267002024	Surfacing Equipment	Construction and Mining Equipment	LPG	0.23	0.83	3.36
2267002030	Trenchers	Construction and Mining Equipment	LPG	3.94	14.39	58.02
2267002033	Bore/Drill Rigs	Construction and Mining Equipment	LPG	1.28	4.73	18.71
2267002039	Concrete/Industrial Saws	Construction and Mining Equipment	LPG	3.81	13.70	56.49
2267002045	Cranes	Construction and Mining Equipment	LPG	1.38	5.06	20.22
2267002054	Crushing/Proc. Equipment	Construction and Mining Equipment	LPG	0.23	0.84	3.35
2267002057	Rough Terrain Forklifts	Construction and Mining Equipment	LPG	2.50	9.15	36.77
2267002060	Rubber Tire Loaders	Construction and Mining Equipment	LPG	6.25	22.76	92.13
2267002066	Tractors/Loaders/Backhoes	Construction and Mining Equipment	LPG	0.66	2.39	9.70
2267002072	Skid Steer Loaders	Construction and Mining Equipment	LPG	5.12	18.81	75.31
2267002081	Other Construction Equipment	Construction and Mining Equipment	LPG	2.05	7.57	30.15
2267003010	Aerial Lifts	Industrial Equipment	LPG	30.83	113.22	449.50
2267003020	Forklifts	Industrial Equipment	LPG	2,941.12	10,672.38	43,061.82
2267003030	Sweepers/Scrubbers	Industrial Equipment	LPG	22.66	81.48	332.85
2267003040	Other General Industrial Equipm	Industrial Equipment	LPG	6.90	24.96	101.11
2267003050	Other Material Handling Equipment	Industrial Equipment	LPG	1.67	6.13	24.36
2267003070	Terminal Tractors	Industrial Equipment	LPG	13.85	49.66	203.50
2267004066	Chippers/Stump Grinders	Lawn and Garden Equipment (Com)	LPG	19.43	70.94	287.43
2267005055	Other Agricultural Equipment	Agricultural Equipment	LPG	0.04	0.14	0.55
2267005060	Irrigation Sets	Agricultural Equipment	LPG	0.04	0.13	0.52
2267006005	Generator Sets	Commercial Equipment	LPG	130.01	637.24	1,698.23
2267006010	Pumps	Commercial Equipment	LPG	30.68	148.50	402.53
2267006015	Air Compressors	Commercial Equipment	LPG	37.28	178.91	490.49
2267006025	Welders	Commercial Equipment	LPG	60.36	223.12	885.32
2267006030	Pressure Washers	Commercial Equipment	LPG	0.80	2.98	11.65
2267006035	Hydro Power Units	Commercial Equipment	LPG	0.60	2.87	7.91
2267008005	Airport Ground Support Equipment	Airport Equipment	LPG	4.44	16.16	65.03
2268002081	Other Construction Equipment	Construction and Mining Equipment	CNG	0.00	0.30	1.19
2268003020	Forklifts	Industrial Equipment	CNG	12.64	777.01	3,140.26
2268003030	Sweepers/Scrubbers	Industrial Equipment	CNG	0.01	0.92	3.71
2268003040	Other General Industrial Equipment	Industrial Equipment	CNG	0.01	0.61	2.47
2268003060	AC\Refrigeration	Industrial Equipment	CNG	0.04	2.39	9.71
2268003070	Terminal Tractors	Industrial Equipment	CNG	0.06	3.61	14.80
2268005055	Other Agricultural Equipment	Agricultural Equipment	CNG	0.00	0.17	0.75
2268005060	Irrigation Sets	Agricultural Equipment	CNG	0.23	13.44	57.69
2268006005	Generator Sets	Commercial Equipment	CNG	2.54	208.92	564.06
2268006010	Pumps	Commercial Equipment	CNG	0.13	10.63	29.00
2268006015	Air Compressors	Commercial Equipment	CNG	0.18	14.98	41.35
2268006020	Gas Compressors	Commercial Equipment	CNG	9.63	551.60	2,467.98
2268006035	Hydro Power Units	Commercial Equipment	CNG	0.00	0.15	0.56
2268010010	Other Oil Field Equipment	Industrial Equipment	CNG	0.18	10.61	45.09

SCC	EQUIP	CLASSIFICATION	Engine Type	VOC	NOX	CO
2270001060	Speciality Vehicle Carts	Recreational Equipment	Diesel	33.81	103.92	123.63
2270002003	Pavers	Construction and Mining Equipment	Diesel	36.77	379.48	192.61
2270002006	Tampers/Rammers	Construction and Mining Equipment	Diesel	0.14	0.83	0.49
2270002009	Plate Compactors	Construction and Mining Equipment	Diesel	2.28	13.01	7.78
2270002015	Rollers	Construction and Mining Equipment	Diesel	104.23	941.64	554.27
2270002018	Scrapers	Construction and Mining Equipment	Diesel	76.50	1,090.40	500.96
2270002021	Paving Equipment	Construction and Mining Equipment	Diesel	6.71	59.87	35.87
2270002024	Surfacing Equipment	Construction and Mining Equipment	Diesel	4.64	40.44	27.13
2270002027	Signal Boards/Light Plants	Construction and Mining Equipment	Diesel	22.53	113.69	70.80
2270002030	Trenchers	Construction and Mining Equipment	Diesel	62.05	437.92	332.68
2270002033	Bore/Drill Rigs	Construction and Mining Equipment	Diesel	48.64	519.79	199.79
2270002036	Excavators	Construction and Mining Equipment	Diesel	301.65	3,762.47	1,537.00
2270002039	Concrete/Industrial Saws	Construction and Mining Equipment	Diesel	5.00	29.47	25.74
2270002042	Cement & Mortar Mixers	Construction and Mining Equipment	Diesel	2.34	19.57	8.84
2270002045	Cranes	Construction and Mining Equipment	Diesel	78.61	1,024.93	280.70
2270002048	Graders	Construction and Mining Equipment	Diesel	75.12	956.12	362.10
2270002051	Off-highway Trucks	Construction and Mining Equipment	Diesel	260.12	3,550.46	1,571.32
2270002054	Crushing/Proc. Equipment	Construction and Mining Equipment	Diesel	16.03	180.02	65.76
2270002057	Rough Terrain Forklifts	Construction and Mining Equipment	Diesel	149.86	1,203.05	827.58
2270002060	Rubber Tire Loaders	Construction and Mining Equipment	Diesel	375.05	4,608.14	2,128.57
2270002066	Tractors/Loaders/Backhoes	Construction and Mining Equipment	Diesel	647.46	2,799.72	2,600.12
2270002069	Crawler Tractor/Dozers	Construction and Mining Equipment	Diesel	325.87	4,048.96	1,821.46
2270002072	Skid Steer Loaders	Construction and Mining Equipment	Diesel	625.10	1,795.10	2,273.82
2270002075	Off-Highway Tractors	Construction and Mining Equipment	Diesel	44.02	487.95	275.56
2270002078	Dumpers/Tenders	Construction and Mining Equipment	Diesel	1.90	5.77	6.49
2270002081	Other Construction Equipment	Construction and Mining Equipment	Diesel	41.15	474.67	264.48
2270003010	Aerial Lifts	Industrial Equipment	Diesel	35.09	117.74	119.37
2270003020	Forklifts	Industrial Equipment	Diesel	123.86	1,242.40	724.91
2270003030	Sweepers/Scrubbers	Industrial Equipment	Diesel	64.06	658.70	223.07
2270003040	Other General Industrial Eqp	Industrial Equipment	Diesel	69.34	750.17	241.93
2270003050	Other Material Handling Eqp	Industrial Equipment	Diesel	6.53	34.71	22.18
2270003060	AC\Refrigeration	Industrial Equipment	Diesel	370.18	2,712.73	1,402.74
2270003070	Terminal Tractors	Industrial Equipment	Diesel	67.86	850.03	306.57
2270004031	Leafblowers/Vacuums	Lawn and Garden Equipment (Com)	Diesel	0.01	0.05	0.03
2270004036	Snowblowers	Lawn and Garden Equipment (Com)	Diesel	1.36	14.12	5.51
2270004046	Front Mowers	Lawn and Garden Equipment (Com)	Diesel	63.80	323.21	203.08
2270004056	Lawn & Garden Tractors	Lawn and Garden Equipment (Com)	Diesel	14.13	71.33	44.38
2270004066	Chippers/Stump Grinders	Lawn and Garden Equipment (Com)	Diesel	54.70	483.02	216.50
2270004071	Commercial Turf Equipment	Lawn and Garden Equipment (Com)	Diesel	6.59	48.67	22.81
2270004076	Other Lawn & Garden Eqp.	Lawn and Garden Equipment (Com)	Diesel	0.20	1.25	0.72
2270005010	2-Wheel Tractors	Agricultural Equipment	Diesel	0.02	0.13	0.13
2270005015	Agricultural Tractors	Agricultural Equipment	Diesel	709.90	5,588.37	3,386.78
2270005020	Combines	Agricultural Equipment	Diesel	51.70	566.60	210.94
2270005025	Balers	Agricultural Equipment	Diesel	0.52	2.42	1.76
2270005030	Agricultural Mowers	Agricultural Equipment	Diesel	0.08	0.52	0.41
2270005035	Sprayers	Agricultural Equipment	Diesel	7.54	40.14	23.75
2270005040	Tillers > 6 HP	Agricultural Equipment	Diesel	0.01	0.07	0.05
2270005045	Swathers	Agricultural Equipment	Diesel	4.65	39.67	20.29
2270005055	Other Agricultural Equipment	Agricultural Equipment	Diesel	15.83	116.80	67.31
2270005060	Irrigation Sets	Agricultural Equipment	Diesel	9.74	73.19	30.13
2270006005	Generator Sets	Commercial Equipment	Diesel	423.09	2,774.72	1,486.38
2270006010	Pumps	Commercial Equipment	Diesel	93.12	661.06	345.95
2270006015	Air Compressors	Commercial Equipment	Diesel	209.73	1,667.44	788.59
2270006020	Gas Compressors	Commercial Equipment	Diesel	0.06	0.51	0.23
2270006025	Welders	Commercial Equipment	Diesel	319.27	807.33	1,170.16
2270006030	Pressure Washers	Commercial Equipment	Diesel	13.36	92.82	44.97
2270006035	Hydro Power Units	Commercial Equipment	Diesel	9.76	72.00	35.59
2270007010	Shredders > 6 HP	Logging Equipment	Diesel	0.00	0.00	0.00
2270007015	Forest Eqp - Feller/Bunch/Skidder	Logging Equipment	Diesel	24.29	323.82	111.48
2270008005	Airport Ground Support Equipment	Airport Equipment	Diesel	53.04	622.95	288.72
2270009010	Other Underground Mining Equipment	Construction and Mining Equipment	Diesel	0.00	0.00	0.00
2270010010	Other Oil Field Equipment	Industrial Equipment	Diesel	2.35	28.74	9.72
2282005010	Outboard	Pleasure Craft	2 Stroke	41,019.29	873.91	69,948.20
2282005015	Personal Water Craft	Pleasure Craft	2 Stroke	14,301.71	220.35	25,299.84
2282010005	Inboard/Sterndrive	Pleasure Craft	4 Stroke	3,300.45	2,066.29	42,792.72
2282020005	Inboard/Sterndrive	Pleasure Craft	Diesel	84.75	2,192.70	346.83
2282020010	Outboards	Pleasure Craft	Diesel	1.79	6.79	4.90
2285002015	Railway Maintenance	Railroad Equipment	Diesel	9.10	46.76	38.62
2285004015	Railway Maintenance	Railroad Equipment	4 Stroke	3.07	0.99	101.61
2285006015	Railway Maintenance	Railroad Equipment	LPG	0.03	0.11	0.45
		Statewide Total		155,509.35	78,202.50	1,196,738.82

2002 NYMA COUNTY LEVEL ANNUAL NOx, VOC AND CO EMISSIONS FROM ALL SECTORS (TPY)

2002 NYMA ANNUAL NOx EMISSIONS FROM ALL SECTORS (TPY)								
COUNTY	FIPS	Point	EGU	Area	Nonroad	On-road	Biogenic	Total
BRONX	36005	994	0	3,710	2,643	7,134	25	14,506
KINGS	36047	868	2,527	7,560	7,617	9,875	15	28,462
NASSAU	36059	424	2,410	6,458	4,479	21,968	81	35,821
NEW YORK	36061	2,180	3,549	15,971	11,044	8,733	16	41,492
QUEENS	36081	1,428	9,178	6,888	11,357	15,476	20	44,348
RICHMOND	36085	136	591	1,282	3,771	4,492	47	10,320
ROCKLAND	36087	465	5,526	1,299	1,352	5,686	26	14,355
SUFFOLK	36103	1,368	9,672	7,013	9,522	33,046	368	60,990
WESTCHESTER	36119	1,348	0	4,786	4,198	18,229	35	28,596
NYMA		9,211	33,454	54,968	55,984	124,640	633	278,890

2002 NYMA ANNUAL VOC EMISSIONS FROM ALL SECTORS (TPY)								
COUNTY	FIPS	Point	EGU	AREA	Non-road	On-road	Biogenic	Total
BRONX	36005	77	0	13,479	2,833	4,702	657	21,747
KINGS	36047	387	33	26,169	6,038	6,652	309	39,588
NASSAU	36059	716	62	19,705	7,354	14,952	2,859	45,648
NEW YORK	36061	159	91	23,441	9,194	7,690	473	41,048
QUEENS	36081	290	264	25,061	6,350	10,396	543	42,904
RICHMOND	36085	209	32	7,551	1,748	2,977	1,292	13,809
ROCKLAND	36087	44	65	3,835	2,088	3,309	4,006	13,347
SUFFOLK	36103	459	272	24,839	18,492	20,738	12,886	77,686
WESTCHESTER	36119	38	0	13,960	6,539	10,082	5,347	35,965
NYMA		2,379	819	158,039	60,635	81,499	28,372	331,743

2002 NYMA ANNUAL CO EMISSIONS FROM ALL SECTORS (TPY)								
COUNTY	FIPS	Point	EGU	Area	Nonroad	On-road	Biogenic	Total
BRONX	36005	269	0	1,486	30,836	62,986	100	95,677
KINGS	36047	426	366	3,078	74,634	84,765	60	163,329
NASSAU	36059	344	446	2,354	89,391	194,701	408	287,643
NEW YORK	36061	808	858	5,351	146,416	77,353	76	230,862
QUEENS	36081	579	2,538	2,467	72,839	133,330	105	211,859
RICHMOND	36085	137	404	528	17,588	39,155	173	57,984
ROCKLAND	36087	230	490	815	19,523	52,063	300	73,421
SUFFOLK	36103	494	1,638	5,310	145,045	300,650	1,328	454,466
WESTCHESTER	36119	255	0	2,445	71,468	161,917	549	236,633
NYMA		3,542	6,741	23,834	667,739	1,106,919	3,098	1,811,874

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Department of Environmental Conservation
Division of Air Resources

NEW YORK STATE IMPLEMENTATION PLAN FOR OZONE (8-HOUR NAAQS)

ATTAINMENT DEMONSTRATION FOR NEW YORK METRO AREA

APPENDIX C

FINAL PROPOSED REVISION FEBRUARY 2008

New York State Department of Environmental Conservation
ELIOT SPITZER, GOVERNOR ***ALEXANDER GRANNIS, COMMISSIONER***

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New York State
Ozone Season Day Emissions Inventory
NYMA Nonattainment Area

Appendix C
2002 Ozone Season Day (OSD) Statewide
2002 & future year OSD NYMA

February 5, 2008

2002 OSD **Point**

Point		Tons per day		
COUNTY	FIPS	CO	NOx	VOC
ALBANY	36001	1.89	17.68	1.22
ALLEGANY	36003	0.43	0.23	0.06
BRONX	36005	1.04	4.57	0.33
BROOME	36007	0.59	0.91	0.42
CATTARAUGUS	36009	0.00	0.00	0.000
CAYUGA	36011	0.69	1.78	0.25
CHAUTAUQUA	36013	0.43	0.70	0.71
CHEMUNG	36015	0.08	1.50	0.25
CHENANGO	36017	0.04	0.05	0.28
CLINTON	36019	0.06	0.13	0.12
COLUMBIA	36021	0.01	0.07	0.32
CORTLAND	36023	0.01	0.01	0.36
DELAWARE	36025	0.34	1.64	0.84
DUTCHESS	36027	1.69	0.18	0.32
ERIE	36029	6.09	3.51	4.88
ESSEX	36031	0.99	2.06	1.27
FRANKLIN	36033	0.00	0.00	0.00
FULTON	36035	0.01	0.05	0.27
GENESEE	36037	0.13	0.33	0.01
GREENE	36039	1.01	8.85	0.15
HAMILTON	36041	0.00	0.00	0.00
HERKIMER	36043	0.19	0.46	0.47
JEFFERSON	36045	0.29	0.35	0.51
KINGS	36047	1.90	4.96	1.37
LEWIS	36049	0.01	0.01	0.05
LIVINGSTON	36051	0.09	0.32	0.20
MADISON	36053	0.00	0.00	0.00
MONROE	36055	5.66	18.35	4.83
MONTGOMERY	36057	0.03	0.04	0.08
NASSAU	36059	2.54	9.05	2.42
NEW YORK	36061	2.85	7.77	0.57
NIAGARA	36063	81.89	5.68	5.82
ONEIDA	36065	0.33	0.28	1.09
ONONDAGA	36067	0.55	5.20	1.89
ONTARIO	36069	0.47	2.62	0.92
ORANGE	36071	0.77	1.66	3.16
ORLEANS	36073	0.01	0.02	0.45
OSWEGO	36075	0.37	0.98	0.77
OTSEGO	36077	0.00	0.00	0.00
PUTNAM	36079	0.04	0.16	0.01
QUEENS	36081	3.56	10.80	1.26
RENSSELAER	36083	0.08	0.23	0.69
RICHMOND	36085	0.45	0.44	0.68
ROCKLAND	36087	0.82	1.89	0.16
ST LAWRENCE	36089	98.13	0.95	0.51
SARATOGA	36091	0.49	0.98	1.57
SCHENECTADY	36093	0.15	0.36	1.34
SCHOHARIE	36095	0.55	0.59	0.10
SCHUYLER	36097	0.24	0.68	0.02
SENECA	36099	0.74	0.17	0.23
STEUBEN	36101	0.56	2.08	0.71
SUFFOLK	36103	1.61	5.24	4.25
SULLIVAN	36105	0.01	0.00	0.01
TIOGA	36107	0.00	0.00	0.00
TOMPKINS	36109	0.69	1.06	0.09
ULSTER	36111	0.04	1.26	1.02
WARREN	36113	3.84	3.88	0.36
WASHINGTON	36115	0.56	1.04	3.89
WAYNE	36117	0.18	0.17	5.66
WESTCHESTER	36119	1.00	6.18	0.17
WYOMING	36121	0.04	0.69	0.06
YATES	36123	0.00	0.00	0.00
STATEWIDE		227.27	140.85	59.46

2002 OSD **EGU**

EGU		Tons per day		
COUNTY	**FIPS**	**CO**	**NOx**	**VOC**
ALBANY	36001	0.87	1.72	0.09
ALLEGANY	36003	0.04	0.07	0.00
BRONX	36005	0.00	0.00	0.00
BROOME	36007	0.26	7.51	0.03
CATTARAUGUS	36009	0.01	0.07	0.00
CAYUGA	36011	0.00	0.00	0.00
CHAUTAUQUA	36013	0.09	18.47	0.01
CHEMUNG	36015	0.00	0.00	0.00
CHENANGO	36017	0.00	0.00	0.00
CLINTON	36019	0.01	0.67	0.09
COLUMBIA	36021	0.00	0.00	0.00
CORTLAND	36023	0.00	0.00	0.00
DELAWARE	36025	0.00	0.00	0.00
DUTCHESS	36027	0.00	0.00	0.00
ERIE	36029	0.99	22.69	0.12
ESSEX	36031	0.00	1.00	0.00
FRANKLIN	36033	0.00	0.00	0.00
FULTON	36035	0.00	0.00	0.00
GENESEE	36037	0.03	0.15	0.03
GREENE	36039	0.00	0.00	0.00
HAMILTON	36041	0.00	0.00	0.00
HERKIMER	36043	0.00	0.14	0.00
JEFFERSON	36045	1.02	1.26	0.02
KINGS	36047	2.01	13.01	0.12
LEWIS	36049	0.05	0.06	0.03
LIVINGSTON	36051	0.00	0.00	0.00
MADISON	36053	0.00	0.00	0.00
MONROE	36055	0.43	8.69	0.05
MONTGOMERY	36057	0.00	0.00	0.00
NASSAU	36059	1.68	8.26	0.23
NEW YORK	36061	2.32	9.27	0.23
NIAGARA	36063	0.83	13.37	0.13
ONEIDA	36065	0.08	0.14	0.01
ONONDAGA	36067	2.35	4.51	0.17
ONTARIO	36069	0.00	0.00	0.00
ORANGE	36071	1.32	17.59	0.16
ORLEANS	36073	0.00	0.00	0.00
OSWEGO	36075	3.82	4.17	0.12
OTSEGO	36077	0.00	0.00	0.00
PUTNAM	36079	0.00	0.00	0.00
QUEENS	36081	8.93	33.53	0.94
RENSSELAER	36083	0.23	0.38	0.01
RICHMOND	36085	1.52	2.22	0.12
ROCKLAND	36087	1.52	17.47	0.20
ST LAWRENCE	36089	0.10	0.12	0.01
SARATOGA	36091	0.35	0.98	0.05
SCHENECTADY	36093	0.00	0.00	0.00
SCHOHARIE	36095	0.00	0.00	0.00
SCHUYLER	36097	0.00	0.00	0.00
SENECA	36099	0.00	0.00	0.00
STEUBEN	36101	0.00	0.00	0.00
SUFFOLK	36103	5.10	33.86	0.85
SULLIVAN	36105	0.00	0.00	0.00
TIOGA	36107	0.00	0.00	0.00
TOMPKINS	36109	0.41	7.70	0.05
ULSTER	36111	0.00	0.00	0.00
WARREN	36113	0.00	0.00	0.00
WASHINGTON	36115	0.00	0.00	0.00
WAYNE	36117	0.00	0.00	0.00
WESTCHESTER	36119	0.00	0.00	0.00
WYOMING	36121	0.08	0.35	0.01
YATES	36123	0.27	7.87	0.08
Statewide		**36.73**	**237.29**	**3.97**

		2002 OSD		Area
Area		Tons per day		
COUNTY	FIPS	CO	NOx	VOC
ALBANY	36001	1.66	3.59	15.94
ALLEGANY	36003	2.12	0.48	3.41
BRONX	36005	1.75	4.25	40.36
BROOME	36007	2.13	2.52	16.64
CATTARAUGUS	36009	3.11	0.99	5.93
CAYUGA	36011	0.86	0.70	4.24
CHAUTAUQUA	36013	3.15	1.81	11.11
CHEMUNG	36015	1.43	1.11	6.39
CHENANGO	36017	1.83	0.54	3.30
CLINTON	36019	3.57	1.05	6.45
COLUMBIA	36021	1.53	0.47	3.54
CORTLAND	36023	0.98	0.51	2.85
DELAWARE	36025	1.53	0.58	3.01
DUTCHESS	36027	2.10	2.63	18.07
ERIE	36029	5.81	11.42	49.72
ESSEX	36031	4.05	0.44	3.32
FRANKLIN	36033	3.47	0.46	4.22
FULTON	36035	2.75	0.63	4.28
GENESEE	36037	0.88	0.61	4.52
GREENE	36039	1.45	0.29	2.63
HAMILTON	36041	0.85	0.07	0.81
HERKIMER	36043	1.71	0.61	4.00
JEFFERSON	36045	3.10	0.91	6.44
KINGS	36047	3.69	10.13	77.69
LEWIS	36049	2.54	0.24	3.06
LIVINGSTON	36051	1.09	0.50	3.69
MADISON	36053	1.28	0.57	3.74
MONROE	36055	4.34	10.65	47.03
MONTGOMERY	36057	0.58	0.57	2.98
NASSAU	36059	2.66	9.14	59.50
NEW YORK	36061	7.04	23.85	67.80
NIAGARA	36063	1.63	2.32	15.05
ONEIDA	36065	3.46	2.61	15.77
ONONDAGA	36067	2.86	5.72	26.87
ONTARIO	36069	1.45	1.20	6.05
ORANGE	36071	2.56	2.34	18.28
ORLEANS	36073	0.73	0.35	2.53
OSWEGO	36075	2.50	0.97	8.27
OTSEGO	36077	1.38	0.46	3.53
PUTNAM	36079	1.02	0.42	3.83
QUEENS	36081	3.18	9.44	74.84
RENSSELAER	36083	1.57	0.99	7.27
RICHMOND	36085	0.58	1.56	21.99
ROCKLAND	36087	0.82	2.41	10.66
ST LAWRENCE	36089	4.28	0.99	6.76
SARATOGA	36091	6.21	1.91	12.19
SCHENECTADY	36093	0.69	1.46	7.45
SCHOHARIE	36095	1.09	0.16	1.95
SCHUYLER	36097	0.65	0.14	1.15
SENECA	36099	0.44	0.34	1.97
STEUBEN	36101	2.66	1.19	6.12
SUFFOLK	36103	6.56	10.98	68.30
SULLIVAN	36105	4.16	0.49	3.98
TIOGA	36107	1.63	0.59	3.03
TOMPKINS	36109	1.44	1.02	4.87
ULSTER	36111	3.34	1.28	9.40
WARREN	36113	5.36	0.95	4.82
WASHINGTON	36115	4.92	0.64	5.85
WAYNE	36117	1.76	0.96	5.33
WESTCHESTER	36119	2.43	6.57	40.18
WYOMING	36121	1.28	0.42	2.70
YATES	36123	0.65	0.19	1.48
STATEWIDE		148.31	153.39	889.13

		2002 OSD		Nonroad
Nonroad		Tons per day		
COUNTY	FIPS	CO	NOx	VOC
ALBANY	36001	75.03	12.41	6.91
ALLEGANY	36003	11.75	1.32	1.64
BRONX	36005	141.90	8.48	12.92
BROOME	36007	45.58	3.90	4.90
CATTARAUGUS	36009	29.25	2.44	4.82
CAYUGA	36011	41.15	3.64	10.89
CHAUTAUQUA	36013	60.14	8.27	10.70
CHEMUNG	36015	21.55	1.82	2.01
CHENANGO	36017	13.03	1.54	1.82
CLINTON	36019	53.03	3.09	17.21
COLUMBIA	36021	26.89	4.37	4.90
CORTLAND	36023	10.83	1.20	1.18
DELAWARE	36025	25.87	1.85	6.03
DUTCHESS	36027	82.33	8.56	11.01
ERIE	36029	236.74	22.64	19.60
ESSEX	36031	73.36	2.88	26.08
FRANKLIN	36033	43.13	2.94	14.94
FULTON	36035	28.12	0.98	8.12
GENESEE	36037	20.54	4.04	2.04
GREENE	36039	24.41	1.99	4.06
HAMILTON	36041	49.49	1.28	20.57
HERKIMER	36043	36.26	3.43	10.94
JEFFERSON	36045	86.02	7.57	24.74
KINGS	36047	302.89	23.35	25.29
LEWIS	36049	15.87	1.43	4.07
LIVINGSTON	36051	19.67	2.24	3.56
MADISON	36053	21.26	2.45	2.61
MONROE	36055	263.21	16.88	20.41
MONTGOMERY	36057	19.09	4.30	2.58
NASSAU	36059	377.78	14.89	33.56
NEW YORK	36061	493.54	32.80	32.29
NIAGARA	36063	68.24	6.34	8.63
ONEIDA	36065	69.24	6.42	12.63
ONONDAGA	36067	132.28	10.77	13.57
ONTARIO	36069	43.32	3.32	6.41
ORANGE	36071	81.43	6.71	10.11
ORLEANS	36073	15.94	1.68	2.65
OSWEGO	36075	71.04	4.96	18.90
OTSEGO	36077	18.48	2.04	3.67
PUTNAM	36079	35.88	1.67	5.36
QUEENS	36081	293.13	33.30	25.72
RENSSELAER	36083	33.07	4.05	4.47
RICHMOND	36085	81.71	11.22	7.78
ROCKLAND	36087	86.76	4.42	10.56
ST LAWRENCE	36089	83.46	7.32	28.93
SARATOGA	36091	59.72	4.96	10.44
SCHENECTADY	36093	27.67	3.22	2.67
SCHOHARIE	36095	8.56	1.08	1.63
SCHUYLER	36097	12.37	0.66	4.01
SENECA	36099	37.76	2.03	13.78
STEUBEN	36101	27.30	3.86	4.54
SUFFOLK	36103	718.46	36.05	104.57
SULLIVAN	36105	45.27	1.57	11.14
TIOGA	36107	17.77	1.46	2.09
TOMPKINS	36109	28.62	1.98	4.93
ULSTER	36111	59.37	3.76	11.02
WARREN	36113	59.86	2.52	17.34
WASHINGTON	36115	10.78	1.83	2.02
WAYNE	36117	40.66	5.09	6.59
WESTCHESTER	36119	327.85	13.97	30.81
WYOMING	36121	18.75	2.31	2.59
YATES	36123	21.56	1.24	7.45
STATEWIDE		5,386.05	400.78	749.45

On-Road		2002 OSD Tons per day		
COUNTY	FIPS	CO	NOx	VOC
ALBANY	36001	210.35	22.91	15.86
ALLEGANY	36003	28.43	5.55	2.04
BRONX	36005	141.46	19.04	13.72
BROOME	36007	120.02	17.12	9.15
CATTARAUGUS	36009	50.07	8.30	3.54
CAYUGA	36011	51.20	5.96	3.70
CHAUTAUQUA	36013	86.86	14.35	6.21
CHEMUNG	36015	43.17	6.43	3.41
CHENANGO	36017	29.81	4.03	2.14
CLINTON	36019	53.40	7.83	3.75
COLUMBIA	36021	52.79	5.51	3.65
CORTLAND	36023	40.72	5.19	2.89
DELAWARE	36025	35.99	4.82	2.56
DUTCHESS	36027	125.21	14.25	9.99
ERIE	36029	442.34	53.97	32.73
ESSEX	36031	38.68	5.39	2.57
FRANKLIN	36033	28.56	3.40	2.06
FULTON	36035	23.99	2.68	1.90
GENESEE	36037	77.77	10.32	5.36
GREENE	36039	51.62	6.43	3.54
HAMILTON	36041	8.02	0.93	0.56
HERKIMER	36043	47.62	5.59	3.50
JEFFERSON	36045	74.86	11.25	5.31
KINGS	36047	186.42	26.45	19.47
LEWIS	36049	15.71	1.90	1.11
LIVINGSTON	36051	55.07	7.23	3.79
MADISON	36053	48.07	5.94	3.44
MONROE	36055	359.53	40.10	29.42
MONTGOMERY	36057	55.88	7.44	3.93
NASSAU	36059	409.70	56.98	41.93
NEW YORK	36061	174.87	24.13	22.20
NIAGARA	36063	80.79	9.27	6.12
ONEIDA	36065	125.89	14.46	9.88
ONONDAGA	36067	246.94	29.04	19.80
ONTARIO	36069	89.51	11.19	6.30
ORANGE	36071	196.45	25.37	15.18
ORLEANS	36073	20.75	2.43	1.51
OSWEGO	36075	74.91	9.27	5.35
OTSEGO	36077	43.06	6.32	3.03
PUTNAM	36079	88.73	10.71	7.29
QUEENS	36081	300.33	41.60	30.61
RENSSELAER	36083	84.41	9.41	6.51
RICHMOND	36085	87.05	12.02	8.69
ROCKLAND	36087	110.55	14.62	9.93
ST LAWRENCE	36089	58.63	7.04	4.27
SARATOGA	36091	133.79	14.92	10.33
SCHENECTADY	36093	74.78	8.51	5.55
SCHOHARIE	36095	24.24	3.34	1.75
SCHUYLER	36097	10.29	1.52	0.76
SENECA	36099	33.04	4.11	2.37
STEUBEN	36101	77.20	15.38	5.52
SUFFOLK	36103	633.00	85.69	60.06
SULLIVAN	36105	45.15	5.54	3.34
TIOGA	36107	33.78	5.16	2.55
TOMPKINS	36109	41.19	4.49	3.16
ULSTER	36111	130.87	14.53	9.17
WARREN	36113	52.13	6.79	3.74
WASHINGTON	36115	32.55	3.81	2.47
WAYNE	36117	46.35	5.40	3.35
WESTCHESTER	36119	341.34	46.77	30.21
WYOMING	36121	21.61	2.47	1.60
YATES	36123	10.83	1.62	0.81
STATEWIDE		**6,518.33**	**844.22**	**546.65**

Biogenic		2002 OSD Tons per day		Biogenic
County	FIPS	CO	NO	VOC
ALBANY	36001	4.96	0.25	45.05
ALLEGANY	36003	8.29	0.55	68.63
BRONX	36005	0.68	0.11	4.73
BROOME	36007	5.98	0.46	56.63
CATTARAUGUS	36009	11.25	0.63	97.54
CAYUGA	36011	6.71	0.97	57.12
CHAUTAUQUA	36013	8.58	0.86	58.67
CHEMUNG	36015	3.54	0.38	28.17
CHENANGO	36017	7.62	0.64	56.43
CLINTON	36019	11.09	0.59	96.12
COLUMBIA	36021	6.10	0.41	61.12
CORTLAND	36023	4.19	0.43	30.84
DELAWARE	36025	11.38	0.57	96.79
DUTCHESS	36027	7.46	0.39	74.12
ERIE	36029	7.66	0.71	49.70
ESSEX	36031	17.33	0.41	150.49
FRANKLIN	36033	15.90	0.98	123.89
FULTON	36035	5.20	0.39	38.01
GENESEE	36037	4.39	0.86	28.76
GREENE	36039	6.03	0.20	58.95
HAMILTON	36041	14.23	0.34	115.67
HERKIMER	36043	12.13	0.75	92.55
JEFFERSON	36045	11.94	1.08	90.08
KINGS	36047	0.41	0.06	2.22
LEWIS	36049	11.52	0.66	87.29
LIVINGSTON	36051	6.04	0.95	43.57
MADISON	36053	7.14	0.64	54.24
MONROE	36055	6.74	0.96	44.93
MONTGOMERY	36057	3.94	0.46	33.97
NASSAU	36059	2.77	0.35	20.60
NEW YORK	36061	0.52	0.07	3.41
NIAGARA	36063	6.40	1.44	37.33
ONEIDA	36065	10.30	0.92	72.19
ONONDAGA	36067	6.32	0.73	45.10
ONTARIO	36069	5.22	0.76	43.40
ORANGE	36071	7.25	0.47	93.83
ORLEANS	36073	4.32	0.84	23.87
OSWEGO	36075	8.69	0.51	56.99
OTSEGO	36077	8.10	0.67	57.33
PUTNAM	36079	3.22	0.14	37.77
QUEENS	36081	0.71	0.09	3.91
RENSSELAER	36083	6.08	0.41	52.71
RICHMOND	36085	1.17	0.20	9.31
ROCKLAND	36087	2.04	0.11	28.86
ST LAWRENCE	36089	26.37	1.61	208.64
SARATOGA	36091	7.65	0.33	64.91
SCHENECTADY	36093	2.57	0.17	21.84
SCHOHARIE	36095	5.01	0.41	39.60
SCHUYLER	36097	2.98	0.37	23.00
SENECA	36099	2.98	0.54	23.81
STEUBEN	36101	10.03	1.15	87.06
SUFFOLK	36103	9.04	1.58	92.84
SULLIVAN	36105	9.01	0.33	90.33
TIOGA	36107	4.96	0.44	38.90
TOMPKINS	36109	3.92	0.41	29.74
ULSTER	36111	10.16	0.35	113.21
WARREN	36113	9.49	0.20	83.34
WASHINGTON	36115	7.55	0.79	60.19
WAYNE	36117	6.26	1.16	42.80
WESTCHESTER	36119	3.73	0.15	38.52
WYOMING	36121	4.90	0.83	27.47
YATES	36123	3.45	0.46	28.94
STATEWIDE		**431.59**	**35.68**	**3,548.04**

2002 STATEWIDE COUNTY LEVEL OSD CO EMISSIONS FROM ALL SECTORS (TPD)

COUNTY	FIPS	Point	EGU	Area	Nonroad	On-road	Biogenic	Total
ALBANY	36001	1.89	0.87	1.66	75.03	210.35	4.96	294.78
ALLEGANY	36003	0.43	0.04	2.12	11.75	28.43	8.29	51.05
BRONX	36005	1.04	0.00	1.75	141.90	141.46	0.68	286.83
BROOME	36007	0.59	0.26	2.13	45.58	120.02	5.98	174.56
CATTARAUGUS	36009	0.00	0.01	3.11	29.25	50.07	11.25	93.70
CAYUGA	36011	0.69	0.00	0.86	41.15	51.20	6.71	100.60
CHAUTAUQUA	36013	0.43	0.09	3.15	60.14	86.86	8.58	159.25
CHEMUNG	36015	0.08	0.00	1.43	21.55	43.17	3.54	69.77
CHENANGO	36017	0.04	0.00	1.83	13.03	29.81	7.62	52.33
CLINTON	36019	0.06	0.01	3.57	53.03	53.40	11.09	121.17
COLUMBIA	36021	0.01	0.00	1.53	26.89	52.79	6.10	87.33
CORTLAND	36023	0.01	0.00	0.98	10.83	40.72	4.19	56.73
DELAWARE	36025	0.34	0.00	1.53	25.87	35.99	11.38	75.10
DUTCHESS	36027	1.69	0.00	2.10	82.33	125.21	7.46	218.78
ERIE	36029	6.09	0.99	5.81	236.74	442.34	7.66	699.63
ESSEX	36031	0.99	0.00	4.05	73.36	38.68	17.33	134.41
FRANKLIN	36033	0.00	0.00	3.47	43.13	28.56	15.90	91.06
FULTON	36035	0.01	0.00	2.75	28.12	23.99	5.20	60.07
GENESEE	36037	0.13	0.03	0.88	20.54	77.77	4.39	103.73
GREENE	36039	1.01	0.00	1.45	24.41	51.62	6.03	84.51
HAMILTON	36041	0.00	0.00	0.85	49.49	8.02	14.23	72.59
HERKIMER	36043	0.19	0.00	1.71	36.26	47.62	12.13	97.90
JEFFERSON	36045	0.29	1.02	3.10	86.02	74.86	11.94	177.22
KINGS	36047	1.90	2.01	3.69	302.89	186.42	0.41	497.32
LEWIS	36049	0.01	0.05	2.54	15.87	15.71	11.52	45.69
LIVINGSTON	36051	0.09	0.00	1.09	19.67	55.07	6.04	81.96
MADISON	36053	0.00	0.00	1.28	21.26	48.07	7.14	77.74
MONROE	36055	5.66	0.43	4.34	263.21	359.53	6.74	639.91
MONTGOMERY	36057	0.03	0.00	0.58	19.09	55.88	3.94	79.53
NASSAU	36059	2.54	1.68	2.66	377.78	409.70	2.77	797.14
NEW YORK	36061	2.85	2.32	7.04	493.54	174.87	0.52	681.12
NIAGARA	36063	81.89	0.83	1.63	68.24	80.79	6.40	239.79
ONEIDA	36065	0.33	0.08	3.46	69.24	125.89	10.30	209.31
ONONDAGA	36067	0.55	2.35	2.86	132.28	246.94	6.32	391.31
ONTARIO	36069	0.47	0.00	1.45	43.32	89.51	5.22	139.96
ORANGE	36071	0.77	1.32	2.56	81.43	196.45	7.25	289.78
ORLEANS	36073	0.01	0.00	0.73	15.94	20.75	4.32	41.76
OSWEGO	36075	0.37	3.82	2.50	71.04	74.91	8.69	161.32
OTSEGO	36077	0.00	0.00	1.38	18.48	43.06	8.10	71.02
PUTNAM	36079	0.04	0.00	1.02	35.88	88.73	3.22	128.89
QUEENS	36081	3.56	8.93	3.18	293.13	300.33	0.71	609.84
RENSSELAER	36083	0.08	0.23	1.57	33.07	84.41	6.08	125.43
RICHMOND	36085	0.45	1.52	0.58	81.71	87.05	1.17	172.49
ROCKLAND	36087	0.82	1.52	0.82	86.76	110.55	2.04	202.50
ST LAWRENCE	36089	98.13	0.10	4.28	83.46	58.63	26.37	270.98
SARATOGA	36091	0.49	0.35	6.21	59.72	133.79	7.65	208.22
SCHENECTADY	36093	0.15	0.00	0.69	27.67	74.78	2.57	105.86
SCHOHARIE	36095	0.55	0.00	1.09	8.56	24.24	5.01	39.44
SCHUYLER	36097	0.24	0.00	0.65	12.37	10.29	2.98	26.53
SENECA	36099	0.74	0.00	0.44	37.76	33.04	2.98	74.96
STEUBEN	36101	0.56	0.00	2.66	27.30	77.20	10.03	117.75
SUFFOLK	36103	1.61	5.10	6.56	718.46	633.00	9.04	1,373.78
SULLIVAN	36105	0.01	0.00	4.16	45.27	45.15	9.01	103.60
TIOGA	36107	0.00	0.00	1.63	17.77	33.78	4.96	58.15
TOMPKINS	36109	0.69	0.41	1.44	28.62	41.19	3.92	76.27
ULSTER	36111	0.04	0.00	3.34	59.37	130.87	10.16	203.78
WARREN	36113	3.84	0.00	5.36	59.86	52.13	9.49	130.69
WASHINGTON	36115	0.56	0.00	4.92	10.78	32.55	7.55	56.36
WAYNE	36117	0.18	0.00	1.76	40.66	46.35	6.26	95.21
WESTCHESTER	36119	1.00	0.00	2.43	327.85	341.34	3.73	676.36
WYOMING	36121	0.04	0.08	1.28	18.75	21.61	4.90	46.66
YATES	36123	0.00	0.27	0.65	21.56	10.83	3.45	36.75
STATEWIDE		227.27	36.73	148.31	5,386.05	6,518.33	431.59	12,748.29

2002 STATEWIDE COUNTY LEVEL OSD NOx EMISSIONS FROM ALL SECTORS (TPD)

COUNTY	FIPS	Point	EGU	Area	Nonroad	On-road	Biogenic	Total
ALBANY	36001	17.68	1.72	3.59	12.41	22.91	0.25	58.56
ALLEGANY	36003	0.23	0.07	0.48	1.32	5.55	0.55	8.21
BRONX	36005	4.57	0.00	4.25	8.48	19.04	0.11	36.46
BROOME	36007	0.91	7.51	2.52	3.90	17.12	0.46	32.43
CATTARAUGUS	36009	0.00	0.07	0.99	2.44	8.30	0.63	12.44
CAYUGA	36011	1.78	0.00	0.70	3.64	5.96	0.97	13.06
CHAUTAUQUA	36013	0.70	18.47	1.81	8.27	14.35	0.86	44.46
CHEMUNG	36015	1.50	0.00	1.11	1.82	6.43	0.38	11.24
CHENANGO	36017	0.05	0.00	0.54	1.54	4.03	0.64	6.79
CLINTON	36019	0.13	0.67	1.05	3.09	7.83	0.59	13.37
COLUMBIA	36021	0.07	0.00	0.47	4.37	5.51	0.41	10.83
CORTLAND	36023	0.01	0.00	0.51	1.20	5.19	0.43	7.34
DELAWARE	36025	1.64	0.00	0.58	1.85	4.82	0.57	9.46
DUTCHESS	36027	0.18	0.00	2.63	8.56	14.25	0.39	26.00
ERIE	36029	3.51	22.69	11.42	22.64	53.97	0.71	114.93
ESSEX	36031	2.06	1.00	0.44	2.88	5.39	0.41	12.17
FRANKLIN	36033	0.00	0.00	0.46	2.94	3.40	0.98	7.78
FULTON	36035	0.05	0.00	0.63	0.98	2.68	0.39	4.71
GENESEE	36037	0.33	0.15	0.61	4.04	10.32	0.86	16.32
GREENE	36039	8.85	0.00	0.29	1.99	6.43	0.20	17.77
HAMILTON	36041	0.00	0.00	0.07	1.28	0.93	0.34	2.61
HERKIMER	36043	0.46	0.14	0.61	3.43	5.59	0.75	10.97
JEFFERSON	36045	0.35	1.26	0.91	7.57	11.25	1.08	22.42
KINGS	36047	4.96	13.01	10.13	23.35	26.45	0.06	77.97
LEWIS	36049	0.01	0.06	0.24	1.43	1.90	0.66	4.29
LIVINGSTON	36051	0.32	0.00	0.50	2.24	7.23	0.95	11.24
MADISON	36053	0.00	0.00	0.57	2.45	5.94	0.64	9.60
MONROE	36055	18.35	8.69	10.65	16.88	40.10	0.96	95.62
MONTGOMERY	36057	0.04	0.00	0.57	4.30	7.44	0.46	12.81
NASSAU	36059	9.05	8.26	9.14	14.89	56.98	0.35	98.68
NEW YORK	36061	7.77	9.27	23.85	32.80	24.13	0.07	97.90
NIAGARA	36063	5.68	13.37	2.32	6.34	9.27	1.44	38.42
ONEIDA	36065	0.28	0.14	2.61	6.42	14.46	0.92	24.83
ONONDAGA	36067	5.20	4.51	5.72	10.77	29.04	0.73	55.98
ONTARIO	36069	2.62	0.00	1.20	3.32	11.19	0.76	19.09
ORANGE	36071	1.66	17.59	2.34	6.71	25.37	0.47	54.14
ORLEANS	36073	0.02	0.00	0.35	1.68	2.43	0.84	5.31
OSWEGO	36075	0.98	4.17	0.97	4.96	9.27	0.51	20.86
OTSEGO	36077	0.00	0.00	0.46	2.04	6.32	0.67	9.50
PUTNAM	36079	0.16	0.00	0.42	1.67	10.71	0.14	13.09
QUEENS	36081	10.80	33.53	9.44	33.30	41.60	0.09	128.75
RENSSELAER	36083	0.23	0.38	0.99	4.05	9.41	0.41	15.47
RICHMOND	36085	0.44	2.22	1.56	11.22	12.02	0.20	27.66
ROCKLAND	36087	1.89	17.47	2.41	4.42	14.62	0.11	40.92
ST LAWRENCE	36089	0.95	0.12	0.99	7.32	7.04	1.61	18.04
SARATOGA	36091	0.98	0.98	1.91	4.96	14.92	0.33	24.08
SCHENECTADY	36093	0.36	0.00	1.46	3.22	8.51	0.17	13.71
SCHOHARIE	36095	0.59	0.00	0.16	1.08	3.34	0.41	5.58
SCHUYLER	36097	0.68	0.00	0.14	0.66	1.52	0.37	3.38
SENECA	36099	0.17	0.00	0.34	2.03	4.11	0.54	7.19
STEUBEN	36101	2.08	0.00	1.19	3.86	15.38	1.15	23.65
SUFFOLK	36103	5.24	33.86	10.98	36.05	85.69	1.58	173.40
SULLIVAN	36105	0.00	0.00	0.49	1.57	5.54	0.33	7.93
TIOGA	36107	0.00	0.00	0.59	1.46	5.16	0.44	7.64
TOMPKINS	36109	1.06	7.70	1.02	1.98	4.49	0.41	16.66
ULSTER	36111	1.26	0.00	1.28	3.76	14.53	0.35	21.17
WARREN	36113	3.88	0.00	0.95	2.52	6.79	0.20	14.33
WASHINGTON	36115	1.04	0.00	0.64	1.83	3.81	0.79	8.11
WAYNE	36117	0.17	0.00	0.96	5.09	5.40	1.16	12.77
WESTCHESTER	36119	6.18	0.00	6.57	13.97	46.77	0.15	73.64
WYOMING	36121	0.69	0.35	0.42	2.31	2.47	0.83	7.07
YATES	36123	0.00	7.87	0.19	1.24	1.62	0.46	11.38
STATEWIDE		**140.85**	**237.29**	**153.39**	**400.78**	**844.22**	**35.68**	**1,812.20**

2002 STATEWIDE COUNTY LEVEL OSD VOC EMISSIONS FROM ALL SECTORS (TPD)

COUNTY	FIPS	Point	EGU	Area	Nonroad	On-road	Biogenic	Total
ALBANY	36001	1.22	0.09	15.94	6.91	15.86	45.05	85.07
ALLEGANY	36003	0.06	0.00	3.41	1.64	2.04	68.63	75.78
BRONX	36005	0.33	0.00	40.36	12.92	13.72	4.73	72.07
BROOME	36007	0.42	0.03	16.64	4.90	9.15	56.63	87.77
CATTARAUGUS	36009	0.00	0.00	5.93	4.82	3.54	97.54	111.84
CAYUGA	36011	0.25	0.00	4.24	10.89	3.70	57.12	76.20
CHAUTAUQUA	36013	0.71	0.01	11.11	10.70	6.21	58.67	87.42
CHEMUNG	36015	0.25	0.00	6.39	2.01	3.41	28.17	40.24
CHENANGO	36017	0.28	0.00	3.30	1.82	2.14	56.43	63.99
CLINTON	36019	0.12	0.09	6.45	17.21	3.75	96.12	123.73
COLUMBIA	36021	0.32	0.00	3.54	4.90	3.65	61.12	73.54
CORTLAND	36023	0.36	0.00	2.85	1.18	2.89	30.84	38.11
DELAWARE	36025	0.84	0.00	3.01	6.03	2.56	96.79	109.23
DUTCHESS	36027	0.32	0.00	18.07	11.01	9.99	74.12	113.51
ERIE	36029	4.88	0.12	49.72	19.60	32.73	49.70	156.74
ESSEX	36031	1.27	0.00	3.32	26.08	2.57	150.49	183.74
FRANKLIN	36033	0.00	0.00	4.22	14.94	2.06	123.89	145.12
FULTON	36035	0.27	0.00	4.28	8.12	1.90	38.01	52.57
GENESEE	36037	0.01	0.03	4.52	2.04	5.36	28.76	40.72
GREENE	36039	0.15	0.00	2.63	4.06	3.54	58.95	69.33
HAMILTON	36041	0.00	0.00	0.81	20.57	0.56	115.67	137.62
HERKIMER	36043	0.47	0.00	4.00	10.94	3.50	92.55	111.45
JEFFERSON	36045	0.51	0.02	6.44	24.74	5.31	90.08	127.09
KINGS	36047	1.37	0.12	77.69	25.29	19.47	2.22	126.17
LEWIS	36049	0.05	0.03	3.06	4.07	1.11	87.29	95.61
LIVINGSTON	36051	0.20	0.00	3.69	3.56	3.79	43.57	54.81
MADISON	36053	0.00	0.00	3.74	2.61	3.44	54.24	64.03
MONROE	36055	4.83	0.05	47.03	20.41	29.42	44.93	146.68
MONTGOMERY	36057	0.08	0.00	2.98	2.58	3.93	33.97	43.53
NASSAU	36059	2.42	0.23	59.50	33.56	41.93	20.60	158.25
NEW YORK	36061	0.57	0.23	67.80	32.29	22.20	3.41	126.50
NIAGARA	36063	5.82	0.13	15.05	8.63	6.12	37.33	73.08
ONEIDA	36065	1.09	0.01	15.77	12.63	9.88	72.19	111.57
ONONDAGA	36067	1.89	0.17	26.87	13.57	19.80	45.10	107.38
ONTARIO	36069	0.92	0.00	6.05	6.41	6.30	43.40	63.07
ORANGE	36071	3.16	0.16	18.28	10.11	15.18	93.83	140.71
ORLEANS	36073	0.45	0.00	2.53	2.65	1.51	23.87	31.02
OSWEGO	36075	0.77	0.12	8.27	18.90	5.35	56.99	90.41
OTSEGO	36077	0.00	0.00	3.53	3.67	3.03	57.33	67.56
PUTNAM	36079	0.01	0.00	3.83	5.36	7.29	37.77	54.27
QUEENS	36081	1.26	0.94	74.84	25.72	30.61	3.91	137.27
RENSSELAER	36083	0.69	0.01	7.27	4.47	6.51	52.71	71.66
RICHMOND	36085	0.68	0.12	21.99	7.78	8.69	9.31	48.57
ROCKLAND	36087	0.16	0.20	10.66	10.56	9.93	28.86	60.37
ST LAWRENCE	36089	0.51	0.01	6.76	28.93	4.27	208.64	249.12
SARATOGA	36091	1.57	0.05	12.19	10.44	10.33	64.91	99.49
SCHENECTADY	36093	1.34	0.00	7.45	2.67	5.55	21.84	38.85
SCHOHARIE	36095	0.10	0.00	1.95	1.63	1.75	39.60	45.02
SCHUYLER	36097	0.02	0.00	1.15	4.01	0.76	23.00	28.93
SENECA	36099	0.23	0.00	1.97	13.78	2.37	23.81	42.17
STEUBEN	36101	0.71	0.00	6.12	4.54	5.52	87.06	103.95
SUFFOLK	36103	4.25	0.85	68.30	104.57	60.06	92.84	330.87
SULLIVAN	36105	0.01	0.00	3.98	11.14	3.34	90.33	108.81
TIOGA	36107	0.00	0.00	3.03	2.09	2.55	38.90	46.58
TOMPKINS	36109	0.09	0.05	4.87	4.93	3.16	29.74	42.85
ULSTER	36111	1.02	0.00	9.40	11.02	9.17	113.21	143.82
WARREN	36113	0.36	0.00	4.82	17.34	3.74	83.34	109.61
WASHINGTON	36115	3.89	0.00	5.85	2.02	2.47	60.19	74.42
WAYNE	36117	5.66	0.00	5.33	6.59	3.35	42.80	63.72
WESTCHESTER	36119	0.17	0.00	40.18	30.81	30.21	38.52	139.89
WYOMING	36121	0.06	0.01	2.70	2.59	1.60	27.47	34.42
YATES	36123	0.00	0.08	1.48	7.45	0.81	28.94	38.76
STATEWIDE		59.46	3.97	889.13	749.45	546.65	3,548.04	5,796.69

Ozone Season Day Point Source Carbon Monoxide by SCC in lbs.

SCC	2002 OSD	2005 OSD	2008 OSD	2009 OSD	2011 OSD	2012 OSD
10100401	490	610	731	771	761	756
10100501	16	24	33	35	26	22
10100601	2,458	2,574	2,691	2,729	3,015	3,158
10100602	452	474	495	502	555	581
10100604	1,377	1,442	1,507	1,529	1,689	1,769
10200202	333	341	348	351	352	352
10200203	699	715	730	735	737	738
10200204	375	383	391	394	395	396
10200205	552	564	576	580	582	583
10200206	3,167	3,237	3,308	3,331	3,339	3,343
10200401	2,072	2,260	2,448	2,511	2,514	2,515
10200402	169	184	199	205	205	205
10200501	176	176	177	178	175	174
10200502	14	15	15	15	14	14
10200503	5	5	5	5	5	5
10200504	49	49	50	50	49	49
10200601	2,276	2,329	2,383	2,400	2,442	2,462
10200602	4,812	4,924	5,037	5,075	5,162	5,206
10200603	236	242	247	249	253	255
10200704	0	0	0	0	0	0
10200707	0	0	0	0	0	0
10200799	76	77	79	79	80	80
10200901	543	578	612	624	634	639
10200902	425	452	479	488	496	500
10200903	64	68	72	73	74	75
10200905	104	110	117	119	121	122
10200906	56	59	63	64	65	65
10201002	4	4	4	4	4	4
10201301	73	78	83	84	86	86
10201302	12	13	13	13	13	13
10201401	83	85	87	88	89	90
10300209	100	102	104	105	104	104
10300401	1,000	965	930	918	932	939
10300402	296	286	276	272	276	278
10300501	45	47	48	49	49	49
10300502	73	75	77	78	79	79
10300503	0	0	0	0	0	0
10300504	3	3	3	3	3	3
10300601	2,850	2,863	2,876	2,880	2,927	2,951
10300602	2,478	2,489	2,500	2,504	2,545	2,566
10300603	335	337	338	339	344	347
10300701	148	152	156	157	160	161
10300901	26	26	26	26	26	26
10300902	486	485	483	483	483	483
10300903	43	43	43	43	43	43
10301002	0	0	0	0	0	0
10301302	8	8	9	9	9	9
10500105	4	4	4	4	5	5
10500106	264	270	276	278	283	285
10500110	5	5	5	5	5	5
10500205	1	1	1	1	1	1
10500206	19	19	19	19	20	20
20100101	0	0	1	1	1	0
20100102	643	962	1,280	1,386	1,039	865
20100201	900	943	985	999	1,104	1,157
20100202	1,583	1,658	1,733	1,758	1,942	2,035
20200101	0	0	0	0	0	0
20200102	1,104	1,109	1,114	1,116	1,103	1,096
20200103	12	12	12	12	12	12
20200104	9	9	9	9	9	9
20200201	1,214	1,243	1,271	1,281	1,303	1,314

Ozone Season Day Point Source Carbon Monoxide by SCC in lbs.

SCC	2002 OSD	2005 OSD	2008 OSD	2009 OSD	2011 OSD	2012 OSD
20200202	7,548	7,725	7,901	7,960	8,097	8,166
20200203	344	352	360	362	369	372
20200204	114	117	119	120	122	123
20200252	9	9	9	9	9	10
20200253	586	600	614	618	629	634
20200254	180	185	189	190	194	195
20200301	864	864	864	864	868	871
20200401	3,332	3,348	3,364	3,369	3,331	3,311
20200402	2,606	2,606	2,606	2,606	2,606	2,606
20201001	6	6	6	6	6	6
20201707	26	26	26	26	26	26
20300101	1,738	1,792	1,846	1,863	1,880	1,888
20300102	1	1	1	1	1	1
20300201	566	569	571	572	581	586
20300204	46	46	47	47	47	48
20300301	460	463	466	467	466	465
20300702	2,279	2,274	2,269	2,267	2,267	2,267
20300801	672	671	669	669	669	669
20300807	1,413	1,410	1,407	1,406	1,406	1,406
20301001	6	6	6	6	6	6
20400401	3,054	3,316	3,579	3,667	3,849	3,941
30100899	0	0	0	0	0	1
30101814	0	1	1	1	1	1
30101860	1	1	1	1	1	1
30101891	36	40	45	46	49	50
30101899	1	1	1	1	1	1
30103553	0	0	0	0	0	0
30106099	57	68	79	83	88	91
30182003	79	89	98	102	108	111
30190004	12	13	15	15	16	16
30190013	3	3	3	3	3	3
30199999	952	1,070	1,188	1,227	1,300	1,337
30290003	1	1	1	1	1	1
30300101	69,817	74,379	78,941	80,462	84,426	86,408
30300102	124,525	132,663	140,800	143,512	150,582	154,117
30300105	744	793	841	858	900	921
30300331	134	131	129	128	132	133
30300503	21	22	24	24	25	26
30300702	934	917	901	895	919	930
30300933	144	142	139	138	142	144
30300934	3	2	2	2	2	3
30300936	21	21	21	21	21	21
30301580	0	0	0	0	0	0
30390003	486	478	470	467	457	452
30400101	3	3	4	4	4	4
30400109	419	490	561	584	624	643
30400112	40	46	53	55	59	61
30400115	123	144	165	172	184	189
30400301	42	47	52	54	57	59
30400732	1,325	1,480	1,636	1,688	1,792	1,844
30400740	1	1	2	2	2	2
30402005	159,309	189,705	220,102	230,235	248,953	258,312
30490003	61	63	66	67	69	70
30500205	29	32	35	36	38	39
30500251	745	820	896	921	976	1,003
30500606	6,763	7,438	8,112	8,337	8,741	8,944
30500613	5	6	7	7	7	7
30500706	2,391	2,553	2,715	2,769	2,861	2,907
30500899	50	49	49	49	49	50
30501202	12	12	12	12	12	12
30501204	924	918	911	909	923	930

Ozone Season Day Point Source Carbon Monoxide by SCC in lbs.

SCC	2002 OSD	2005 OSD	2008 OSD	2009 OSD	2011 OSD	2012 OSD
30501205	7	7	7	7	7	7
30501206	58	58	57	57	58	59
30501402	151	159	167	170	176	179
30501403	158	167	175	178	184	187
30501406	2	2	2	2	2	2
30502021	6	7	7	7	8	8
30590001	2	2	2	2	2	2
30590003	3	3	4	4	4	4
30599999	26	28	30	30	32	32
30700115	859	881	904	911	940	955
30700718	308	324	339	344	354	359
30801005	0	0	0	0	0	0
31000414	5	5	5	5	5	5
31306599	2	3	3	3	4	4
31604003	0	0	0	0	0	0
31605001	221	216	211	209	209	208
31612002	0	0	0	0	0	0
31615001	851	831	812	805	802	801
31616003	1	1	1	1	1	1
39000289	2	2	2	2	2	2
39000489	58	63	68	70	70	70
39000589	55	55	56	56	55	55
39000689	9,440	9,661	9,882	9,956	10,127	10,213
39000699	12	13	13	13	13	13
39000889	297	285	273	269	254	246
39000989	0	1	1	1	1	1
39001089	10	10	9	9	9	9
39001099	45	44	42	42	42	42
39001399	110	117	124	127	129	130
39900601	16	17	17	17	18	18
39990003	52	54	56	57	58	59
39990004	0	0	0	0	0	0
39990013	0	0	0	0	0	0
39990014	1	1	1	1	1	1
39999994	23	28	32	34	36	37
40201001	17	17	18	18	18	18
40500301	176	177	177	177	181	183
40600131	21	21	21	21	21	21
50100102	1,098	1,129	1,160	1,170	1,208	1,227
50100103	4	4	4	4	4	4
50100104	257	264	271	274	283	287
50100105	370	380	390	394	407	413
50100106	1,160	1,193	1,226	1,237	1,276	1,296
50100410	1,788	1,784	1,780	1,779	1,779	1,779
50100421	1,274	1,271	1,268	1,267	1,267	1,267
50100505	31	31	32	32	32	32
50100515	3,582	3,683	3,784	3,818	3,941	4,002
50100789	265	272	280	282	291	296
50200101	2	2	3	3	3	3
50200504	10	10	10	10	10	10
50200601	504	503	502	501	501	501
50300112	122	141	160	166	178	183
50300501	97	112	127	132	141	146
50300503	6	7	8	9	9	10
50300506	76	87	99	103	110	113
50300701	12	14	15	16	17	18
50410560	2	2	2	2	2	2
STATEWIDE	**454,541**	**501,367**	**548,193**	**563,802**	**595,976**	**612,063**
State (tons)	227.27	250.68	274.10	281.90	297.99	306.03

Ozone Season Day Point Source Nitrogen Oxides by SCC in lbs.

SCC	2002 OSD	2005 OSD	2008 OSD	2009 OSD	2011 OSD	2012 OSD
10100205	0	0	0	0	0	0
10100401	4,715	5,871	7,028	7,413	7,319	7,272
10100405	0	0	0	0	0	0
10100501	79	117	156	169	127	106
10100505	0	0	0	0	0	0
10100601	8,102	8,486	8,869	8,997	9,940	10,411
10100602	502	525	549	557	615	644
10100604	4,447	4,658	4,868	4,938	5,456	5,715
10200202	7,315	7,478	7,640	7,694	7,712	7,722
10200203	22,712	23,216	23,719	23,887	23,945	23,974
10200204	913	933	953	960	962	963
10200205	824	842	860	866	868	869
10200206	3,829	3,914	3,999	4,028	4,037	4,042
10200401	3,930	4,286	4,643	4,762	4,767	4,770
10200402	1,899	2,071	2,244	2,301	2,304	2,305
10200501	763	766	770	771	761	757
10200502	58	58	58	58	58	57
10200503	21	21	21	21	21	21
10200504	462	464	466	467	461	458
10200601	6,610	6,765	6,920	6,971	7,091	7,151
10200602	6,146	6,290	6,434	6,482	6,594	6,650
10200603	317	325	332	334	340	343
10200704	1	1	1	1	1	1
10200707	297	274	251	243	230	223
10200799	601	614	626	630	632	633
10200802	0	0	0	0	0	0
10200901	1,021	1,086	1,152	1,173	1,192	1,201
10200902	47	50	53	54	55	55
10200903	7	7	8	8	8	8
10200905	358	381	404	411	418	421
10200906	9	10	11	11	11	11
10201002	24	23	23	23	23	23
10201301	1,219	1,297	1,375	1,401	1,424	1,435
10201302	47	48	48	49	49	49
10201401	332	340	348	350	356	359
10300203	0	0	0	0	0	0
10300206	0	0	0	0	0	0
10300209	738	753	769	774	770	769
10300401	8,776	8,469	8,161	8,058	8,182	8,244
10300402	3,070	2,962	2,854	2,819	2,862	2,884
10300501	200	207	213	215	217	218
10300502	313	323	332	336	339	340
10300503	1	1	1	1	1	1
10300504	12	13	13	13	13	14
10300601	5,531	5,556	5,581	5,589	5,681	5,727
10300602	2,814	2,827	2,839	2,844	2,890	2,914
10300603	718	722	725	726	738	744
10300701	190	195	200	201	205	207
10300901	45	45	44	44	44	44
10300902	178	178	177	177	177	177
10300903	35	35	35	35	35	35
10301002	2	2	2	2	2	2
10301302	31	32	33	33	33	33
10500105	17	18	18	18	18	18
10500106	331	339	347	349	355	358
10500110	31	30	29	29	29	29
10500113	0	0	0	0	0	0
10500205	2	2	2	2	2	2
10500206	106	107	107	107	109	110
10500209	0	0	0	0	0	0
10500210	0	0	0	0	0	0
10500214	0	0	0	0	0	0
20100101	83	124	164	178	133	111
20100102	14,644	21,893	29,142	31,558	23,649	19,695
20100201	2,030	2,126	2,222	2,254	2,490	2,608
20100202	2,926	3,064	3,203	3,249	3,589	3,760
20200101	64	64	64	64	64	63
20200102	8,871	8,911	8,951	8,964	8,857	8,803
20200103	3,244	3,259	3,273	3,278	3,239	3,219
20200104	48	48	48	48	48	47
20200201	1,300	1,330	1,360	1,370	1,394	1,406
20200202	10,659	10,908	11,157	11,240	11,434	11,531
20200203	1,347	1,378	1,410	1,420	1,445	1,457
20200204	257	263	269	271	275	278

Ozone Season Day Point Source Nitrogen Oxides by SCC in lbs.

SCC	2002 OSD	2005 OSD	2008 OSD	2009 OSD	2011 OSD	2012 OSD
20200252	12	12	12	12	13	13
20200253	683	699	715	720	732	739
20200254	283	290	297	299	304	307
20200301	37	37	37	37	37	37
20200401	10,487	10,537	10,587	10,604	10,481	10,420
20200402	4,089	4,089	4,089	4,089	4,089	4,089
20201001	7	7	6	6	6	6
20201707	1	1	1	1	1	1
20300101	6,539	6,741	6,943	7,011	7,073	7,104
20300102	157	162	167	169	170	171
20300201	1,301	1,307	1,313	1,315	1,336	1,347
20300202	0	0	0	0	0	0
20300204	17	18	18	18	18	18
20300301	12	12	12	12	12	12
20300702	469	468	467	467	467	467
20300801	723	721	720	719	719	719
20300807	237	237	236	236	236	236
20301001	6	7	7	7	7	7
20400401	79	86	93	95	100	102
30100899	0	0	1	1	1	1
30101809	0	0	0	0	0	0
30101814	0	0	0	0	0	0
30102499	12	14	16	16	17	18
30103499	0	0	0	0	0	0
30106008	0	0	0	0	0	0
30106011	0	1	1	1	1	1
30190004	19	21	24	25	26	27
30190013	3	3	3	3	3	3
30199999	2,893	3,252	3,610	3,730	3,953	4,065
30290003	2	2	2	2	2	2
30300101	51	54	57	58	61	63
30300102	48	52	55	56	59	60
30300105	102	109	115	118	123	126
30300331	535	526	517	513	527	533
30300503	118	126	134	136	143	146
30300702	2,331	2,290	2,249	2,236	2,294	2,322
30300910	77	76	75	74	76	77
30300933	381	374	368	365	375	380
30300934	2	1	1	1	1	1
30300936	6	6	6	5	6	6
30300998	0	0	0	0	0	0
30390003	15	15	15	15	14	14
30400101	6	7	8	8	9	9
30400102	1	1	1	1	1	1
30400103	0	0	0	0	0	0
30400108	0	0	0	0	0	0
30400109	133	156	178	185	198	204
30400112	66	77	88	92	98	101
30400114	1	1	1	1	1	2
30400115	147	172	196	205	218	225
30400301	22	24	27	28	29	30
30400320	0	0	1	1	1	1
30400402	1,352	1,580	1,807	1,883	2,011	2,074
30400414	257	300	343	358	382	394
30400499	41	48	54	57	61	62
30400732	262	292	323	333	354	364
30400740	61	68	75	77	82	85
30490003	95	99	103	104	107	109
30500205	38	42	45	47	49	51
30500251	155	171	186	192	203	209
30500503	50	50	49	49	50	50
30500606	4,964	5,459	5,954	6,118	6,416	6,564
30500613	22	24	26	27	28	29
30500706	46,184	49,316	52,449	53,493	55,265	56,151
30500899	59	59	58	58	59	59
30500915	2,030	2,016	2,002	1,997	2,027	2,042
30501202	326	324	322	321	326	328
30501204	369	367	364	363	369	372
30501205	3	3	2	2	3	3
30501206	17	17	17	17	17	17
30501401	545	574	603	612	635	646
30501402	6,168	6,495	6,822	6,931	7,183	7,309
30501403	4,373	4,605	4,837	4,915	5,094	5,183
30501416	276	291	305	310	321	327

Ozone Season Day Point Source Nitrogen Oxides by SCC in lbs.

SCC	2002 OSD	2005 OSD	2008 OSD	2009 OSD	2011 OSD	2012 OSD
30502021	28	30	32	33	35	36
30515002	50	50	49	49	50	50
30590001	6	6	6	6	6	6
30590003	5	6	6	6	6	6
30599999	546	585	624	637	665	680
30700106	80	82	84	85	87	89
30700110	1,530	1,570	1,610	1,623	1,674	1,700
30700718	16	17	18	18	19	19
30790003	28	27	27	26	27	27
30990003	2	2	2	2	2	2
31000412	0	0	0	0	0	0
31000414	18	19	20	20	20	20
31306599	0	0	0	0	0	0
31603002	1	1	1	1	1	1
31604002	0	0	0	0	0	0
31604003	0	0	0	0	0	0
31605001	315	308	301	299	297	297
31605003	26	26	25	25	25	25
31612001	81	79	77	77	76	76
31612002	0	0	0	0	0	0
31615001	153	150	146	145	144	144
31616002	33	32	32	31	31	31
31616003	0	0	0	0	0	0
31616004	0	0	0	0	0	0
39000289	37	37	36	36	35	34
39000489	402	439	475	487	488	488
39000589	209	210	211	211	209	207
39000689	4,299	4,400	4,500	4,534	4,612	4,651
39000699	15	15	15	15	16	16
39000798	0	0	0	0	0	0
39000889	1,113	1,068	1,024	1,009	951	922
39000989	0	0	0	0	0	0
39001089	74	72	69	69	69	69
39001099	18	18	17	17	17	17
39001399	372	396	420	428	435	438
39900601	55	57	60	60	62	63
39990003	48	50	52	53	54	55
39990004	0	0	0	0	0	0
39990014	41	43	45	45	47	47
39999989	0	0	0	0	0	0
39999994	48	58	68	72	76	78
39999995	0	0	0	0	0	0
40200701	53	62	71	74	80	82
40201001	20	21	21	21	22	22
40500301	9	9	9	9	10	10
40500401	0	0	0	0	0	0
40600131	25	25	25	25	25	25
50100102	12,220	12,565	12,910	13,025	13,444	13,654
50100103	952	950	948	947	947	947
50100104	4,798	4,933	5,068	5,114	5,278	5,361
50100105	2,827	2,907	2,986	3,013	3,110	3,159
50100106	736	757	778	785	810	823
50100410	379	378	378	377	377	377
50100421	1,025	1,023	1,021	1,020	1,020	1,020
50100505	35	36	36	36	36	36
50100515	318	327	336	339	350	355
50100789	144	148	152	153	158	161
50200101	1	1	1	1	1	1
50200504	86	87	89	89	89	89
50200505	0	0	0	0	0	0
50200515	0	0	0	0	0	0
50200601	107	106	106	106	106	106
50300112	1,345	1,550	1,756	1,824	1,953	2,017
50300501	512	590	668	694	743	768
50300503	48	55	62	65	69	72
50300506	234	270	306	318	340	351
50300701	190	219	248	258	276	285
50410560	2	2	2	2	2	2
STATEWIDE	**281,696**	**299,258**	**316,819**	**322,673**	**321,666**	**321,162**
state (tons)	140.85	149.63	158.41	161.34	160.83	160.58

Ozone Season Day Point Source non-hazardous VOC by SCC in lbs.

SCC	2002 OSD	2005 OSD	2008 OSD	2009 OSD	2011 OSD	2012 OSD
10100205	0.00	0.00	0.00	0.00	0.00	0.00
10100401	70.51	87.80	105.10	110.86	109.46	108.76
10100405	0.00	0.00	0.00	0.00	0.00	0.00
10100501	0.50	0.74	0.99	1.07	0.80	0.67
10100505	0.00	0.00	0.00	0.00	0.00	0.00
10100601	123.94	129.81	135.67	137.62	152.05	159.26
10100602	22.80	23.88	24.96	25.32	27.98	29.30
10100604	242.99	254.48	265.98	269.81	298.09	312.23
10200202	40.01	40.90	41.79	42.08	42.19	42.24
10200203	153.83	157.24	160.65	161.79	162.18	162.38
10200205	4.60	4.70	4.80	4.84	4.85	4.86
10200206	374.30	382.60	390.90	393.67	394.62	395.10
10200401	32.59	35.55	38.50	39.49	39.54	39.56
10200402	9.45	10.31	11.17	11.45	11.47	11.47
10200501	6.51	6.54	6.57	6.58	6.50	6.46
10200502	0.58	0.58	0.58	0.58	0.58	0.57
10200503	0.21	0.21	0.21	0.21	0.21	0.21
10200504	1.97	1.97	1.98	1.99	1.96	1.95
10200601	157.31	160.99	164.67	165.90	168.76	170.19
10200602	246.73	252.50	258.27	260.19	264.68	266.92
10200603	17.43	17.83	18.24	18.38	18.69	18.85
10200704	0.09	0.09	0.08	0.08	0.07	0.07
10200707	1.97	1.81	1.66	1.61	1.52	1.48
10200799	5.73	5.85	5.97	6.01	6.03	6.04
10200802	0.00	0.00	0.00	0.00	0.00	0.00
10200901	12.17	12.94	13.72	13.98	14.20	14.31
10200902	3.25	3.46	3.67	3.74	3.79	3.82
10200903	0.49	0.52	0.55	0.56	0.57	0.57
10200905	3.27	3.48	3.68	3.75	3.81	3.84
10200906	19.22	20.45	21.68	22.09	22.44	22.62
10201002	0.38	0.37	0.36	0.36	0.36	0.36
10201301	14.68	15.62	16.56	16.87	17.14	17.28
10201302	2.44	2.48	2.53	2.54	2.56	2.56
10201401	6.64	6.80	6.96	7.01	7.13	7.19
10201403	0.00	0.00	0.00	0.00	0.00	0.00
10300203	0.00	0.00	0.00	0.00	0.00	0.00
10300206	0.00	0.00	0.00	0.00	0.00	0.00
10300401	217.49	209.87	202.25	199.71	202.77	204.31
10300402	67.00	64.65	62.30	61.52	62.47	62.94
10300501	2.62	2.71	2.79	2.82	2.84	2.85
10300502	4.97	5.12	5.28	5.33	5.38	5.40
10300503	0.01	0.01	0.01	0.01	0.01	0.01
10300504	0.21	0.22	0.22	0.23	0.23	0.23
10300601	164.65	165.40	166.14	166.39	169.13	170.49
10300602	126.78	127.35	127.93	128.12	130.22	131.28
10300603	23.44	23.55	23.65	23.69	24.08	24.27
10300701	10.92	11.21	11.49	11.59	11.81	11.92
10300901	0.03	0.03	0.03	0.03	0.03	0.03
10300902	9.28	9.26	9.24	9.23	9.23	9.23
10300903	0.00	0.00	0.00	0.00	0.00	0.00
10301002	0.04	0.04	0.05	0.05	0.05	0.05
10301302	1.65	1.68	1.71	1.72	1.74	1.75
10500105	0.16	0.17	0.17	0.17	0.17	0.17
10500106	17.35	17.76	18.17	18.30	18.62	18.77
10500110	0.48	0.47	0.46	0.45	0.45	0.46
10500113	0.00	0.00	0.00	0.00	0.00	0.00
10500205	0.07	0.08	0.08	0.08	0.08	0.08
10500206	5.05	5.07	5.09	5.10	5.18	5.22
10500209	0.00	0.00	0.00	0.00	0.00	0.00
10500210	0.00	0.00	0.00	0.00	0.00	0.00
10500214	0.00	0.00	0.00	0.00	0.00	0.00
20100101	0.03	0.04	0.05	0.06	0.04	0.04
20100102	249.83	373.51	497.18	538.41	403.48	336.01
20100106	0.18	0.28	0.37	0.40	0.30	0.25
20100201	23.00	24.09	25.18	25.54	28.22	29.56
20100202	606.40	635.10	663.79	673.36	743.92	779.21
20200101	0.00	0.00	0.00	0.00	0.00	0.00
20200102	397.13	398.92	400.71	401.30	396.50	394.09

Ozone Season Day Point Source non-hazardous VOC by SCC in lbs.

SCC	2002 OSD	2005 OSD	2008 OSD	2009 OSD	2011 OSD	2012 OSD
20200103	1.50	1.51	1.52	1.52	1.50	1.49
20200104	2.54	2.55	2.56	2.57	2.54	2.52
20200106	0.08	0.08	0.08	0.09	0.08	0.08
20200201	6.37	6.52	6.67	6.72	6.84	6.90
20200202	1,315.46	1,346.24	1,377.01	1,387.27	1,411.19	1,423.14
20200203	7.56	7.74	7.92	7.97	8.11	8.18
20200204	33.10	33.87	34.65	34.90	35.51	35.81
20200252	1.10	1.12	1.15	1.15	1.17	1.18
20200253	11.22	11.48	11.74	11.83	12.03	12.14
20200254	15.61	15.98	16.34	16.46	16.75	16.89
20200301	26.62	26.61	26.61	26.61	26.74	26.81
20200401	326.91	328.47	330.04	330.56	326.75	324.84
20200402	1,316.36	1,316.36	1,316.36	1,316.36	1,316.36	1,316.36
20201001	4.03	3.92	3.80	3.76	3.78	3.79
20201707	0.00	0.00	0.00	0.00	0.00	0.00
20300101	657.56	677.94	698.31	705.11	711.39	714.54
20300102	0.00	0.00	0.00	0.00	0.00	0.00
20300201	389.78	391.54	393.30	393.89	400.36	403.60
20300202	0.00	0.00	0.00	0.00	0.00	0.00
20300204	4.36	4.38	4.40	4.41	4.48	4.52
20300301	22.23	22.38	22.53	22.58	22.52	22.49
20300702	85.20	85.00	84.81	84.74	84.74	84.74
20300801	18.14	18.10	18.06	18.05	18.05	18.05
20300807	85.33	85.14	84.94	84.88	84.88	84.88
20301001	3.87	3.95	4.03	4.06	4.10	4.12
20400401	114.70	124.57	134.44	137.73	144.59	148.02
30100899	0.02	0.03	0.03	0.03	0.03	0.03
30100908	6.00	6.75	7.49	7.74	8.20	8.42
30101401	595.05	658.99	722.92	744.23	783.75	803.52
30101402	0.23	0.26	0.29	0.30	0.31	0.32
30101404	0.03	0.03	0.03	0.03	0.04	0.04
30101805	331.45	372.86	414.27	428.07	453.09	465.60
30101808	0.92	1.04	1.15	1.19	1.26	1.30
30101809	319.51	359.42	399.34	412.64	436.76	448.82
30101810	16.55	18.61	20.68	21.37	22.62	23.24
30101811	4.50	5.07	5.63	5.82	6.16	6.33
30101814	20.02	22.52	25.02	25.85	27.36	28.12
30101817	2.85	3.20	3.56	3.68	3.89	4.00
30101818	177.86	200.08	222.30	229.71	243.13	249.85
30101819	0.20	0.23	0.25	0.26	0.28	0.29
30101822	39.06	43.94	48.82	50.45	53.40	54.87
30101847	69.87	78.60	87.32	90.23	95.51	98.14
30101852	82.28	92.56	102.83	106.26	112.47	115.58
30101860	5.65	6.36	7.06	7.30	7.73	7.94
30101891	5.41	6.09	6.76	6.99	7.40	7.60
30101892	0.88	0.99	1.10	1.14	1.21	1.24
30101893	0.16	0.18	0.20	0.21	0.22	0.23
30101894	0.14	0.16	0.18	0.18	0.19	0.20
30101899	14.94	16.81	18.68	19.30	20.43	20.99
30102499	29.88	33.62	37.35	38.59	40.85	41.98
30102630	216.41	243.44	270.48	279.49	295.82	303.99
30102699	32.16	36.18	40.20	41.53	43.96	45.18
30103499	16.03	15.84	15.65	15.59	15.85	15.98
30103553	0.05	0.06	0.06	0.07	0.07	0.07
30103554	2.37	2.35	2.32	2.31	2.35	2.37
30104005	1.02	1.14	1.27	1.31	1.39	1.43
30106002	3.53	4.20	4.86	5.09	5.45	5.63
30106004	50.43	59.97	69.52	72.70	77.85	80.43
30106008	40.36	48.00	55.64	58.19	62.31	64.38
30106009	164.68	195.85	227.01	237.40	254.23	262.65
30106010	2.29	2.72	3.15	3.30	3.53	3.65
30106011	80.06	95.20	110.35	115.40	123.59	127.68
30106012	3.23	3.84	4.45	4.66	4.99	5.15
30106099	1,124.54	1,337.34	1,550.15	1,621.08	1,736.02	1,793.49
30107002	74.08	83.33	92.59	95.67	101.26	104.06
30112199	2.90	2.86	2.83	2.82	2.87	2.89
30113299	2.42	2.39	2.37	2.36	2.40	2.42
30130101	4.16	4.68	5.20	5.37	5.68	5.84

Ozone Season Day Point Source non-hazardous VOC by SCC in lbs.

SCC	2002 OSD	2005 OSD	2008 OSD	2009 OSD	2011 OSD	2012 OSD
30180001	2.78	3.12	3.47	3.58	3.80	3.90
30182001	0.01	0.01	0.01	0.01	0.01	0.01
30182002	59.85	67.27	74.69	77.16	81.78	84.09
30182003	0.00	0.00	0.00	0.00	0.00	0.00
30183001	62.01	69.70	77.40	79.96	84.74	87.13
30184001	1.39	1.56	1.74	1.79	1.90	1.95
30187097	0.00	0.00	0.00	0.00	0.00	0.00
30187098	0.13	0.13	0.13	0.13	0.13	0.13
30188801	20.84	23.45	26.05	26.92	28.49	29.28
30188805	5.00	5.62	6.24	6.45	6.84	7.03
30190004	0.59	0.67	0.74	0.76	0.81	0.83
30190013	0.17	0.17	0.17	0.17	0.17	0.17
30199999	91.95	103.35	114.75	118.55	125.65	129.20
30200903	346.75	348.24	349.74	350.24	351.46	352.06
30200911	213.93	214.85	215.77	216.08	216.83	217.20
30200912	0.21	0.21	0.21	0.21	0.21	0.21
30200999	92.98	93.38	93.78	93.92	94.24	94.41
30201501	0.51	0.52	0.52	0.53	0.54	0.54
30203201	229.20	232.55	235.91	237.03	239.60	240.89
30203202	182.25	185.24	188.22	189.21	193.24	195.26
30203299	7.12	7.22	7.33	7.36	7.44	7.48
30282001	0.03	0.03	0.03	0.03	0.03	0.03
30290003	0.04	0.04	0.04	0.04	0.04	0.04
30299998	100.38	102.02	103.66	104.21	106.43	107.54
30300102	454.16	483.84	513.51	523.41	549.19	562.09
30300105	17.51	18.65	19.80	20.18	21.17	21.67
30300199	1.18	1.26	1.33	1.36	1.43	1.46
30300312	11.02	10.83	10.63	10.57	10.84	10.98
30300331	80.53	79.11	77.69	77.22	79.22	80.22
30300399	12.64	12.42	12.20	12.12	12.44	12.59
30300503	4.89	5.21	5.53	5.64	5.91	6.05
30300702	407.50	400.32	393.14	390.75	400.88	405.94
30300910	0.68	0.67	0.66	0.65	0.67	0.68
30300912	0.07	0.07	0.07	0.07	0.07	0.07
30300933	1.59	1.56	1.53	1.53	1.57	1.58
30300934	2.07	2.03	1.99	1.98	2.03	2.06
30300935	14.71	14.45	14.19	14.11	14.47	14.66
30300936	65.92	64.76	63.60	63.21	64.85	65.67
30300998	0.77	0.76	0.75	0.74	0.76	0.77
30390003	0.13	0.13	0.13	0.13	0.12	0.12
30400101	0.88	1.03	1.18	1.23	1.31	1.35
30400102	0.82	0.96	1.10	1.14	1.22	1.26
30400103	0.00	0.00	0.00	0.00	0.00	0.00
30400108	0.00	0.00	0.00	0.00	0.00	0.00
30400109	42.15	49.25	56.35	58.72	62.69	64.67
30400112	54.20	63.33	72.46	75.50	80.61	83.16
30400114	16.50	17.88	19.27	19.73	20.83	21.39
30400115	20.60	24.06	27.53	28.69	30.63	31.60
30400131	38.05	44.46	50.87	53.01	56.59	58.38
30400132	135.92	158.81	181.70	189.33	202.13	208.53
30400150	413.18	451.90	490.61	503.52	532.22	546.57
30400199	9.54	11.14	12.75	13.29	14.18	14.63
30400299	4.54	5.30	6.06	6.32	6.75	6.96
30400301	0.54	0.61	0.67	0.69	0.73	0.75
30400320	5.81	6.49	7.18	7.40	7.86	8.09
30400331	49.80	55.66	61.52	63.47	67.38	69.33
30400732	235.47	263.17	290.87	300.11	318.57	327.81
30401002	28.74	30.62	32.50	33.13	34.76	35.57
30402003	185.70	221.14	256.57	268.38	290.20	301.11
30402004	12.53	14.91	17.30	18.10	19.57	20.31
30402005	8,541.45	10,171.20	11,800.95	12,344.20	13,347.79	13,849.59
30402201	0.80	0.94	1.07	1.12	1.20	1.23
30404901	0.70	0.75	0.81	0.83	0.88	0.90
30405099	0.02	0.02	0.02	0.02	0.02	0.02
30490003	2.49	2.59	2.69	2.73	2.81	2.85
30500205	4.61	5.07	5.54	5.69	6.03	6.20
30500212	4.59	5.06	5.52	5.67	6.01	6.18
30500251	21.87	24.08	26.28	27.02	28.63	29.44

Ozone Season Day Point Source non-hazardous VOC by SCC in lbs.

SCC	2002 OSD	2005 OSD	2008 OSD	2009 OSD	2011 OSD	2012 OSD
30500606	52.60	57.85	63.09	64.84	67.99	69.56
30500613	0.22	0.24	0.27	0.27	0.29	0.29
30500706	359.95	384.37	408.78	416.92	430.73	437.64
30500899	63.18	62.74	62.29	62.15	63.09	63.56
30500915	833.52	827.69	821.85	819.90	832.29	838.48
30501202	7.60	7.55	7.49	7.48	7.59	7.65
30501204	20.16	20.02	19.88	19.83	20.13	20.28
30501205	0.17	0.17	0.17	0.17	0.17	0.17
30501206	1.26	1.25	1.24	1.24	1.25	1.26
30501299	8.10	8.53	8.96	9.10	9.43	9.60
30501402	140.20	147.64	155.07	157.55	163.29	166.16
30501403	24.13	25.41	26.69	27.12	28.11	28.60
30501406	31.68	33.36	35.04	35.60	36.90	37.54
30501520	40.13	40.74	41.34	41.54	42.59	43.11
30502021	2.26	2.44	2.62	2.68	2.80	2.87
30590001	0.06	0.06	0.06	0.06	0.06	0.06
30590003	0.11	0.11	0.12	0.12	0.12	0.12
30599999	7.28	7.80	8.32	8.49	8.88	9.07
30600503	0.47	0.50	0.53	0.54	0.56	0.57
30600508	4.06	4.31	4.55	4.64	4.80	4.88
30600701	2.33	2.47	2.61	2.66	2.75	2.80
30600801	3.70	3.92	4.15	4.22	4.37	4.45
30600811	2.83	3.00	3.17	3.23	3.34	3.40
30688801	3.74	3.97	4.20	4.27	4.42	4.50
30700105	236.27	242.41	248.55	250.60	258.55	262.52
30700106	15.47	15.87	16.27	16.41	16.93	17.19
30700110	236.24	242.38	248.52	250.57	258.51	262.49
30700115	390.39	400.54	410.69	414.07	427.20	433.77
30700122	119.43	122.53	125.64	126.67	130.69	132.70
30700199	334.62	343.32	352.01	354.91	366.17	371.80
30700401	131.09	134.50	137.91	139.04	143.45	145.66
30700405	407.00	417.58	428.16	431.68	445.38	452.22
30700718	106.00	111.29	116.58	118.34	121.70	123.39
30700727	33.43	35.10	36.77	37.33	38.39	38.92
30700896	43.05	46.35	49.65	50.75	52.62	53.56
30700925	334.58	349.32	364.05	368.96	381.62	387.95
30700960	77.22	80.62	84.02	85.15	88.07	89.53
30701399	614.33	649.18	684.02	695.64	724.18	738.45
30702099	1,067.84	1,126.89	1,185.95	1,205.64	1,271.66	1,304.67
30788801	29.42	30.76	32.09	32.54	33.84	34.49
30790003	0.55	0.54	0.53	0.53	0.53	0.54
30799998	155.43	162.50	169.57	171.92	178.78	182.21
30799999	76.76	80.25	83.75	84.91	88.30	89.99
30800106	5.07	5.72	6.36	6.58	6.92	7.09
30800113	232.06	261.52	290.97	300.79	316.56	324.44
30800114	11.22	12.64	14.06	14.54	15.30	15.68
30800115	22.51	25.36	28.22	29.17	30.70	31.47
30800123	159.38	179.61	199.84	206.58	217.41	222.82
30800127	23.43	26.41	29.38	30.37	31.97	32.76
30800131	20.16	22.72	25.28	26.13	27.50	28.18
30800501	112.95	127.29	141.63	146.41	154.08	157.92
30800699	901.50	1,015.43	1,129.36	1,167.34	1,234.73	1,268.43
30800703	42.73	48.13	53.53	55.33	58.52	60.12
30800704	16.74	18.85	20.97	21.67	22.92	23.55
30800705	4.20	4.73	5.26	5.44	5.75	5.91
30800722	2.36	2.66	2.96	3.05	3.23	3.32
30801002	452.75	509.97	567.18	586.25	620.10	637.03
30801005	347.30	391.19	435.08	449.71	475.68	488.66
30801007	48.51	54.64	60.77	62.82	66.44	68.26
30899999	866.62	976.14	1,085.65	1,122.16	1,186.95	1,219.34
30901099	14.70	16.20	17.71	18.21	19.20	19.69
30901102	0.12	0.15	0.17	0.18	0.20	0.21
30903007	180.69	199.15	217.62	223.78	235.95	242.04
30904200	302.70	333.64	364.57	374.89	395.28	405.48
30904300	49.80	54.89	59.98	61.67	65.03	66.71
30982599	0.07	0.08	0.08	0.09	0.09	0.09
30988801	35.11	38.70	42.28	43.48	45.85	47.03
30990003	0.04	0.04	0.05	0.05	0.05	0.05

Ozone Season Day Point Source non-hazardous VOC by SCC in lbs.

SCC	2002 OSD	2005 OSD	2008 OSD	2009 OSD	2011 OSD	2012 OSD
30999999	3.69	4.07	4.44	4.57	4.82	4.94
31000207	155.17	163.51	171.84	174.62	181.84	185.45
31000227	21.87	23.04	24.22	24.61	25.63	26.14
31000412	0.00	0.00	0.00	0.00	0.00	0.00
31000414	0.36	0.38	0.39	0.40	0.40	0.40
31088801	233.28	245.81	258.34	262.52	273.37	278.79
31299999	9.65	11.78	13.91	14.62	15.60	16.10
31303001	33.45	41.64	49.83	52.56	58.18	60.99
31303501	4.10	4.96	5.82	6.10	6.69	6.98
31303502	20.64	24.96	29.28	30.72	33.67	35.14
31306500	0.00	0.00	0.00	0.00	0.00	0.00
31306501	3.97	4.72	5.48	5.73	6.20	6.43
31306505	2.61	3.11	3.61	3.77	4.08	4.23
31306599	239.55	298.22	356.88	376.44	416.72	436.86
31307001	115.35	137.36	159.37	166.71	180.26	187.04
31399999	0.23	0.28	0.32	0.34	0.37	0.38
31401101	74.10	78.53	82.95	84.43	88.06	89.88
31401503	0.43	0.46	0.49	0.49	0.51	0.53
31499999	1.58	1.74	1.90	1.95	2.06	2.12
31501001	0.01	0.01	0.01	0.01	0.01	0.01
31502001	0.00	0.00	0.00	0.00	0.00	0.00
31503001	0.28	0.32	0.36	0.38	0.40	0.41
31603001	557.03	544.26	531.50	527.24	525.38	524.45
31603002	96.68	94.47	92.25	91.51	91.19	91.03
31604001	596.65	582.98	569.30	564.74	562.75	561.75
31604002	3.13	3.06	2.99	2.97	2.96	2.95
31604003	11.82	11.55	11.27	11.18	11.15	11.13
31605001	547.61	535.06	522.51	518.33	516.50	515.58
31605002	0.39	0.38	0.37	0.37	0.37	0.37
31605003	0.00	0.00	0.00	0.00	0.00	0.00
31612001	0.95	0.92	0.90	0.90	0.89	0.89
31612002	0.42	0.41	0.40	0.39	0.39	0.39
31612003	0.00	0.00	0.00	0.00	0.00	0.00
31613001	7.20	7.04	6.87	6.82	6.79	6.78
31613002	1.80	1.76	1.72	1.71	1.70	1.70
31613004	0.07	0.07	0.07	0.07	0.07	0.07
31614001	0.31	0.30	0.29	0.29	0.29	0.29
31614002	0.08	0.07	0.07	0.07	0.07	0.07
31615001	162.48	158.75	155.03	153.79	153.24	152.97
31615003	59.39	58.03	56.67	56.21	56.01	55.91
31616002	5.79	5.66	5.52	5.48	5.46	5.45
31616003	111.22	108.67	106.12	105.27	104.90	104.72
31616004	0.00	0.00	0.00	0.00	0.00	0.00
33000212	12.68	13.86	15.05	15.45	16.11	16.44
33000214	12.48	13.65	14.82	15.21	15.86	16.19
33000297	147.16	160.97	174.77	179.37	187.05	190.89
38500101	0.00	0.00	0.00	0.00	0.00	0.00
39000289	2.89	2.86	2.82	2.81	2.72	2.67
39000489	1.17	1.28	1.39	1.42	1.43	1.43
39000589	1.94	1.94	1.95	1.96	1.93	1.92
39000689	375.98	384.77	393.57	396.50	403.34	406.75
39000699	0.80	0.82	0.84	0.85	0.86	0.87
39000798	0.00	0.00	0.00	0.00	0.00	0.00
39000989	0.17	0.19	0.20	0.20	0.20	0.20
39001089	1.58	1.53	1.49	1.47	1.48	1.49
39001399	27.56	29.33	31.09	31.68	32.18	32.43
39090001	2.71	2.96	3.20	3.28	3.29	3.29
39090002	0.14	0.15	0.16	0.17	0.17	0.17
39090003	0.78	0.78	0.78	0.78	0.77	0.77
39090004	0.03	0.03	0.03	0.03	0.03	0.03
39090005	0.71	0.77	0.84	0.86	0.86	0.86
39090011	0.01	0.01	0.01	0.01	0.01	0.01
39090012	1.26	1.26	1.26	1.26	1.26	1.26
39900601	2.62	2.73	2.84	2.88	2.97	3.01
39990003	5.29	5.52	5.74	5.81	5.99	6.08
39990004	0.11	0.11	0.12	0.12	0.12	0.12
39990013	0.16	0.17	0.18	0.18	0.19	0.19
39990014	1.63	1.71	1.79	1.82	1.87	1.89

Ozone Season Day Point Source non-hazardous VOC by SCC in lbs.

SCC	2002 OSD	2005 OSD	2008 OSD	2009 OSD	2011 OSD	2012 OSD
39999989	608.25	739.80	871.35	915.20	967.77	994.06
39999992	177.52	215.92	254.31	267.11	282.46	290.13
39999993	34.67	42.16	49.66	52.16	55.16	56.66
39999994	2,031.32	2,470.65	2,909.97	3,056.41	3,232.00	3,319.80
39999995	13.21	16.07	18.93	19.88	21.02	21.59
39999996	5.98	7.27	8.56	9.00	9.51	9.77
39999999	117.62	143.06	168.50	176.98	187.15	192.23
40100251	1,000.05	1,138.26	1,276.47	1,322.54	1,395.24	1,431.59
40100295	21.27	24.21	27.15	28.13	29.68	30.45
40100296	0.48	0.54	0.61	0.63	0.67	0.68
40100298	6.51	7.41	8.31	8.61	9.08	9.32
40100299	17.98	20.46	22.94	23.77	25.08	25.73
40100335	26.85	30.56	34.27	35.51	37.46	38.44
40100336	10.69	12.16	13.64	14.13	14.91	15.30
40100398	36.18	41.18	46.18	47.85	50.48	51.80
40100399	42.00	47.81	53.61	55.55	58.60	60.12
40100501	5.51	5.45	5.38	5.36	5.45	5.50
40188898	0.08	0.10	0.11	0.11	0.12	0.12
40200101	98.50	115.30	132.11	137.71	148.29	153.58
40200110	684.43	801.22	918.01	956.94	1,030.45	1,067.21
40200201	90.50	105.94	121.38	126.53	136.25	141.11
40200210	220.03	257.57	295.12	307.63	331.27	343.08
40200301	58.56	68.55	78.55	81.88	88.17	91.31
40200401	821.66	961.87	1,102.07	1,148.81	1,237.06	1,281.19
40200501	96.19	112.60	129.01	134.48	144.82	149.98
40200510	67.76	79.32	90.89	94.74	102.02	105.66
40200601	60.46	67.30	74.13	76.41	80.98	83.27
40200701	163.89	191.86	219.82	229.14	246.75	255.55
40200706	20.90	24.46	28.03	29.22	31.46	32.58
40200710	4.77	5.58	6.40	6.67	7.18	7.44
40200711	0.84	0.98	1.12	1.17	1.26	1.31
40200712	1.20	1.34	1.47	1.52	1.61	1.65
40200801	629.34	736.72	844.11	879.90	947.50	981.30
40200803	208.34	241.50	274.65	285.70	306.76	317.28
40200810	16.48	19.29	22.10	23.04	24.81	25.70
40200842	243.20	269.34	295.48	304.19	319.12	326.58
40200843	767.18	849.64	932.10	959.58	1,006.67	1,030.21
40200898	16.65	18.53	20.41	21.04	22.30	22.93
40200998	3.41	4.00	4.58	4.77	5.14	5.32
40201001	1.12	1.14	1.17	1.18	1.20	1.21
40201101	5.56	6.19	6.82	7.03	7.45	7.66
40201103	13.68	14.25	14.82	15.01	15.48	15.72
40201122	249.11	246.66	244.20	243.39	251.02	254.84
40201201	4.67	4.63	4.58	4.57	4.71	4.78
40201301	3,515.40	3,717.02	3,918.65	3,985.86	4,150.23	4,232.42
40201303	37.70	39.89	42.08	42.82	44.60	45.49
40201310	0.12	0.14	0.15	0.15	0.16	0.17
40201330	2.20	2.57	2.94	3.07	3.30	3.42
40201399	129.69	137.10	144.52	146.99	153.05	156.07
40201401	6.46	7.20	7.93	8.17	8.66	8.90
40201432	52.93	58.91	64.90	66.89	70.89	72.90
40201435	99.13	99.13	99.13	99.13	102.24	103.80
40201601	4.55	5.07	5.58	5.76	6.10	6.27
40201607	13.74	15.29	16.85	17.36	18.40	18.92
40201620	0.33	0.37	0.40	0.41	0.44	0.45
40201699	3.69	4.10	4.52	4.66	4.94	5.08
40201721	87.11	96.47	105.83	108.96	114.30	116.98
40201722	313.64	347.35	381.06	392.30	411.55	421.17
40201725	127.14	140.80	154.47	159.02	166.82	170.73
40201727	239.51	265.26	291.00	299.58	314.28	321.63
40201799	172.52	192.02	211.53	218.03	231.07	237.59
40201899	29.78	33.15	36.52	37.64	39.89	41.02
40201901	3,928.13	4,229.76	4,531.40	4,631.94	4,905.62	5,042.46
40202201	22.77	25.67	28.57	29.54	31.26	32.11
40202203	3.35	3.78	4.20	4.34	4.59	4.72
40202220	143.45	161.58	179.71	185.76	196.48	201.84
40202230	137.19	154.53	171.87	177.65	187.91	193.03
40202299	6.45	7.27	8.08	8.36	8.84	9.08

Ozone Season Day Point Source non-hazardous VOC by SCC in lbs.

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40202501	297.75	365.73	433.72	456.38	496.32	516.29
40202502	0.68	0.83	0.99	1.04	1.13	1.17
40202503	36.80	45.19	53.58	56.38	61.31	63.78
40202521	139.26	171.09	202.92	213.53	232.23	241.57
40202537	18.90	22.98	27.07	28.43	30.85	32.06
40202544	34.34	42.18	50.03	52.65	57.26	59.56
40202599	53.95	66.06	78.16	82.20	89.34	92.90
40203001	96.85	113.37	129.90	135.41	145.81	151.01
40204004	67.95	75.63	83.31	85.87	91.01	93.58
40204161	0.62	0.64	0.67	0.68	0.70	0.71
40204321	46.18	48.10	50.02	50.66	52.24	53.03
40204330	167.37	174.33	181.29	183.61	189.36	192.23
40204340	1,137.82	1,185.14	1,232.45	1,248.23	1,287.28	1,306.81
40204435	60.81	63.34	65.86	66.71	68.79	69.84
40206031	53.70	53.17	52.64	52.46	54.11	54.93
40206034	1.97	1.95	1.93	1.93	1.99	2.02
40288805	38.06	44.55	51.04	53.21	57.30	59.34
40288821	100.49	117.64	134.79	140.51	151.30	156.70
40288822	0.09	0.10	0.12	0.12	0.13	0.14
40288824	4.62	5.41	6.20	6.46	6.96	7.21
40299995	7,739.03	9,066.99	10,394.94	10,837.59	11,671.94	12,089.11
40299996	0.04	0.05	0.05	0.05	0.06	0.06
40299998	35.45	41.50	47.55	49.56	53.37	55.27
40299999	1.30	1.52	1.74	1.81	1.95	2.02
40300302	38.41	40.74	43.06	43.84	45.39	46.17
40301002	1.43	1.52	1.60	1.63	1.69	1.72
40301007	0.81	0.86	0.90	0.92	0.95	0.97
40301008	0.00	0.00	0.00	0.00	0.00	0.00
40301016	0.30	0.32	0.34	0.35	0.36	0.37
40301017	1.68	1.79	1.89	1.92	1.99	2.03
40301018	0.18	0.19	0.21	0.21	0.22	0.22
40301019	141.04	149.58	158.11	160.96	166.67	169.52
40301020	13.03	13.81	14.60	14.87	15.39	15.66
40301021	11.83	12.54	13.26	13.50	13.98	14.22
40301025	0.00	0.00	0.00	0.00	0.00	0.00
40301028	1.82	1.93	2.04	2.08	2.15	2.19
40301075	0.79	0.84	0.88	0.90	0.93	0.95
40301097	42.79	45.38	47.97	48.83	50.56	51.43
40301098	20.03	21.25	22.46	22.86	23.67	24.08
40301099	63.63	67.49	71.34	72.62	75.20	76.48
40301120	0.30	0.31	0.33	0.34	0.35	0.35
40301151	141.50	150.07	158.64	161.49	167.22	170.08
40301197	0.98	1.04	1.10	1.12	1.16	1.18
40400102	53.00	56.21	59.42	60.49	62.63	63.70
40400107	0.27	0.29	0.31	0.31	0.32	0.33
40400109	2.39	2.53	2.67	2.72	2.82	2.87
40400110	0.03	0.04	0.04	0.04	0.04	0.04
40400111	310.71	329.52	348.33	354.60	367.17	373.45
40400114	459.17	486.97	514.76	524.03	542.60	551.89
40400116	6.33	6.71	7.09	7.22	7.48	7.60
40400117	180.72	191.66	202.60	206.24	213.55	217.21
40400121	0.24	0.25	0.27	0.27	0.28	0.29
40400122	9.10	9.65	10.20	10.39	10.75	10.94
40400150	69.20	73.39	77.58	78.97	81.77	83.17
40400151	485.12	514.49	543.86	553.65	573.27	583.09
40400152	40.25	42.69	45.13	45.94	47.57	48.38
40400153	138.34	146.72	155.09	157.88	163.48	166.28
40400154	416.07	441.26	466.45	474.84	491.67	500.09
40400160	1,676.23	1,777.70	1,879.18	1,913.00	1,980.81	2,014.72
40400179	206.44	218.93	231.43	235.60	243.95	248.12
40400199	3.42	3.63	3.83	3.90	4.04	4.11
40400204	0.61	0.61	0.61	0.61	0.60	0.60
40400250	1,001.56	1,062.20	1,122.83	1,143.04	1,183.56	1,203.82
40400251	63.84	67.70	71.57	72.86	75.44	76.73
40400253	4.37	4.63	4.90	4.98	5.16	5.25
40400254	0.00	0.00	0.00	0.00	0.00	0.00
40400301	12.37	13.27	14.17	14.47	15.13	15.46
40400302	9.31	9.98	10.65	10.87	11.36	11.60

Ozone Season Day Point Source non-hazardous VOC by SCC in lbs.

SCC	2002 OSD	2005 OSD	2008 OSD	2009 OSD	2011 OSD	2012 OSD
40400401	0.29	0.28	0.28	0.28	0.28	0.28
40400404	0.61	0.61	0.61	0.61	0.60	0.60
40400408	0.86	0.92	0.97	0.99	1.02	1.04
40400413	0.00	0.00	0.00	0.00	0.00	0.00
40400414	11.54	11.78	12.03	12.11	11.87	11.75
40400497	0.01	0.01	0.01	0.01	0.01	0.01
40400498	0.21	0.22	0.23	0.23	0.24	0.25
40500101	12.85	12.46	12.06	11.93	12.10	12.18
40500212	117.85	114.21	110.58	109.37	110.91	111.68
40500301	1,494.57	1,496.45	1,498.33	1,498.96	1,533.63	1,550.97
40500311	3,573.92	3,463.67	3,353.41	3,316.66	3,363.44	3,386.82
40500312	107.74	104.42	101.09	99.98	101.39	102.10
40500316	4.73	4.59	4.44	4.39	4.46	4.49
40500401	471.34	457.10	442.86	438.11	444.37	447.50
40500411	234.88	227.70	220.52	218.13	221.23	222.78
40500415	0.08	0.08	0.08	0.08	0.08	0.08
40500431	36.09	34.98	33.86	33.49	33.96	34.20
40500511	2,326.24	2,254.48	2,182.72	2,158.80	2,189.24	2,204.46
40500597	47.81	47.87	47.93	47.95	49.06	49.62
40500599	24.23	24.26	24.29	24.30	24.86	25.15
40500701	3.42	3.42	3.43	3.43	3.51	3.55
40500801	0.71	0.69	0.67	0.66	0.67	0.67
40588801	617.72	618.56	619.40	619.68	634.04	641.21
40600101	0.23	0.23	0.23	0.23	0.23	0.23
40600131	71.58	71.45	71.31	71.26	70.73	70.46
40600135	1.22	1.24	1.27	1.28	1.25	1.24
40600140	22.05	22.04	22.02	22.01	21.83	21.74
40600141	58.68	58.57	58.46	58.42	57.98	57.76
40600163	28.13	28.08	28.03	28.01	27.80	27.69
40600232	131.74	139.72	147.69	150.35	155.68	158.35
40600234	2,051.30	2,175.48	2,299.66	2,341.05	2,424.04	2,465.53
40600251	14.32	15.19	16.06	16.35	16.93	17.22
40600301	7.45	7.45	7.44	7.44	7.38	7.35
40600302	0.29	0.29	0.28	0.28	0.28	0.28
40600306	15.80	16.14	16.47	16.59	16.26	16.09
40600307	0.04	0.04	0.04	0.04	0.04	0.04
40600401	3.80	3.80	3.79	3.79	3.76	3.74
40600402	0.10	0.10	0.10	0.10	0.10	0.09
40600602	0.05	0.05	0.05	0.05	0.05	0.05
40600603	4.61	4.60	4.60	4.59	4.56	4.54
40600706	30.36	30.30	30.24	30.22	30.00	29.88
40600707	0.00	0.00	0.00	0.00	0.00	0.00
40688801	0.36	0.39	0.41	0.41	0.43	0.44
40700809	0.06	0.06	0.06	0.06	0.06	0.06
40700810	0.06	0.06	0.06	0.06	0.06	0.06
40701607	30.56	30.20	29.84	29.72	30.21	30.46
40701613	4.84	4.78	4.73	4.71	4.79	4.82
40701614	0.31	0.30	0.30	0.30	0.30	0.31
40701698	2.72	2.69	2.65	2.64	2.69	2.71
40704405	0.23	0.23	0.23	0.22	0.23	0.23
40704406	0.39	0.39	0.38	0.38	0.39	0.39
40704497	0.01	0.01	0.01	0.01	0.01	0.01
40704498	0.02	0.02	0.02	0.02	0.02	0.02
40708098	0.11	0.11	0.10	0.10	0.11	0.11
40714697	1.39	1.38	1.36	1.36	1.38	1.39
40714698	17.49	17.29	17.08	17.01	17.29	17.44
40715812	12.56	12.41	12.27	12.22	12.42	12.52
40717613	19.38	19.16	18.93	18.85	19.17	19.32
40722097	0.06	0.06	0.06	0.06	0.06	0.06
40786099	0.00	0.00	0.00	0.00	0.00	0.00
40799997	324.28	320.46	316.65	315.38	320.64	323.27
40799998	4.79	4.74	4.68	4.66	4.74	4.78
40799999	11.28	11.15	11.01	10.97	11.15	11.24
49000101	27.33	27.01	26.69	26.58	27.03	27.25
49000201	3.08	3.04	3.00	2.99	3.04	3.07
49000405	15.33	17.12	18.92	19.52	20.60	21.14
49000599	1.08	1.07	1.06	1.05	1.07	1.08
49099998	95.90	94.77	93.65	93.27	94.83	95.60

Ozone Season Day Point Source non-hazardous VOC by SCC in lbs.

SCC	2002 OSD	2005 OSD	2008 OSD	2009 OSD	2011 OSD	2012 OSD
49099999	1,064.94	1,052.42	1,039.89	1,035.72	1,052.99	1,061.62
50100102	127.32	130.91	134.50	135.70	140.07	142.26
50100103	0.02	0.02	0.02	0.02	0.02	0.02
50100104	10.90	11.20	11.51	11.61	11.99	12.18
50100105	0.00	0.00	0.00	0.00	0.00	0.00
50100106	51.43	52.88	54.34	54.82	56.59	57.47
50100402	717.70	736.97	756.25	762.68	786.21	797.98
50100403	87.91	89.98	92.04	92.73	95.28	96.56
50100404	9.32	9.30	9.28	9.27	9.27	9.27
50100405	22.09	22.71	23.33	23.54	24.30	24.68
50100406	86.70	89.15	91.60	92.42	95.39	96.88
50100410	38.62	38.53	38.44	38.41	38.41	38.41
50100421	188.71	188.28	187.84	187.70	187.70	187.70
50100422	2.96	3.04	3.12	3.15	3.25	3.30
50100505	3.01	3.06	3.10	3.12	3.12	3.11
50100701	1.08	1.11	1.14	1.15	1.19	1.21
50100707	0.08	0.08	0.09	0.09	0.09	0.09
50100720	0.09	0.09	0.09	0.09	0.09	0.10
50100731	0.64	0.66	0.68	0.69	0.71	0.72
50100740	1.98	2.04	2.10	2.12	2.18	2.22
50100760	0.03	0.03	0.03	0.03	0.03	0.03
50100771	0.11	0.11	0.11	0.12	0.12	0.12
50100781	0.06	0.06	0.06	0.06	0.06	0.06
50100789	13.38	13.76	14.14	14.26	14.72	14.95
50100799	32.88	33.81	34.74	35.05	36.18	36.74
50200101	0.67	0.72	0.77	0.79	0.82	0.84
50200504	6.66	6.77	6.87	6.91	6.90	6.90
50200515	0.00	0.00	0.00	0.00	0.00	0.00
50200601	27.59	27.53	27.46	27.44	27.44	27.44
50200602	281.45	292.79	304.13	307.90	314.75	318.17
50200603	175.66	175.25	174.85	174.72	174.72	174.72
50200610	2.29	2.29	2.28	2.28	2.28	2.28
50300112	0.99	1.15	1.30	1.35	1.44	1.49
50300501	1.51	1.74	1.97	2.04	2.19	2.26
50300503	0.12	0.13	0.15	0.16	0.17	0.17
50300506	18.06	20.82	23.57	24.49	26.22	27.09
50300701	5.07	5.84	6.62	6.87	7.36	7.60
50300702	24.37	28.09	31.81	33.05	35.39	36.56
50300801	3.19	3.68	4.16	4.33	4.63	4.79
50300820	30.35	34.98	39.61	41.16	44.07	45.52
50300830	0.08	0.10	0.11	0.11	0.12	0.13
50300899	0.01	0.01	0.01	0.01	0.02	0.02
50382501	0.15	0.18	0.20	0.21	0.22	0.23
50410405	4.26	4.38	4.50	4.54	4.68	4.76
50410420	0.00	0.00	0.00	0.00	0.00	0.00
50410560	0.32	0.32	0.33	0.34	0.35	0.35
50410621	0.01	0.01	0.01	0.01	0.01	0.02
68240030	89.91	89.71	89.51	89.44	89.30	89.23
STATEWIDE	**86,162.00**	**93,628.32**	**101,094.66**	**103,583.43**	**108,550.61**	**111,034.21**
state(tons)	43.08	46.81	50.55	51.79	54.28	55.52

Ozone Season Day Point Source HAPs by SCC in lbs.

SCC	2002 OSD	2005 OSD	2008 OSD	2009 OSD	2011 OSD	2012 OSD
10100205	-	-	-	-	-	-
10100401	3.99	4.97	5.95	6.28	6.20	6.16
10100405	-	-	-	-	-	-
10100501	0.16	0.24	0.31	0.34	0.26	0.21
10100601	37.00	38.75	40.50	41.09	45.39	47.54
10100602	6.81	7.13	7.45	7.56	8.35	8.75
10100604	72.54	75.97	79.40	80.55	88.99	93.21
10200204	0.02	0.02	0.02	0.02	0.02	0.02
10200401	5.72	6.24	6.76	6.93	6.94	6.94
10200501	1.69	1.69	1.70	1.70	1.68	1.67
10200601	40.59	41.54	42.49	42.81	43.54	43.91
10200602	71.21	72.88	74.54	75.10	76.39	77.04
10200799	0.00	0.00	0.00	0.00	0.00	0.00
10200901	-	-	-	-	-	-
10200902	0.50	0.53	0.56	0.57	0.58	0.59
10200903	0.07	0.08	0.08	0.09	0.09	0.09
10200905	0.50	0.53	0.57	0.58	0.59	0.59
10200906	0.22	0.24	0.25	0.26	0.26	0.26
10201302	0.02	0.02	0.02	0.02	0.02	0.02
10300209	3.26	3.33	3.40	3.42	3.41	3.40
10300401	8.50	8.20	7.90	7.80	7.92	7.98
10300501	0.46	0.47	0.49	0.49	0.50	0.50
10300502	0.01	0.01	0.01	0.01	0.01	0.01
10300601	49.16	49.38	49.60	49.67	50.49	50.90
10300602	37.85	38.02	38.19	38.25	38.88	39.19
10300603	4.58	4.60	4.62	4.63	4.70	4.74
10300701	0.01	0.01	0.01	0.01	0.01	0.01
10300901	0.06	0.06	0.06	0.06	0.06	0.06
10300902	1.25	1.24	1.24	1.24	1.24	1.24
10300903	0.94	0.94	0.93	0.93	0.93	0.93
10500105	0.01	0.01	0.01	0.01	0.01	0.01
10500113	-	-	-	-	-	-
10500214	-	-	-	-	-	-
20100101	0.01	0.02	0.02	0.02	0.02	0.01
20100102	13.69	20.47	27.25	29.51	22.11	18.41
20100201	0.03	0.03	0.03	0.03	0.03	0.03
20200101	0.03	0.03	0.03	0.03	0.03	0.03
20200102	4.38	4.40	4.42	4.42	4.37	4.34
20200103	0.01	0.01	0.01	0.01	0.01	0.01
20200104	0.17	0.17	0.17	0.17	0.17	0.17
20200201	5.67	5.80	5.93	5.98	6.08	6.13
20200203	1.23	1.26	1.29	1.30	1.32	1.33
20200252	1.76	1.80	1.84	1.85	1.88	1.90
20200253	2.85	2.92	2.99	3.01	3.06	3.09
20200254	22.94	23.48	24.02	24.20	24.61	24.82
20200401	5.88	5.91	5.94	5.95	5.88	5.85
20200402	36.54	36.54	36.54	36.54	36.54	36.54
20300101	0.05	0.05	0.05	0.05	0.05	0.05
20300102	0.07	0.07	0.07	0.07	0.07	0.08
20300702	0.01	0.01	0.01	0.01	0.01	0.01
20300801	0.23	0.23	0.23	0.23	0.23	0.23
30101401	488.46	540.24	592.01	609.27	641.35	657.40
30101805	1,014.64	1,141.40	1,268.16	1,310.41	1,386.99	1,425.28
30101808	10.36	11.65	12.94	13.37	14.16	14.55
30101809	0.00	0.00	0.01	0.01	0.01	0.01
30101810	8.29	9.33	10.37	10.71	11.34	11.65
30101811	9.93	11.18	12.42	12.83	13.58	13.96
30101817	3.85	4.33	4.81	4.97	5.26	5.41
30101818	4.04	4.54	5.05	5.22	5.52	5.67
30101819	0.18	0.20	0.22	0.23	0.25	0.25
30101821	1.08	1.21	1.35	1.39	1.48	1.52
30101822	382.16	429.90	477.65	493.56	522.41	536.83
30101847	76.95	86.56	96.18	99.38	105.19	108.09
30101860	1.88	2.12	2.35	2.43	2.57	2.65
30101891	108.12	121.63	135.13	139.64	147.80	151.88
30101892	0.01	0.01	0.01	0.01	0.01	0.01
30101893	0.78	0.88	0.98	1.01	1.07	1.10
30101894	14.54	16.35	18.17	18.77	19.87	20.42

Ozone Season Day Point Source HAPs by SCC in lbs.

SCC	2002 OSD	2005 OSD	2008 OSD	2009 OSD	2011 OSD	2012 OSD
30101899	118.52	133.33	148.13	153.07	162.01	166.49
30102499	26.24	29.51	32.79	33.88	35.86	36.85
30102630	459.60	517.01	574.43	593.57	628.26	645.60
30102699	7.26	8.16	9.07	9.37	9.92	10.19
30103499	0.09	0.09	0.09	0.09	0.09	0.09
30106002	0.89	1.06	1.23	1.28	1.38	1.42
30106004	1.44	1.72	1.99	2.08	2.23	2.30
30106008	10.93	13.00	15.07	15.76	16.88	17.44
30106009	0.54	0.65	0.75	0.78	0.84	0.87
30106010	2.56	3.04	3.53	3.69	3.95	4.08
30106011	8.78	10.45	12.11	12.66	13.56	14.01
30106099	384.55	457.32	530.08	554.34	593.65	613.30
30107002	1.37	1.54	1.71	1.77	1.87	1.92
30112199	57.88	57.20	56.52	56.29	57.23	57.70
30113299	0.47	0.47	0.46	0.46	0.47	0.47
30117401	0.08	0.09	0.10	0.10	0.10	0.11
30130101	9.93	11.18	12.42	12.83	13.58	13.95
30180001	0.06	0.07	0.08	0.08	0.08	0.09
30182001	0.01	0.01	0.01	0.01	0.02	0.02
30182002	241.60	271.55	301.50	311.48	330.15	339.48
30182003	0.10	0.11	0.12	0.12	0.13	0.13
30183001	16.00	17.98	19.97	20.63	21.86	22.47
30184001	0.56	0.63	0.71	0.73	0.77	0.79
30187001	4.32	4.27	4.22	4.20	4.27	4.31
30188801	3.68	4.14	4.60	4.75	5.03	5.16
30188805	221.36	248.80	276.24	285.38	302.48	311.03
30199999	134.23	150.87	167.51	173.06	183.43	188.61
30200734	32.19	32.71	33.24	33.42	34.13	34.48
30203201	1,795.35	1,821.65	1,847.96	1,856.72	1,876.87	1,886.95
30299998	206.20	209.58	212.95	214.08	218.64	220.92
30300102	186.58	198.77	210.96	215.02	225.62	230.91
30300199	0.15	0.16	0.17	0.18	0.18	0.19
30300331	7.11	6.98	6.86	6.82	6.99	7.08
30300341	3.30	3.25	3.19	3.17	3.25	3.29
30300361	0.02	0.02	0.02	0.02	0.02	0.02
30300934	0.00	0.00	0.00	0.00	0.00	0.00
30400103	-	-	-	-	-	-
30400108	-	-	-	-	-	-
30400109	0.21	0.25	0.28	0.29	0.31	0.32
30400112	3.26	3.81	4.36	4.54	4.85	5.00
30400115	28.70	33.54	38.37	39.98	42.68	44.03
30400132	1.62	1.89	2.16	2.25	2.40	2.48
30400299	0.54	0.63	0.72	0.75	0.80	0.83
30400320	0.23	0.26	0.28	0.29	0.31	0.32
30400331	1.97	2.20	2.43	2.51	2.66	2.74
30401002	31.81	33.89	35.96	36.66	38.46	39.37
30402004	907.48	1,080.63	1,253.78	1,311.50	1,418.12	1,471.44
30402005	1.68	2.00	2.32	2.43	2.63	2.73
30500212	0.25	0.28	0.30	0.31	0.33	0.34
30500251	23.20	25.54	27.88	28.66	30.38	31.23
30501204	253.33	251.56	249.78	249.19	252.96	254.84
30501205	1.79	1.78	1.76	1.76	1.79	1.80
30501206	20.11	19.97	19.83	19.78	20.08	20.23
30501299	0.82	0.86	0.90	0.92	0.95	0.97
30501406	2.39	2.52	2.64	2.68	2.78	2.83
30501420	0.49	0.50	0.51	0.51	0.52	0.53
30600508	0.65	0.69	0.73	0.74	0.77	0.78
30600811	0.32	0.34	0.36	0.36	0.38	0.38
30622401	1.11	1.17	1.24	1.26	1.31	1.33
30622404	15.75	16.70	17.66	17.97	18.61	18.93
30700105	1.65	1.70	1.74	1.75	1.81	1.84
30700106	12.89	13.22	13.56	13.67	14.10	14.32
30700110	17.55	18.01	18.46	18.61	19.20	19.50
30700115	94.35	96.81	99.26	100.08	103.25	104.84
30700122	219.77	225.48	231.19	233.10	240.49	244.19
30700199	129.47	132.84	136.20	137.33	141.68	143.86
30700401	4.38	4.49	4.60	4.64	4.79	4.86
30700406	0.02	0.03	0.03	0.03	0.03	0.03

Ozone Season Day Point Source HAPs by SCC in lbs.

SCC	2002 OSD	2005 OSD	2008 OSD	2009 OSD	2011 OSD	2012 OSD
30700718	4.33	4.55	4.77	4.84	4.98	5.04
30700727	0.17	0.17	0.18	0.19	0.19	0.19
30700896	2.30	2.48	2.65	2.71	2.81	2.86
30700925	527.99	551.25	574.50	582.25	602.23	612.21
30700960	151.46	158.13	164.81	167.03	172.76	175.62
30701199	0.38	0.39	0.41	0.42	0.43	0.44
30701399	256.33	270.87	285.41	290.26	302.17	308.12
30702099	23.14	24.42	25.69	26.12	27.55	28.27
30799998	677.49	708.31	739.13	749.40	779.29	794.23
30799999	0.00	0.00	0.00	0.00	0.00	0.00
30800113	11.53	12.99	14.46	14.94	15.73	16.12
30800114	1.32	1.49	1.66	1.71	1.80	1.85
30800115	4.83	5.44	6.05	6.26	6.58	6.75
30800127	7.68	8.66	9.63	9.96	10.48	10.74
30800131	3.65	4.11	4.58	4.73	4.98	5.10
30800501	34.54	38.93	43.31	44.78	47.12	48.30
30800699	8,890.88	10,014.47	11,138.06	11,512.59	12,177.27	12,509.61
30800702	2.02	2.28	2.54	2.62	2.77	2.85
30800703	52.77	59.43	66.10	68.32	72.27	74.24
30800704	1.39	1.56	1.74	1.79	1.90	1.95
30800721	6.23	7.02	7.81	8.07	8.54	8.77
30800722	36.08	40.64	45.20	46.72	49.42	50.77
30800723	7.77	8.75	9.73	10.06	10.64	10.93
30800724	86.10	96.98	107.86	111.48	117.92	121.14
30800736	2.35	2.65	2.95	3.05	3.22	3.31
30800799	0.15	0.17	0.19	0.19	0.20	0.21
30801002	0.57	0.64	0.71	0.73	0.78	0.80
30801005	2.71	3.06	3.40	3.51	3.72	3.82
30801007	92.46	104.14	115.83	119.72	126.63	130.09
30899999	1.83	2.06	2.30	2.37	2.51	2.58
30901001	0.16	0.17	0.19	0.20	0.21	0.21
30901042	0.03	0.03	0.04	0.04	0.04	0.04
30901052	3.00	3.31	3.62	3.72	3.92	4.02
30901099	48.96	53.96	58.97	60.63	63.93	65.58
30901101	1.47	1.80	2.14	2.25	2.45	2.55
30901102	1.64	2.01	2.39	2.51	2.73	2.84
30982599	0.01	0.01	0.01	0.01	0.01	0.01
30988801	1.97	2.17	2.37	2.43	2.57	2.63
31000227	10.44	11.00	11.56	11.75	12.23	12.48
31000302	-	-	-	-	-	-
31303001	2.05	2.55	3.05	3.22	3.56	3.74
31303501	0.21	0.26	0.30	0.31	0.35	0.36
31306500	0.00	0.00	0.00	0.00	0.00	0.00
31306501	0.11	0.13	0.15	0.16	0.17	0.18
31306505	0.05	0.06	0.07	0.07	0.08	0.08
31306599	45.09	56.14	67.18	70.86	78.44	82.23
31307001	2.53	3.01	3.49	3.65	3.95	4.10
31401503	0.43	0.46	0.49	0.49	0.51	0.53
31499999	0.47	0.52	0.57	0.58	0.62	0.63
31502001	19.75	19.78	19.81	19.81	19.79	19.79
31503001	0.52	0.60	0.67	0.70	0.74	0.76
31603001	14.42	14.09	13.76	13.65	13.60	13.57
31603002	293.52	286.79	280.07	277.82	276.84	276.35
31604001	327.55	320.04	312.54	310.03	308.94	308.39
31604002	4.09	4.00	3.90	3.87	3.86	3.85
31604003	10.48	10.24	10.00	9.92	9.89	9.87
31605001	274.55	268.26	261.97	259.87	258.95	258.49
31605002	0.36	0.35	0.34	0.34	0.34	0.34
31605003	-	-	-	-	-	-
31605004	14.52	14.18	13.85	13.74	13.69	13.67
31612001	0.48	0.47	0.46	0.46	0.45	0.45
31612002	1.07	1.04	1.02	1.01	1.00	1.00
31612003	9.91	9.69	9.46	9.38	9.35	9.33
31613001	1.58	1.54	1.51	1.50	1.49	1.49
31613002	1.40	1.37	1.34	1.32	1.32	1.32
31613004	0.42	0.41	0.40	0.40	0.40	0.40
31614001	0.05	0.05	0.05	0.05	0.05	0.05
31614002	0.09	0.09	0.09	0.08	0.08	0.08

Ozone Season Day Point Source HAPs by SCC in lbs.

SCC	2002 OSD	2005 OSD	2008 OSD	2009 OSD	2011 OSD	2012 OSD
31615001	15.55	15.19	14.84	14.72	14.66	14.64
31615003	60.73	59.33	57.94	57.48	57.27	57.17
31616002	2.96	2.89	2.82	2.80	2.79	2.79
31616003	206.36	201.63	196.90	195.33	194.64	194.29
31616004	0.31	0.30	0.30	0.29	0.29	0.29
33000104	0.08	0.08	0.08	0.08	0.08	0.08
33000212	124.68	136.37	148.06	151.96	158.47	161.72
33000214	35.11	38.40	41.69	42.79	44.62	45.54
33000297	1.16	1.27	1.38	1.41	1.47	1.50
39000689	4.92	5.03	5.15	5.18	5.27	5.32
39990003	7.04	7.34	7.63	7.73	7.97	8.09
39990014	2.29	2.40	2.51	2.55	2.62	2.66
39999989	49.91	60.70	71.49	75.09	79.40	81.56
39999992	0.11	0.14	0.16	0.17	0.18	0.19
39999993	160.38	195.07	229.75	241.31	255.18	262.11
39999994	2,146.75	2,611.04	3,075.33	3,230.09	3,415.66	3,508.44
39999998	26.75	32.54	38.32	40.25	42.56	43.72
39999999	49.14	59.77	70.39	73.94	78.18	80.31
40100204	5.80	6.60	7.40	7.67	8.09	8.30
40100205	242.51	276.03	309.54	320.72	338.35	347.16
40100222	146.26	166.47	186.68	193.42	204.05	209.37
40100501	2.05	2.03	2.00	1.99	2.03	2.04
40200101	35.12	41.11	47.11	49.11	52.88	54.76
40200110	80.84	94.63	108.42	113.02	121.71	126.05
40200201	7.23	8.46	9.70	10.11	10.88	11.27
40200210	0.63	0.73	0.84	0.88	0.94	0.98
40200301	6.28	7.35	8.42	8.78	9.45	9.79
40200401	49.01	57.37	65.73	68.52	73.78	76.41
40200501	43.69	51.14	58.60	61.08	65.77	68.12
40200510	18.23	21.34	24.45	25.48	27.44	28.42
40200701	218.78	256.11	293.44	305.89	329.38	341.13
40200706	17.52	20.51	23.50	24.50	26.38	27.32
40200707	0.03	0.03	0.03	0.03	0.04	0.04
40200710	43.65	51.09	58.54	61.02	65.71	68.05
40200711	0.26	0.30	0.34	0.36	0.39	0.40
40200801	139.60	163.42	187.24	195.18	210.18	217.67
40200803	13.77	15.33	16.88	17.40	18.44	18.97
40200810	0.95	1.12	1.28	1.33	1.44	1.49
40200842	81.27	90.00	98.74	101.65	106.64	109.13
40200843	11.98	13.27	14.55	14.98	15.72	16.09
40200898	31.82	35.42	39.01	40.21	42.62	43.82
40200998	2.38	2.78	3.19	3.32	3.58	3.70
40201101	83.53	92.97	102.42	105.56	111.88	115.04
40201103	0.53	0.58	0.64	0.66	0.69	0.71
40201122	43.20	42.78	42.35	42.21	43.53	44.19
40201201	0.58	0.57	0.57	0.56	0.58	0.59
40201301	244.86	260.81	276.76	282.07	294.51	300.73
40201303	3.11	3.45	3.78	3.90	4.12	4.23
40201310	0.04	0.04	0.05	0.05	0.05	0.05
40201330	0.23	0.25	0.26	0.27	0.28	0.29
40201399	3.34	3.63	3.91	4.00	4.21	4.31
40201401	0.86	0.95	1.05	1.08	1.15	1.18
40201432	7.42	8.26	9.10	9.37	9.94	10.22
40201435	11.96	11.96	11.96	11.96	12.33	12.52
40201601	0.09	0.10	0.11	0.12	0.12	0.13
40201607	2.94	3.28	3.61	3.72	3.94	4.05
40201620	0.00	0.00	0.00	0.00	0.00	0.00
40201699	0.12	0.13	0.15	0.15	0.16	0.16
40201721	15.14	16.76	18.39	18.93	19.86	20.32
40201722	24.07	26.66	29.24	30.10	31.58	32.32
40201725	18.36	20.33	22.30	22.96	24.08	24.65
40201727	43.49	48.17	52.84	54.40	57.07	58.40
40201799	32.56	36.24	39.93	41.15	43.62	44.85
40201901	322.38	353.38	384.37	394.71	419.12	431.33
40202201	20.67	23.28	25.90	26.77	28.31	29.08
40202203	3.01	3.39	3.77	3.90	4.13	4.24
40202220	75.32	84.84	94.36	97.53	103.16	105.98
40202299	0.63	0.71	0.79	0.82	0.86	0.89

Ozone Season Day Point Source HAPs by SCC in lbs.

SCC	2002 OSD	2005 OSD	2008 OSD	2009 OSD	2011 OSD	2012 OSD
40202501	26.27	32.27	38.27	40.27	43.80	45.56
40202502	0.12	0.15	0.17	0.18	0.20	0.21
40202503	0.42	0.49	0.56	0.58	0.63	0.65
40202521	7.73	9.50	11.26	11.85	12.89	13.41
40202537	0.70	0.80	0.89	0.92	0.98	1.01
40202544	2.83	3.48	4.13	4.34	4.72	4.91
40202599	56.72	68.26	79.80	83.65	90.55	93.99
40203001	3.97	4.65	5.33	5.56	5.98	6.20
40204004	16.04	17.85	19.67	20.27	21.49	22.09
40204161	0.12	0.13	0.13	0.13	0.14	0.14
40204330	0.49	0.51	0.53	0.53	0.55	0.56
40204340	20.35	21.19	22.04	22.32	23.02	23.37
40206031	0.23	0.22	0.22	0.22	0.23	0.23
40206034	0.07	0.07	0.07	0.07	0.07	0.07
40288824	0.00	0.00	0.00	0.00	0.00	0.00
40299995	1,510.17	1,784.12	2,058.08	2,149.40	2,318.95	2,403.72
40299998	0.77	0.91	1.04	1.08	1.17	1.21
40300302	8.59	9.11	9.63	9.81	10.15	10.33
40301016	0.00	0.00	0.01	0.01	0.01	0.01
40301017	0.23	0.25	0.26	0.27	0.28	0.28
40301018	0.19	0.20	0.21	0.21	0.22	0.23
40301019	12.14	12.87	13.61	13.85	14.34	14.59
40301020	1.28	1.36	1.44	1.46	1.51	1.54
40301021	0.96	1.02	1.08	1.10	1.14	1.16
40301097	1.13	1.20	1.27	1.29	1.34	1.36
40301098	0.35	0.37	0.39	0.40	0.41	0.42
40301099	1.47	1.56	1.65	1.68	1.74	1.77
40301120	0.00	0.00	0.00	0.00	0.00	0.00
40301151	8.95	9.49	10.04	10.22	10.58	10.76
40301197	0.05	0.06	0.06	0.06	0.06	0.06
40400110	36.64	38.85	41.07	41.81	43.29	44.03
40400111	28.15	29.86	31.56	32.13	33.27	33.84
40400114	494.00	523.91	553.82	563.78	583.77	593.76
40400116	1.33	1.41	1.49	1.51	1.57	1.59
40400117	29.06	30.82	32.58	33.17	34.35	34.93
40400121	0.00	0.00	0.00	0.00	0.00	0.00
40400122	0.22	0.24	0.25	0.26	0.26	0.27
40400150	18.66	19.79	20.92	21.30	22.05	22.43
40400151	18.08	19.18	20.27	20.64	21.37	21.73
40400152	31.63	33.55	35.46	36.10	37.38	38.02
40400153	5.58	5.91	6.25	6.36	6.59	6.70
40400154	33.89	35.94	37.99	38.67	40.05	40.73
40400160	154.22	163.55	172.89	176.00	182.24	185.36
40400179	18.29	19.40	20.51	20.88	21.62	21.99
40400199	0.51	0.54	0.57	0.58	0.60	0.61
40400250	219.36	232.64	245.92	250.34	259.22	263.65
40400251	7.79	8.26	8.74	8.89	9.21	9.37
40400253	0.67	0.71	0.75	0.76	0.79	0.81
40400254	43.06	45.67	48.28	49.15	50.89	51.76
40400301	0.05	0.06	0.06	0.06	0.07	0.07
40400302	0.04	0.04	0.04	0.04	0.04	0.05
40400401	0.31	0.31	0.31	0.31	0.31	0.31
40400498	0.01	0.01	0.01	0.01	0.01	0.01
40500101	0.11	0.11	0.11	0.10	0.11	0.11
40500212	3.64	3.53	3.41	3.38	3.42	3.45
40500301	14.55	14.57	14.59	14.59	14.93	15.10
40500311	135.80	131.61	127.42	126.03	127.80	128.69
40500312	0.40	0.38	0.37	0.37	0.37	0.37
40500401	21.55	20.89	20.22	20.00	20.28	20.42
40500431	33.11	32.09	31.07	30.73	31.16	31.38
40500511	815.42	790.27	765.11	756.73	767.40	772.74
40500701	0.55	0.56	0.56	0.56	0.57	0.58
40500801	0.00	0.00	0.00	0.00	0.00	0.00
40588801	6.15	6.15	6.16	6.16	6.31	6.38
40600131	4.11	4.10	4.09	4.09	4.06	4.05
40600135	0.90	0.92	0.94	0.94	0.93	0.92
40600140	2.98	2.98	2.97	2.97	2.95	2.94
40600141	8.13	8.12	8.10	8.09	8.03	8.00

Ozone Season Day Point Source HAPs by SCC in lbs.

SCC	2002 OSD	2005 OSD	2008 OSD	2009 OSD	2011 OSD	2012 OSD
40600163	794.37	792.87	791.36	790.86	784.92	781.94
40600232	22.44	23.80	25.16	25.61	26.52	26.97
40600234	1,623.92	1,722.23	1,820.54	1,853.31	1,919.00	1,951.85
40600251	0.62	0.66	0.70	0.71	0.73	0.75
40600301	0.01	0.01	0.01	0.01	0.01	0.01
40600302	0.05	0.05	0.05	0.05	0.05	0.05
40600306	1.13	1.16	1.18	1.19	1.16	1.15
40600307	0.01	0.01	0.01	0.01	0.01	0.01
40600401	0.02	0.02	0.02	0.02	0.02	0.02
40600402	0.00	0.00	0.00	0.00	0.00	0.00
40600602	0.01	0.01	0.01	0.01	0.01	0.01
40600603	0.27	0.27	0.26	0.26	0.26	0.26
40600706	7.43	7.41	7.40	7.39	7.34	7.31
40700815	1.56	1.54	1.52	1.51	1.54	1.55
40701613	0.33	0.33	0.33	0.33	0.33	0.33
40703202	0.00	0.00	0.00	0.00	0.00	0.00
40703601	0.82	0.81	0.80	0.80	0.81	0.82
40703620	0.01	0.01	0.01	0.01	0.01	0.01
40704420	4.92	4.86	4.80	4.78	4.86	4.90
40708098	0.10	0.10	0.10	0.10	0.10	0.10
40714697	0.13	0.13	0.13	0.13	0.13	0.13
40714698	42.74	42.23	41.73	41.56	42.26	42.60
40715812	14.74	14.57	14.39	14.34	14.58	14.70
40717613	660.63	652.87	645.10	642.51	653.22	658.57
40722097	0.59	0.58	0.58	0.57	0.58	0.59
40786099	0.06	0.06	0.06	0.06	0.06	0.06
40799997	26.83	26.51	26.19	26.09	26.52	26.74
40799998	0.27	0.27	0.27	0.26	0.27	0.27
49000201	1.56	1.54	1.53	1.52	1.54	1.56
49000202	0.01	0.01	0.01	0.01	0.01	0.01
49000599	0.45	0.45	0.44	0.44	0.45	0.45
49099999	0.38	0.37	0.37	0.37	0.37	0.38
50100102	1.29	1.32	1.36	1.37	1.41	1.44
50100104	10.00	10.28	10.56	10.65	11.00	11.17
50100105	0.53	0.55	0.56	0.57	0.59	0.60
50100106	0.03	0.03	0.03	0.03	0.03	0.04
50100402	145.11	148.72	152.34	153.54	157.98	160.20
50100403	6.62	6.60	6.59	6.58	6.58	6.58
50100404	0.92	0.92	0.91	0.91	0.91	0.91
50100410	1.36	1.36	1.35	1.35	1.35	1.35
50100421	1.70	1.70	1.69	1.69	1.69	1.69
50100505	0.00	0.00	0.00	0.00	0.00	0.00
50100707	0.58	0.60	0.62	0.62	0.64	0.65
50100720	1.24	1.27	1.31	1.32	1.36	1.38
50100731	14.62	15.03	15.45	15.58	16.09	16.34
50100740	11.14	11.46	11.77	11.88	12.26	12.45
50100760	0.20	0.21	0.21	0.21	0.22	0.22
50100771	0.45	0.46	0.47	0.47	0.49	0.50
50100781	0.23	0.23	0.24	0.24	0.25	0.25
50100799	0.23	0.24	0.24	0.24	0.25	0.26
50200504	0.22	0.22	0.23	0.23	0.23	0.23
50200505	0.23	0.23	0.23	0.23	0.23	0.23
50200507	4.82	4.80	4.79	4.79	4.79	4.79
50200602	38.26	41.35	44.44	45.47	47.29	48.20
50300112	0.93	1.07	1.21	1.26	1.35	1.39
50300503	0.05	0.06	0.07	0.07	0.08	0.08
50300701	0.35	0.40	0.45	0.47	0.51	0.52
50300702	2.42	2.79	3.16	3.28	3.52	3.63
50382501	0.18	0.21	0.24	0.25	0.26	0.27
50410405	5.89	6.05	6.22	6.28	6.48	6.58
50410420	0.10	0.10	0.10	0.10	0.11	0.11
50410560	0.65	0.67	0.69	0.70	0.72	0.73
64615012	94.18	94.34	94.47	94.47	94.38	94.38
68240030	0.34	0.34	0.34	0.34	0.34	0.34
68480001	0.13	0.14	0.15	0.15	0.16	0.16
STATEWIDE	**32,748.51**	**35,973.51**	**39,198.47**	**40,273.41**	**42,233.61**	**43,213.77**
state (tons)	16.37	17.99	19.60	20.14	21.12	21.61

Ozone Season Day Area Source Carbon Monoxide by SCC in lbs.

strSCC	OSD 02	OSD 05	OSD 08	OSD 09	OSD 11	OSD 12
2101001000						
2101002000	387	411	435	443	452	457
2101004000	185	276	367	398	298	248
2101005000	1,415	1,762	2,109	2,224	2,196	2,182
2101006000	0	0	0	0	0	0
2102001000						
2102002000	2,624	2,682	2,740	2,760	2,766	2,770
2102004000	2,526	2,538	2,549	2,553	2,522	2,507
2102005000	220	240	260	267	267	267
2102006000	18,101	18,525	18,948	19,089	19,419	19,583
2102007000	1,081	1,050	1,018	1,008	1,014	1,017
2102008000						
2102011000	231	222	214	211	216	219
2103001000						
2103002000	2	2	2	2	2	2
2103004001	330	358	387	396	401	403
2103004002	21,970	23,857	25,745	26,374	26,687	26,844
2103005000	188	182	175	173	176	177
2103006000	4,975	4,998	5,020	5,028	5,111	5,152
2103007000	7	7	7	7	7	8
2103008000	970	968	966	965	965	965
2103011000	12	14	16	16	16	16
2104001000						
2104002000	1	1	1	1	1	1
2104004000	770	771	772	772	771	771
2104006010	13,844	14,343	14,842	15,008	15,268	15,398
2104007000	685	696	708	711	744	761
2104008001	88,985	86,163	83,341	82,400	80,502	79,553
2104008052	29,098	28,175	27,252	26,945	26,324	26,014
2104008070	7,806	7,784	7,762	7,755	7,603	7,527
2104011000	40	52	65	69	69	69
2302002100	2,288	2,324	2,361	2,373	2,388	2,395
2302002200	8,066	8,195	8,324	8,367	8,417	8,442
2302003100	667	678	688	692	696	698
2610000100	7,093	7,122	7,151	7,161	7,175	7,182
2610000400	8,941	8,978	9,014	9,026	9,044	9,053
2610030000	27,942	28,050	28,158	28,194	28,245	28,271
2610040400						
2810001000	36,754	36,754	36,754	36,754	36,754	36,754
2810015000	856	743	629	592	592	592
2810030000	7,570	8,156	8,742	8,937	9,117	9,207
STATEWIDE	**296,629**	**297,076**	**297,523**	**297,672**	**296,226**	**295,502**
State (tons)	148	149	149	149	148	148

Ozone Season Day Area Source NOx by SCC in lbs.

strSCC	OSD 02	OSD 05	OSD 08	OSD 09	OSD 11	OSD 12
2101001000						
2101002000	9,284	9,862	10,439	10,632	10,849	10,957
2101004000	886	1,325	1,763	1,910	1,431	1,192
2101005000	13,297	16,559	19,821	20,908	20,643	20,511
2101006000	0	0	0	0	0	0
2102001000						
2102002000	62,972	59,004	55,035	53,713	53,843	53,908
2102004000	12,127	11,189	10,251	9,938	9,819	9,760
2102005000	2,071	2,056	2,040	2,035	2,038	2,039
2102006000	21,549	20,213	18,876	18,430	18,748	18,907
2102007000	6,307	5,648	4,988	4,768	4,798	4,813
2102008000						
2102011000	1,108	1,023	939	910	934	945
2103001000						
2103002000	103	96	89	87	86	86
2103004001	1,584	1,561	1,539	1,531	1,549	1,558
2103004002	102,074	100,604	99,134	98,644	99,815	100,401
2103005000	1,770	1,572	1,374	1,308	1,328	1,339
2103006000	24,877	22,889	20,900	20,237	20,570	20,736
2103007000	56	52	48	47	48	48
2103008000	35	33	32	31	31	31
2103011000	59	63	68	70	70	71
2104001000						
2104002000	20	21	21	21	21	21
2104004000	3,697	3,701	3,705	3,706	3,702	3,700
2104006010	32,533	33,706	34,879	35,270	35,880	36,185
2104007000	5,046	5,130	5,214	5,242	5,483	5,604
2104008001	916	887	858	848	829	819
2104008052	470	455	440	435	425	420
2104008070	80	80	80	80	78	77
2104011000	191	251	310	330	330	330
2610000100	393	394	396	396	397	398
2610000400	319	321	322	322	323	323
2610030000	1,970	1,978	1,986	1,988	1,992	1,994
2610040400						
2810001000	785	785	785	785	785	785
2810015000	18	16	14	13	13	13
2810030000	181	195	209	213	218	220
STATEWIDE	**306,779**	**301,667**	**296,555**	**294,850**	**297,077**	**298,190**
State (tons)	153.39	150.83	148.28	147.43	148.54	149.09

Ozone Season Day Area Source VOC by SCC in lbs.

strSCC	OSD 02	OSD 05	OSD 08	OSD 09	OSD 11	OSD 12
2101001000						
2101002000	46	49	52	53	54	55
2101004000	7	11	15	16	12	10
2101005000	215	268	321	338	334	332
2101006000	0	0	0	0	0	0
2102001000						
2102002000	315	322	329	331	332	332
2102004000	101	102	102	102	101	100
2102005000	12	13	15	15	15	15
2102006000	1,185	1,213	1,241	1,250	1,271	1,282
2102007000	78	76	74	73	73	73
2102008000						
2102011000	9	9	9	8	9	9
2103001000						
2103002000	0	0	0	0	0	0
2103004001	22	24	26	27	27	27
2103004002	8,332	9,047	9,763	10,002	10,121	10,180
2103005000	43	41	40	39	40	40
2103006000	1,368	1,374	1,381	1,383	1,405	1,417
2103007000	2	2	2	2	2	2
2103008000	1	1	1	1	1	1
2103011000	1	1	1	1	1	1
2104002000	0	0	0	0	0	0
2104004000	52	52	52	53	52	52
2104006010	1,904	1,972	2,041	2,064	2,099	2,117
2104007000	108	110	112	112	117	120
2104008001	80,671	78,113	75,554	74,702	72,981	72,120
2104008052	3,170	3,070	2,969	2,936	2,868	2,834
2104008070	7,076	7,057	7,037	7,031	6,893	6,824
2104011000	3	4	4	5	5	5
2302002100	685	696	707	711	715	717
2302002200	2,466	2,505	2,545	2,558	2,573	2,581
2302003000	364	369	375	377	380	381
2302003100	323	328	333	335	337	338
2302003200	12	12	12	12	12	12
2302050000	18,020	18,284	18,548	18,636	18,838	18,939
2401001000	222,166	206,408	190,649	185,397	192,309	195,765
2401005000	106,840	93,398	79,956	75,475	78,724	80,348
2401008000	1,338	1,158	979	919	912	909
2401020000	23,147	24,427	25,707	26,134	27,565	28,281
2401050000	31,025	34,196	37,367	38,424	40,514	41,559
2401055000	13,989	20,218	26,448	28,524	31,878	33,555
2401060000	53,335	53,335	53,335	53,335	55,012	55,851
2401065000	87,150	89,512	91,873	92,661	93,552	93,998
2401070000	12	14	15	15	16	17
2401075000	4,727	4,930	5,134	5,202	5,423	5,533
2401080000	1,686	1,700	1,713	1,718	1,746	1,760
2415020000	947	712	477	399	421	431
2415025000	2,263	1,966	1,668	1,569	1,754	1,846
2415035000	352	264	177	148	156	161
2415045000	3,678	2,908	2,138	1,882	1,990	2,044
2415055000	20,548	15,074	9,600	7,775	8,050	8,188
2415060000	7,655	5,678	3,701	3,043	3,167	3,229
2420010055	18,806	18,681	18,555	18,513	18,819	18,972
2420020055	452	449	446	445	452	456

Ozone Season Day Area Source VOC by SCC in lbs.

strSCC	OSD 02	OSD 05	OSD 08	OSD 09	OSD 11	OSD 12
2425000000	91,526	91,651	91,776	91,817	93,944	95,007
2430000000	8,524	9,570	10,617	10,966	11,579	11,886
2440020000	49,217	38,308	27,399	23,763	25,442	26,282
2460000000	412,624	387,300	361,977	353,536	355,159	355,970
2461022000	64,236	55,793	47,350	44,536	46,315	47,204
2461800000	17,817	17,844	17,871	17,880	17,880	17,881
2501011011	9,534	7,454	5,373	4,680	2,995	2,152
2501011012	82,329	64,365	46,401	40,414	25,862	18,586
2501011016	4,518	3,532	2,547	2,218	1,419	1,020
2501012011	909	710	511	445	284	204
2501012012	7,442	5,813	4,184	3,641	2,328	1,672
2501012016	19,265	15,047	10,830	9,424	6,027	4,328
2501060051	38,828	38,754	38,681	38,656	38,366	38,220
2501060052	61,167	61,051	60,935	60,897	60,439	60,210
2501060053	1,596	1,593	1,590	1,589	1,577	1,571
2501060100	87,009	68,564	50,118	43,969	36,562	32,859
2501060201	15,957	15,926	15,896	15,886	15,767	15,707
2501080050	1,832	2,044	2,256	2,327	2,459	2,525
2501080100	111	124	137	141	149	153
2505020120	40,340	42,782	45,224	46,038	47,670	48,486
2505030120	1,197	1,194	1,192	1,191	1,182	1,178
2610000100	1,773	1,781	1,788	1,790	1,794	1,795
2610000400	1,213	1,218	1,223	1,225	1,227	1,229
2610030000	1,382	1,387	1,393	1,394	1,397	1,398
2610040400						
2630000000	1,081	1,112	1,142	1,152	1,189	1,208
2630020000	22,038	22,660	23,282	23,489	24,246	24,624
2640000000	4,134	4,251	4,368	4,407	4,549	4,620
2810001000	1,721	1,721	1,721	1,721	1,721	1,721
2810015000	40	35	30	28	28	28
2810030000	1,388	1,495	1,603	1,638	1,671	1,688
2830000000	466	466	466	466	466	466
2850000010	349	354	360	362	361	361
STATEWIDE	**1,778,270**	**1,666,055**	**1,553,839**	**1,516,434**	**1,516,185**	**1,516,061**
State (tons)	889	833	777	758	758	758

2002 NEW YORK OZONE SEASON CO EMISSIONS FROM AIRCRAFT, COMMERCIAL MARINE AND LOCOMOTIVE (TPD)

COUNTY	AIRCRAFT	COMMERCIAL MARINE	LOCOMOTIVE	TOTAL
ALBANY	0.57	0.73	0.23	1.52
ALLEGANY	0.00	0.00	0.03	0.03
BRONX	0.00	0.07	0.03	0.10
BROOME	0.02	0.00	0.09	0.11
CATTARAUGUS	0.00	0.00	0.05	0.05
CAYUGA	0.00	0.01	0.07	0.08
CHAUTAUQUA	0.01	0.02	0.44	0.46
CHEMUNG	0.02	0.00	0.04	0.06
CHENANGO	0.00	0.00	0.03	0.03
CLINTON	0.00	0.00	0.05	0.06
COLUMBIA	0.00	0.02	0.30	0.33
CORTLAND	0.00	0.00	0.01	0.01
DELAWARE	0.00	0.00	0.01	0.01
DUTCHESS	0.00	0.06	0.37	0.42
ERIE	0.68	0.26	0.67	1.61
ESSEX	0.00	0.00	0.07	0.07
FRANKLIN	0.01	0.13	0.03	0.16
FULTON	0.00	0.00	0.00	0.00
GENESEE	0.00	0.00	0.22	0.22
GREENE	0.00	0.02	0.06	0.09
HAMILTON	0.00	0.00	0.00	0.00
HERKIMER	0.00	0.00	0.15	0.15
JEFFERSON	0.01	0.13	0.18	0.32
KINGS	0.00	0.71	0.00	0.71
LEWIS	0.00	0.00	0.00	0.00
LIVINGSTON	0.00	0.00	0.04	0.04
MADISON	0.00	0.00	0.10	0.10
MONROE	0.45	0.02	0.31	0.78
MONTGOMERY	0.00	0.00	0.25	0.25
NASSAU	0.00	0.08	0.08	0.15
NEW YORK	0.01	0.51	0.02	0.54
NIAGARA	0.00	0.01	0.18	0.18
ONEIDA	0.00	0.01	0.19	0.20
ONONDAGA	0.40	0.00	0.32	0.72
ONTARIO	0.00	0.00	0.01	0.01
ORANGE	0.09	0.03	0.21	0.34
ORLEANS	0.00	0.01	0.00	0.01
OSWEGO	0.00	0.01	0.22	0.22
OTSEGO	0.00	0.00	0.07	0.07
PUTNAM	0.00	0.03	0.16	0.19
QUEENS	11.20	0.76	0.03	12.00
RENSSELAER	0.00	0.01	0.20	0.21
RICHMOND	0.00	1.04	0.00	1.04
ROCKLAND	0.00	0.00	0.08	0.08
ST LAWRENCE	0.01	0.13	0.24	0.38
SARATOGA	0.00	0.00	0.10	0.11
SCHENECTADY	0.00	0.00	0.18	0.18
SCHOHARIE	0.00	0.00	0.03	0.03
SCHUYLER	0.00	0.00	0.00	0.00
SENECA	0.00	0.00	0.00	0.00
STEUBEN	0.00	0.00	0.09	0.09
SUFFOLK	0.33	0.03	0.51	0.86
SULLIVAN	0.00	0.00	0.01	0.01
TIOGA	0.00	0.00	0.04	0.04
TOMPKINS	0.02	0.00	0.00	0.02
ULSTER	0.00	0.04	0.11	0.15
WARREN	0.00	0.00	0.00	0.00
WASHINGTON	0.00	0.00	0.07	0.07
WAYNE	0.00	0.01	0.22	0.23
WESTCHESTER	0.24	0.03	0.15	0.42
WYOMING	0.00	0.00	0.06	0.06
YATES	0.00	0.00	0.00	0.00
TOTAL	14.06	4.90	7.43	26.39

2002 NEW YORK OZONE SEASON NOx EMISSIONS FROM AIRCRAFT, COMMERCIAL MARINE AND LOCOMOTIVE (TPD)

COUNTY	AIRCRAFT	COMMERCIAL MARINE	LOCOMOTIVE	TOTAL
ALBANY	0.38	5.52	2.05	7.95
ALLEGANY	0.00	0.00	0.23	0.23
BRONX	0.00	0.51	0.28	0.78
BROOME	0.01	0.00	0.82	0.84
CATTARAUGUS	0.00	0.00	0.46	0.46
CAYUGA	0.00	0.04	0.66	0.70
CHAUTAUQUA	0.00	0.13	3.93	4.06
CHEMUNG	0.01	0.00	0.38	0.39
CHENANGO	0.00	0.00	0.31	0.31
CLINTON	0.00	0.00	0.48	0.48
COLUMBIA	0.00	0.18	2.76	2.94
CORTLAND	0.00	0.00	0.14	0.14
DELAWARE	0.00	0.00	0.08	0.08
DUTCHESS	0.00	0.42	3.57	4.00
ERIE	0.58	1.94	6.05	8.57
ESSEX	0.00	0.00	0.59	0.59
FRANKLIN	0.00	0.98	0.23	1.21
FULTON	0.00	0.00	0.00	0.00
GENESEE	0.00	0.00	2.04	2.04
GREENE	0.00	0.18	0.57	0.75
HAMILTON	0.00	0.00	0.00	0.00
HERKIMER	0.00	0.00	1.35	1.35
JEFFERSON	0.00	1.01	1.57	2.58
KINGS	0.00	4.49	0.01	4.50
LEWIS	0.00	0.00	0.04	0.04
LIVINGSTON	0.00	0.00	0.34	0.34
MADISON	0.00	0.00	0.88	0.88
MONROE	0.40	0.15	2.78	3.33
MONTGOMERY	0.00	0.00	2.28	2.28
NASSAU	0.00	0.61	0.76	1.37
NEW YORK	0.00	3.19	0.22	3.40
NIAGARA	0.00	0.04	1.62	1.66
ONEIDA	0.00	0.11	1.74	1.85
ONONDAGA	0.31	0.00	2.93	3.24
ONTARIO	0.00	0.00	0.10	0.10
ORANGE	0.04	0.22	2.08	2.34
ORLEANS	0.00	0.04	0.01	0.05
OSWEGO	0.00	0.04	1.93	1.97
OTSEGO	0.00	0.00	0.61	0.61
PUTNAM	0.00	0.22	0.10	0.32
QUEENS	11.11	5.37	0.29	16.77
RENSSELAER	0.00	0.08	1.80	1.88
RICHMOND	0.00	6.28	0.00	6.28
ROCKLAND	0.00	0.00	0.78	0.78
ST LAWRENCE	0.00	0.98	2.14	3.12
SARATOGA	0.00	0.01	0.95	0.96
SCHENECTADY	0.00	0.00	1.63	1.63
SCHOHARIE	0.00	0.00	0.24	0.24
SCHUYLER	0.00	0.00	0.04	0.04
SENECA	0.00	0.00	0.01	0.01
STEUBEN	0.00	0.00	0.84	0.84
SUFFOLK	0.28	0.22	5.16	5.66
SULLIVAN	0.00	0.00	0.05	0.05
TIOGA	0.00	0.00	0.38	0.38
TOMPKINS	0.01	0.00	0.04	0.05
ULSTER	0.00	0.32	0.96	1.28
WARREN	0.00	0.00	0.02	0.02
WASHINGTON	0.00	0.00	0.65	0.65
WAYNE	0.00	0.09	2.00	2.09
WESTCHESTER	0.15	0.24	1.56	1.95
WYOMING	0.00	0.00	0.53	0.53
YATES	0.00	0.00	0.03	0.03
TOTAL	13.28	33.61	67.10	113.99

2002 NEW YORK OZONE SEASON VOC EMISSIONS FROM AIRCRAFT, COMMERCIAL MARINE AND LOCOMOTIVE (TPD)

COUNTY	AIRCRAFT	COMMERCIAL MARINE	LOCOMOTIVE	TOTAL
ALBANY	0.08	0.17	0.09	0.34
ALLEGANY	0.00	0.00	0.01	0.01
BRONX	0.00	0.02	0.01	0.03
BROOME	0.00	0.00	0.03	0.04
CATTARAUGUS	0.00	0.00	0.02	0.02
CAYUGA	0.00	0.00	0.03	0.03
CHAUTAUQUA	0.00	0.00	0.16	0.17
CHEMUNG	0.00	0.00	0.02	0.02
CHENANGO	0.00	0.00	0.01	0.01
CLINTON	0.00	0.00	0.02	0.02
COLUMBIA	0.00	0.01	0.11	0.12
CORTLAND	0.00	0.00	0.01	0.01
DELAWARE	0.00	0.00	0.00	0.00
DUTCHESS	0.00	0.01	0.14	0.15
ERIE	0.08	0.06	0.25	0.39
ESSEX	0.00	0.00	0.02	0.02
FRANKLIN	0.00	0.03	0.01	0.04
FULTON	0.00	0.00	0.00	0.00
GENESEE	0.00	0.00	0.08	0.08
GREENE	0.00	0.01	0.02	0.03
HAMILTON	0.00	0.00	0.00	0.00
HERKIMER	0.00	0.00	0.06	0.06
JEFFERSON	0.00	0.03	0.07	0.10
KINGS	0.00	0.16	0.00	0.16
LEWIS	0.00	0.00	0.00	0.00
LIVINGSTON	0.00	0.00	0.01	0.01
MADISON	0.00	0.00	0.04	0.04
MONROE	0.06	0.00	0.12	0.18
MONTGOMERY	0.00	0.00	0.09	0.09
NASSAU	0.00	0.03	0.03	0.06
NEW YORK	0.00	0.09	0.01	0.10
NIAGARA	0.00	0.00	0.07	0.07
ONEIDA	0.00	0.00	0.07	0.07
ONONDAGA	0.05	0.00	0.12	0.17
ONTARIO	0.00	0.00	0.00	0.00
ORANGE	0.01	0.01	0.08	0.10
ORLEANS	0.00	0.00	0.00	0.00
OSWEGO	0.00	0.00	0.08	0.08
OTSEGO	0.00	0.00	0.03	0.03
PUTNAM	0.00	0.01	0.06	0.07
QUEENS	2.21	0.23	0.01	2.45
RENSSELAER	0.00	0.00	0.07	0.08
RICHMOND	0.00	0.22	0.00	0.22
ROCKLAND	0.00	0.00	0.03	0.03
ST LAWRENCE	0.00	0.03	0.09	0.12
SARATOGA	0.00	0.00	0.04	0.04
SCHENECTADY	0.00	0.00	0.07	0.07
SCHOHARIE	0.00	0.00	0.01	0.01
SCHUYLER	0.00	0.00	0.00	0.00
SENECA	0.00	0.00	0.00	0.00
STEUBEN	0.00	0.00	0.03	0.03
SUFFOLK	0.04	0.01	0.19	0.24
SULLIVAN	0.00	0.00	0.00	0.00
TIOGA	0.00	0.00	0.02	0.02
TOMPKINS	0.00	0.00	0.00	0.01
ULSTER	0.00	0.01	0.04	0.05
WARREN	0.00	0.00	0.00	0.00
WASHINGTON	0.00	0.00	0.03	0.03
WAYNE	0.00	0.00	0.08	0.09
WESTCHESTER	0.03	0.01	0.06	0.10
WYOMING	0.00	0.00	0.02	0.02
YATES	0.00	0.00	0.00	0.00
TOTAL	2.57	1.16	2.80	6.53

SCC	EQUIP	CLASSIFICATION	Engine Type	VOC	NOX	CO
2260001010	Motorcycles: Off-Road	Recreational Equipment	2 Stroke	19.91	0.06	17.58
2260001020	Snowmobiles	Recreational Equipment	2 Stroke	2.94	0.00	0.00
2260001030	ATVs	Recreational Equipment	2 Stroke	19.78	0.06	17.33
2260001060	Specialty Vehicles/Carts	Recreational Equipment	2 Stroke	0.81	0.17	22.03
2260002006	Tampers/Rammers	Construction and Mining Equipment	2 Stroke	1.04	0.02	2.55
2260002009	Plate Compactors	Construction and Mining Equipment	2 Stroke	0.06	0.00	0.12
2260002021	Paving Equipment	Construction and Mining Equipment	2 Stroke	0.07	0.00	0.15
2260002027	Signal Boards/Light Plants	Construction and Mining Equipment	2 Stroke	0.00	0.00	0.00
2260002039	Concrete/Industrial Saws	Construction and Mining Equipment	2 Stroke	2.76	0.04	6.75
2260002054	Crushing/Proc. Equipment	Construction and Mining Equipment	2 Stroke	0.01	0.00	0.03
2260003030	Sweepers/Scrubbers	Industrial Equipment	2 Stroke	0.04	0.00	0.09
2260003040	Other General Industrial Eqp	Industrial Equipment	2 Stroke	0.00	0.00	0.01
2260004015	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Res)	2 Stroke	0.79	0.00	1.44
2260004016	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Com)	2 Stroke	1.60	0.01	3.03
2260004020	Chain Saws < 6 HP	Lawn and Garden Equipment (Res)	2 Stroke	5.85	0.02	9.35
2260004021	Chain Saws < 6 HP	Lawn and Garden Equipment (Com)	2 Stroke	10.21	0.12	22.20
2260004025	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Res)	2 Stroke	15.34	0.05	27.04
2260004026	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Com)	2 Stroke	15.61	0.07	30.09
2260004030	Leafblowers/Vacuums	Lawn and Garden Equipment (Res)	2 Stroke	9.63	0.03	16.88
2260004031	Leafblowers/Vacuums	Lawn and Garden Equipment (Com)	2 Stroke	14.23	0.12	30.34
2260004035	Snowblowers	Lawn and Garden Equipment (Res)	2 Stroke	0.81	0.00	0.00
2260004036	Snowblowers	Lawn and Garden Equipment (Com)	2 Stroke	0.05	0.00	0.00
2260004071	Commercial Turf Equipment	Lawn and Garden Equipment (Com)	2 Stroke	0.01	0.00	0.01
2260005035	Sprayers	Agricultural Equipment	2 Stroke	0.07	0.00	0.14
2260006005	Generator Sets	Commercial Equipment	2 Stroke	0.81	0.00	1.53
2260006010	Pumps	Commercial Equipment	2 Stroke	5.50	0.02	10.80
2260006015	Air Compressors	Commercial Equipment	2 Stroke	0.00	0.00	0.00
2260006035	Hydro Power Units	Commercial Equipment	2 Stroke	0.03	0.00	0.06
2260007005	Chain Saws > 6 HP	Logging Equipment	2 Stroke	0.42	0.01	1.03
2265001010	Motorcycles: Off-Road	Recreational Equipment	4 Stroke	0.74	0.07	7.83
2265001030	ATVs	Recreational Equipment	4 Stroke	7.45	0.67	70.63
2265001050	Golf Carts	Recreational Equipment	4 Stroke	3.38	0.98	174.48
2265001060	Specialty Vehicles/Carts	Recreational Equipment	4 Stroke	0.87	0.14	19.43
2265002003	Pavers	Construction and Mining Equipment	4 Stroke	0.06	0.03	2.31
2265002006	Tampers/Rammers	Construction and Mining Equipment	4 Stroke	0.00	0.00	0.02
2265002009	Plate Compactors	Construction and Mining Equipment	4 Stroke	0.21	0.03	4.27
2265002015	Rollers	Construction and Mining Equipment	4 Stroke	0.09	0.04	4.33
2265002021	Paving Equipment	Construction and Mining Equipment	4 Stroke	0.31	0.06	8.36
2265002024	Surfacing Equipment	Construction and Mining Equipment	4 Stroke	0.11	0.03	3.79
2265002027	Signal Boards/Light Plants	Construction and Mining Equipment	4 Stroke	0.01	0.00	0.19
2265002030	Trenchers	Construction and Mining Equipment	4 Stroke	0.22	0.08	7.09
2265002033	Bore/Drill Rigs	Construction and Mining Equipment	4 Stroke	0.13	0.02	2.09
2265002039	Concrete/Industrial Saws	Construction and Mining Equipment	4 Stroke	0.32	0.13	17.49
2265002042	Cement & Mortar Mixers	Construction and Mining Equipment	4 Stroke	0.35	0.05	7.32
2265002045	Cranes	Construction and Mining Equipment	4 Stroke	0.01	0.01	0.29
2265002054	Crushing/Proc. Equipment	Construction and Mining Equipment	4 Stroke	0.03	0.01	1.03
2265002057	Rough Terrain Forklifts	Construction and Mining Equipment	4 Stroke	0.02	0.02	0.38
2265002060	Rubber Tire Loaders	Construction and Mining Equipment	4 Stroke	0.04	0.05	0.92
2265002066	Tractors/Loaders/Backhoes	Construction and Mining Equipment	4 Stroke	0.11	0.04	5.51
2265002072	Skid Steer Loaders	Construction and Mining Equipment	4 Stroke	0.08	0.06	2.44
2265002078	Dumpers/Tenders	Construction and Mining Equipment	4 Stroke	0.05	0.01	1.14
2265002081	Other Construction Equipment	Construction and Mining Equipment	4 Stroke	0.01	0.02	0.32
2265003010	Aerial Lifts	Industrial Equipment	4 Stroke	0.29	0.26	8.35
2265003020	Forklifts	Industrial Equipment	4 Stroke	0.81	1.09	18.87
2265003030	Sweepers/Scrubbers	Industrial Equipment	4 Stroke	0.25	0.19	8.11
2265003040	Other General Industrial Eqp	Industrial Equipment	4 Stroke	0.87	0.17	20.69
2265003050	Other Material Handling Eqp	Industrial Equipment	4 Stroke	0.02	0.02	0.64
2265003060	AC\Refrigeration	Industrial Equipment	4 Stroke	0.02	0.01	0.69
2265003070	Terminal Tractors	Industrial Equipment	4 Stroke	0.08	0.11	1.96
2265004010	Lawn mowers	Lawn and Garden Equipment (Res)	4 Stroke	29.22	1.95	285.67
2265004011	Lawn mowers	Lawn and Garden Equipment (Com)	4 Stroke	8.18	0.74	108.44
2265004015	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Res)	4 Stroke	2.56	0.17	24.06
2265004016	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Com)	4 Stroke	4.16	0.37	52.83
2265004025	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Res)	4 Stroke	0.17	0.01	1.60
2265004026	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Com)	4 Stroke	0.16	0.02	2.69
2265004030	Leafblowers/Vacuums	Lawn and Garden Equipment (Res)	4 Stroke	0.30	0.02	3.07
2265004031	Leafblowers/Vacuums	Lawn and Garden Equipment (Com)	4 Stroke	3.07	1.27	107.78
2265004035	Snowblowers	Lawn and Garden Equipment (Res)	4 Stroke	1.61	0.00	0.00
2265004036	Snowblowers	Lawn and Garden Equipment (Com)	4 Stroke	0.12	0.00	0.00
2265004040	Rear Engine Riding Mowers	Lawn and Garden Equipment (Res)	4 Stroke	2.67	0.51	67.18
2265004041	Rear Engine Riding Mowers	Lawn and Garden Equipment (Com)	4 Stroke	0.30	0.10	13.96
2265004046	Front Mowers	Lawn and Garden Equipment (Com)	4 Stroke	0.49	0.11	15.07

SCC	EQUIP	CLASSIFICATION	Engine Type	VOC	NOX	CO
2265004051	Shredders < 6 HP	Lawn and Garden Equipment (Com)	4 Stroke	0.50	0.04	6.05
2265004055	Lawn & Garden Tractors	Lawn and Garden Equipment (Res)	4 Stroke	32.28	6.97	893.26
2265004056	Lawn & Garden Tractors	Lawn and Garden Equipment (Com)	4 Stroke	4.08	1.43	187.69
2265004066	Chippers/Stump Grinders	Lawn and Garden Equipment (Com)	4 Stroke	0.59	0.46	24.93
2265004071	Commercial Turf Equipment	Lawn and Garden Equipment (Com)	4 Stroke	14.39	5.02	580.57
2265004075	Other Lawn & Garden Eqp.	Lawn and Garden Equipment (Res)	4 Stroke	1.66	0.19	29.16
2265004076	Other Lawn & Garden Eqp.	Lawn and Garden Equipment (Com)	4 Stroke	0.94	0.11	16.41
2265005010	2-Wheel Tractors	Agricultural Equipment	4 Stroke	0.01	0.00	0.50
2265005015	Agricultural Tractors	Agricultural Equipment	4 Stroke	0.03	0.04	1.01
2265005020	Combines	Agricultural Equipment	4 Stroke	0.00	0.00	0.01
2265005025	Balers	Agricultural Equipment	4 Stroke	0.03	0.03	0.46
2265005030	Agricultural Mowers	Agricultural Equipment	4 Stroke	0.01	0.00	0.39
2265005035	Sprayers	Agricultural Equipment	4 Stroke	0.15	0.04	3.34
2265005040	Tillers > 6 HP	Agricultural Equipment	4 Stroke	0.31	0.04	8.31
2265005045	Swathers	Agricultural Equipment	4 Stroke	0.04	0.04	0.73
2265005055	Other Agricultural Equipment	Agricultural Equipment	4 Stroke	0.06	0.05	1.52
2265005060	Irrigation Sets	Agricultural Equipment	4 Stroke	0.06	0.07	1.42
2265006005	Generator Sets	Commercial Equipment	4 Stroke	17.92	3.39	451.19
2265006010	Pumps	Commercial Equipment	4 Stroke	4.85	1.03	104.26
2265006015	Air Compressors	Commercial Equipment	4 Stroke	1.91	0.71	51.79
2265006025	Welders	Commercial Equipment	4 Stroke	3.24	1.28	130.11
2265006030	Pressure Washers	Commercial Equipment	4 Stroke	8.85	1.50	197.61
2265006035	Hydro Power Units	Commercial Equipment	4 Stroke	0.30	0.07	10.00
2265007010	Shredders > 6 HP	Logging Equipment	4 Stroke	0.09	0.01	2.30
2265007015	Forest Eqp - Feller/Bunch/Skidder	Logging Equipment	4 Stroke	0.00	0.00	0.03
2265008005	Airport Ground Support Equipment	Airport Equipment	4 Stroke	0.04	0.03	1.04
2265010010	Other Oil Field Equipment	Industrial Equipment	4 Stroke	0.03	0.01	1.63
2267001060	Specialty Vehicle Carts	Recreational Equipment	LPG	0.01	0.05	0.20
2267002003	Pavers	Construction and Mining Equipment	LPG	0.00	0.01	0.06
2267002015	Rollers	Construction and Mining Equipment	LPG	0.01	0.02	0.10
2267002021	Paving Equipment	Construction and Mining Equipment	LPG	0.00	0.00	0.02
2267002024	Surfacing Equipment	Construction and Mining Equipment	LPG	0.00	0.00	0.01
2267002030	Trenchers	Construction and Mining Equipment	LPG	0.01	0.04	0.18
2267002033	Bore/Drill Rigs	Construction and Mining Equipment	LPG	0.00	0.01	0.06
2267002039	Concrete/Industrial Saws	Construction and Mining Equipment	LPG	0.01	0.04	0.18
2267002045	Cranes	Construction and Mining Equipment	LPG	0.00	0.02	0.06
2267002054	Crushing/Proc. Equipment	Construction and Mining Equipment	LPG	0.00	0.00	0.01
2267002057	Rough Terrain Forklifts	Construction and Mining Equipment	LPG	0.01	0.03	0.11
2267002060	Rubber Tire Loaders	Construction and Mining Equipment	LPG	0.02	0.07	0.29
2267002066	Tractors/Loaders/Backhoes	Construction and Mining Equipment	LPG	0.00	0.01	0.03
2267002072	Skid Steer Loaders	Construction and Mining Equipment	LPG	0.02	0.06	0.23
2267002081	Other Construction Equipment	Construction and Mining Equipment	LPG	0.01	0.02	0.09
2267003010	Aerial Lifts	Industrial Equipment	LPG	0.10	0.37	1.48
2267003020	Forklifts	Industrial Equipment	LPG	9.59	35.15	141.84
2267003030	Sweepers/Scrubbers	Industrial Equipment	LPG	0.07	0.27	1.10
2267003040	Other General Industrial Equipm	Industrial Equipment	LPG	0.02	0.08	0.33
2267003050	Other Material Handling Equipment	Industrial Equipment	LPG	0.01	0.02	0.08
2267003070	Terminal Tractors	Industrial Equipment	LPG	0.05	0.16	0.67
2267004066	Chippers/Stump Grinders	Lawn and Garden Equipment (Com)	LPG	0.11	0.39	1.57
2267005055	Other Agricultural Equipment	Agricultural Equipment	LPG	0.00	0.00	0.00
2267005060	Irrigation Sets	Agricultural Equipment	LPG	0.00	0.00	0.00
2267006005	Generator Sets	Commercial Equipment	LPG	0.35	1.74	4.63
2267006010	Pumps	Commercial Equipment	LPG	0.08	0.40	1.10
2267006015	Air Compressors	Commercial Equipment	LPG	0.10	0.49	1.34
2267006025	Welders	Commercial Equipment	LPG	0.16	0.61	2.42
2267006030	Pressure Washers	Commercial Equipment	LPG	0.00	0.01	0.03
2267006035	Hydro Power Units	Commercial Equipment	LPG	0.00	0.01	0.02
2267008005	Airport Ground Support Equipment	Airport Equipment	LPG	0.01	0.04	0.18
2268002081	Other Construction Equipment	Construction and Mining Equipment	CNG	0.00	0.00	0.00
2268003020	Forklifts	Industrial Equipment	CNG	0.04	2.56	10.34
2268003030	Sweepers/Scrubbers	Industrial Equipment	CNG	0.00	0.00	0.01
2268003040	Other General Industrial Equipment	Industrial Equipment	CNG	0.00	0.00	0.01
2268003060	AC\Refrigeration	Industrial Equipment	CNG	0.00	0.01	0.03
2268003070	Terminal Tractors	Industrial Equipment	CNG	0.00	0.01	0.05
2268005055	Other Agricultural Equipment	Agricultural Equipment	CNG	0.00	0.00	0.00
2268005060	Irrigation Sets	Agricultural Equipment	CNG	0.00	0.07	0.32
2268006005	Generator Sets	Commercial Equipment	CNG	0.01	0.57	1.54
2268006010	Pumps	Commercial Equipment	CNG	0.00	0.03	0.08
2268006015	Air Compressors	Commercial Equipment	CNG	0.00	0.04	0.11
2268006020	Gas Compressors	Commercial Equipment	CNG	0.03	1.50	6.73
2268006035	Hydro Power Units	Commercial Equipment	CNG	0.00	0.00	0.00
2268010010	Other Oil Field Equipment	Industrial Equipment	CNG	0.00	0.04	0.17

2002 STATEWIDE OZONE SEASON DAY NONROAD EMISSIONS BY ASC (TPD)

SCC	EQUIP	CLASSIFICATION	Engine Type	VOC	NOX	CO
2270001060	Speciality Vehicle Carts	Recreational Equipment	Diesel	0.16	0.50	0.60
2270002003	Pavers	Construction and Mining Equipment	Diesel	0.11	1.18	0.60
2270002006	Tampers/Rammers	Construction and Mining Equipment	Diesel	0.00	0.00	0.00
2270002009	Plate Compactors	Construction and Mining Equipment	Diesel	0.01	0.04	0.02
2270002015	Rollers	Construction and Mining Equipment	Diesel	0.32	2.93	1.72
2270002018	Scrapers	Construction and Mining Equipment	Diesel	0.24	3.39	1.56
2270002021	Paving Equipment	Construction and Mining Equipment	Diesel	0.02	0.19	0.11
2270002024	Surfacing Equipment	Construction and Mining Equipment	Diesel	0.01	0.13	0.08
2270002027	Signal Boards/Light Plants	Construction and Mining Equipment	Diesel	0.07	0.35	0.22
2270002030	Trenchers	Construction and Mining Equipment	Diesel	0.19	1.36	1.04
2270002033	Bore/Drill Rigs	Construction and Mining Equipment	Diesel	0.15	1.62	0.62
2270002036	Excavators	Construction and Mining Equipment	Diesel	0.93	11.71	4.78
2270002039	Concrete/Industrial Saws	Construction and Mining Equipment	Diesel	0.02	0.09	0.08
2270002042	Cement & Mortar Mixers	Construction and Mining Equipment	Diesel	0.01	0.06	0.03
2270002045	Cranes	Construction and Mining Equipment	Diesel	0.24	3.19	0.87
2270002048	Graders	Construction and Mining Equipment	Diesel	0.23	2.98	1.13
2270002051	Off-highway Trucks	Construction and Mining Equipment	Diesel	0.81	11.05	4.89
2270002054	Crushing/Proc. Equipment	Construction and Mining Equipment	Diesel	0.05	0.56	0.20
2270002057	Rough Terrain Forklifts	Construction and Mining Equipment	Diesel	0.46	3.74	2.58
2270002060	Rubber Tire Loaders	Construction and Mining Equipment	Diesel	1.16	14.34	6.62
2270002066	Tractors/Loaders/Backhoes	Construction and Mining Equipment	Diesel	2.01	8.71	8.09
2270002069	Crawler Tractor/Dozers	Construction and Mining Equipment	Diesel	1.01	12.60	5.67
2270002072	Skid Steer Loaders	Construction and Mining Equipment	Diesel	1.94	5.59	7.08
2270002075	Off-Highway Tractors	Construction and Mining Equipment	Diesel	0.14	1.52	0.86
2270002078	Dumpers/Tenders	Construction and Mining Equipment	Diesel	0.01	0.02	0.02
2270002081	Other Construction Equipment	Construction and Mining Equipment	Diesel	0.13	1.48	0.82
2270003010	Aerial Lifts	Industrial Equipment	Diesel	0.11	0.39	0.39
2270003020	Forklifts	Industrial Equipment	Diesel	0.40	4.09	2.39
2270003030	Sweepers/Scrubbers	Industrial Equipment	Diesel	0.21	2.17	0.73
2270003040	Other General Industrial Eqp	Industrial Equipment	Diesel	0.23	2.47	0.80
2270003050	Other Material Handling Eqp	Industrial Equipment	Diesel	0.02	0.11	0.07
2270003060	AC\Refrigeration	Industrial Equipment	Diesel	1.21	8.90	4.60
2270003070	Terminal Tractors	Industrial Equipment	Diesel	0.22	2.80	1.01
2270004031	Leafblowers/Vacuums	Lawn and Garden Equipment (Com)	Diesel	0.00	0.00	0.00
2270004036	Snowblowers	Lawn and Garden Equipment (Com)	Diesel	0.00	0.00	0.00
2270004046	Front Mowers	Lawn and Garden Equipment (Com)	Diesel	0.35	1.76	1.11
2270004056	Lawn & Garden Tractors	Lawn and Garden Equipment (Com)	Diesel	0.08	0.39	0.24
2270004066	Chippers/Stump Grinders	Lawn and Garden Equipment (Com)	Diesel	0.30	2.64	1.18
2270004071	Commercial Turf Equipment	Lawn and Garden Equipment (Com)	Diesel	0.04	0.27	0.12
2270004076	Other Lawn & Garden Eqp.	Lawn and Garden Equipment (Com)	Diesel	0.00	0.01	0.00
2270005010	2-Wheel Tractors	Agricultural Equipment	Diesel	0.00	0.00	0.00
2270005015	Agricultural Tractors	Agricultural Equipment	Diesel	3.82	30.72	18.62
2270005020	Combines	Agricultural Equipment	Diesel	0.28	3.12	1.16
2270005025	Balers	Agricultural Equipment	Diesel	0.00	0.01	0.01
2270005030	Agricultural Mowers	Agricultural Equipment	Diesel	0.00	0.00	0.00
2270005035	Sprayers	Agricultural Equipment	Diesel	0.04	0.22	0.13
2270005040	Tillers > 6 HP	Agricultural Equipment	Diesel	0.00	0.00	0.00
2270005045	Swathers	Agricultural Equipment	Diesel	0.03	0.22	0.11
2270005055	Other Agricultural Equipment	Agricultural Equipment	Diesel	0.09	0.64	0.37
2270005060	Irrigation Sets	Agricultural Equipment	Diesel	0.05	0.40	0.17
2270006005	Generator Sets	Commercial Equipment	Diesel	1.15	7.57	4.06
2270006010	Pumps	Commercial Equipment	Diesel	0.25	1.80	0.94
2270006015	Air Compressors	Commercial Equipment	Diesel	0.57	4.55	2.15
2270006020	Gas Compressors	Commercial Equipment	Diesel	0.00	0.00	0.00
2270006025	Welders	Commercial Equipment	Diesel	0.87	2.20	3.19
2270006030	Pressure Washers	Commercial Equipment	Diesel	0.04	0.25	0.12
2270006035	Hydro Power Units	Commercial Equipment	Diesel	0.03	0.20	0.10
2270007010	Shredders > 6 HP	Logging Equipment	Diesel	0.00	0.00	0.00
2270007015	Forest Eqp - Feller/Bunch/Skidder	Logging Equipment	Diesel	0.07	0.91	0.31
2270008005	Airport Ground Support Equipment	Airport Equipment	Diesel	0.14	1.71	0.79
2270009010	Other Underground Mining Equipment	Construction and Mining Equipment	Diesel	0.00	0.00	0.00
2270010010	Other Oil Field Equipment	Industrial Equipment	Diesel	0.01	0.11	0.04
2282005010	Outboard	Pleasure Craft	2 Stroke	294.38	5.79	547.27
2282005015	Personal Water Craft	Pleasure Craft	2 Stroke	104.86	1.62	198.05
2282010005	Inboard/Sterndrive	Pleasure Craft	4 Stroke	20.45	14.48	328.60
2282020005	Inboard/Sterndrive	Pleasure Craft	Diesel	0.62	16.65	2.63
2282020010	Outboards	Pleasure Craft	Diesel	0.01	0.05	0.04
2285002015	Railway Maintenance	Railroad Equipment	Diesel	0.02	0.13	0.11
2285004015	Railway Maintenance	Railroad Equipment	4 Stroke	0.01	0.00	0.29
2285006015	Railway Maintenance	Railroad Equipment	LPG	0.00	0.00	0.00
		Statewide Total		742.92	286.75	5,359.66

2002 NYMA OSD NOx EMISSIONS FROM ALL SECTORS (TPD)								
COUNTY	FIPS	Point	EGU	Area	Nonroad	On-road	Biogenic	Total
BRONX	36005	4.57	0.00	4.25	8.48	19.04	0.11	36.46
KINGS	36047	4.96	13.01	10.13	23.35	26.45	0.06	77.97
NASSAU	36059	9.05	8.26	9.14	14.89	56.98	0.35	98.68
NEW YORK	36061	7.77	9.27	23.85	32.80	24.13	0.07	97.90
QUEENS	36081	10.80	33.53	9.44	33.30	41.60	0.09	128.75
RICHMOND	36085	0.44	2.22	1.56	11.22	12.02	0.20	27.66
ROCKLAND	36087	1.89	17.47	2.41	4.42	14.62	0.11	40.92
SUFFOLK	36103	5.24	33.86	10.98	36.05	85.69	1.58	173.40
WESTCHESTER	36119	6.18	0.00	6.57	13.97	46.77	0.15	73.64
NYMA TOTAL		**50.91**	**117.61**	**78.33**	**178.49**	**327.31**	**2.72**	**755.38**

2002 NYMA OSD VOC EMISSIONS FROM ALL SECTORS (TPD)								
COUNTY	FIPS	Point	EGU	Area	Nonroad	On-road	Biogenic	Total
BRONX	36005	0.33	0.00	40.36	12.92	13.72	4.73	72.07
KINGS	36047	1.37	0.12	77.69	25.29	19.47	2.22	126.17
NASSAU	36059	2.42	0.23	59.50	33.56	41.93	20.60	158.25
NEW YORK	36061	0.57	0.23	67.80	32.29	22.20	3.41	126.50
QUEENS	36081	1.26	0.94	74.84	25.72	30.61	3.91	137.27
RICHMOND	36085	0.68	0.12	21.99	7.78	8.69	9.31	48.57
ROCKLAND	36087	0.16	0.20	10.66	10.56	9.93	28.86	60.37
SUFFOLK	36103	4.25	0.85	68.30	104.57	60.06	92.84	330.87
WESTCHESTER	36119	0.17	0.00	40.18	30.81	30.21	38.52	139.89
NYMA TOTAL		**11.21**	**2.70**	**461.31**	**283.51**	**236.83**	**204.40**	**1,199.96**

2002 NYMA OSD CO EMISSIONS FROM ALL SECTORS (TPD)								
COUNTY	FIPS	Point	EGU	Area	Nonroad	On-road	Biogenic	Total
BRONX	36005	1.04	0.00	1.75	141.90	141.46	0.68	286.83
KINGS	36047	1.90	2.01	3.69	302.89	186.42	0.41	497.32
NASSAU	36059	2.54	1.68	2.66	377.78	409.70	2.77	797.14
NEW YORK	36061	2.85	2.32	7.04	493.54	174.87	0.52	681.12
QUEENS	36081	3.56	8.93	3.18	293.13	300.33	0.71	609.84
RICHMOND	36085	0.45	1.52	0.58	81.71	87.05	1.17	172.49
ROCKLAND	36087	0.82	1.52	0.82	86.76	110.55	2.04	202.50
SUFFOLK	36103	1.61	5.10	6.56	718.46	633.00	9.04	1,373.78
WESTCHESTER	36119	1.00	0.00	2.43	327.85	341.34	3.73	676.36
STATEWIDE		**15.78**	**23.07**	**28.70**	**2,824.03**	**2,384.72**	**21.08**	**5,297.38**

2002 NYMA COUNTY LEVEL OZONE SEASON EMISSIONS FROM AIRCRAFT, COMMERCIAL MARINE VESSELS AND LOCOMOTIVE (TPD)

VOC	AIRCRAFT	COMMERCIAL MARINE	LOCOMOTIVE	TOTAL
BRONX	0.00	0.02	0.01	0.03
KINGS	0.00	0.16	0.00	0.16
NASSAU	0.00	0.03	0.03	0.06
NEW YORK	0.00	0.09	0.01	0.10
QUEENS	2.21	0.23	0.01	2.45
RICHMOND	0.00	0.22	0.00	0.22
ROCKLAND	0.00	0.00	0.03	0.03
SUFFOLK	0.04	0.01	0.19	0.24
WESTCHESTER	0.03	0.01	0.06	0.10
TOTAL	2.27	0.77	0.34	3.38

NOx	AIRCRAFT	COMMERCIAL MARINE	LOCOMOTIVE	TOTAL
BRONX	0.00	0.51	0.28	0.78
KINGS	0.00	4.49	0.01	4.50
NASSAU	0.00	0.61	0.76	1.37
NEW YORK	0.00	3.19	0.22	3.40
QUEENS	11.11	5.37	0.29	16.77
RICHMOND	0.00	6.28	0.00	6.28
ROCKLAND	0.00	0.00	0.78	0.78
SUFFOLK	0.28	0.22	5.16	5.66
WESTCHESTER	0.15	0.24	1.56	1.95
TOTAL	11.53	20.91	9.06	41.50

CO	AIRCRAFT	COMMERCIAL MARINE	LOCOMOTIVE	TOTAL
BRONX	0.00	0.07	0.03	0.10
KINGS	0.00	0.71	0.00	0.71
NASSAU	0.00	0.08	0.08	0.15
NEW YORK	0.01	0.51	0.02	0.54
QUEENS	11.20	0.76	0.03	12.00
RICHMOND	0.00	1.04	0.00	1.04
ROCKLAND	0.00	0.00	0.08	0.08
SUFFOLK	0.33	0.03	0.51	0.86
WESTCHESTER	0.24	0.03	0.15	0.42
TOTAL	11.78	3.23	0.91	15.92

2008 NYMA COUNTY LEVEL OZONE SEASON EMISSIONS FROM AIRCRAFT, COMMERCIAL MARINE VESSELS AND LOCOMOTIVE (TPD)

VOC	AIRCRAFT	COMMERCIAL MARINE	LOCOMOTIVE	TOTAL
BRONX	0.00	0.02	0.01	0.03
KINGS	0.00	0.16	0.00	0.16
NASSAU	0.00	0.03	0.03	0.05
NEW YORK	0.00	0.09	0.01	0.10
QUEENS	2.23	0.23	0.01	2.47
RICHMOND	0.00	0.23	0.00	0.23
ROCKLAND	0.00	0.00	0.03	0.03
SUFFOLK	0.04	0.01	0.18	0.23
WESTCHESTER	0.03	0.01	0.05	0.09
TOTAL	2.29	0.78	0.32	3.40

NOx	AIRCRAFT	COMMERCIAL MARINE	LOCOMOTIVE	TOTAL
BRONX	0.00	0.49	0.21	0.70
KINGS	0.00	4.37	0.01	4.38
NASSAU	0.00	0.59	0.57	1.17
NEW YORK	0.00	3.10	0.16	3.27
QUEENS	11.20	5.23	0.22	16.65
RICHMOND	0.00	6.11	0.00	6.11
ROCKLAND	0.00	0.00	0.59	0.59
SUFFOLK	0.28	0.22	3.89	4.39
WESTCHESTER	0.15	0.24	1.18	1.56
TOTAL	11.64	20.35	6.83	38.82

CO	AIRCRAFT	COMMERCIAL MARINE	LOCOMOTIVE	TOTAL
BRONX	0.00	0.07	0.03	0.10
KINGS	0.00	0.74	0.00	0.74
NASSAU	0.00	0.08	0.07	0.15
NEW YORK	0.01	0.54	0.02	0.56
QUEENS	11.30	0.80	0.03	12.13
RICHMOND	0.00	1.08	0.00	1.08
ROCKLAND	0.00	0.00	0.09	0.09
SUFFOLK	0.33	0.03	0.47	0.83
WESTCHESTER	0.24	0.03	0.14	0.41
TOTAL	11.89	3.37	0.85	16.10

2011 NYMA COUNTY LEVEL OZONE SEASON EMISSIONS FROM AIRCRAFT, COMMERCIAL MARINE VESSELS AND LOCOMOTIVE (TPD)

VOC	AIRCRAFT	COMMERCIAL MARINE	LOCOMOTIVE	TOTAL
BRONX	0.00	0.02	0.01	0.03
KINGS	0.00	0.16	0.00	0.16
NASSAU	0.00	0.03	0.03	0.05
NEW YORK	0.00	0.09	0.01	0.10
QUEENS	2.31	0.23	0.01	2.56
RICHMOND	0.00	0.23	0.00	0.23
ROCKLAND	0.00	0.00	0.03	0.03
SUFFOLK	0.04	0.01	0.18	0.23
WESTCHESTER	0.03	0.01	0.05	0.10
TOTAL	2.39	0.78	0.32	3.49

NOx	AIRCRAFT	COMMERCIAL MARINE	LOCOMOTIVE	TOTAL
BRONX	0.00	0.48	0.19	0.68
KINGS	0.00	4.27	0.01	4.28
NASSAU	0.00	0.58	0.54	1.12
NEW YORK	0.00	3.04	0.15	3.19
QUEENS	11.65	5.11	0.21	16.96
RICHMOND	0.00	5.97	0.00	5.97
ROCKLAND	0.00	0.00	0.55	0.55
SUFFOLK	0.30	0.21	3.65	4.15
WESTCHESTER	0.15	0.23	1.10	1.49
TOTAL	12.10	19.89	6.40	38.38

CO	AIRCRAFT	COMMERCIAL MARINE	LOCOMOTIVE	TOTAL
BRONX	0.00	0.07	0.03	0.10
KINGS	0.00	0.76	0.00	0.76
NASSAU	0.00	0.08	0.08	0.17
NEW YORK	0.01	0.55	0.02	0.58
QUEENS	11.75	0.82	0.03	12.60
RICHMOND	0.00	1.12	0.00	1.12
ROCKLAND	0.00	0.00	0.09	0.09
SUFFOLK	0.34	0.03	0.54	0.92
WESTCHESTER	0.25	0.03	0.17	0.45
TOTAL	12.36	3.46	0.97	16.79

2012 NYMA COUNTY LEVEL OZONE SEASON EMISSIONS FROM AIRCRAFT, COMMERCIAL MARINE VESSELS AND LOCOMOTIVE (TPD)

VOC	AIRCRAFT	COMMERCIAL MARINE	LOCOMOTIVE	TOTAL
BRONX	0.00	0.02	0.01	0.03
KINGS	0.00	0.16	0.00	0.16
NASSAU	0.00	0.03	0.03	0.05
NEW YORK	0.00	0.09	0.01	0.10
QUEENS	2.38	0.23	0.01	2.62
RICHMOND	0.00	0.23	0.00	0.23
ROCKLAND	0.00	0.00	0.03	0.03
SUFFOLK	0.04	0.01	0.18	0.23
WESTCHESTER	0.03	0.01	0.05	0.10
TOTAL	2.45	0.79	0.32	3.55

NOx	AIRCRAFT	COMMERCIAL MARINE	LOCOMOTIVE	TOTAL
BRONX	0.00	0.47	0.19	0.67
KINGS	0.00	4.21	0.01	4.22
NASSAU	0.00	0.57	0.53	1.10
NEW YORK	0.00	2.99	0.15	3.14
QUEENS	11.95	5.04	0.20	17.19
RICHMOND	0.00	5.89	0.00	5.89
ROCKLAND	0.00	0.00	0.55	0.55
SUFFOLK	0.30	0.21	3.62	4.13
WESTCHESTER	0.16	0.23	1.10	1.48
TOTAL	12.42	19.61	6.36	38.38

CO	AIRCRAFT	COMMERCIAL MARINE	LOCOMOTIVE	TOTAL
BRONX	0.00	0.07	0.03	0.11
KINGS	0.00	0.77	0.00	0.77
NASSAU	0.00	0.08	0.08	0.17
NEW YORK	0.01	0.55	0.02	0.58
QUEENS	12.06	0.83	0.03	12.92
RICHMOND	0.00	1.13	0.00	1.13
ROCKLAND	0.00	0.00	0.09	0.09
SUFFOLK	0.35	0.03	0.55	0.94
WESTCHESTER	0.26	0.03	0.17	0.46
TOTAL	12.68	3.50	0.99	17.17

2002 NEW YORK METRO AREA OZONE SEASON DAY NONROAD EMISSIONS BY ASC (TPD)

SCC	EQUIP	CLASSIFICATION	Engine Type	VOC	NOX	CO
2260001010	Motorcycles: Off-Road	Recreational Equipment	2 Stroke	2.83	0.01	2.36
2260001020	Snowmobiles	Recreational Equipment	2 Stroke	0.01	0.00	0.00
2260001030	ATVs	Recreational Equipment	2 Stroke	2.81	0.01	2.33
2260001060	Specialty Vehicles/Carts	Recreational Equipment	2 Stroke	0.11	0.03	2.95
2260002006	Tampers/Rammers	Construction and Mining Equipment	2 Stroke	0.63	0.01	1.51
2260002009	Plate Compactors	Construction and Mining Equipment	2 Stroke	0.04	0.00	0.07
2260002021	Paving Equipment	Construction and Mining Equipment	2 Stroke	0.05	0.00	0.09
2260002027	Signal Boards/Light Plants	Construction and Mining Equipment	2 Stroke	0.00	0.00	0.00
2260002039	Concrete/Industrial Saws	Construction and Mining Equipment	2 Stroke	1.67	0.02	3.98
2260002054	Crushing/Proc. Equipment	Construction and Mining Equipment	2 Stroke	0.01	0.00	0.02
2260003030	Sweepers/Scrubbers	Industrial Equipment	2 Stroke	0.02	0.00	0.03
2260003040	Other General Industrial Eqp	Industrial Equipment	2 Stroke	0.00	0.00	0.00
2260004015	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Res)	2 Stroke	0.47	0.00	0.84
2260004016	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Com)	2 Stroke	0.98	0.00	1.80
2260004020	Chain Saws < 6 HP	Lawn and Garden Equipment (Res)	2 Stroke	3.53	0.01	5.47
2260004021	Chain Saws < 6 HP	Lawn and Garden Equipment (Com)	2 Stroke	6.21	0.08	13.17
2260004025	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Res)	2 Stroke	9.25	0.03	15.82
2260004026	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Com)	2 Stroke	9.50	0.05	17.85
2260004030	Leafblowers/Vacuums	Lawn and Garden Equipment (Res)	2 Stroke	5.80	0.02	9.88
2260004031	Leafblowers/Vacuums	Lawn and Garden Equipment (Com)	2 Stroke	8.65	0.07	18.00
2260004035	Snowblowers	Lawn and Garden Equipment (Res)	2 Stroke	0.51	0.00	0.00
2260004036	Snowblowers	Lawn and Garden Equipment (Com)	2 Stroke	0.03	0.00	0.00
2260004071	Commercial Turf Equipment	Lawn and Garden Equipment (Com)	2 Stroke	0.00	0.00	0.01
2260005035	Sprayers	Agricultural Equipment	2 Stroke	0.00	0.00	0.00
2260006005	Generator Sets	Commercial Equipment	2 Stroke	0.62	0.00	1.16
2260006010	Pumps	Commercial Equipment	2 Stroke	4.22	0.02	8.16
2260006015	Air Compressors	Commercial Equipment	2 Stroke	0.00	0.00	0.00
2260006035	Hydro Power Units	Commercial Equipment	2 Stroke	0.02	0.00	0.05
2260007005	Chain Saws > 6 HP	Logging Equipment	2 Stroke	0.00	0.00	0.00
2265001010	Motorcycles: Off-Road	Recreational Equipment	4 Stroke	0.10	0.01	1.06
2265001030	ATVs	Recreational Equipment	4 Stroke	1.04	0.10	9.58
2265001050	Golf Carts	Recreational Equipment	4 Stroke	0.98	0.31	49.95
2265001060	Specialty Vehicles/Carts	Recreational Equipment	4 Stroke	0.12	0.02	2.63
2265002003	Pavers	Construction and Mining Equipment	4 Stroke	0.03	0.02	1.37
2265002006	Tampers/Rammers	Construction and Mining Equipment	4 Stroke	0.00	0.00	0.01
2265002009	Plate Compactors	Construction and Mining Equipment	4 Stroke	0.13	0.02	2.53
2265002015	Rollers	Construction and Mining Equipment	4 Stroke	0.05	0.03	2.57
2265002021	Paving Equipment	Construction and Mining Equipment	4 Stroke	0.19	0.04	4.96
2265002024	Surfacing Equipment	Construction and Mining Equipment	4 Stroke	0.07	0.02	2.25
2265002027	Signal Boards/Light Plants	Construction and Mining Equipment	4 Stroke	0.00	0.00	0.11
2265002030	Trenchers	Construction and Mining Equipment	4 Stroke	0.13	0.05	4.20
2265002033	Bore/Drill Rigs	Construction and Mining Equipment	4 Stroke	0.08	0.02	1.24
2265002039	Concrete/Industrial Saws	Construction and Mining Equipment	4 Stroke	0.19	0.08	10.38
2265002042	Cement & Mortar Mixers	Construction and Mining Equipment	4 Stroke	0.21	0.03	4.34
2265002045	Cranes	Construction and Mining Equipment	4 Stroke	0.01	0.01	0.17
2265002054	Crushing/Proc. Equipment	Construction and Mining Equipment	4 Stroke	0.02	0.01	0.61
2265002057	Rough Terrain Forklifts	Construction and Mining Equipment	4 Stroke	0.01	0.01	0.23
2265002060	Rubber Tire Loaders	Construction and Mining Equipment	4 Stroke	0.02	0.03	0.54
2265002066	Tractors/Loaders/Backhoes	Construction and Mining Equipment	4 Stroke	0.07	0.03	3.27
2265002072	Skid Steer Loaders	Construction and Mining Equipment	4 Stroke	0.05	0.04	1.45
2265002078	Dumpers/Tenders	Construction and Mining Equipment	4 Stroke	0.03	0.01	0.68
2265002081	Other Construction Equipment	Construction and Mining Equipment	4 Stroke	0.01	0.01	0.19
2265003010	Aerial Lifts	Industrial Equipment	4 Stroke	0.12	0.11	3.29
2265003020	Forklifts	Industrial Equipment	4 Stroke	0.32	0.46	7.44
2265003030	Sweepers/Scrubbers	Industrial Equipment	4 Stroke	0.10	0.08	3.20
2265003040	Other General Industrial Eqp	Industrial Equipment	4 Stroke	0.35	0.07	8.16
2265003050	Other Material Handling Eqp	Industrial Equipment	4 Stroke	0.01	0.01	0.25
2265003060	AC\Refrigeration	Industrial Equipment	4 Stroke	0.01	0.00	0.43
2265003070	Terminal Tractors	Industrial Equipment	4 Stroke	0.03	0.05	0.77
2265004010	Lawn mowers	Lawn and Garden Equipment (Res)	4 Stroke	17.56	1.20	168.25
2265004011	Lawn mowers	Lawn and Garden Equipment (Com)	4 Stroke	4.91	0.46	64.53
2265004015	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Res)	4 Stroke	1.54	0.10	14.17
2265004016	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Com)	4 Stroke	2.50	0.23	31.44
2265004025	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Res)	4 Stroke	0.10	0.01	0.94
2265004026	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Com)	4 Stroke	0.09	0.01	1.60
2265004030	Leafblowers/Vacuums	Lawn and Garden Equipment (Res)	4 Stroke	0.18	0.01	1.81
2265004031	Leafblowers/Vacuums	Lawn and Garden Equipment (Com)	4 Stroke	1.85	0.79	64.14
2265004035	Snowblowers	Lawn and Garden Equipment (Res)	4 Stroke	1.01	0.00	0.00
2265004036	Snowblowers	Lawn and Garden Equipment (Com)	4 Stroke	0.07	0.00	0.00
2265004040	Rear Engine Riding Mowers	Lawn and Garden Equipment (Res)	4 Stroke	1.61	0.31	39.57
2265004041	Rear Engine Riding Mowers	Lawn and Garden Equipment (Com)	4 Stroke	0.18	0.06	8.31
2265004046	Front Mowers	Lawn and Garden Equipment (Com)	4 Stroke	0.29	0.07	8.97

SCC	EQUIP	CLASSIFICATION	Engine Type	VOC	NOX	CO
2265004051	Shredders < 6 HP	Lawn and Garden Equipment (Com)	4 Stroke	0.30	0.03	3.60
2265004055	Lawn & Garden Tractors	Lawn and Garden Equipment (Res)	4 Stroke	19.51	4.31	526.09
2265004056	Lawn & Garden Tractors	Lawn and Garden Equipment (Com)	4 Stroke	2.44	0.90	111.69
2265004066	Chippers/Stump Grinders	Lawn and Garden Equipment (Com)	4 Stroke	0.35	0.29	14.83
2265004071	Commercial Turf Equipment	Lawn and Garden Equipment (Com)	4 Stroke	8.61	3.15	345.48
2265004075	Other Lawn & Garden Eqp.	Lawn and Garden Equipment (Res)	4 Stroke	0.98	0.12	17.17
2265004076	Other Lawn & Garden Eqp.	Lawn and Garden Equipment (Com)	4 Stroke	0.56	0.07	9.77
2265005010	2-Wheel Tractors	Agricultural Equipment	4 Stroke	0.00	0.00	0.00
2265005015	Agricultural Tractors	Agricultural Equipment	4 Stroke	0.00	0.00	0.01
2265005020	Combines	Agricultural Equipment	4 Stroke	0.00	0.00	0.00
2265005025	Balers	Agricultural Equipment	4 Stroke	0.00	0.00	0.00
2265005030	Agricultural Mowers	Agricultural Equipment	4 Stroke	0.00	0.00	0.00
2265005035	Sprayers	Agricultural Equipment	4 Stroke	0.00	0.00	0.02
2265005040	Tillers > 6 HP	Agricultural Equipment	4 Stroke	0.00	0.00	0.05
2265005045	Swathers	Agricultural Equipment	4 Stroke	0.00	0.00	0.00
2265005055	Other Agricultural Equipment	Agricultural Equipment	4 Stroke	0.00	0.00	0.01
2265005060	Irrigation Sets	Agricultural Equipment	4 Stroke	0.00	0.00	0.01
2265006005	Generator Sets	Commercial Equipment	4 Stroke	13.68	2.65	342.02
2265006010	Pumps	Commercial Equipment	4 Stroke	3.69	0.80	79.03
2265006015	Air Compressors	Commercial Equipment	4 Stroke	1.45	0.55	39.26
2265006025	Welders	Commercial Equipment	4 Stroke	2.47	1.00	98.63
2265006030	Pressure Washers	Commercial Equipment	4 Stroke	6.74	1.17	149.79
2265006035	Hydro Power Units	Commercial Equipment	4 Stroke	0.23	0.06	7.58
2265007010	Shredders > 6 HP	Logging Equipment	4 Stroke	0.00	0.00	0.01
2265007015	Forest Eqp - Feller/Bunch/Skidder	Logging Equipment	4 Stroke	0.00	0.00	0.00
2265008005	Airport Ground Support Equipment	Airport Equipment	4 Stroke	0.03	0.03	0.82
2265010010	Other Oil Field Equipment	Industrial Equipment	4 Stroke	0.01	0.00	0.65
2267001060	Specialty Vehicle Carts	Recreational Equipment	LPG	0.00	0.01	0.03
2267002003	Pavers	Construction and Mining Equipment	LPG	0.00	0.01	0.04
2267002015	Rollers	Construction and Mining Equipment	LPG	0.00	0.02	0.06
2267002021	Paving Equipment	Construction and Mining Equipment	LPG	0.00	0.00	0.01
2267002024	Surfacing Equipment	Construction and Mining Equipment	LPG	0.00	0.00	0.01
2267002030	Trenchers	Construction and Mining Equipment	LPG	0.01	0.03	0.11
2267002033	Bore/Drill Rigs	Construction and Mining Equipment	LPG	0.00	0.01	0.04
2267002039	Concrete/Industrial Saws	Construction and Mining Equipment	LPG	0.01	0.03	0.11
2267002045	Cranes	Construction and Mining Equipment	LPG	0.00	0.01	0.04
2267002054	Crushing/Proc. Equipment	Construction and Mining Equipment	LPG	0.00	0.00	0.01
2267002057	Rough Terrain Forklifts	Construction and Mining Equipment	LPG	0.00	0.02	0.07
2267002060	Rubber Tire Loaders	Construction and Mining Equipment	LPG	0.01	0.04	0.17
2267002066	Tractors/Loaders/Backhoes	Construction and Mining Equipment	LPG	0.00	0.00	0.02
2267002072	Skid Steer Loaders	Construction and Mining Equipment	LPG	0.01	0.04	0.14
2267002081	Other Construction Equipment	Construction and Mining Equipment	LPG	0.00	0.01	0.06
2267003010	Aerial Lifts	Industrial Equipment	LPG	0.04	0.15	0.61
2267003020	Forklifts	Industrial Equipment	LPG	3.92	14.38	58.04
2267003030	Sweepers/Scrubbers	Industrial Equipment	LPG	0.03	0.11	0.45
2267003040	Other General Industrial Equipm	Industrial Equipment	LPG	0.01	0.03	0.14
2267003050	Other Material Handling Equipment	Industrial Equipment	LPG	0.00	0.01	0.03
2267003070	Terminal Tractors	Industrial Equipment	LPG	0.02	0.07	0.27
2267004066	Chippers/Stump Grinders	Lawn and Garden Equipment (Com)	LPG	0.06	0.24	0.96
2267005055	Other Agricultural Equipment	Agricultural Equipment	LPG	0.00	0.00	0.00
2267005060	Irrigation Sets	Agricultural Equipment	LPG	0.00	0.00	0.00
2267006005	Generator Sets	Commercial Equipment	LPG	0.27	1.34	3.56
2267006010	Pumps	Commercial Equipment	LPG	0.06	0.31	0.84
2267006015	Air Compressors	Commercial Equipment	LPG	0.08	0.38	1.03
2267006025	Welders	Commercial Equipment	LPG	0.13	0.47	1.86
2267006030	Pressure Washers	Commercial Equipment	LPG	0.00	0.01	0.02
2267006035	Hydro Power Units	Commercial Equipment	LPG	0.00	0.01	0.02
2267008005	Airport Ground Support Equipment	Airport Equipment	LPG	0.01	0.04	0.14
2268002081	Other Construction Equipment	Construction and Mining Equipment	CNG	0.00	0.00	0.00
2268003020	Forklifts	Industrial Equipment	CNG	0.02	1.05	4.23
2268003030	Sweepers/Scrubbers	Industrial Equipment	CNG	0.00	0.00	0.01
2268003040	Other General Industrial Equipment	Industrial Equipment	CNG	0.00	0.00	0.00
2268003060	AC\Refrigeration	Industrial Equipment	CNG	0.00	0.00	0.02
2268003070	Terminal Tractors	Industrial Equipment	CNG	0.00	0.00	0.02
2268005055	Other Agricultural Equipment	Agricultural Equipment	CNG	0.00	0.00	0.00
2268005060	Irrigation Sets	Agricultural Equipment	CNG	0.00	0.00	0.00
2268006005	Generator Sets	Commercial Equipment	CNG	0.01	0.44	1.18
2268006010	Pumps	Commercial Equipment	CNG	0.00	0.02	0.06
2268006015	Air Compressors	Commercial Equipment	CNG	0.00	0.03	0.09
2268006020	Gas Compressors	Commercial Equipment	CNG	0.02	1.16	5.17
2268006035	Hydro Power Units	Commercial Equipment	CNG	0.00	0.00	0.00
2268010010	Other Oil Field Equipment	Industrial Equipment	CNG	0.00	0.02	0.07

2002 NEW YORK METRO AREA OZONE SEASON DAY NONROAD EMISSIONS BY ASC (TPD)

SCC	EQUIP	CLASSIFICATION	Engine Type	VOC	NOX	CO
2270001060	Speciality Vehicle Carts	Recreational Equipment	Diesel	0.02	0.07	0.09
2270002003	Pavers	Construction and Mining Equipment	Diesel	0.07	0.72	0.36
2270002006	Tampers/Rammers	Construction and Mining Equipment	Diesel	0.00	0.00	0.00
2270002009	Plate Compactors	Construction and Mining Equipment	Diesel	0.00	0.02	0.01
2270002015	Rollers	Construction and Mining Equipment	Diesel	0.20	1.78	1.05
2270002018	Scrapers	Construction and Mining Equipment	Diesel	0.14	2.06	0.95
2270002021	Paving Equipment	Construction and Mining Equipment	Diesel	0.01	0.11	0.07
2270002024	Surfacing Equipment	Construction and Mining Equipment	Diesel	0.01	0.08	0.05
2270002027	Signal Boards/Light Plants	Construction and Mining Equipment	Diesel	0.04	0.21	0.13
2270002030	Trenchers	Construction and Mining Equipment	Diesel	0.12	0.83	0.63
2270002033	Bore/Drill Rigs	Construction and Mining Equipment	Diesel	0.09	0.98	0.38
2270002036	Excavators	Construction and Mining Equipment	Diesel	0.57	7.11	2.90
2270002039	Concrete/Industrial Saws	Construction and Mining Equipment	Diesel	0.01	0.06	0.05
2270002042	Cement & Mortar Mixers	Construction and Mining Equipment	Diesel	0.00	0.04	0.02
2270002045	Cranes	Construction and Mining Equipment	Diesel	0.15	1.94	0.53
2270002048	Graders	Construction and Mining Equipment	Diesel	0.14	1.81	0.68
2270002051	Off-highway Trucks	Construction and Mining Equipment	Diesel	0.49	6.71	2.97
2270002054	Crushing/Proc. Equipment	Construction and Mining Equipment	Diesel	0.03	0.34	0.12
2270002057	Rough Terrain Forklifts	Construction and Mining Equipment	Diesel	0.28	2.27	1.56
2270002060	Rubber Tire Loaders	Construction and Mining Equipment	Diesel	0.71	8.71	4.02
2270002066	Tractors/Loaders/Backhoes	Construction and Mining Equipment	Diesel	1.22	5.29	4.91
2270002069	Crawler Tractor/Dozers	Construction and Mining Equipment	Diesel	0.61	7.65	3.44
2270002072	Skid Steer Loaders	Construction and Mining Equipment	Diesel	1.18	3.39	4.30
2270002075	Off-Highway Tractors	Construction and Mining Equipment	Diesel	0.08	0.92	0.52
2270002078	Dumpers/Tenders	Construction and Mining Equipment	Diesel	0.00	0.01	0.01
2270002081	Other Construction Equipment	Construction and Mining Equipment	Diesel	0.08	0.90	0.50
2270003010	Aerial Lifts	Industrial Equipment	Diesel	0.05	0.16	0.16
2270003020	Forklifts	Industrial Equipment	Diesel	0.17	1.67	0.98
2270003030	Sweepers/Scrubbers	Industrial Equipment	Diesel	0.09	0.89	0.30
2270003040	Other General Industrial Eqp	Industrial Equipment	Diesel	0.09	1.01	0.33
2270003050	Other Material Handling Eqp	Industrial Equipment	Diesel	0.01	0.05	0.03
2270003060	AC\Refrigeration	Industrial Equipment	Diesel	0.76	5.64	2.92
2270003070	Terminal Tractors	Industrial Equipment	Diesel	0.09	1.15	0.41
2270004031	Leafblowers/Vacuums	Lawn and Garden Equipment (Com)	Diesel	0.00	0.00	0.00
2270004036	Snowblowers	Lawn and Garden Equipment (Com)	Diesel	0.00	0.00	0.00
2270004046	Front Mowers	Lawn and Garden Equipment (Com)	Diesel	0.21	1.08	0.68
2270004056	Lawn & Garden Tractors	Lawn and Garden Equipment (Com)	Diesel	0.05	0.24	0.15
2270004066	Chippers/Stump Grinders	Lawn and Garden Equipment (Com)	Diesel	0.18	1.61	0.72
2270004071	Commercial Turf Equipment	Lawn and Garden Equipment (Com)	Diesel	0.02	0.16	0.08
2270004076	Other Lawn & Garden Eqp.	Lawn and Garden Equipment (Com)	Diesel	0.00	0.00	0.00
2270005010	2-Wheel Tractors	Agricultural Equipment	Diesel	0.00	0.00	0.00
2270005015	Agricultural Tractors	Agricultural Equipment	Diesel	0.03	0.20	0.12
2270005020	Combines	Agricultural Equipment	Diesel	0.00	0.02	0.01
2270005025	Balers	Agricultural Equipment	Diesel	0.00	0.00	0.00
2270005030	Agricultural Mowers	Agricultural Equipment	Diesel	0.00	0.00	0.00
2270005035	Sprayers	Agricultural Equipment	Diesel	0.00	0.00	0.00
2270005040	Tillers > 6 HP	Agricultural Equipment	Diesel	0.00	0.00	0.00
2270005045	Swathers	Agricultural Equipment	Diesel	0.00	0.00	0.00
2270005055	Other Agricultural Equipment	Agricultural Equipment	Diesel	0.00	0.00	0.00
2270005060	Irrigation Sets	Agricultural Equipment	Diesel	0.00	0.00	0.00
2270006005	Generator Sets	Commercial Equipment	Diesel	0.88	5.82	3.12
2270006010	Pumps	Commercial Equipment	Diesel	0.19	1.39	0.72
2270006015	Air Compressors	Commercial Equipment	Diesel	0.44	3.50	1.65
2270006020	Gas Compressors	Commercial Equipment	Diesel	0.00	0.00	0.00
2270006025	Welders	Commercial Equipment	Diesel	0.67	1.69	2.45
2270006030	Pressure Washers	Commercial Equipment	Diesel	0.03	0.19	0.09
2270006035	Hydro Power Units	Commercial Equipment	Diesel	0.02	0.15	0.07
2270007010	Shredders > 6 HP	Logging Equipment	Diesel	0.00	0.00	0.00
2270007015	Forest Eqp - Feller/Bunch/Skidder	Logging Equipment	Diesel	0.00	0.00	0.00
2270008005	Airport Ground Support Equipment	Airport Equipment	Diesel	0.12	1.37	0.63
2270009010	Other Underground Mining Equipment	Construction and Mining Equipment	Diesel	0.00	0.00	0.00
2270010010	Other Oil Field Equipment	Industrial Equipment	Diesel	0.00	0.05	0.02
2282005010	Outboard	Pleasure Craft	2 Stroke	75.18	1.67	132.57
2282005015	Personal Water Craft	Pleasure Craft	2 Stroke	26.80	0.47	47.98
2282010005	Inboard/Sterndrive	Pleasure Craft	4 Stroke	7.40	5.69	117.27
2282020005	Inboard/Sterndrive	Pleasure Craft	Diesel	0.23	6.21	0.98
2282020010	Outboards	Pleasure Craft	Diesel	0.00	0.01	0.01
2285002015	Railway Maintenance	Railroad Equipment	Diesel	0.00	0.00	0.00
2285004015	Railway Maintenance	Railroad Equipment	4 Stroke	0.00	0.00	0.00
2285006015	Railway Maintenance	Railroad Equipment	LPG	0.00	0.00	0.00
		Nonattainment Total		280.13	136.99	2,808.11

2008 NEW YORK METRO AREA OZONE SEASON DAY NONROAD EMISSIONS BY ASC (TPD)

SCC	EQUIP	CLASSIFICATION	Engine Type	VOC	NOX	CO
2260001010	Motorcycles: Off-Road	Recreational Equipment	2 Stroke	3.75	0.02	3.32
2260001020	Snowmobiles	Recreational Equipment	2 Stroke	0.01	0.00	0.00
2260001030	ATVs	Recreational Equipment	2 Stroke	4.78	0.02	4.63
2260001060	Specialty Vehicles/Carts	Recreational Equipment	2 Stroke	0.09	0.02	3.24
2260002006	Tampers/Rammers	Construction and Mining Equipment	2 Stroke	0.30	0.01	1.26
2260002009	Plate Compactors	Construction and Mining Equipment	2 Stroke	0.01	0.00	0.05
2260002021	Paving Equipment	Construction and Mining Equipment	2 Stroke	0.01	0.00	0.06
2260002027	Signal Boards/Light Plants	Construction and Mining Equipment	2 Stroke	0.00	0.00	0.00
2260002039	Concrete/Industrial Saws	Construction and Mining Equipment	2 Stroke	0.66	0.01	3.20
2260002054	Crushing/Proc. Equipment	Construction and Mining Equipment	2 Stroke	0.00	0.00	0.01
2260003030	Sweepers/Scrubbers	Industrial Equipment	2 Stroke	0.00	0.00	0.02
2260003040	Other General Industrial Eqp	Industrial Equipment	2 Stroke	0.00	0.00	0.00
2260004015	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Res)	2 Stroke	0.23	0.00	0.59
2260004016	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Com)	2 Stroke	0.34	0.01	1.24
2260004020	Chain Saws < 6 HP	Lawn and Garden Equipment (Res)	2 Stroke	1.57	0.03	3.86
2260004021	Chain Saws < 6 HP	Lawn and Garden Equipment (Com)	2 Stroke	2.88	0.05	11.58
2260004025	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Res)	2 Stroke	3.75	0.08	10.13
2260004026	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Com)	2 Stroke	3.06	0.09	12.78
2260004030	Leafblowers/Vacuums	Lawn and Garden Equipment (Res)	2 Stroke	2.39	0.05	6.81
2260004031	Leafblowers/Vacuums	Lawn and Garden Equipment (Com)	2 Stroke	3.20	0.09	14.35
2260004035	Snowblowers	Lawn and Garden Equipment (Res)	2 Stroke	0.58	0.00	0.00
2260004036	Snowblowers	Lawn and Garden Equipment (Com)	2 Stroke	0.04	0.00	0.00
2260004071	Commercial Turf Equipment	Lawn and Garden Equipment (Com)	2 Stroke	0.00	0.00	0.01
2260005035	Sprayers	Agricultural Equipment	2 Stroke	0.00	0.00	0.00
2260006005	Generator Sets	Commercial Equipment	2 Stroke	0.19	0.01	0.85
2260006010	Pumps	Commercial Equipment	2 Stroke	1.32	0.05	5.61
2260006015	Air Compressors	Commercial Equipment	2 Stroke	0.00	0.00	0.00
2260006035	Hydro Power Units	Commercial Equipment	2 Stroke	0.01	0.00	0.04
2260007005	Chain Saws > 6 HP	Logging Equipment	2 Stroke	0.00	0.00	0.00
2265001010	Motorcycles: Off-Road	Recreational Equipment	4 Stroke	0.14	0.02	1.45
2265001030	ATVs	Recreational Equipment	4 Stroke	1.46	0.15	14.92
2265001050	Golf Carts	Recreational Equipment	4 Stroke	0.83	0.26	54.10
2265001060	Specialty Vehicles/Carts	Recreational Equipment	4 Stroke	0.11	0.02	2.66
2265002003	Pavers	Construction and Mining Equipment	4 Stroke	0.02	0.01	1.41
2265002006	Tampers/Rammers	Construction and Mining Equipment	4 Stroke	0.00	0.00	0.01
2265002009	Plate Compactors	Construction and Mining Equipment	4 Stroke	0.10	0.01	2.61
2265002015	Rollers	Construction and Mining Equipment	4 Stroke	0.04	0.02	2.62
2265002021	Paving Equipment	Construction and Mining Equipment	4 Stroke	0.14	0.03	5.19
2265002024	Surfacing Equipment	Construction and Mining Equipment	4 Stroke	0.04	0.01	2.35
2265002027	Signal Boards/Light Plants	Construction and Mining Equipment	4 Stroke	0.00	0.00	0.12
2265002030	Trenchers	Construction and Mining Equipment	4 Stroke	0.08	0.03	4.27
2265002033	Bore/Drill Rigs	Construction and Mining Equipment	4 Stroke	0.06	0.01	1.23
2265002039	Concrete/Industrial Saws	Construction and Mining Equipment	4 Stroke	0.14	0.06	10.70
2265002042	Cement & Mortar Mixers	Construction and Mining Equipment	4 Stroke	0.17	0.03	4.40
2265002045	Cranes	Construction and Mining Equipment	4 Stroke	0.01	0.01	0.15
2265002054	Crushing/Proc. Equipment	Construction and Mining Equipment	4 Stroke	0.01	0.00	0.64
2265002057	Rough Terrain Forklifts	Construction and Mining Equipment	4 Stroke	0.01	0.01	0.16
2265002060	Rubber Tire Loaders	Construction and Mining Equipment	4 Stroke	0.01	0.02	0.33
2265002066	Tractors/Loaders/Backhoes	Construction and Mining Equipment	4 Stroke	0.05	0.02	3.44
2265002072	Skid Steer Loaders	Construction and Mining Equipment	4 Stroke	0.03	0.03	1.41
2265002078	Dumpers/Tenders	Construction and Mining Equipment	4 Stroke	0.02	0.00	0.69
2265002081	Other Construction Equipment	Construction and Mining Equipment	4 Stroke	0.01	0.01	0.15
2265003010	Aerial Lifts	Industrial Equipment	4 Stroke	0.07	0.07	2.23
2265003020	Forklifts	Industrial Equipment	4 Stroke	0.15	0.21	3.59
2265003030	Sweepers/Scrubbers	Industrial Equipment	4 Stroke	0.04	0.03	1.87
2265003040	Other General Industrial Eqp	Industrial Equipment	4 Stroke	0.12	0.03	5.55
2265003050	Other Material Handling Eqp	Industrial Equipment	4 Stroke	0.00	0.00	0.17
2265003060	AC\Refrigeration	Industrial Equipment	4 Stroke	0.01	0.00	0.31
2265003070	Terminal Tractors	Industrial Equipment	4 Stroke	0.01	0.01	0.20
2265004010	Lawn mowers	Lawn and Garden Equipment (Res)	4 Stroke	17.28	1.26	185.91
2265004011	Lawn mowers	Lawn and Garden Equipment (Com)	4 Stroke	4.09	0.39	71.22
2265004015	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Res)	4 Stroke	1.52	0.11	15.62
2265004016	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Com)	4 Stroke	2.39	0.23	34.96
2265004025	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Res)	4 Stroke	0.11	0.01	1.05
2265004026	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Com)	4 Stroke	0.08	0.01	1.84
2265004030	Leafblowers/Vacuums	Lawn and Garden Equipment (Res)	4 Stroke	0.18	0.01	2.00
2265004031	Leafblowers/Vacuums	Lawn and Garden Equipment (Com)	4 Stroke	1.52	0.62	73.97
2265004035	Snowblowers	Lawn and Garden Equipment (Res)	4 Stroke	1.14	0.00	0.00
2265004036	Snowblowers	Lawn and Garden Equipment (Com)	4 Stroke	0.08	0.00	0.00
2265004040	Rear Engine Riding Mowers	Lawn and Garden Equipment (Res)	4 Stroke	1.53	0.28	46.10
2265004041	Rear Engine Riding Mowers	Lawn and Garden Equipment (Com)	4 Stroke	0.15	0.05	9.81
2265004046	Front Mowers	Lawn and Garden Equipment (Com)	4 Stroke	0.26	0.07	10.14

2008 NEW YORK METRO AREA OZONE SEASON DAY NONROAD EMISSIONS BY ASC (TPD)

SCC	EQUIP	CLASSIFICATION	Engine Type	VOC	NOX	CO
2265004051	Shredders < 6 HP	Lawn and Garden Equipment (Com)	4 Stroke	0.29	0.03	4.00
2265004055	Lawn & Garden Tractors	Lawn and Garden Equipment (Res)	4 Stroke	17.65	3.71	617.22
2265004056	Lawn & Garden Tractors	Lawn and Garden Equipment (Com)	4 Stroke	1.93	0.73	133.38
2265004066	Chippers/Stump Grinders	Lawn and Garden Equipment (Com)	4 Stroke	0.26	0.19	15.65
2265004071	Commercial Turf Equipment	Lawn and Garden Equipment (Com)	4 Stroke	7.24	2.28	387.63
2265004075	Other Lawn & Garden Eqp.	Lawn and Garden Equipment (Res)	4 Stroke	0.89	0.13	18.99
2265004076	Other Lawn & Garden Eqp.	Lawn and Garden Equipment (Com)	4 Stroke	0.51	0.08	10.80
2265005010	2-Wheel Tractors	Agricultural Equipment	4 Stroke	0.00	0.00	0.00
2265005015	Agricultural Tractors	Agricultural Equipment	4 Stroke	0.00	0.00	0.01
2265005020	Combines	Agricultural Equipment	4 Stroke	0.00	0.00	0.00
2265005025	Balers	Agricultural Equipment	4 Stroke	0.00	0.00	0.00
2265005030	Agricultural Mowers	Agricultural Equipment	4 Stroke	0.00	0.00	0.00
2265005035	Sprayers	Agricultural Equipment	4 Stroke	0.00	0.00	0.02
2265005040	Tillers > 6 HP	Agricultural Equipment	4 Stroke	0.00	0.00	0.05
2265005045	Swathers	Agricultural Equipment	4 Stroke	0.00	0.00	0.00
2265005055	Other Agricultural Equipment	Agricultural Equipment	4 Stroke	0.00	0.00	0.01
2265005060	Irrigation Sets	Agricultural Equipment	4 Stroke	0.00	0.00	0.01
2265006005	Generator Sets	Commercial Equipment	4 Stroke	12.83	2.56	419.26
2265006010	Pumps	Commercial Equipment	4 Stroke	2.86	0.67	95.18
2265006015	Air Compressors	Commercial Equipment	4 Stroke	1.07	0.43	46.53
2265006025	Welders	Commercial Equipment	4 Stroke	2.24	0.85	120.67
2265006030	Pressure Washers	Commercial Equipment	4 Stroke	6.08	1.03	184.69
2265006035	Hydro Power Units	Commercial Equipment	4 Stroke	0.18	0.05	9.40
2265007010	Shredders > 6 HP	Logging Equipment	4 Stroke	0.00	0.00	0.01
2265007015	Forest Eqp - Feller/Bunch/Skidder	Logging Equipment	4 Stroke	0.00	0.00	0.00
2265008005	Airport Ground Support Equipment	Airport Equipment	4 Stroke	0.02	0.02	0.70
2265010010	Other Oil Field Equipment	Industrial Equipment	4 Stroke	0.01	0.00	0.67
2267001060	Specialty Vehicle Carts	Recreational Equipment	LPG	0.00	0.01	0.03
2267002003	Pavers	Construction and Mining Equipment	LPG	0.00	0.01	0.03
2267002015	Rollers	Construction and Mining Equipment	LPG	0.00	0.01	0.05
2267002021	Paving Equipment	Construction and Mining Equipment	LPG	0.00	0.00	0.01
2267002024	Surfacing Equipment	Construction and Mining Equipment	LPG	0.00	0.00	0.01
2267002030	Trenchers	Construction and Mining Equipment	LPG	0.01	0.02	0.10
2267002033	Bore/Drill Rigs	Construction and Mining Equipment	LPG	0.00	0.01	0.04
2267002039	Concrete/Industrial Saws	Construction and Mining Equipment	LPG	0.00	0.01	0.07
2267002045	Cranes	Construction and Mining Equipment	LPG	0.00	0.01	0.04
2267002054	Crushing/Proc. Equipment	Construction and Mining Equipment	LPG	0.00	0.00	0.01
2267002057	Rough Terrain Forklifts	Construction and Mining Equipment	LPG	0.00	0.01	0.06
2267002060	Rubber Tire Loaders	Construction and Mining Equipment	LPG	0.01	0.03	0.15
2267002066	Tractors/Loaders/Backhoes	Construction and Mining Equipment	LPG	0.00	0.00	0.01
2267002072	Skid Steer Loaders	Construction and Mining Equipment	LPG	0.01	0.03	0.13
2267002081	Other Construction Equipment	Construction and Mining Equipment	LPG	0.00	0.01	0.06
2267003010	Aerial Lifts	Industrial Equipment	LPG	0.04	0.13	0.61
2267003020	Forklifts	Industrial Equipment	LPG	2.59	9.16	52.29
2267003030	Sweepers/Scrubbers	Industrial Equipment	LPG	0.01	0.05	0.35
2267003040	Other General Industrial Equipm	Industrial Equipment	LPG	0.01	0.02	0.12
2267003050	Other Material Handling Equipment	Industrial Equipment	LPG	0.00	0.01	0.03
2267003070	Terminal Tractors	Industrial Equipment	LPG	0.01	0.02	0.20
2267004066	Chippers/Stump Grinders	Lawn and Garden Equipment (Com)	LPG	0.04	0.13	0.80
2267005055	Other Agricultural Equipment	Agricultural Equipment	LPG	0.00	0.00	0.00
2267005060	Irrigation Sets	Agricultural Equipment	LPG	0.00	0.00	0.00
2267006005	Generator Sets	Commercial Equipment	LPG	0.27	1.32	4.26
2267006010	Pumps	Commercial Equipment	LPG	0.06	0.27	0.95
2267006015	Air Compressors	Commercial Equipment	LPG	0.06	0.29	1.12
2267006025	Welders	Commercial Equipment	LPG	0.11	0.38	2.01
2267006030	Pressure Washers	Commercial Equipment	LPG	0.00	0.01	0.03
2267006035	Hydro Power Units	Commercial Equipment	LPG	0.00	0.00	0.02
2267008005	Airport Ground Support Equipment	Airport Equipment	LPG	0.01	0.02	0.13
2268002081	Other Construction Equipment	Construction and Mining Equipment	CNG	0.00	0.00	0.00
2268003020	Forklifts	Industrial Equipment	CNG	0.01	0.66	3.73
2268003030	Sweepers/Scrubbers	Industrial Equipment	CNG	0.00	0.00	0.00
2268003040	Other General Industrial Equipment	Industrial Equipment	CNG	0.00	0.00	0.00
2268003060	AC\Refrigeration	Industrial Equipment	CNG	0.00	0.00	0.02
2268003070	Terminal Tractors	Industrial Equipment	CNG	0.00	0.00	0.01
2268005055	Other Agricultural Equipment	Agricultural Equipment	CNG	0.00	0.00	0.00
2268005060	Irrigation Sets	Agricultural Equipment	CNG	0.00	0.00	0.00
2268006005	Generator Sets	Commercial Equipment	CNG	0.00	0.41	1.29
2268006010	Pumps	Commercial Equipment	CNG	0.00	0.02	0.06
2268006015	Air Compressors	Commercial Equipment	CNG	0.00	0.02	0.09
2268006020	Gas Compressors	Commercial Equipment	CNG	0.00	0.12	0.60
2268006035	Hydro Power Units	Commercial Equipment	CNG	0.00	0.00	0.00
2268010010	Other Oil Field Equipment	Industrial Equipment	CNG	0.00	0.00	0.02

2008 NEW YORK METRO AREA OZONE SEASON DAY NONROAD EMISSIONS BY ASC (TPD)

SCC	EQUIP	CLASSIFICATION	Engine Type	VOC	NOX	CO
2270001060	Speciality Vehicle Carts	Recreational Equipment	Diesel	0.02	0.07	0.08
2270002003	Pavers	Construction and Mining Equipment	Diesel	0.05	0.61	0.27
2270002006	Tampers/Rammers	Construction and Mining Equipment	Diesel	0.00	0.00	0.00
2270002009	Plate Compactors	Construction and Mining Equipment	Diesel	0.00	0.02	0.01
2270002015	Rollers	Construction and Mining Equipment	Diesel	0.14	1.55	0.81
2270002018	Scrapers	Construction and Mining Equipment	Diesel	0.10	1.72	0.74
2270002021	Paving Equipment	Construction and Mining Equipment	Diesel	0.01	0.10	0.05
2270002024	Surfacing Equipment	Construction and Mining Equipment	Diesel	0.01	0.07	0.04
2270002027	Signal Boards/Light Plants	Construction and Mining Equipment	Diesel	0.03	0.19	0.11
2270002030	Trenchers	Construction and Mining Equipment	Diesel	0.08	0.78	0.51
2270002033	Bore/Drill Rigs	Construction and Mining Equipment	Diesel	0.08	0.92	0.33
2270002036	Excavators	Construction and Mining Equipment	Diesel	0.44	5.79	2.24
2270002039	Concrete/Industrial Saws	Construction and Mining Equipment	Diesel	0.01	0.05	0.04
2270002042	Cement & Mortar Mixers	Construction and Mining Equipment	Diesel	0.00	0.04	0.02
2270002045	Cranes	Construction and Mining Equipment	Diesel	0.11	1.63	0.41
2270002048	Graders	Construction and Mining Equipment	Diesel	0.11	1.45	0.50
2270002051	Off-highway Trucks	Construction and Mining Equipment	Diesel	0.32	5.65	1.86
2270002054	Crushing/Proc. Equipment	Construction and Mining Equipment	Diesel	0.02	0.30	0.10
2270002057	Rough Terrain Forklifts	Construction and Mining Equipment	Diesel	0.21	2.09	1.30
2270002060	Rubber Tire Loaders	Construction and Mining Equipment	Diesel	0.54	7.51	3.11
2270002066	Tractors/Loaders/Backhoes	Construction and Mining Equipment	Diesel	1.08	4.99	4.71
2270002069	Crawler Tractor/Dozers	Construction and Mining Equipment	Diesel	0.44	6.43	2.63
2270002072	Skid Steer Loaders	Construction and Mining Equipment	Diesel	0.99	3.39	4.10
2270002075	Off-Highway Tractors	Construction and Mining Equipment	Diesel	0.06	0.82	0.38
2270002078	Dumpers/Tenders	Construction and Mining Equipment	Diesel	0.00	0.01	0.01
2270002081	Other Construction Equipment	Construction and Mining Equipment	Diesel	0.06	0.79	0.39
2270003010	Aerial Lifts	Industrial Equipment	Diesel	0.04	0.16	0.17
2270003020	Forklifts	Industrial Equipment	Diesel	0.13	1.49	1.03
2270003030	Sweepers/Scrubbers	Industrial Equipment	Diesel	0.06	0.77	0.24
2270003040	Other General Industrial Eqp	Industrial Equipment	Diesel	0.07	0.87	0.27
2270003050	Other Material Handling Eqp	Industrial Equipment	Diesel	0.01	0.04	0.03
2270003060	AC\Refrigeration	Industrial Equipment	Diesel	0.51	5.45	2.65
2270003070	Terminal Tractors	Industrial Equipment	Diesel	0.08	0.94	0.38
2270004031	Leafblowers/Vacuums	Lawn and Garden Equipment (Com)	Diesel	0.00	0.00	0.00
2270004036	Snowblowers	Lawn and Garden Equipment (Com)	Diesel	0.00	0.00	0.00
2270004046	Front Mowers	Lawn and Garden Equipment (Com)	Diesel	0.17	1.15	0.63
2270004056	Lawn & Garden Tractors	Lawn and Garden Equipment (Com)	Diesel	0.04	0.23	0.13
2270004066	Chippers/Stump Grinders	Lawn and Garden Equipment (Com)	Diesel	0.17	1.76	0.72
2270004071	Commercial Turf Equipment	Lawn and Garden Equipment (Com)	Diesel	0.01	0.16	0.06
2270004076	Other Lawn & Garden Eqp.	Lawn and Garden Equipment (Com)	Diesel	0.00	0.00	0.00
2270005010	2-Wheel Tractors	Agricultural Equipment	Diesel	0.00	0.00	0.00
2270005015	Agricultural Tractors	Agricultural Equipment	Diesel	0.02	0.18	0.10
2270005020	Combines	Agricultural Equipment	Diesel	0.00	0.02	0.01
2270005025	Balers	Agricultural Equipment	Diesel	0.00	0.00	0.00
2270005030	Agricultural Mowers	Agricultural Equipment	Diesel	0.00	0.00	0.00
2270005035	Sprayers	Agricultural Equipment	Diesel	0.00	0.00	0.00
2270005040	Tillers > 6 HP	Agricultural Equipment	Diesel	0.00	0.00	0.00
2270005045	Swathers	Agricultural Equipment	Diesel	0.00	0.00	0.00
2270005055	Other Agricultural Equipment	Agricultural Equipment	Diesel	0.00	0.00	0.00
2270005060	Irrigation Sets	Agricultural Equipment	Diesel	0.00	0.00	0.00
2270006005	Generator Sets	Commercial Equipment	Diesel	0.79	6.08	2.99
2270006010	Pumps	Commercial Equipment	Diesel	0.18	1.44	0.71
2270006015	Air Compressors	Commercial Equipment	Diesel	0.35	3.48	1.54
2270006020	Gas Compressors	Commercial Equipment	Diesel	0.00	0.00	0.00
2270006025	Welders	Commercial Equipment	Diesel	0.58	1.81	2.36
2270006030	Pressure Washers	Commercial Equipment	Diesel	0.03	0.20	0.09
2270006035	Hydro Power Units	Commercial Equipment	Diesel	0.02	0.15	0.07
2270007010	Shredders > 6 HP	Logging Equipment	Diesel	0.00	0.00	0.00
2270007015	Forest Eqp - Feller/Bunch/Skidder	Logging Equipment	Diesel	0.00	0.00	0.00
2270008005	Airport Ground Support Equipment	Airport Equipment	Diesel	0.10	1.27	0.55
2270009010	Other Underground Mining Equipment	Construction and Mining Equipment	Diesel	0.00	0.00	0.00
2270010010	Other Oil Field Equipment	Industrial Equipment	Diesel	0.00	0.03	0.01
2282005010	Outboard	Pleasure Craft	2 Stroke	57.79	2.80	114.31
2282005015	Personal Water Craft	Pleasure Craft	2 Stroke	17.28	0.91	43.95
2282010005	Inboard/Sterndrive	Pleasure Craft	4 Stroke	7.22	6.73	106.97
2282020005	Inboard/Sterndrive	Pleasure Craft	Diesel	0.25	6.94	1.14
2282020010	Outboards	Pleasure Craft	Diesel	0.00	0.01	0.01
2285002015	Railway Maintenance	Railroad Equipment	Diesel	0.00	0.00	0.00
2285004015	Railway Maintenance	Railroad Equipment	4 Stroke	0.00	0.00	0.01
2285006015	Railway Maintenance	Railroad Equipment	LPG	0.00	0.00	0.00
		Nonattainment Total		211.47	122.69	3,105.52

2011 NEW YORK METRO AREA OZONE SEASON DAY NONROAD EMISSIONS BY ASC (TPD)

SCC	EQUIP	CLASSIFICATION	Engine Type	VOC	NOX	CO
2260001010	Motorcycles: Off-Road	Recreational Equipment	2 Stroke	3.75	0.02	3.62
2260001020	Snowmobiles	Recreational Equipment	2 Stroke	0.01	0.00	0.00
2260001030	ATVs	Recreational Equipment	2 Stroke	4.33	0.03	5.29
2260001060	Specialty Vehicles/Carts	Recreational Equipment	2 Stroke	0.09	0.02	3.34
2260002006	Tampers/Rammers	Construction and Mining Equipment	2 Stroke	0.26	0.01	1.24
2260002009	Plate Compactors	Construction and Mining Equipment	2 Stroke	0.01	0.00	0.05
2260002021	Paving Equipment	Construction and Mining Equipment	2 Stroke	0.01	0.00	0.06
2260002027	Signal Boards/Light Plants	Construction and Mining Equipment	2 Stroke	0.00	0.00	0.00
2260002039	Concrete/Industrial Saws	Construction and Mining Equipment	2 Stroke	0.67	0.01	3.23
2260002054	Crushing/Proc. Equipment	Construction and Mining Equipment	2 Stroke	0.00	0.00	0.01
2260003030	Sweepers/Scrubbers	Industrial Equipment	2 Stroke	0.00	0.00	0.01
2260003040	Other General Industrial Eqp	Industrial Equipment	2 Stroke	0.00	0.00	0.00
2260004015	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Res)	2 Stroke	0.17	0.00	0.55
2260004016	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Com)	2 Stroke	0.27	0.01	1.22
2260004020	Chain Saws < 6 HP	Lawn and Garden Equipment (Res)	2 Stroke	1.37	0.03	3.83
2260004021	Chain Saws < 6 HP	Lawn and Garden Equipment (Com)	2 Stroke	3.04	0.05	12.22
2260004025	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Res)	2 Stroke	3.17	0.09	9.86
2260004026	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Com)	2 Stroke	3.12	0.10	13.40
2260004030	Leafblowers/Vacuums	Lawn and Garden Equipment (Res)	2 Stroke	2.05	0.05	6.72
2260004031	Leafblowers/Vacuums	Lawn and Garden Equipment (Com)	2 Stroke	3.09	0.09	14.93
2260004035	Snowblowers	Lawn and Garden Equipment (Res)	2 Stroke	0.61	0.00	0.00
2260004036	Snowblowers	Lawn and Garden Equipment (Com)	2 Stroke	0.04	0.00	0.00
2260004071	Commercial Turf Equipment	Lawn and Garden Equipment (Com)	2 Stroke	0.00	0.00	0.01
2260005035	Sprayers	Agricultural Equipment	2 Stroke	0.00	0.00	0.00
2260006005	Generator Sets	Commercial Equipment	2 Stroke	0.20	0.01	0.92
2260006010	Pumps	Commercial Equipment	2 Stroke	1.41	0.05	6.03
2260006015	Air Compressors	Commercial Equipment	2 Stroke	0.00	0.00	0.00
2260006035	Hydro Power Units	Commercial Equipment	2 Stroke	0.01	0.00	0.04
2260007005	Chain Saws > 6 HP	Logging Equipment	2 Stroke	0.00	0.00	0.00
2265001010	Motorcycles: Off-Road	Recreational Equipment	4 Stroke	0.14	0.02	1.51
2265001030	ATVs	Recreational Equipment	4 Stroke	1.52	0.16	16.87
2265001050	Golf Carts	Recreational Equipment	4 Stroke	0.85	0.27	55.29
2265001060	Specialty Vehicles/Carts	Recreational Equipment	4 Stroke	0.10	0.02	2.70
2265002003	Pavers	Construction and Mining Equipment	4 Stroke	0.02	0.01	1.40
2265002006	Tampers/Rammers	Construction and Mining Equipment	4 Stroke	0.00	0.00	0.01
2265002009	Plate Compactors	Construction and Mining Equipment	4 Stroke	0.07	0.01	2.61
2265002015	Rollers	Construction and Mining Equipment	4 Stroke	0.04	0.02	2.59
2265002021	Paving Equipment	Construction and Mining Equipment	4 Stroke	0.12	0.03	5.25
2265002024	Surfacing Equipment	Construction and Mining Equipment	4 Stroke	0.04	0.01	2.36
2265002027	Signal Boards/Light Plants	Construction and Mining Equipment	4 Stroke	0.00	0.00	0.12
2265002030	Trenchers	Construction and Mining Equipment	4 Stroke	0.08	0.03	4.23
2265002033	Bore/Drill Rigs	Construction and Mining Equipment	4 Stroke	0.04	0.01	1.22
2265002039	Concrete/Industrial Saws	Construction and Mining Equipment	4 Stroke	0.14	0.05	10.72
2265002042	Cement & Mortar Mixers	Construction and Mining Equipment	4 Stroke	0.14	0.03	4.48
2265002045	Cranes	Construction and Mining Equipment	4 Stroke	0.00	0.00	0.14
2265002054	Crushing/Proc. Equipment	Construction and Mining Equipment	4 Stroke	0.01	0.00	0.64
2265002057	Rough Terrain Forklifts	Construction and Mining Equipment	4 Stroke	0.00	0.01	0.12
2265002060	Rubber Tire Loaders	Construction and Mining Equipment	4 Stroke	0.01	0.01	0.19
2265002066	Tractors/Loaders/Backhoes	Construction and Mining Equipment	4 Stroke	0.05	0.02	3.45
2265002072	Skid Steer Loaders	Construction and Mining Equipment	4 Stroke	0.03	0.02	1.35
2265002078	Dumpers/Tenders	Construction and Mining Equipment	4 Stroke	0.02	0.00	0.70
2265002081	Other Construction Equipment	Construction and Mining Equipment	4 Stroke	0.01	0.01	0.13
2265003010	Aerial Lifts	Industrial Equipment	4 Stroke	0.05	0.05	1.69
2265003020	Forklifts	Industrial Equipment	4 Stroke	0.07	0.10	1.76
2265003030	Sweepers/Scrubbers	Industrial Equipment	4 Stroke	0.02	0.01	1.31
2265003040	Other General Industrial Eqp	Industrial Equipment	4 Stroke	0.09	0.02	4.23
2265003050	Other Material Handling Eqp	Industrial Equipment	4 Stroke	0.00	0.00	0.13
2265003060	AC\Refrigeration	Industrial Equipment	4 Stroke	0.00	0.00	0.24
2265003070	Terminal Tractors	Industrial Equipment	4 Stroke	0.00	0.00	0.06
2265004010	Lawn mowers	Lawn and Garden Equipment (Res)	4 Stroke	14.93	1.01	193.93
2265004011	Lawn mowers	Lawn and Garden Equipment (Com)	4 Stroke	2.82	0.29	74.14
2265004015	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Res)	4 Stroke	1.30	0.09	16.27
2265004016	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Com)	4 Stroke	1.74	0.17	36.37
2265004025	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Res)	4 Stroke	0.09	0.01	1.09
2265004026	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Com)	4 Stroke	0.06	0.01	1.92
2265004030	Leafblowers/Vacuums	Lawn and Garden Equipment (Res)	4 Stroke	0.14	0.01	2.08
2265004031	Leafblowers/Vacuums	Lawn and Garden Equipment (Com)	4 Stroke	1.49	0.57	76.76
2265004035	Snowblowers	Lawn and Garden Equipment (Res)	4 Stroke	1.20	0.00	0.00
2265004036	Snowblowers	Lawn and Garden Equipment (Com)	4 Stroke	0.09	0.00	0.00
2265004040	Rear Engine Riding Mowers	Lawn and Garden Equipment (Res)	4 Stroke	1.56	0.27	49.18
2265004041	Rear Engine Riding Mowers	Lawn and Garden Equipment (Com)	4 Stroke	0.16	0.06	10.37
2265004046	Front Mowers	Lawn and Garden Equipment (Com)	4 Stroke	0.25	0.07	10.84

SCC	EQUIP	CLASSIFICATION	Engine Type	VOC	NOX	CO
2265004051	Shredders < 6 HP	Lawn and Garden Equipment (Com)	4 Stroke	0.22	0.02	4.17
2265004055	Lawn & Garden Tractors	Lawn and Garden Equipment (Res)	4 Stroke	17.92	3.69	659.78
2265004056	Lawn & Garden Tractors	Lawn and Garden Equipment (Com)	4 Stroke	2.02	0.76	140.99
2265004066	Chippers/Stump Grinders	Lawn and Garden Equipment (Com)	4 Stroke	0.23	0.13	15.48
2265004071	Commercial Turf Equipment	Lawn and Garden Equipment (Com)	4 Stroke	6.40	2.17	406.14
2265004075	Other Lawn & Garden Eqp.	Lawn and Garden Equipment (Res)	4 Stroke	0.76	0.12	20.08
2265004076	Other Lawn & Garden Eqp.	Lawn and Garden Equipment (Com)	4 Stroke	0.44	0.07	11.41
2265005010	2-Wheel Tractors	Agricultural Equipment	4 Stroke	0.00	0.00	0.00
2265005015	Agricultural Tractors	Agricultural Equipment	4 Stroke	0.00	0.00	0.00
2265005020	Combines	Agricultural Equipment	4 Stroke	0.00	0.00	0.00
2265005025	Balers	Agricultural Equipment	4 Stroke	0.00	0.00	0.00
2265005030	Agricultural Mowers	Agricultural Equipment	4 Stroke	0.00	0.00	0.00
2265005035	Sprayers	Agricultural Equipment	4 Stroke	0.00	0.00	0.02
2265005040	Tillers > 6 HP	Agricultural Equipment	4 Stroke	0.00	0.00	0.06
2265005045	Swathers	Agricultural Equipment	4 Stroke	0.00	0.00	0.00
2265005055	Other Agricultural Equipment	Agricultural Equipment	4 Stroke	0.00	0.00	0.01
2265005060	Irrigation Sets	Agricultural Equipment	4 Stroke	0.00	0.00	0.00
2265006005	Generator Sets	Commercial Equipment	4 Stroke	12.36	2.55	458.14
2265006010	Pumps	Commercial Equipment	4 Stroke	2.55	0.62	102.13
2265006015	Air Compressors	Commercial Equipment	4 Stroke	1.07	0.38	49.46
2265006025	Welders	Commercial Equipment	4 Stroke	2.34	0.82	129.07
2265006030	Pressure Washers	Commercial Equipment	4 Stroke	5.12	0.98	199.64
2265006035	Hydro Power Units	Commercial Equipment	4 Stroke	0.19	0.05	10.16
2265007010	Shredders > 6 HP	Logging Equipment	4 Stroke	0.00	0.00	0.01
2265007015	Forest Eqp - Feller/Bunch/Skidder	Logging Equipment	4 Stroke	0.00	0.00	0.00
2265008005	Airport Ground Support Equipment	Airport Equipment	4 Stroke	0.01	0.01	0.60
2265010010	Other Oil Field Equipment	Industrial Equipment	4 Stroke	0.01	0.00	0.67
2267001060	Specialty Vehicle Carts	Recreational Equipment	LPG	0.00	0.01	0.02
2267002003	Pavers	Construction and Mining Equipment	LPG	0.00	0.00	0.02
2267002015	Rollers	Construction and Mining Equipment	LPG	0.00	0.00	0.03
2267002021	Paving Equipment	Construction and Mining Equipment	LPG	0.00	0.00	0.01
2267002024	Surfacing Equipment	Construction and Mining Equipment	LPG	0.00	0.00	0.00
2267002030	Trenchers	Construction and Mining Equipment	LPG	0.00	0.01	0.07
2267002033	Bore/Drill Rigs	Construction and Mining Equipment	LPG	0.00	0.01	0.03
2267002039	Concrete/Industrial Saws	Construction and Mining Equipment	LPG	0.00	0.00	0.03
2267002045	Cranes	Construction and Mining Equipment	LPG	0.00	0.01	0.03
2267002054	Crushing/Proc. Equipment	Construction and Mining Equipment	LPG	0.00	0.00	0.01
2267002057	Rough Terrain Forklifts	Construction and Mining Equipment	LPG	0.00	0.01	0.05
2267002060	Rubber Tire Loaders	Construction and Mining Equipment	LPG	0.00	0.01	0.10
2267002066	Tractors/Loaders/Backhoes	Construction and Mining Equipment	LPG	0.00	0.00	0.01
2267002072	Skid Steer Loaders	Construction and Mining Equipment	LPG	0.01	0.02	0.11
2267002081	Other Construction Equipment	Construction and Mining Equipment	LPG	0.00	0.01	0.05
2267003010	Aerial Lifts	Industrial Equipment	LPG	0.03	0.11	0.53
2267003020	Forklifts	Industrial Equipment	LPG	1.43	5.19	35.72
2267003030	Sweepers/Scrubbers	Industrial Equipment	LPG	0.01	0.03	0.18
2267003040	Other General Industrial Equipm	Industrial Equipment	LPG	0.00	0.01	0.07
2267003050	Other Material Handling Equipment	Industrial Equipment	LPG	0.00	0.01	0.03
2267003070	Terminal Tractors	Industrial Equipment	LPG	0.00	0.01	0.07
2267004066	Chippers/Stump Grinders	Lawn and Garden Equipment (Com)	LPG	0.02	0.07	0.49
2267005055	Other Agricultural Equipment	Agricultural Equipment	LPG	0.00	0.00	0.00
2267005060	Irrigation Sets	Agricultural Equipment	LPG	0.00	0.00	0.00
2267006005	Generator Sets	Commercial Equipment	LPG	0.25	1.22	4.13
2267006010	Pumps	Commercial Equipment	LPG	0.04	0.21	0.84
2267006015	Air Compressors	Commercial Equipment	LPG	0.04	0.21	0.91
2267006025	Welders	Commercial Equipment	LPG	0.08	0.27	1.61
2267006030	Pressure Washers	Commercial Equipment	LPG	0.00	0.00	0.03
2267006035	Hydro Power Units	Commercial Equipment	LPG	0.00	0.00	0.01
2267008005	Airport Ground Support Equipment	Airport Equipment	LPG	0.00	0.01	0.09
2268002081	Other Construction Equipment	Construction and Mining Equipment	CNG	0.00	0.00	0.00
2268003020	Forklifts	Industrial Equipment	CNG	0.01	0.37	2.53
2268003030	Sweepers/Scrubbers	Industrial Equipment	CNG	0.00	0.00	0.00
2268003040	Other General Industrial Equipment	Industrial Equipment	CNG	0.00	0.00	0.00
2268003060	AC\Refrigeration	Industrial Equipment	CNG	0.00	0.00	0.01
2268003070	Terminal Tractors	Industrial Equipment	CNG	0.00	0.00	0.00
2268005055	Other Agricultural Equipment	Agricultural Equipment	CNG	0.00	0.00	0.00
2268005060	Irrigation Sets	Agricultural Equipment	CNG	0.00	0.00	0.00
2268006005	Generator Sets	Commercial Equipment	CNG	0.00	0.37	1.22
2268006010	Pumps	Commercial Equipment	CNG	0.00	0.02	0.06
2268006015	Air Compressors	Commercial Equipment	CNG	0.00	0.02	0.07
2268006020	Gas Compressors	Commercial Equipment	CNG	0.00	0.13	0.65
2268006035	Hydro Power Units	Commercial Equipment	CNG	0.00	0.00	0.00
2268010010	Other Oil Field Equipment	Industrial Equipment	CNG	0.00	0.00	0.01

2011 NEW YORK METRO AREA OZONE SEASON DAY NONROAD EMISSIONS BY ASC (TPD)

SCC	EQUIP	CLASSIFICATION	Engine Type	VOC	NOX	CO
2270001060	Speciality Vehicle Carts	Recreational Equipment	Diesel	0.02	0.07	0.07
2270002003	Pavers	Construction and Mining Equipment	Diesel	0.04	0.53	0.26
2270002006	Tampers/Rammers	Construction and Mining Equipment	Diesel	0.00	0.00	0.00
2270002009	Plate Compactors	Construction and Mining Equipment	Diesel	0.00	0.02	0.01
2270002015	Rollers	Construction and Mining Equipment	Diesel	0.12	1.41	0.77
2270002018	Scrapers	Construction and Mining Equipment	Diesel	0.09	1.48	0.67
2270002021	Paving Equipment	Construction and Mining Equipment	Diesel	0.01	0.09	0.05
2270002024	Surfacing Equipment	Construction and Mining Equipment	Diesel	0.01	0.07	0.04
2270002027	Signal Boards/Light Plants	Construction and Mining Equipment	Diesel	0.02	0.19	0.09
2270002030	Trenchers	Construction and Mining Equipment	Diesel	0.07	0.73	0.46
2270002033	Bore/Drill Rigs	Construction and Mining Equipment	Diesel	0.07	0.85	0.29
2270002036	Excavators	Construction and Mining Equipment	Diesel	0.37	4.90	2.14
2270002039	Concrete/Industrial Saws	Construction and Mining Equipment	Diesel	0.00	0.05	0.04
2270002042	Cement & Mortar Mixers	Construction and Mining Equipment	Diesel	0.00	0.03	0.02
2270002045	Cranes	Construction and Mining Equipment	Diesel	0.10	1.41	0.37
2270002048	Graders	Construction and Mining Equipment	Diesel	0.09	1.21	0.47
2270002051	Off-highway Trucks	Construction and Mining Equipment	Diesel	0.29	4.83	1.62
2270002054	Crushing/Proc. Equipment	Construction and Mining Equipment	Diesel	0.02	0.26	0.09
2270002057	Rough Terrain Forklifts	Construction and Mining Equipment	Diesel	0.17	1.92	1.27
2270002060	Rubber Tire Loaders	Construction and Mining Equipment	Diesel	0.47	6.63	2.76
2270002066	Tractors/Loaders/Backhoes	Construction and Mining Equipment	Diesel	0.96	4.71	4.56
2270002069	Crawler Tractor/Dozers	Construction and Mining Equipment	Diesel	0.38	5.55	2.40
2270002072	Skid Steer Loaders	Construction and Mining Equipment	Diesel	0.85	3.26	3.82
2270002075	Off-Highway Tractors	Construction and Mining Equipment	Diesel	0.05	0.73	0.31
2270002078	Dumpers/Tenders	Construction and Mining Equipment	Diesel	0.00	0.01	0.01
2270002081	Other Construction Equipment	Construction and Mining Equipment	Diesel	0.05	0.71	0.34
2270003010	Aerial Lifts	Industrial Equipment	Diesel	0.04	0.15	0.16
2270003020	Forklifts	Industrial Equipment	Diesel	0.10	1.28	1.04
2270003030	Sweepers/Scrubbers	Industrial Equipment	Diesel	0.05	0.67	0.25
2270003040	Other General Industrial Eqp	Industrial Equipment	Diesel	0.06	0.78	0.26
2270003050	Other Material Handling Eqp	Industrial Equipment	Diesel	0.01	0.04	0.03
2270003060	AC\Refrigeration	Industrial Equipment	Diesel	0.42	5.07	2.81
2270003070	Terminal Tractors	Industrial Equipment	Diesel	0.06	0.79	0.38
2270004031	Leafblowers/Vacuums	Lawn and Garden Equipment (Com)	Diesel	0.00	0.00	0.00
2270004036	Snowblowers	Lawn and Garden Equipment (Com)	Diesel	0.00	0.00	0.00
2270004046	Front Mowers	Lawn and Garden Equipment (Com)	Diesel	0.14	1.16	0.59
2270004056	Lawn & Garden Tractors	Lawn and Garden Equipment (Com)	Diesel	0.03	0.23	0.12
2270004066	Chippers/Stump Grinders	Lawn and Garden Equipment (Com)	Diesel	0.16	1.73	0.70
2270004071	Commercial Turf Equipment	Lawn and Garden Equipment (Com)	Diesel	0.01	0.16	0.07
2270004076	Other Lawn & Garden Eqp.	Lawn and Garden Equipment (Com)	Diesel	0.00	0.00	0.00
2270005010	2-Wheel Tractors	Agricultural Equipment	Diesel	0.00	0.00	0.00
2270005015	Agricultural Tractors	Agricultural Equipment	Diesel	0.02	0.16	0.08
2270005020	Combines	Agricultural Equipment	Diesel	0.00	0.02	0.01
2270005025	Balers	Agricultural Equipment	Diesel	0.00	0.00	0.00
2270005030	Agricultural Mowers	Agricultural Equipment	Diesel	0.00	0.00	0.00
2270005035	Sprayers	Agricultural Equipment	Diesel	0.00	0.00	0.00
2270005040	Tillers > 6 HP	Agricultural Equipment	Diesel	0.00	0.00	0.00
2270005045	Swathers	Agricultural Equipment	Diesel	0.00	0.00	0.00
2270005055	Other Agricultural Equipment	Agricultural Equipment	Diesel	0.00	0.00	0.00
2270005060	Irrigation Sets	Agricultural Equipment	Diesel	0.00	0.00	0.00
2270006005	Generator Sets	Commercial Equipment	Diesel	0.71	5.98	2.88
2270006010	Pumps	Commercial Equipment	Diesel	0.16	1.41	0.69
2270006015	Air Compressors	Commercial Equipment	Diesel	0.29	3.24	1.52
2270006020	Gas Compressors	Commercial Equipment	Diesel	0.00	0.00	0.00
2270006025	Welders	Commercial Equipment	Diesel	0.51	1.80	2.17
2270006030	Pressure Washers	Commercial Equipment	Diesel	0.02	0.20	0.09
2270006035	Hydro Power Units	Commercial Equipment	Diesel	0.01	0.14	0.07
2270007010	Shredders > 6 HP	Logging Equipment	Diesel	0.00	0.00	0.00
2270007015	Forest Eqp - Feller/Bunch/Skidder	Logging Equipment	Diesel	0.00	0.00	0.00
2270008005	Airport Ground Support Equipment	Airport Equipment	Diesel	0.08	1.16	0.53
2270009010	Other Underground Mining Equipment	Construction and Mining Equipment	Diesel	0.00	0.00	0.00
2270010010	Other Oil Field Equipment	Industrial Equipment	Diesel	0.00	0.03	0.01
2282005010	Outboard	Pleasure Craft	2 Stroke	49.50	3.35	106.08
2282005015	Personal Water Craft	Pleasure Craft	2 Stroke	13.40	1.09	42.65
2282010005	Inboard/Sterndrive	Pleasure Craft	4 Stroke	7.10	7.26	101.16
2282020005	Inboard/Sterndrive	Pleasure Craft	Diesel	0.25	7.09	1.22
2282020010	Outboards	Pleasure Craft	Diesel	0.00	0.01	0.01
2285002015	Railway Maintenance	Railroad Equipment	Diesel	0.00	0.00	0.00
2285004015	Railway Maintenance	Railroad Equipment	4 Stroke	0.00	0.00	0.01
2285006015	Railway Maintenance	Railroad Equipment	LPG	0.00	0.00	0.00
		Nonattainment Total		188.21	111.47	3,233.41

2012 NEW YORK METRO AREA OZONE SEASON DAY NONROAD EMISSIONS BY ASC (TPD)

SCC	EQUIP	CLASSIFICATION	Engine Type	VOC	NOX	CO
2260001010	Motorcycles: Off-Road	Recreational Equipment	2 Stroke	3.70	0.02	3.66
2260001020	Snowmobiles	Recreational Equipment	2 Stroke	0.01	0.00	0.00
2260001030	ATVs	Recreational Equipment	2 Stroke	4.15	0.03	5.46
2260001060	Specialty Vehicles/Carts	Recreational Equipment	2 Stroke	0.09	0.02	3.37
2260002006	Tampers/Rammers	Construction and Mining Equipment	2 Stroke	0.26	0.01	1.24
2260002009	Plate Compactors	Construction and Mining Equipment	2 Stroke	0.01	0.00	0.05
2260002021	Paving Equipment	Construction and Mining Equipment	2 Stroke	0.01	0.00	0.06
2260002027	Signal Boards/Light Plants	Construction and Mining Equipment	2 Stroke	0.00	0.00	0.00
2260002039	Concrete/Industrial Saws	Construction and Mining Equipment	2 Stroke	0.67	0.01	3.24
2260002054	Crushing/Proc. Equipment	Construction and Mining Equipment	2 Stroke	0.00	0.00	0.01
2260003030	Sweepers/Scrubbers	Industrial Equipment	2 Stroke	0.00	0.00	0.01
2260003040	Other General Industrial Eqp	Industrial Equipment	2 Stroke	0.00	0.00	0.00
2260004015	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Res)	2 Stroke	0.16	0.00	0.56
2260004016	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Com)	2 Stroke	0.27	0.01	1.24
2260004020	Chain Saws < 6 HP	Lawn and Garden Equipment (Res)	2 Stroke	1.38	0.03	3.88
2260004021	Chain Saws < 6 HP	Lawn and Garden Equipment (Com)	2 Stroke	3.09	0.06	12.44
2260004025	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Res)	2 Stroke	3.19	0.09	9.99
2260004026	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Com)	2 Stroke	3.18	0.10	13.64
2260004030	Leafblowers/Vacuums	Lawn and Garden Equipment (Res)	2 Stroke	2.06	0.06	6.82
2260004031	Leafblowers/Vacuums	Lawn and Garden Equipment (Com)	2 Stroke	3.15	0.09	15.20
2260004035	Snowblowers	Lawn and Garden Equipment (Res)	2 Stroke	0.62	0.00	0.00
2260004036	Snowblowers	Lawn and Garden Equipment (Com)	2 Stroke	0.04	0.00	0.00
2260004071	Commercial Turf Equipment	Lawn and Garden Equipment (Com)	2 Stroke	0.00	0.00	0.01
2260005035	Sprayers	Agricultural Equipment	2 Stroke	0.00	0.00	0.00
2260006005	Generator Sets	Commercial Equipment	2 Stroke	0.21	0.01	0.95
2260006010	Pumps	Commercial Equipment	2 Stroke	1.44	0.05	6.17
2260006015	Air Compressors	Commercial Equipment	2 Stroke	0.00	0.00	0.00
2260006035	Hydro Power Units	Commercial Equipment	2 Stroke	0.01	0.00	0.04
2260007005	Chain Saws > 6 HP	Logging Equipment	2 Stroke	0.00	0.00	0.00
2265001010	Motorcycles: Off-Road	Recreational Equipment	4 Stroke	0.14	0.02	1.51
2265001030	ATVs	Recreational Equipment	4 Stroke	1.53	0.16	17.36
2265001050	Golf Carts	Recreational Equipment	4 Stroke	0.86	0.27	55.69
2265001060	Specialty Vehicles/Carts	Recreational Equipment	4 Stroke	0.10	0.02	2.72
2265002003	Pavers	Construction and Mining Equipment	4 Stroke	0.02	0.01	1.39
2265002006	Tampers/Rammers	Construction and Mining Equipment	4 Stroke	0.00	0.00	0.01
2265002009	Plate Compactors	Construction and Mining Equipment	4 Stroke	0.07	0.01	2.62
2265002015	Rollers	Construction and Mining Equipment	4 Stroke	0.04	0.01	2.59
2265002021	Paving Equipment	Construction and Mining Equipment	4 Stroke	0.12	0.03	5.26
2265002024	Surfacing Equipment	Construction and Mining Equipment	4 Stroke	0.04	0.01	2.37
2265002027	Signal Boards/Light Plants	Construction and Mining Equipment	4 Stroke	0.00	0.00	0.12
2265002030	Trenchers	Construction and Mining Equipment	4 Stroke	0.08	0.03	4.22
2265002033	Bore/Drill Rigs	Construction and Mining Equipment	4 Stroke	0.04	0.01	1.22
2265002039	Concrete/Industrial Saws	Construction and Mining Equipment	4 Stroke	0.14	0.05	10.74
2265002042	Cement & Mortar Mixers	Construction and Mining Equipment	4 Stroke	0.13	0.02	4.50
2265002045	Cranes	Construction and Mining Equipment	4 Stroke	0.00	0.00	0.13
2265002054	Crushing/Proc. Equipment	Construction and Mining Equipment	4 Stroke	0.01	0.00	0.64
2265002057	Rough Terrain Forklifts	Construction and Mining Equipment	4 Stroke	0.00	0.01	0.11
2265002060	Rubber Tire Loaders	Construction and Mining Equipment	4 Stroke	0.01	0.01	0.14
2265002066	Tractors/Loaders/Backhoes	Construction and Mining Equipment	4 Stroke	0.05	0.02	3.46
2265002072	Skid Steer Loaders	Construction and Mining Equipment	4 Stroke	0.03	0.02	1.32
2265002078	Dumpers/Tenders	Construction and Mining Equipment	4 Stroke	0.02	0.00	0.70
2265002081	Other Construction Equipment	Construction and Mining Equipment	4 Stroke	0.01	0.01	0.12
2265003010	Aerial Lifts	Industrial Equipment	4 Stroke	0.04	0.04	1.51
2265003020	Forklifts	Industrial Equipment	4 Stroke	0.05	0.07	1.26
2265003030	Sweepers/Scrubbers	Industrial Equipment	4 Stroke	0.02	0.01	1.15
2265003040	Other General Industrial Eqp	Industrial Equipment	4 Stroke	0.08	0.02	3.81
2265003050	Other Material Handling Eqp	Industrial Equipment	4 Stroke	0.00	0.00	0.12
2265003060	AC\Refrigeration	Industrial Equipment	4 Stroke	0.00	0.00	0.22
2265003070	Terminal Tractors	Industrial Equipment	4 Stroke	0.00	0.00	0.04
2265004010	Lawn mowers	Lawn and Garden Equipment (Res)	4 Stroke	14.02	0.94	196.53
2265004011	Lawn mowers	Lawn and Garden Equipment (Com)	4 Stroke	2.86	0.29	75.45
2265004015	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Res)	4 Stroke	1.22	0.08	16.49
2265004016	Rotary Tillers < 6 HP	Lawn and Garden Equipment (Com)	4 Stroke	1.60	0.16	36.89
2265004025	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Res)	4 Stroke	0.08	0.00	1.10
2265004026	Trimmers/Edgers/Brush Cutter	Lawn and Garden Equipment (Com)	4 Stroke	0.06	0.01	1.96
2265004030	Leafblowers/Vacuums	Lawn and Garden Equipment (Res)	4 Stroke	0.13	0.01	2.11
2265004031	Leafblowers/Vacuums	Lawn and Garden Equipment (Com)	4 Stroke	1.50	0.55	77.70
2265004035	Snowblowers	Lawn and Garden Equipment (Res)	4 Stroke	1.23	0.00	0.00
2265004036	Snowblowers	Lawn and Garden Equipment (Com)	4 Stroke	0.09	0.00	0.00
2265004040	Rear Engine Riding Mowers	Lawn and Garden Equipment (Res)	4 Stroke	1.58	0.28	50.11
2265004041	Rear Engine Riding Mowers	Lawn and Garden Equipment (Com)	4 Stroke	0.16	0.06	10.56
2265004046	Front Mowers	Lawn and Garden Equipment (Com)	4 Stroke	0.25	0.07	11.07

SCC	EQUIP	CLASSIFICATION	Engine Type	VOC	NOX	CO
2265004051	Shredders < 6 HP	Lawn and Garden Equipment (Com)	4 Stroke	0.20	0.02	4.23
2265004055	Lawn & Garden Tractors	Lawn and Garden Equipment (Res)	4 Stroke	18.16	3.73	672.37
2265004056	Lawn & Garden Tractors	Lawn and Garden Equipment (Com)	4 Stroke	2.06	0.78	143.50
2265004066	Chippers/Stump Grinders	Lawn and Garden Equipment (Com)	4 Stroke	0.22	0.13	15.54
2265004071	Commercial Turf Equipment	Lawn and Garden Equipment (Com)	4 Stroke	6.47	2.20	413.18
2265004075	Other Lawn & Garden Eqp.	Lawn and Garden Equipment (Res)	4 Stroke	0.71	0.11	20.45
2265004076	Other Lawn & Garden Eqp.	Lawn and Garden Equipment (Com)	4 Stroke	0.41	0.07	11.62
2265005010	2-Wheel Tractors	Agricultural Equipment	4 Stroke	0.00	0.00	0.00
2265005015	Agricultural Tractors	Agricultural Equipment	4 Stroke	0.00	0.00	0.00
2265005020	Combines	Agricultural Equipment	4 Stroke	0.00	0.00	0.00
2265005025	Balers	Agricultural Equipment	4 Stroke	0.00	0.00	0.00
2265005030	Agricultural Mowers	Agricultural Equipment	4 Stroke	0.00	0.00	0.00
2265005035	Sprayers	Agricultural Equipment	4 Stroke	0.00	0.00	0.02
2265005040	Tillers > 6 HP	Agricultural Equipment	4 Stroke	0.00	0.00	0.06
2265005045	Swathers	Agricultural Equipment	4 Stroke	0.00	0.00	0.00
2265005055	Other Agricultural Equipment	Agricultural Equipment	4 Stroke	0.00	0.00	0.01
2265005060	Irrigation Sets	Agricultural Equipment	4 Stroke	0.00	0.00	0.00
2265006005	Generator Sets	Commercial Equipment	4 Stroke	12.55	2.59	470.48
2265006010	Pumps	Commercial Equipment	4 Stroke	2.61	0.62	104.53
2265006015	Air Compressors	Commercial Equipment	4 Stroke	1.09	0.36	50.44
2265006025	Welders	Commercial Equipment	4 Stroke	2.38	0.81	131.82
2265006030	Pressure Washers	Commercial Equipment	4 Stroke	5.24	1.00	204.74
2265006035	Hydro Power Units	Commercial Equipment	4 Stroke	0.20	0.05	10.41
2265007010	Shredders > 6 HP	Logging Equipment	4 Stroke	0.00	0.00	0.01
2265007015	Forest Eqp - Feller/Bunch/Skidder	Logging Equipment	4 Stroke	0.00	0.00	0.00
2265008005	Airport Ground Support Equipment	Airport Equipment	4 Stroke	0.01	0.01	0.58
2265010010	Other Oil Field Equipment	Industrial Equipment	4 Stroke	0.01	0.00	0.67
2267001060	Specialty Vehicle Carts	Recreational Equipment	LPG	0.00	0.01	0.02
2267002003	Pavers	Construction and Mining Equipment	LPG	0.00	0.00	0.02
2267002015	Rollers	Construction and Mining Equipment	LPG	0.00	0.00	0.02
2267002021	Paving Equipment	Construction and Mining Equipment	LPG	0.00	0.00	0.01
2267002024	Surfacing Equipment	Construction and Mining Equipment	LPG	0.00	0.00	0.00
2267002030	Trenchers	Construction and Mining Equipment	LPG	0.00	0.01	0.06
2267002033	Bore/Drill Rigs	Construction and Mining Equipment	LPG	0.00	0.01	0.03
2267002039	Concrete/Industrial Saws	Construction and Mining Equipment	LPG	0.00	0.00	0.02
2267002045	Cranes	Construction and Mining Equipment	LPG	0.00	0.01	0.03
2267002054	Crushing/Proc. Equipment	Construction and Mining Equipment	LPG	0.00	0.00	0.00
2267002057	Rough Terrain Forklifts	Construction and Mining Equipment	LPG	0.00	0.01	0.04
2267002060	Rubber Tire Loaders	Construction and Mining Equipment	LPG	0.00	0.01	0.08
2267002066	Tractors/Loaders/Backhoes	Construction and Mining Equipment	LPG	0.00	0.00	0.01
2267002072	Skid Steer Loaders	Construction and Mining Equipment	LPG	0.01	0.02	0.10
2267002081	Other Construction Equipment	Construction and Mining Equipment	LPG	0.00	0.01	0.05
2267003010	Aerial Lifts	Industrial Equipment	LPG	0.03	0.10	0.50
2267003020	Forklifts	Industrial Equipment	LPG	1.08	4.02	30.01
2267003030	Sweepers/Scrubbers	Industrial Equipment	LPG	0.00	0.02	0.15
2267003040	Other General Industrial Equipm	Industrial Equipment	LPG	0.00	0.01	0.06
2267003050	Other Material Handling Equipment	Industrial Equipment	LPG	0.00	0.01	0.03
2267003070	Terminal Tractors	Industrial Equipment	LPG	0.00	0.01	0.05
2267004066	Chippers/Stump Grinders	Lawn and Garden Equipment (Com)	LPG	0.01	0.05	0.41
2267005055	Other Agricultural Equipment	Agricultural Equipment	LPG	0.00	0.00	0.00
2267005060	Irrigation Sets	Agricultural Equipment	LPG	0.00	0.00	0.00
2267006005	Generator Sets	Commercial Equipment	LPG	0.25	1.18	4.07
2267006010	Pumps	Commercial Equipment	LPG	0.04	0.20	0.79
2267006015	Air Compressors	Commercial Equipment	LPG	0.04	0.18	0.84
2267006025	Welders	Commercial Equipment	LPG	0.07	0.24	1.46
2267006030	Pressure Washers	Commercial Equipment	LPG	0.00	0.00	0.02
2267006035	Hydro Power Units	Commercial Equipment	LPG	0.00	0.00	0.01
2267008005	Airport Ground Support Equipment	Airport Equipment	LPG	0.00	0.01	0.07
2268002081	Other Construction Equipment	Construction and Mining Equipment	CNG	0.00	0.00	0.00
2268003020	Forklifts	Industrial Equipment	CNG	0.00	0.29	2.12
2268003030	Sweepers/Scrubbers	Industrial Equipment	CNG	0.00	0.00	0.00
2268003040	Other General Industrial Equipment	Industrial Equipment	CNG	0.00	0.00	0.00
2268003060	AC\Refrigeration	Industrial Equipment	CNG	0.00	0.00	0.01
2268003070	Terminal Tractors	Industrial Equipment	CNG	0.00	0.00	0.00
2268005055	Other Agricultural Equipment	Agricultural Equipment	CNG	0.00	0.00	0.00
2268005060	Irrigation Sets	Agricultural Equipment	CNG	0.00	0.00	0.00
2268006005	Generator Sets	Commercial Equipment	CNG	0.00	0.36	1.20
2268006010	Pumps	Commercial Equipment	CNG	0.00	0.01	0.05
2268006015	Air Compressors	Commercial Equipment	CNG	0.00	0.01	0.06
2268006020	Gas Compressors	Commercial Equipment	CNG	0.00	0.13	0.67
2268006035	Hydro Power Units	Commercial Equipment	CNG	0.00	0.00	0.00
2268010010	Other Oil Field Equipment	Industrial Equipment	CNG	0.00	0.00	0.01

2012 NEW YORK METRO AREA OZONE SEASON DAY NONROAD EMISSIONS BY ASC (TPD)

SCC	EQUIP	CLASSIFICATION	Engine Type	VOC	NOX	CO
2270001060	Speciality Vehicle Carts	Recreational Equipment	Diesel	0.02	0.07	0.07
2270002003	Pavers	Construction and Mining Equipment	Diesel	0.04	0.50	0.24
2270002006	Tampers/Rammers	Construction and Mining Equipment	Diesel	0.00	0.00	0.00
2270002009	Plate Compactors	Construction and Mining Equipment	Diesel	0.00	0.02	0.01
2270002015	Rollers	Construction and Mining Equipment	Diesel	0.11	1.33	0.72
2270002018	Scrapers	Construction and Mining Equipment	Diesel	0.09	1.38	0.61
2270002021	Paving Equipment	Construction and Mining Equipment	Diesel	0.01	0.08	0.04
2270002024	Surfacing Equipment	Construction and Mining Equipment	Diesel	0.01	0.06	0.03
2270002027	Signal Boards/Light Plants	Construction and Mining Equipment	Diesel	0.02	0.19	0.09
2270002030	Trenchers	Construction and Mining Equipment	Diesel	0.06	0.71	0.44
2270002033	Bore/Drill Rigs	Construction and Mining Equipment	Diesel	0.07	0.83	0.28
2270002036	Excavators	Construction and Mining Equipment	Diesel	0.35	4.51	1.94
2270002039	Concrete/Industrial Saws	Construction and Mining Equipment	Diesel	0.00	0.05	0.03
2270002042	Cement & Mortar Mixers	Construction and Mining Equipment	Diesel	0.00	0.03	0.02
2270002045	Cranes	Construction and Mining Equipment	Diesel	0.09	1.32	0.34
2270002048	Graders	Construction and Mining Equipment	Diesel	0.09	1.12	0.42
2270002051	Off-highway Trucks	Construction and Mining Equipment	Diesel	0.29	4.44	1.42
2270002054	Crushing/Proc. Equipment	Construction and Mining Equipment	Diesel	0.02	0.25	0.09
2270002057	Rough Terrain Forklifts	Construction and Mining Equipment	Diesel	0.16	1.82	1.19
2270002060	Rubber Tire Loaders	Construction and Mining Equipment	Diesel	0.44	6.24	2.55
2270002066	Tractors/Loaders/Backhoes	Construction and Mining Equipment	Diesel	0.90	4.53	4.34
2270002069	Crawler Tractor/Dozers	Construction and Mining Equipment	Diesel	0.36	5.17	2.18
2270002072	Skid Steer Loaders	Construction and Mining Equipment	Diesel	0.79	3.19	3.67
2270002075	Off-Highway Tractors	Construction and Mining Equipment	Diesel	0.04	0.69	0.28
2270002078	Dumpers/Tenders	Construction and Mining Equipment	Diesel	0.00	0.01	0.01
2270002081	Other Construction Equipment	Construction and Mining Equipment	Diesel	0.05	0.68	0.32
2270003010	Aerial Lifts	Industrial Equipment	Diesel	0.04	0.15	0.16
2270003020	Forklifts	Industrial Equipment	Diesel	0.09	1.15	0.92
2270003030	Sweepers/Scrubbers	Industrial Equipment	Diesel	0.05	0.63	0.24
2270003040	Other General Industrial Eqp	Industrial Equipment	Diesel	0.06	0.73	0.24
2270003050	Other Material Handling Eqp	Industrial Equipment	Diesel	0.01	0.04	0.03
2270003060	AC\Refrigeration	Industrial Equipment	Diesel	0.39	4.95	2.89
2270003070	Terminal Tractors	Industrial Equipment	Diesel	0.06	0.71	0.34
2270004031	Leafblowers/Vacuums	Lawn and Garden Equipment (Com)	Diesel	0.00	0.00	0.00
2270004036	Snowblowers	Lawn and Garden Equipment (Com)	Diesel	0.00	0.00	0.00
2270004046	Front Mowers	Lawn and Garden Equipment (Com)	Diesel	0.13	1.17	0.58
2270004056	Lawn & Garden Tractors	Lawn and Garden Equipment (Com)	Diesel	0.03	0.23	0.12
2270004066	Chippers/Stump Grinders	Lawn and Garden Equipment (Com)	Diesel	0.16	1.70	0.68
2270004071	Commercial Turf Equipment	Lawn and Garden Equipment (Com)	Diesel	0.01	0.16	0.06
2270004076	Other Lawn & Garden Eqp.	Lawn and Garden Equipment (Com)	Diesel	0.00	0.00	0.00
2270005010	2-Wheel Tractors	Agricultural Equipment	Diesel	0.00	0.00	0.00
2270005015	Agricultural Tractors	Agricultural Equipment	Diesel	0.01	0.16	0.08
2270005020	Combines	Agricultural Equipment	Diesel	0.00	0.02	0.01
2270005025	Balers	Agricultural Equipment	Diesel	0.00	0.00	0.00
2270005030	Agricultural Mowers	Agricultural Equipment	Diesel	0.00	0.00	0.00
2270005035	Sprayers	Agricultural Equipment	Diesel	0.00	0.00	0.00
2270005040	Tillers > 6 HP	Agricultural Equipment	Diesel	0.00	0.00	0.00
2270005045	Swathers	Agricultural Equipment	Diesel	0.00	0.00	0.00
2270005055	Other Agricultural Equipment	Agricultural Equipment	Diesel	0.00	0.00	0.00
2270005060	Irrigation Sets	Agricultural Equipment	Diesel	0.00	0.00	0.00
2270006005	Generator Sets	Commercial Equipment	Diesel	0.68	5.91	2.80
2270006010	Pumps	Commercial Equipment	Diesel	0.15	1.39	0.67
2270006015	Air Compressors	Commercial Equipment	Diesel	0.27	3.13	1.47
2270006020	Gas Compressors	Commercial Equipment	Diesel	0.00	0.00	0.00
2270006025	Welders	Commercial Equipment	Diesel	0.48	1.79	2.08
2270006030	Pressure Washers	Commercial Equipment	Diesel	0.02	0.20	0.08
2270006035	Hydro Power Units	Commercial Equipment	Diesel	0.01	0.14	0.06
2270007010	Shredders > 6 HP	Logging Equipment	Diesel	0.00	0.00	0.00
2270007015	Forest Eqp - Feller/Bunch/Skidder	Logging Equipment	Diesel	0.00	0.00	0.00
2270008005	Airport Ground Support Equipment	Airport Equipment	Diesel	0.08	1.10	0.49
2270009010	Other Underground Mining Equipment	Construction and Mining Equipment	Diesel	0.00	0.00	0.00
2270010010	Other Oil Field Equipment	Industrial Equipment	Diesel	0.00	0.03	0.01
2282005010	Outboard	Pleasure Craft	2 Stroke	47.07	3.52	103.80
2282005015	Personal Water Craft	Pleasure Craft	2 Stroke	12.53	1.14	42.44
2282010005	Inboard/Sterndrive	Pleasure Craft	4 Stroke	7.07	7.44	99.24
2282020005	Inboard/Sterndrive	Pleasure Craft	Diesel	0.25	7.13	1.25
2282020010	Outboards	Pleasure Craft	Diesel	0.00	0.01	0.01
2285002015	Railway Maintenance	Railroad Equipment	Diesel	0.00	0.00	0.00
2285004015	Railway Maintenance	Railroad Equipment	4 Stroke	0.00	0.00	0.01
2285006015	Railway Maintenance	Railroad Equipment	LPG	0.00	0.00	0.00
		Nonattainment Total		183.68	107.29	3,274.94

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Department of Environmental Conservation
Division of Air Resources

NEW YORK STATE IMPLEMENTATION PLAN FOR OZONE (8-HOUR NAAQS)

ATTAINMENT DEMONSTRATION FOR NEW YORK METRO AREA

APPENDIX D

FINAL PROPOSED REVISION FEBRUARY 2008

New York State Department of Environmental Conservation
ELIOT SPITZER, GOVERNOR ***ALEXANDER GRANNIS, COMMISSIONER***

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THE NEW YORK STATE

AREA SOURCE METHODOLOGIES

MANUAL

NYSDEC

Division of Air Resources

Bureau of Air Quality Planning

2005

NEW YORK STATE AREA SOURCE METHODOLOGIES

Area Sources are sources that are considered too small to be included in the Annual Point Source Inventory Survey. They are not required to obtain a Title V permit pursuant to 6 NYCRR 201-6. Some of the Area Source categories must have point source emissions subtracted out to avoid double counting depending on the SIC code. For example: Graphic Arts is an area source category, but there are Graphic Arts facilities that are large enough (emissions wise) that required them to obtain a Title V permit and other different types of Title V facilities that may have a Graphic Arts process. An activity like structure fires will not have point sources and therefore will not be subjected to double counting.

The New York State (NYS) Area Source Inventory is part of the Periodic Inventory that is mandated by the 1990 Clean Air Act (§7502(c)(3) and §7511a(a)(3)(A)). The Periodic Inventory is mandated to be completed every third year beginning with 1990 as the base year. The Area Source Inventory currently consists of 27 categories with emissions calculated per county for each of the contaminants associated with the respective category. The contaminants include the criteria contaminants: Carbon Monoxide (CO), Sulfur Dioxide (SO2), Particulate Matter (PM , PM-10 and PM-2.5), Oxides of Nitrogen (NOx), Volatile Organic Compounds (VOCs)) and Hazardous Air Pollutants (HAPs). The HAPs that are part of the NYS Area Source Inventory were the HAPs that were targeted by the Great Lakes Commission (GLC), which NYS is a member. A listing of the targeted HAPs can be accessed at www.glc.org/air.

Emission factors utilized to calculate emissions from the various categories were derived or taken directly from Federal (United States Environmental Protection Agency, EPA) and various State references (For Example: Ohio's EPA was referenced for Agricultural Pesticides). Federal references included EPA's AP-42, Fire Information Retrieval (FIRE 6.25), Emission Inventory Improvement Program (EIIP), Landfill Air Emissions Estimation Model v2.01 (LAEEM) and the publication "Documentation For The 1996 Base Year National Toxics Inventory For Area Sources". The Federal references can be accessed at www.epa.gov/ttn/chief/. Each separate category will explain if the respective emission factor(s) depended on employment, per capita (population), fuel use, etc., and the respective reference(s) will be noted. If a category depended on a per capita emission factor then the New York State population per county for the respective Periodic Inventory Year can be downloaded from the New York Data Center located at the Empire State Development Department. The population per county data can be accessed at www.empire.state.ny.us/nysdc/popandhous/ESTIMATE.asp.

Please note that all the completed Area Source Categories can be found at the following address on the L drive: L:/dar/air3/apps1/baqp/baqp_ssps/areasources/.

TABLE OF CONTENTS	
Page Number	**Area Source Category**

1.) Agricultural Pesticides

Estimating emissions from the use of Atrazine and Trifluralin were based on actual pesticides use (gallons per county or pounds per county) that was calculated from data compiled by the New York State Department of Environmental Conservation's (NYSDEC) Division of Solid And Hazardous Materials, Bureau of Pesticide Management in conjunction with The Pesticide Management Education Program at Cornell University and EPA's Office of Pesticide Programs (Pesticide Product Label System (PPLS) - Search). The EPA's website for the Pesticide Programs is as follows: http://oaspub.epa.gov/pestlabl/ppls.home.

The data compiled by the NYSDEC represented only the counties that Atrazine and Trifluralin were sold in and the amount (gallons and/or pounds) that was sold. It was assumed that the amount sold in a county was used entirely (100%) in that respective county and was applied (100%) in that respective year that was a Periodic Inventory Year. Each pesticide has a Product Label associated with it and has to be registered at the EPA's Office of Pesticide Programs. The Product Label would list all the ingredients and the percentage of each ingredient in the pesticide. For example: A Product Label for a **Pesticide A** has Atrazine or Trifluralin listed as an ingredient with a percentage of 25%. Every county this pesticide was sold in would have this Product Label listed along with the amount sold either in gallons and/or pounds and the percentage would be used to calculate the amount of Atrazine or Trifluralin in the respective pesticide. For Example: 100 lbs. of Pesticide X was sold in County Y and Atrazine was listed on the Product Label as one of the ingredients with a percentage of 25%. Total amount of Atrazine in the pesticide: 100.0 lbs. * 0.25 (25% Atrazine) = 25.0 lbs. of Atrazine. The conversion from gallons to pounds for either Atrazine or Trifluralin is as follows: (Weight of water (8.34 lbs./gallon))*(Density of the contaminant (Atrazine (1.187) or Trifluralin (1.294)))*(amount of Atrazine or Trifluralin in gallons).

The emission factor for Atrazine is the volatility rate of 18 percent per unit of pesticide applied (in this case pounds) while the emission factor for Trifluralin is the volatility rate of 82 percent per unit of pesticide applied (again in pounds). The emissions factors were given in an email from Tom Velatis of Ohio's EPA dated June 21, 2000. ASC Code: 2461800000

A point source adjustment is not required for this area source category.

2.) **Ammonia**

The 2002 New York State Ammonia Area Source Inventory was generated by utilizing the Carnegie Mellon University's (CMU) Ammonia Model latest available version. Using the model's input and output files, ammonia emissions for the various processes in New York State were estimated to the county level. The input and output files are detailed in the model's user manual. The CMU Ammonia Model and user manual can be accessed and downloaded at www.marama.org/ under the Regional Technical Center. ASC: There are 33 different ASC codes associated with the Ammonia category and they all can be referenced to the CMU's Ammonia Model.

A point source adjustment is not required for this area source category.

3.) Architectural Coatings

Two types of paint are used to categorize architectural surface coating. They are water-based and solvent-based paints. Solvent-based paint typically contains substantially higher volatile solvent contents than water-based paint.

The emission factors (per capita) used in calculating VOC emissions were derived from the EIIP's Volume III, Chapter 3, Section 5. For each type of paint, VOC emission factors (lb/gal) and Usage factors, (gal/person) were given. Multiplying the factors we obtain 1.8189 lb of VOC/person for solvent-based paint and 1.4282 lb of VOC/person for water-based one. Adding the last two we obtain 3.2471 lb of VOC/person for architectural coating.

Paint Type	VOC Emission Factor (Lb/gal)	Usage Factor (Gal/person)	VOC / Person (Lb/person)
Solvent-based	3.87	0.47	1.8189
Water-based	0.74	1.93	1.4282

The VOC speciation profiles were obtained from the California Air Resources Board (CARB). CARB can be accessed at: http://www.arb.ca.gov. The targeted compounds for solvent-based paint are Acetone, Ethylbenzene, Xylenes, and Toluene. For water-based paint are Benzene, Methylene Chloride, and Methyl Chloride

	Air Toxin (TOX)	Speciation (TOX/VOC), % by wt
Solvent-based paints:	Acetone	3.2
	Ethylbenzene	4.3
	Isomers of Xylene	2.6
	Toluene	5.2
Water-based paints:	Benzene	0.3
	Methylene Chloride	5.5
	Methyl Chloride	0.5

Architectural surface coating is categorized under NAICS code 325510: Paint and coating manufacturing. It's categorized by the following ASC codes under FIRE

A24	Solvent Utilization
A2401	Surface Coating
A2401001	Architectural Surface Coating
A2401001000	Total: All Solvent Types

This activity is higher in the Summer, (EPA's default adjustment: 1.3). A point source adjustment is not required for this area source category.

4.) Asphalt Paving

Estimating VOCs (Volatile Organic Compounds) emissions from Asphalt Paving are based on actual data obtained from the New York State (NYS) Department of Transportation's Environmental Analysis Bureau, Air Quality Section for each county in the state. The data included the total amount of Asphalt Concrete, Crack Fill, and Emulsions that was applied in each county during 2002. The emission factor (0.219 lbs / gallons of asphalt) was derived from the emission factor for Emulsified Asphalt listed in EIIP's Asphalt Paving (Page 17.5-8, Table 17.5-2, Volume III: Chapter 17). Since Cutback Asphalt is prohibited in New York State (See 6NYCRR Part 211.4(a)) there are no Hazardous Air Pollutants (HAPs) associated with this process. ASC Code: 2461022000

A point source adjustment is not required for this area source category.

5.) <u>Autobody Refinishing</u>

Estimating VOCs (Volatile Organic Compounds) emissions from Autobody Refinishing in 1999 was based on per capita (population) and an emission factor of 2.3 lbs VOC /per capita/yr (EPA's document: Procedures for the Preparation of Emission Inventories for Carbon Monoxide and Precursors of Ozone, Volume 1: General Guidance for Stationary Sources;1991). VOC emissions for 2002 incorporate the National Rule promulgated in 1998. EPA estimated a 37% reduction for the National Rule. Because this rule affects manufacturers, a 100 percent Rule Effectiveness (RE) is used, which assumes that instructions on how to apply the coatings are followed. Rule penetration (RP) is also 100 percent, because the rule affects all sources within the category. Ozone season daily emissions are estimated by dividing annual emissions estimates by 365, and assuming 5 days per week of operation. The 5 days per week assumption is applied by multiplying average daily emissions by 7/5. ACS: 2401005000

The equation for computing the VOC emission factor is described:

Post-control emission factor = Pre-control emission factor*[1.0-(CE*RP*RE)]
= 2.3 lbs/capita*[1.0- (0.37*1.00*1.00)]
= 1.45 lbs/capita

VOC's speciation for this area source is provided by EIIP as follows:

Benzene (Cas No: 71432)	0.0151 lb/lb VOC
Di-n-butylbutyl Phthalate (Cas No: 84742)	0.0001 lb/lb VOC
Napthalene (Cas No: 91203)	0.0146 lb/lb VOC
Toluene (Cas No: 108883)	0.0865 lb/lb VOC
Xylene (m, o, & p mixture/Cas No: 1330207)	0.2067 lb/lb VOC

A point source adjustment is not required for this area source category.

6.) <u>Combustion (Commercial/Institutional, Electrical Generation, Industrial And Residential)</u>

The NYSDEC estimated emissions from fuel combustion for four area source sectors: commercial/institutional, electrical generation, industrial, and residential. The emission estimates were developed on a county-basis for eight fuels per sector (Area Source Codes (ASCs)) for a total of 32 ASCs. The ASCs begin with 2101 for electrical generation, 2102 for industrial, 2103 for commercial/institutional, and 2104 for residential.

State-wide fuel use estimates for calendar year 2002 were obtained from the New York State Energy Research and Development Authority (NYSERDA) for each sector except residential wood use where the statewide estimate developed by MANE-VU was used. Fuel usage at major facilities in the State was determined from a NYSDEC database. The difference between the fuel usage reported by NYSERDA and by major facilities for each sector/fuel combination was allocated on a county-basis. The allocation was based upon census records or employment data and heating degree data (residential and commercial/institutional sectors only).

The emission estimates for each county were calculated by multiplying the fuel allocation by the appropriate emission factor for each ASC. Emission factors were obtained from EPA (AP-42 and FIRE 6.25 databases), the Great Lakes Commission and the MANE-VU Residential Wood Combustion Emission Inventory dated June 22, 2004.

There is no point source adjustment for the sector residential but point source adjustments have to be made for the sectors commercial/institutional, electrical generation and industrial.

7.) Commercial Bakeries

An emission factor of 0.35 lb VOC/capita/year (Emission Inventory Improvement Program (EIIP), Volume III, Area Source Method Abstracts, Baked Goods at Commercial/Retail Bakeries, July 1999), was derived, based on a per capita consumption of 70 pounds per person and emissions for the sponge-dough method of 5 pounds VOC per 1,000 pounds baked. Activity is assumed to occur five days per week, 52 weeks per year. ASC: 2302050000

A point source adjustment is required for this area source category.

8.) Consumer and Commercial Solvents

Overview:

All emission factors and information contained within are from the following source: EPA's Emission Inventory Improvement Program (EIIP), Volume III, Chapter 5, Consumer and Commercial Solvent Use. The consumer and commercial solvent source category includes a wide array of products including personal care products, household cleaning products and household pesticides. However, all VOC emitting products used by businesses, institutions and numerous industrial manufacturing operations are also included. Products included in this category are shown in Table 1 (See Page 9 of this document). The majority of VOC's introduced into the atmosphere from this category is a result of evaporation of the solvent contained in the product or from the propellant. There are two methods for estimating emissions for consumer and commercial solvent use that are recommended by the EIIP and are as follows: 1.) Use of national average per capita emission factors (population based method) adjusted for state or local emission limits; 2.) Surveying consumer and commercial product use or sales in the inventory area. The choice as to which one is employed depends on the desired level of accuracy as well as available data and resources. ASC: 2465000000

Methodology**:**

The population based method was the method used to calculate the emissions per county for this category in 2002. The procedure for the population based method is outlined below:

1.) Identify applicable state and local regulations.
2.) Create a database (See Table 1: (EIIP, Volume III, Chapter 5, Section 4, Page 5.4-3, Table 5.4-1)) or spreadsheet with per capita emission factors for the source categories of interest.
3.) Obtain population data for the base year of interest and allocate it to county level.
4.) Multiply per capita emission factors by the population per county to obtain overall emissions estimates.
5.) Adjust estimated emissions for applicable regulations as needed.

Estimating VOCs:

Example: To estimate VOC emissions from personal care products:

VOCs Emissions = (Population)*(Per Capita Emission Factor)

Given a population of 1 million persons for a particular area, the VOC emissions from personal care products would be: (1,000,000 persons)*(2.32 lbs VOC's/person/year)= (2,320,000 lb VOC/year)/(2000lb/ton)=1,160 tons VOC/year

Table 1:

Consumer and Commercial Solvent Product Categories and Emission Factors

Product Category	**Per Capita Emission Factor (lb VOC/yr/Person)**
Personal Care Products	2.32
Household Products	0.79
Automotive Aftermarket Products	1.36
Adhesives and Sealants	0.57
FIFRA[a]-Regulated Products	1.78
Coatings and Related Products	0.95
Miscellaneous Products	0.07
Total for All Consumer and Commercial Products	7.84

a.) FIFRA: Federal Insecticide, Fungicide, and Rodenticide Act

Estimating HAPs:

The population based method is again the preferred method with adjustments made for state and local regulations on this industry but only for those HAPs that are targeted by The Great Lakes Commission (GLC). The per capita emission factors for the targeted HAPs (EIIP, Volume III, Chapter 5, Section 4, Pages 5.4-4 thru 5.4-6, table 5.4-2) are listed in Table 2.

Data Needed:

Data needs for estimating the emissions of HAP's from this source category are as follows:

Population-based method:
1.) Population in the inventory area.
2.) National average per capita emission factors.
3.) Information on state and local regulations.

Table 2:
Per Capita Consumer and Commercial Solvent HAPs (GLC) Emission Factors
(lb/yr/person)

Toxic Compounds:	**Per Capita Emission Factor (lb /yr/Person)**	**CAS No:**
Ethyl Benzene	2.07E-03	100-41-4
Ethylene Oxide	1.51E-02	75-21-8
Formaldehyde	1.26E-03	50-00-0
Glycol Ethers	4.04E-02	111-76-2
Methylene Chloride (Dichloromethane)	3.64E-02	75-09-2
Naphthalene	4.61E-02	91-20-3
Tetrachloroethylene (Perchloroethylene)	2.82E-02	127-18-4
Toluene	4.29E-01	108-88-3
Methylene Chloride (1,1,1-Trichloroethane)	3.87E-01	71-55-6
Xylenes, m,o, & p	2.03E-01	1330-20-7

When estimating emissions using emission factors, each state will need to use the latest published emission factors available. Additional work may need to be performed, as demonstrated below, in order to account for regulations and controls on the industry in each respective state.

Adjusting for regulations and control of VOC and HAP's

EF_A = emission factor for pollutant A
Q = activity factor for category
CE = control efficiency/100
RP = rule penetration/100
RE = rule effectiveness/100
UAE_A = uncontrolled area source emissions of pollutant A
CAE_A = controlled area source emissions of pollutant A

Adjustments to preferred method using emissions factors and activity data.

Example:

New York has a regulation in place affecting various product subcategories of the categories listed in Table 1. Hair spray, antiperspirants, deodorants, and all purpose cleaners had limits on the % VOC by weight of the products in these subcategories pursuant to 6 NYCRR Part 235 (Consumer Products). The products regulated make up only parts of several categories listed in Table 1. Therefore, when estimating emissions, CE and RP need to be calculated per affected category (see Table 1) as follows:

RP = (per capita emissions of regulated portion of category/per capita emissions of all

products in category)*100
RE = 80% EPA default based on good engineering judgement
(RE of 100 for federal regulation)
CE = (Uncontrolled VOC content - controlled VOC content)/uncontrolled VOC *100

Calculate speciated contaminant and VOC emission estimates with CE, RE, & RP calculated for the relevant category using the formula for the preferred method above.

Refer to Appendix A of the Emission Inventory Improvement Program, Volume 3, Chapter 5, Consumer and Commercial Solvent Use for additional information on product types per category and associated per capita emissions estimates.

A point source adjustment is not required for this area source category.

9.) Chromium Electroplating

Chrome Electroplating emissions were calculated from actual data, involving a survey of known Chrome Electroplating facilities listed in the New York State Department of Environmental Conservation’s Source Management System. Chromium compounds emissions were converted to Chromium emissions. All the facilities surveyed had emission controls, with fume suppressants being the most common one. ASC: 2309100010

Point Source emissions (SIC 3471) will have to be subtracted from the Area Source emissions.

10.) Dry Cleaning

Actual facility data was used. The facility data was furnished by the NYSDEC's Division of Air Resources' Bureau of Stationary Sources. PERC machines (transfer and dry-to-dry), are the main concern. Coin Operated and Petroleum Solvents machines are negligible in the inventory. A point source (SIC 7216) adjustment by county is necessary for this area source category. ASC: 2420000055

11.) Ethylene Oxide Sterilizers

An EPA (2001) report based on validated distributor sales data in 15 metropolitan areas referenced an emission factor of 0.16 lbs./bed/yr of Ethylene Oxide blend for the two metropolitan areas in New York State: New York City and Buffalo. These two areas represent 70 percent of the total number of beds in the State, and by extrapolation the emission factor was used for the whole state. (No reports were available for 2002 apart from the statement that “National sales of ETO sterilants to hospitals declined somewhat in 2002"; therefore, the 2001 figures are conservative). The number of beds per county were determined from the “Health Facilities Directory 2002", provided by the New York Department of Health (NYSDOH). ASC: 2850000010

A point source adjustment by county is necessary for this area source category.

12.) Forest Fires

Emissions from Forest Fires were based on actual acres burned per county and the number of actual forest fires in 2002. The actual acres burned per county was supplied by the NYS Department of Environmental Conservation's (NYSDEC) Division of Lands And Forests and the number of actual forest fires per county was furnished by the NYS Department of State's (NYSDOS) Office of Fire Prevention and Control. Since both the NYSDEC database and the NYSDOS database included the municipality's name for each forest fire listed we were able to avoid double counting the amount of acres burned. In order to convert the number of actual forest fires per county (NYSDOS's data) into acres burned per county the following two default values were used: 1.) 1.0 acre per forest fire in an urbanized county; 2.) 4.54 acres per forest fire in a rural county. The two default values can be referenced to the Great Lakes Commission 1998 Area Source Methodology and are based on data supplied by the State of Michigan's Department of Natural Resources, Forest Management Division. The default values can be accessed at www.glc.org/air/inventory/1998. The fuel loading factor (11.68 tons/acre burned), also know as biomass consumed was based on EPA's AP-42 (Section 13.1.1, Table 13.1-1, Page 13.1-2; Fig. 13.1-1, Page 13.1-3) and the NYSDEC's Division of Lands and Forests. The Criteria Pollutant emissions factors (lbs/ton burned) were forwarded to the Department's Division of Air Resources in an email from Randy Strait of E. H. Pechan & Associates, Inc. on 08/02/2004 (Total Particulate = 34.1 lbs/ton, PM10 = 28.1 lbs/ton, PM2.5 = 24.1 lbs/ton, Carbon Monoxide = 289.0 lbs/ton, NOx = 6.2 lbs/ton, SO2 = 1.7 lbs/ton and VOC = 13.6 lbs/ton) while the emissions factors for the Hazardous Air Pollutants (HAPs) were from EPA's Documentation For The 1996 Base Year National Toxics Inventory for Area Sources dated May 31, 2001 (Appendix A; Page A-30). The actual HAPs are listed below with their respective emission factors for both flaming and smoldering conditions.

Using the actual acres burned per county, the calculated fuel loading factor (biomass consumed) and the appropriate emission factors for Total Particulate, PM10, PM2.5 Carbon Monoxide, NOx, SO2, VOC and HAPs (Flaming and Smoldering Fuel Types) the emissions from Forest Fires were calculated. It was assumed that during forest fires, 75 per cent of biomass is burned under flaming conditions and 25 per cent of biomass is burned under smoldering conditions (See EPA's Documentation For The 1996 Base Year National Toxics Inventory For Area Sources dated May 31, 2001 (Appendix A; Page A-29)). ASC Code: 2810001000

A point source adjustment is not required for this area source category.

FOREST FIRES			
HAP	**CAS No:**	**Flaming Fuel Emission Factor (lb/ton)**	**Smoldering Fuel Emission Factor (lb/ton)**
1,3-butadiene	106-99-0	2.40E-01	9.00E-01
2,3,7,8-TCDD TEQ	1746-01-6	2.00E-09	2.00E-09
Acetaldehyde	75-07-0	4.73E-01	2.14E-01
Acrolein	107-02-8	4.68E-01	2.92E-01
Benz(a)anthracene	56-55-3	6.20E-03	6.20E-03
Benzene	71-43-2	6.60E-01	2.52E+00
Benzo(a)pyrene	50-32-8	1.48E-03	1.48E-03
Chrysene	218-01-9	6.20E-03	6.20E-03
Fluoranthene	206-44-0	6.73E-03	6.73E-03
Formaldehyde	50-00-0	1.50E+00	5.80E+00
Toluene	108-88-3	6.55E-01	3.08E-01
Xylenes, m, o, & p	1330-20-7	2.79E-01	1.31E-01

13.) <u>Forest Fires (Prescribed)</u>

Emissions from Prescribed Forest Fires were based on actual acres burned per county in 2002. The data was supplied by the Department's Division of Lands And Forests. The fuel loading factor (8.2 tons/acre), also know as biomass consumed was from EPA's Documentation For The 1996 Base Year National Toxics Inventory For Area Sources dated May 31, 2001 (Appendix A; Page A-31). The Criteria Pollutant emissions factors (lbs/ton burned) were forwarded to the Department's Division of Air Resources in an email from Randy Strait of E.H. Pechan & Associates, Inc. on 08/02/2004 (Total Particulate, PM10, PM2.5, Carbon Monoxide, NOx, SO2 and VOC) while the emissions factors for the Hazardous Air Pollutants (HAPs) were from EPA's Documentation For The 1996 Base Year National Toxics Inventory For Area Sources dated May 31, 2001 (Appendix A; Page A-32). The Criteria Pollutant emissions factors and actual HAPs are the same as for the category **<u>Forest Fires</u>** and are listed under that category.

Using the actual acres burned per county, the calculated fuel loading factor (biomass consumed) and the appropriate emission factors for Total Particulate, PM10, PM2.5 Carbon Monoxide, NOx, SO2, VOC and HAPs (Flaming and Smoldering Fuel Types) the emissions from Forest Fires were calculated. It was assumed that during prescribed forest fires, 75 percent of biomass is burned under flaming conditions and 25 percent of biomass is burned under smoldering conditions (See EPA's Documentation For The 1996 Base Year National Toxics Inventory For Area Sources dated May 31, 2001 (Appendix A; Page A-31). AMS Code: 2810015000

A point source adjustment is not required for this area source category.

14.) **Portable Fuel Containers (Gas Can)**

Emissions estimated by this inventory come from residential and commercial containers. These emissions are generated in permeation, diurnal (storage), and transport-spillage (can filling). Emissions from equipment refueling spillage and refueling vapor displacement were estimated by our Mobile Source Program.

To estimate the emissions from residential containers we used a California Air Resources Board (CARB) survey, EPA emission factors and New York State household data from "New York State 2002 Residential Housing Units". To estimate emissions from commercial containers we used the CARB survey, EPA emission factors and number of business, (establishments), from "County Business Patterns", US Census Bureau. ASC: 2501011011

A point source adjustment is not required for this area source category.

15.) Gasoline Marketing (Stages I and II)

The calculation methodology followed for estimating area source emissions for this category was taken from the Emission Inventory Improvement Program (EIIP), Volume 3, Chapter 11, Gasoline Marketing (Stage I and II), April 2001. This methodology involves employing an emission factor relating emissions to the volume of gasoline distributed.

There are four sources of information that contain emission factors regarding gasoline service operations.

They are:

- i) AP-42, Chapter 5, Section 2,
- ii) EIIP, Volume III, Chapter 11,
- iii) FIRE 6.22, and
- iv) other technical documents.

These sources offer factors which are applied to gasoline consumption rates for each county in order to estimate emissions of toxic substances from tank filling, tank breathing, tank emptying, and vehicle fueling operations. Tank filling operations are further broken out to include splash filling, submerged filling without controls, and balanced submerged filling. Due to the lack of information concerning gas filling distribution in New York State, it is assumed that gasoline consumption is evenly distributed among these three filling operations.

Emission factors for toluene (submerged filling and balanced submerged filling operations) and xylenes (each of the filling operations) are expressed in units of mg/L, while factors for each of the other contaminants are given in units of lb/1000 gal. Emission factors with units of mg/L were converted to lb/1000 gallons to achieve a consistent format among factors. The units for each of the toxic contaminants also varied from gallons of gas transferred, stored, pumped, and processed. In order to apply each factor to gasoline usage, it is assumed that all units can be equated simply to lb/1000 gallon.

VOC emissions for tank breathing, tank emptying, and vehicle fueling operations were speciated according to *USEPA*, Technical Guidance – Stage II Vapor Recovery Systems for Control of Vehicle Refueling Emissions at Gasoline Dispensing Facilities, Volume I, EPA-450/3-91-022a, November 1991. Toxic emission estimates are provided for each county according to appropriate area source code (ASC). ASC: 2501060000

A point source adjustment is not required for this area source category.

16.) Graphic Arts

Volatile Organic Compounds (VOCs) emissions for the area source category Graphic Arts were calculated using an emission factor based on per capita (population) which was 1.3 lbs. VOC/person/year (0.00065 tons VOC/person/year). The emission factor was taken from EPA's Emission Inventory Improvement Program (EIIP), Volume III, Chapter 7, pages 7.5-10 thru 7.5-11.

6 NYCRR Part 234 (Graphic Arts) establishes rules on materials' VOC contents and controls on processes. Adding the gains brought by the required materials' VOC content plus the post controls on the different processes, we can conservatively state an 80% Control Efficiency (CE) for calculating VOC emissions for the Graphic Arts category. Since the rule applies to every process the Rule Penetration (RP) is 100% and the Rule Effectiveness (RE) is 80%, which is based on good engineering judgement. The equation to calculate VOC emission per county for Graphic Arts is as follows: Emissions per County = (county population*per capita emission factor)*((1.0-(CE*RP*RE)))

VOC's speciation was accomplished using EPA's program SPECIATE (version 3.2). The program can be downloaded from: www.epa.gov/ttn/chief/emch/speciation/.
ASC: 2425000000

A point source adjustment is required for this area source category.

17.) Human Cremation

Emissions for the area source category Human Cremation in New York State (NYS) were calculated using the following equation: Emissions=(Bodies Cremated*Average Weight/Corpse (lb)*Emission Factor (lb/ton))*ton/2000 lb. The number of Bodies Cremated in NYS was calculated based on the number of deaths in NYS for 2002, which was provided by the New York State Department of Health and the NYS Cremation Rate (22%), which was provided by the Cremation Society (United States Cremation Statistics) and the equation is as follows: Number of Bodies Cremated=(2002 Deaths in NYS)*(NYS Cremation Rate). The Average Weight per Corpse is 150 lbs. ASC: 2601020000

Emission Factors were based on the California Air Resources Board's (CARB) test report no. C-90-004. Listed below are the emission factors in lbs/ton for the respective contaminants which were inventoried for this category.

Contaminant	CAS No:	Emission Factor
PCDD		7.74*10E-8
PCDF		1.43*10E-7
POM		9.63*10E-4
Formaldehyde	5000	2.89*10E-9
Lead	7439921	9.39*10E-3
Mercury	7439976	5.32*10E-1
Nickel	7440020	5.09*10E-4
Arsenic	7440382	4.0*10E-4
Beryllium	7440417	1.84*10E-5
Cadmium	7440439	1.46*10E-3
Chromium	7440473	3.99*10E-4
Hydrogen Chloride	7647010	1.97

A point source adjustment is not required for this area source category.

18.) **Industrial Surface Coating**

Emissions estimated from the various Industrial Surface Coating processes (10 processes) were based on employment (EIIP, Volume III, Chapter 8, Industrial Surface Coating, Table 8.5-1 (See below), Page 8.5-2, September 1997). Throughput for the per employee emission factors was provided by the New York State Department of Labor (NYDOL), Division of Research and Statistics and was compiled based on the North American Industry Classification System (NAICS) which has replaced the SIC system of codes. The respective SIC Codes listed in Table 8.5-1 were matched with the equivalent NAICS code provided by the United States Census and forwarded to the NYSDOL for compilation. The NAICS codes can be accessed at the following website: www.census.gov/epcd/. Then using the appropriate emission factor (lbs/year/employee) for the respective process (EIIP, Volume III, Chapter 8, Industrial Surface Coating, Table 8.5-1, Page 8.5-2, September 1997), control efficiency if any existed for a process, the Volatile Organic Compounds (VOCs) emissions for each process under Industrial Surface Coating were calculated per county in NYS. The processes that had control efficiencies are as follows: 1.) Electrical Insulation, 2.) Furniture And Fixtures, 3.) Metal Containers, 4.) Machinery And Equipment and 5.) Sheet, Strip And Coil.

The control efficiencies were calculated by using Table 8.5-1 (dividing the Per Employee VOC Emission Factor (lb/yr) by the Per Employee Coating Usage Factor (gal/yr)) and the maximum permitted pounds of VOCs per gallon (lbs/gal) of coating at application (See 6NYCRR Part 228.7, Table1) for each respective process which had control. Rule effectiveness (RE) was assumed to be 80% for all control processes which was based on good engineering judgement. Rule Penetration (RP) for each control process depended on the geographical area of NYS. The New York City Metropolitan Area (NYMA) had a RP of 100% (See 6NYCRR Part 228.1(b)) for each control process. The Lower Orange County Metropolitan Area (LOCMA) and the rest of NYS had a different RP for each control process because not all Surface Coating Facilities located in these two areas would be effected by Part 228 (See Part 228.1(c)(3) for LOCMA and Part 228.1(d)(3) for the rest of NYS). A review of the NYS database was used to determined the appropriate RP for each of the respective control processes in these two areas.

Point source emissions have to be subtracted out of the Area Source Inventory per county. They can be identified by referencing EIIP, Volume III, Chapter 8, Industrial Surface Coating, Table 8.5-1, Page 8.5-2, September 1997.

TABLE 8.5-1

NATIONAL DEFAULT PER EMPLOYEE EMISSION FACTORS (EPA. 1991)

ASC:	Category:	SIC Code:	Per Employee VOC Emission Factor (lb/yr):	Per Employee Coating Usage Factor (gal/yr):
2401020000	Furniture and Fixtures	25	944.0	175.0
2401040000	Metal Containers	341	6,029.0	1,218.0
2401070000	Automobiles (new)	3711	794.0	131.0
240155000	Machinery and Equipment	35	77.0	17.0
2401060000	Appliances	363	463.0	181.0
2401075000	Other Transportation Equipment	37, except 3711 and 373	35.0	14.0
2401045000	Sheet, Strip and Coil	3479	2,877.0	474.0
240105000	Factory Finished Wood	2426-9, 243-245, 2493, 2499	131.0	40.0
2401065000	Electrical Insulation	3357, 3612	290.0	114.0
2401080000	Marine Coatings	373	308.0	47.0

19.) **Marine Vessel Loading, Ballasting, and Transit**

The calculation methodology followed for estimating area source emissions for this category was taken from the Emission Inventory Improvement Program (EIIP), Volume 3, Chapter 12, Marine Vessel Loading, Ballasting, and Transit, May 1998 document.

The Waterborne Commerce of the United States publication was used to obtain data on the movements of commodities and vessels at individual ports and harbors on individual waterways and canals of New York for the 2002 calendar year. Upon following EIIP guidance, a table identifying New York State waterways, petroleum products by fuel type, emission points, and traffic classifications was created. These values were then summed and converted to appropriate units for application of EIIP emission factors for each classification. According to 6 NYCRR Part 229.3(f) facilities loading more than 15,000 gallons/day must operate a vapor control system which reduces total VOC emissions by 90 percent by weight. This control was applied to the Vessel Loading classification. The Waterborne Commerce of the United States publication indicates that zero values presented in the tables represent less than 500 tons but more than 0. New York's estimation replaces each zero found in the table with 0.25 or 250 tons (the average of 0-500). Upon calculating the total VOC value for each waterway, the emissions were distributed to the appropriate counties within the state according to the allocation breakdown identified in the 1990 stationary area sources report prepared by RADIAN Corp (revised July 1993). Once total VOC emission were distributed, they were speciated according to EPA AP-42 Chapter 5: *Petroleum Refining* speciation profiles in order to calculate the amount of relevant toxic substances contained in each. The ASC (SCC) used to classify total fuels was 2505020000 (marine vessel total: all products), as taken from FIRE 6.22. A further breakdown for each fuel type is possible, but is a much more in depth procedure and requires a tedious summation of each fuel from each waterway for each of the affected counties. This further breakdown creates room for error and does not appear to enhance these area source emission estimates.

No point source emissions adjustments have been made, but may be necessary.

20.) Mercury

Population and an emission factor of 2.5473 * 10^-5 lbs Mercury per capita were used to calculate Mercury emissions for 2002. The emission factor was calculated based on EPA's Mercury Study Report to Congress / Volume II: An Inventory of Anthropogenic Mercury Emissions in the United States (EPA-452/R-97-004), Pages 5-1 and 5-2, Table 5-1. [Emission Factor calculation: (0.55 grams mercury per person per year)*(0.002204623 lbs/grams) = 0.001213 lbs mercury per person per year * 0.021 (Page 5-2, Table 5-1 of the above mentioned EPA Document) = 2.5473 *10^-5 lbs mercury per person per year]. ASC: 2861000000

A point source adjustment is not required for this area source category.

21.) Municipal Solid Waste (MSW) Landfills

Estimating emissions from MSW Landfills were based on actual MSW Landfill data compiled from the New York State Department of Environmental Conservation's (Department) Division of Solid And Hazardous Materials for the years 1988 through 2002. Utilizing the landfill data and the appropriate default values from Section 2.4, Pages 2.4-3 and 2.4-4 of EPA's AP-42 for C(Non-Methane Organic Compounds(NMOCs)), Lo (Methane generation potential = 100 m^3/kg), and k (Methane generation rate constant, yr^-1) the emissions for NMOCs and the associated Hazardous Air Pollutants (HAPs) were calculated using EPA's Landfill Air Emissions Estimation Model (LAEEM). It was assumed that the landfill data was for Co-Disposal, therefore the C(NMOC) value of 2,420 ppmv as Hexane was entered into the LAEEM. Since NYS receives 25 inches or more of rain per year the default value 0.04/yr was used for k and entered into the LAEEM. ASC Code: 2620030000

Point source emissions will have to be subtracted from Area Source emissions by county for MSW Landfills.

Toxic Compounds Emitted By MSW Landfills That Are Targeted by The Great Lakes Commission (GLC) For The 2002 Area Source Inventory:	
Toxic Compounds:	**CAS No:**
Non-Metal Compounds (Excluding PAHs):	
Acrylonitrile	107-13-1
Benzene	71-43-2
Carbon Tetrachloride	56-23-5
Chloroform	67-66-3
Ethylbenzene	100-41-4
Ethylene Dibromide (Dibromoethane)	106-93-4
Ethylene Dichloride (1,2-Dichloroethane)	107-06-2
Methyl Chloroform (1,1,1-Trichloroethane)	71-55-6
Methylene Chloride (Dichloromethane)	75-09-2
Tetrachloroethylene (Perchloroethylene)	127-18-4
Toluene	108-88-3
Vinyl Chloride	75-01-4
Xylenes (Iso)	1330-20-7
Metal Compounds	
Mercury	7439-97-6

22.) [reserved] Open Burning

23.)[reserved] PM-2.5

24.) Public Owned Treatment Works (POTW)

The Great Lakes Commissions issued a table of emission factors for estimation of HAPs generated through volatilization at the surface of the wastewater during treatment processes. A typical POTW usually consists of a grit chamber for storage, a lift station for collection, a primary clarifier for settling solids, a biotreatment process for biological waste treatment, a secondary clarifier for settling, a sludge digester, and a chlorine tank for disinfecting.

Good part of the work for the estimation of this inventory consists in editing the POTW report from the Department's Division of Water, since the flows have different units (reported in gallons and/or million gallons) and our HAPs' emission factors are given in lbs/million gallons.

EPA's procedures document states that approximately 16 percent of all flow of wastewater effluent is waste, with a VOC content of 0.0011 lb/gallon. The emission factor for VOC was calculated to be 1.76*10^2 lbs/million gallons ((0.0011 lb/gallon*10^6 gallons/million gallons)*0.16=1.76*10^2 lbs/million gallons). ASC: 2630020000

Contaminant	CAS No:	Emission Factor
Formadehyde	50000	2.29E-04
Carbon Tetra	56235	1.32E-02
Methanol	67561	1.33E-01
Chloroform	67663	7.53E-02
Benzene	71432	7.86E-02
TCE,111	71556	6.58E-03
Vinyl Chlor	75014	7.76E-05
Acetonitrile	75058	4.03E-03
Acetaldehide	75070	3.62E-03
Methylene Cl	75092	1.07E-01
Carbon Disul	75150	5.05E-02
Ethylene Oxi	75218	2.59E-03
Vinlidene Cl	75354	4.94E-03
Prplene Oxid	75569	8.55E-03
Hexacl-1,3-c	77474	6.46E-06
Dimeth Sulfa	77781	1.45E-05
Prplene Dich	78875	1.34E-04
Meth Eth Ket	78933	3.32E-02
Tricleth,112	79005	1.29E-05
Trichlorethy	79016	3.57E-03
Tetclet,1122	79345	2.10E-05
Nitropropa,2	79469	3.23E-06
Meth Methacr	80626	3.63E-03
Hexcl-13-But	87683	8.08E-06
Naphthalene	91203	1.53E-02

Contaminant	CAS No:	Emission Factor
Biphenyl	92524	8.79E-04
Toluidine,O-	95534	2.10E-05
Nitrobenz	98953	7.60E-05
Ethylbenzene	100414	8.95E-02
Styrene	100425	3.19E-02
Benzyl Chlor	100447	9.54E-05
Diclbenz,14	106467	2.51E-03
Epiclhydrin	106898	5.33E-05
Butadiene,13	106990	2.93E-04
Acrolein	107028	4.48E-03
Allyl. Chlori	107051	2.26E-04
Acrylonitril	107131	4.51E-03
Vinyl Acetat	108054	8.94E-04
Meth Isobut	108101	3.14E-02
Toluene	108883	1.43E-01
Chlorobenz	108907	5.64E-03
Glycol Ethrs	111762	1.34E-01
Triclbnz,124	120821	1.01E-03
Dinitrtol,24	121142	5.62E-04
Dimethylanil	121697	3.76E-03
Propionaldeh	123386	4.04E-05
Dioxane	123911	2.10E-04
Chloroprene	126998	2.78E-04
Perc	127184	4.98E-02
Cresol Mx Is	1319773	1.94E-05
Xylenes (Iso)	1330207	6.98E-01
Eth Acrylate	140885	2.10E-05
Meth Tert Bu	1634044	7.43E-04
VOC	NY998000	1.76E+02

A point source adjustment is required for this area source category.

25.) Solvent Cleaning

The method used to estimate VOC emissions from the category Solvent Cleaning was the method described in The Emission Inventory Improvement Program's (EIIP), Volume 3 (Area Sources and Area Source Method Abstracts), Solvent Cleaning Chapter (Chapter 6; Section 5.1.2; Pages 6.5-1 thru 6.5-4). The emission factors used were the Per Employee Emission Factors (lb/yr/employee) listed in Table 6.5-2 (Page 6.5-4). Throughput for the per employee emission factors was provided by the New York State Department of Labor (NYDOL), Division of Research and Statistics and was compiled based on the North American Industry Classification System (NAICS) which has replaced the SIC system of codes. The respective SIC Codes listed in Table 6.5-2 were matched with the equivalent NAICS code provided by the United States Census and forwarded to the NYSDOL for compilation. The NAICS codes can be accessed at the following website: www.census.gov/epcd/. ASC: 2460000000

Table 6.5-2
Per Capita and Per Employee Solvent Cleaning Emission Factors
(EPA, 1991)

Subcategory	SIC Codes	Per Capita Factor (lb/yr/person)		Per Employee Factor (lb/yr/person)	
		VOCs	Organics	VOCs	Organics
Solvent cleaning (total)	25, 33-39, 417 423, 551, 552, 554-556, 753	4.3	7.2	87	144
Cold Cleaning					
Automobile Repair	417, 423, 553 552, 554-556 753	2.5	2.5	270	270
Manufacturing	25, 33-39	1.1	1.1	24	24
Vapor and In-Line Cleaning					
Electronics and Electrical	36	0.21	1.1	29	150
Other	25,33-39, 417, 423, 551, 552, 554-556, 753	0.49	25	9.8	49

A point source adjustment is not required for this area source category.

26.) Structure Fires

Estimating 2002 emissions from Structure Fires were based on the actual number of structure fires per county upstate and Long Island which was provided by the NYS Department of State's (NYSDOS) Office of Fire Prevention And Control and the 5 counties (Bronx, Kings, New York, Queens and Richmond) of New York City (NYC) which was downloaded from the NYC Fire Department website which can be accessed at http://nyc.gov/html/fdny/html/stats. The fuel loading factor (1.15 tons/fire) and the appropriate emission factors (lbs./ton) were from EIIP, Volume III, Chapter 18, Structure Fires, Pages 18.4-2 and 18.4-5 (see table below), Revised Final January 2001. In an email from Randy Strait of E. H. Pechan & Associates, Inc. on 08/02/2004, it was determined that PM10 emissions equals Particulate Matter (PM) emissions (PM = PM10 = 10.8 lb./ton burned) and that PM2.5 emissions equals 91% of the PM10 emissions (PM2.5 =0.91 * 10.8 lb./ton burned = 9.84 lb/ton burned). Using the above data the emissions from structure fires were calculated per county in NYS. ASC Code: 2810030000

A point source adjustment is not required for this area source category.

Table 18.4-1
Emission Factors For Structure Fires

Pollutant:	**Emission Factor (lb/ton burned):**
Particulate Matter (PM)	10.8
Total Organic Compound (TOG)	13.9
Formaldehyde (Cas No: 50-00-0)	1.02
Acrolein (Cas No: 107-02-8)	4.41
Volatile Organic Compounds (VOCs)	11.0
Oxides Of Nitrogen (NOx)	1.4
Carbon Monoxide (CO)	60

27.) Traffic Markings

Estimating 2002 emissions from Traffic Markings were dependent on the number of miles for each type of roads, (federal, state, county, town) and the type of paint used. New York State Department of Transportation's (NYSDOT) used water-based paints for traffic markings in 2002 and the water based-paints were based on the NYSDOT's own formulation. The water-based paints had replaced solvent-based paints and the emission factors for other types of paint such as epoxy, thermoplastic, latex, were considered negligible.

The number of miles for each type of road is found in the "NYSDOT Highway Mileage Summary" and the type of paint used was found after calling each one of the interested parties. (Note: A survey of the counties and towns transportation offices revealed that they follow advice from DOT about type of paints used).

According to the NYSDOT the Volatile Organic Compounds (VOCs) Hazardous Air Pollutants (HAPS,) Glycol Ether (1%(w)), and Methanol (1%(w)) were speciated out of the Unspeciated VOCs total per county and the balance was reported as VOCs for each county in New York State. ASC:2401008000

A point source adjustment is not required for this area source category.

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Department of Environmental Conservation
Division of Air Resources

NEW YORK STATE IMPLEMENTATION PLAN FOR OZONE (8-HOUR NAAQS)

ATTAINMENT DEMONSTRATION FOR NEW YORK METRO AREA

APPENDIX E

FINAL PROPOSED REVISION FEBRUARY 2008

New York State Department of Environmental Conservation
ELIOT SPITZER, GOVERNOR ***ALEXANDER GRANNIS, COMMISSIONER***

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TSD-1a

Meteorological Modeling using Penn State/NCAR 5th Generation Mesoscale Model (MM5)

Bureau of Air Quality Analysis and Research

Division of Air Resources

New York State Department of Environmental Conservation

Albany, NY 12233

March 19, 2006

Meteorological Modeling using Penn State/NCAR 5th Generation Mesoscale Model (MM5)

Version 3.6 of MM5 was used to generate annual 2002 meteorology for the OTC modeling work. Prof. Dalin Zhang of the University of Maryland performed the MM5 simulations in consultation with NYSDEC staff. The model was applied in Lambert conformal map projection and utilized MPP Version developed for clusters. The two-way nested domain consisted of coarse (36km) and fine (12km) mesh corresponding to 149x129 and 175x175 grids, respectively, in this application (see Figure 1).

The Lambert projection used in this work followed the Regional Planning Organization (RPO) national domain setup with the center at (40°N, 97°W) and parallels at 33°N and 45°N. Map projection parameters in reference to the projection center point are as follows: Southwest corner for the 36 km grid is at (-2664km, -2304km) and the northeast corner at (2664km, 2304km). In the case of the 12km grid, the southwest corner is at (252km, -900km) and the northeast corner at (2340km, 1188km). In the vertical direction, the terrain following σ-coordinate system was used with the pressure at each σ-level determined from a reference state that is estimated using the hydrostatic equation from a given sea-level pressure and temperature with a standard lapse rate. There are 30 unevenly spaced σ levels, giving 29 vertical layers, with higher resolution within the planetary boundary layer (PBL). The σ levels are:

1.0000, 0.9974, 0.9940, 0.8980, 0.9820, 0.9720, 0.9590, 0.9430, 0.9230, 0.8990,

0.8710, 0.8390, 0.8030, 0.7630, 0.7180, 0.6680, 0.6180, 0.5680, 0.5180, 0.4680,

0.3680, 0.3180, 0.2680, 0.2180, 0.1680, 0.1230, 0.0800, 0.0400, 0.0000

The surface layer was set at about 10m, the level at which surface winds were typically observed, and the model top was set at 50hPa with a radiative top boundary condition. The time steps for the 36km and 12km domains were 75 and 25 seconds, respectively.

The important model physics options used for this MM5 simulation include:

- Kain-Fritsch (1993) convective scheme for both 36- and 12-km domains
- Explicit moisture scheme (without the mixed phase) containing prognostic equations for cloud water (ice) and rainwater (snow) (Dudhia 1989; Zhang 1989)
- Modified version of the Blackadar planetary boundary layer (PBL) scheme (Zhang and Anthes 1982; Zhang and Zheng 2004)
- Simple radiative cooling scheme (Grell et al. 1994)
- Multi-layer soil model to predict land surface temperatures using the surface energy budget equation (Dudhia 1996)

Note that the Blackadar PBL scheme has been modified in order to correct the phase shift of surface wind speed and temperature diurnal cycle, following a study that compared five different PBL schemes: the Gayno-Seaman TKE scheme (Shafran et al. 2000), Burk-

Thompson (1989), Blackadar (Zhang and Anthes 1982), MRF (Hong and Pan 1996), and Mellor-Yamada-Jajic (Mellor and Yamada 1974; Jajic 1990, 1994). The details of the study can be found at Zhang and Zheng (2004).

Nudging Processes

The MM5 provides options for nudging observations for each domain during the model integration process (Stauffer and Seaman, 1990; Stauffer et al. 1991). The Eta analyses of upper-air winds, temperature and water-vapor mixing ratio as well as their associated surface fields were used for nudging every 6 hours, and the Eta surface wind fields blended with surface wind observations were used to nudge every 3 hours. While only the surface winds were nudged, their influences could extend into the PBL as well (see Stauffer et al. 1991). Based on UMD's prior experience in numerical experiments, the following nudging coefficients have been used:

- Upper-air wind fields: 5. 0E-4s^{-1} for Domain 1 (36km), and 2. 5E-4s^{-1} for Domain 2 (12km);
- Upper-air temperature fields: 1.0E-5s^{-1} for both Domains;
- Surface winds: 5. 0s^{-1}E-4s^{-1} for Domain 1, and 2.5E-4s^{-1} for Domain 2; and
- Surface temperature and moisture: not nudged due to instability consideration.

ASSESSMENT

This assessment covers the period of May through September 2002.

National Weather Service (NWS) and CASTNet data – Surface temperature, Wind Speed, and Humidity

NWS (TDL) and CASTNet (www.epa.gov/castnet/) surface measurements of temperature, wind speed, and humidity (note there were no humidity measurements for CASTNet) were used to compare with the MM5 outputs. The evaluation was performed with METSTAT program developed by Environ Corporation (www.camx.com/files/metstat.15feb05.tar.gz) When comparing to NWS data, the METSTAT interpolates the first layer MM5 (at 10m height) temperature and humidity data to a height of 2m, the level that corresponds to the NWS measurement of these parameters. However, no such interpolation was made for wind speed and direction. In the case of CASTNet surface measurements, no such changes were needed as CASTNet data were reported at a height of 10m. In this analysis, no exclusion was made for calm conditions. The reported calm winds (zero wind speed measured) were treated as is in this evaluation effort. The METSTAT calculated standard statistical measures – average, bias, error and index of agreement between the measured and predicted parameters.

Figure 2 displays the temperature and wind speed comparison of MM5 and measured data from NWS and CASTNet networks for August 2002. MM5 performance for both in magnitude and diurnal timing, temperature can be considered to be quite good for both NWS and CASTNet data, while MM5 underpredicted NWS and overpredicted CASTNet daytime wind speed, respectively. It should be pointed out that there are differences in how the meteorological information is collected and reported by the two networks as well as in MM5. The CASTNet measurements are based on hourly averaged wind speed while NWS reports 2min average at 10min before the hour, whereas MM5 predictions are reflective of the last time-step of the hour of computation. Interestingly, MM5 appears to track quite well the nighttime minimum wind speed for both networks. In the case of humidity (not shown), MM5 tracks the NWS observed humidity trend well, but MM5 missed the observed semi-diurnal cycles. Comparisons for the five months including bias and root mean square error from both NWS and CASTNet are available on request from NYSDEC.

The above assessment is based on domain-wide averages to provide an overall response of the model over the five months. Another way of assessing the model is to examine the degree of correlation between the measured and predicted parameters. Figures 3a and 3b displays such a comparison for wind speed and temperature, respectively, for the NWS hourly data covering the period of May through September 2002. For the NWS data, the correlations are in the range from 0.7 to 0.8 for wind speed, above 0.96 for temperature, and in the range of 0.8 to 0.9 for humidity. CASTNet data (not shown) also exhibit similar correlation. These correlations indicate that MM5 simulation has captured both the diurnal and synoptic scale variations. Detailed plots of this comparison are available on request from NYSDEC.

Vertical Profiler – Winds

The Wind-Profiler network measurements along the U. S. East Coast (www.madis-fsl.org/cap) were used to evaluate the vertical profiles from MM5. There are twelve wind-profiler measurement stations from which data were available for comparison. For convenience of comparison, the wind-profiler measurements were interpolated to the MM5 vertical levels. The approach used was simple interpolation between two adjacent wind-profiler layers to the MM5 vertical level, and was limited to that reported by the profiler measurement. The focus of the comparison was to assess if MM5 was able to capture the measured vertical structure, and for this we used the observed Low Level Jet (LLJ) as an indicator. The comparison was performed for June, July and August 2002. In general it is found that MM5 captures the profiler measured vertical wind field structure reasonably well. Figure 4 displays an example of the MM5 and wind profiler comparison for the August 2002 episode at Richmond, VA and Concord, NH. MM5 predicted weaker LLJ winds compared to those based on the wind-profiler measurements. The detailed plots of this comparison are available on request from NYSDEC.

Cloud Cover – Satellite cloud image

Cloud information derived from satellite image data (www.atmos.umd.edu/~srb/gcip/webgcip.htm)were used to assess the MM5 prediction of cloud cover. The 0.5^{o} by 0.5^{o} resolution of the satellite data were interpolated into the 12km MM5 grid for comparison. The MM5 total cloud fraction was estimated by MCIP based on the MM5's low cloud, middle cloud and high cloud predictions. In general, MM5 captured the satellite cloud pattern well but underestimates the satellite cloud fraction (see Figure 5 as an example). Part of problem may due to the coarse resolution of the satellite cloud data.

Precipitation comparison

The monthly total observed precipitation data were constructed from 1/8-degree daily precipitation analysis data (http://data.eol.ucar.edu/codiac/dss/id=21.093 produced by Climate Prediction Center, based on 7,000-8,000 hourly/6-hourly gauge reports and radar). The MM5 monthly total precipitation was estimated from the MM5 predicted convective and non-convective rainfall and summed up for each month. In general, MM5 captured the observed spatial patterns in May and September, but no so well for June, July and August (See Figure 6), perhaps reflective of the summertime convective rain activities not captured by MM5. Detailed plots of this comparison are available on request from NYSDEC.

Calm Conditions

Calm conditions are defined as observed wind speed of zero knots and wind direction as 0^o. It would be useful to assess how MM5 performs under observed calm conditions, because of potential pollutant buildup that could occur under such conditions. Table 1 lists the summary of the percentage of calm condition at each hour for the August 2002 from the NWS data within the 12km domain. It is apparent from the Table that the calm conditions occur primarily during the night and early morning hours, from 23Z (7 p.m. EDT) to 15Z (11 a.m. EDT) with a peak at 10Z (6 a.m. EDT). To assess MM5 performance, the observed and MM5 predicted wind speeds were divided into calm and non-calm according to observed wind speed. Figure 7 displays such a comparison of the MM5 predicted wind speed to the observed wind speed under the calm and non-calm conditions for the month of August 2002. For the "calm" group, the average wind speed for MM5 varies from 1 m/s during the night and early morning hours and over 1.5 m/s during the day. MM5 is over-predicting during observed calm wind conditions. There are local minima every 3 hours, due to the surface observed wind speed nudging in MM5. In contrast under the non-calm conditions, MM5 underpredicts by about 0.5 m/s for all hours with noticeable local maximum happening at the nudging hours. The MM5 nudging process would pull predictions toward the measured data, while the underprediction of MM5 for the non-calm conditions may due to the adopted PBL scheme in this simulation.

Summary

In this study, we performed an assessment of the MM5 simulation to real-world data, both at the surface level as well as in the vertical. While there are no specific recommended procedures identified for this assessment, similar approaches have been used elsewhere (Dolwick 2005, Baker 2004, and Johnson 2004). Traditionally, the NWS surface measurements are used for such a comparison. Since NWS data had been used through nudging processes in developing the MM5 simulation, the comparisons should not be far removed from each other. In this study, we extended the evaluation by using CASTNet measurements that were not used in the MM5 simulations. Thus comparison with CASTNet data provides for an independent assessment and should complement the comparison with NWS data. We also compared the MM5 results with the wind profiler data and cloud data derived from satellite images to diagnose if the MM5 simulation is yielding the right type of dynamics in the vertical. The analyses shows that in general, the performance of the MM5 is reasonable both at the surface and in the vertical, thereby providing confidence in the use of these data in the CMAQ simulations.

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Table 1 Measured calm and non-calm occurrences over the modeling domain during August 2002 based on NWS data

Hour	#Non-Calm	#Calm	#Total	% Calm
00Z	18209	3924	22133	17.7
01Z	16531	6026	22557	26.7
02Z	15604	6929	22533	30.8
03Z	14983	7245	22228	32.6
04Z	14309	7540	21849	34.5
05z	14073	7735	21808	35.5
06Z	13934	7949	21883	36.3
07Z	13792	8040	21832	36.8
08Z	13542	8273	21815	37.9
09Z	13542	8385	21927	38.2
10Z	13708	8591	22299	**38.5**
11Z	14139	8693	22832	38.1
12Z	15297	7690	22987	33.5
13Z	17336	5192	22528	23
14Z	18522	3439	21961	15.7
15Z	18755	2617	21372	12.2
16Z	19169	2015	21184	9.5
17Z	19555	1617	21172	7.6
18Z	19982	1430	21412	6.7
19Z	20149	1389	21538	6.4
20Z	20565	1288	21853	5.9
21Z	20518	1383	21901	6.3
22Z	20672	1556	22228	7
23Z	20231	2292	22523	10.2

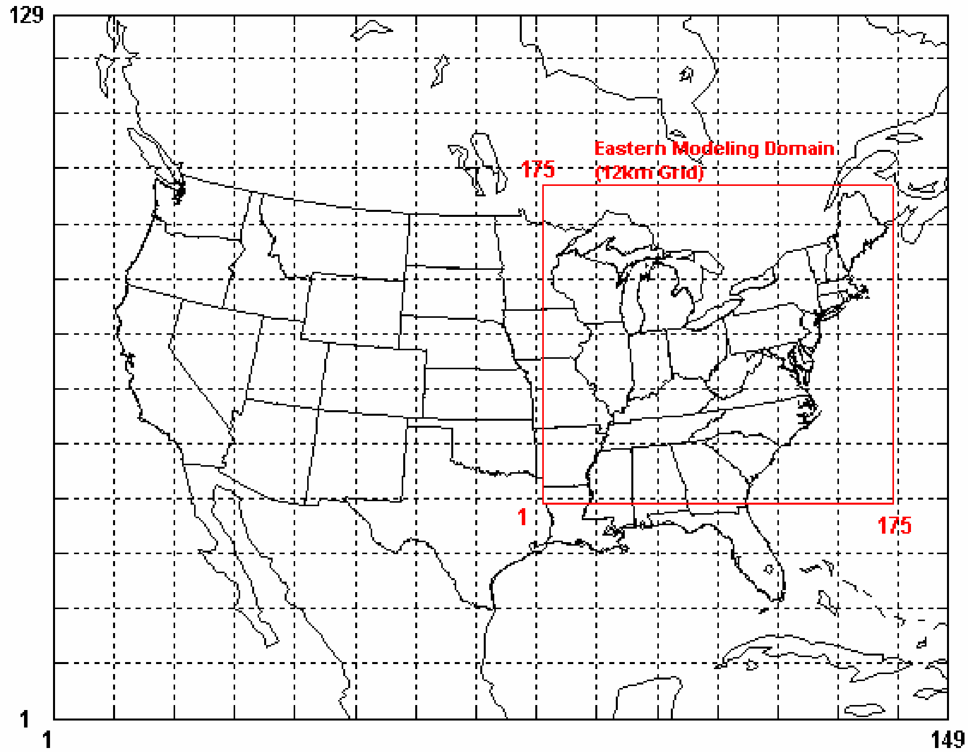


Figure 1: OTC MM5 modeling domain with areal extent of 12km and 36km grids

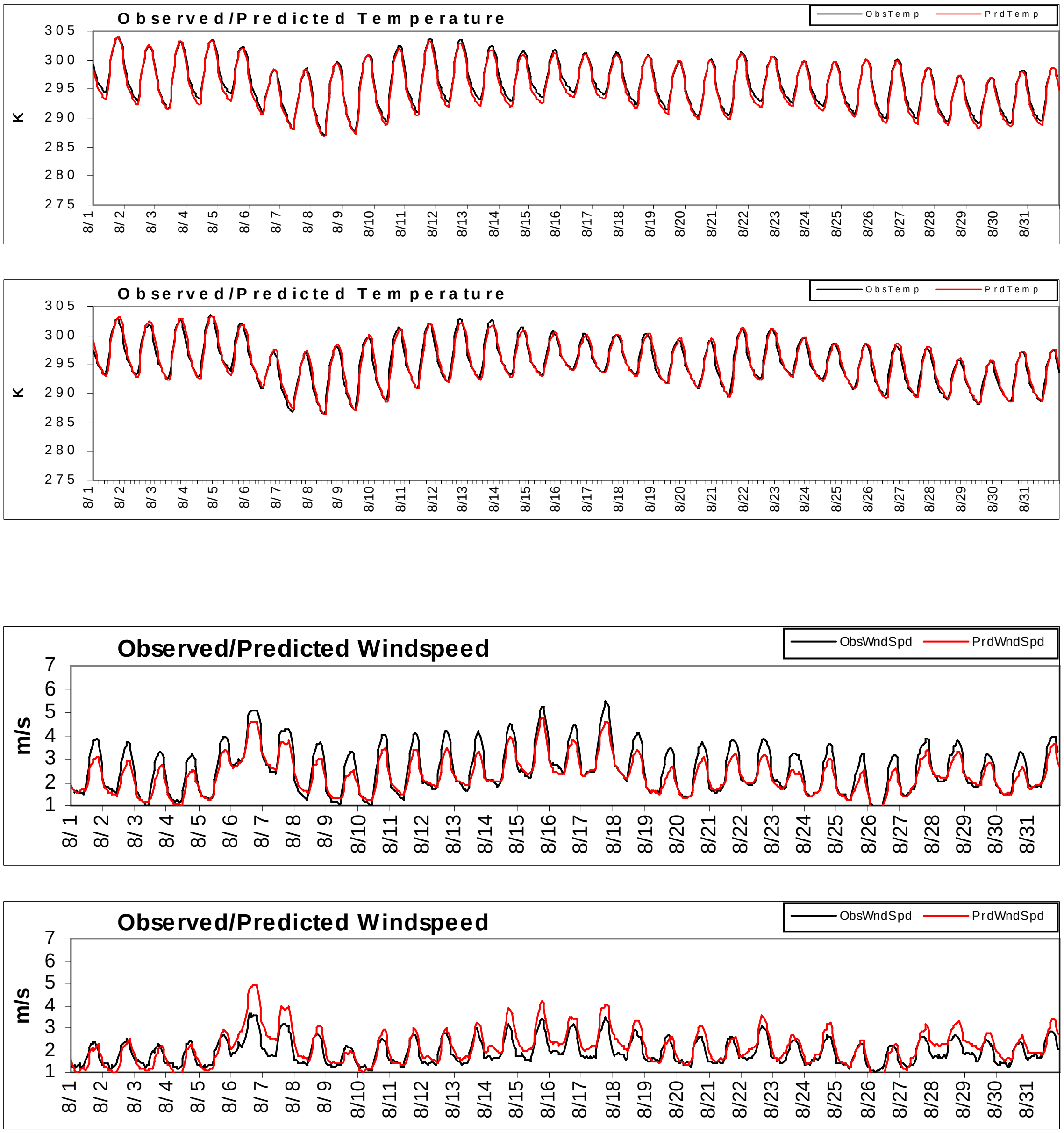


Figure 2: Temperature and Wind speed comparisons for August 2002. In each case the upper panel corresponds to comparison between MM5 and NWS data and the lower panel between MM5 and CASTNet data.

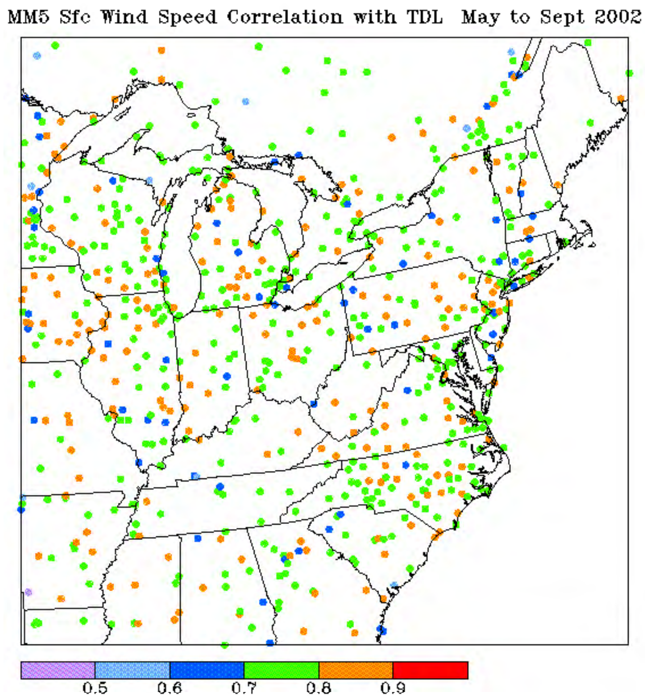


Figure 3a: Spatial correlation estimates between MM5 and NWS data for wind speed from May to September 2002

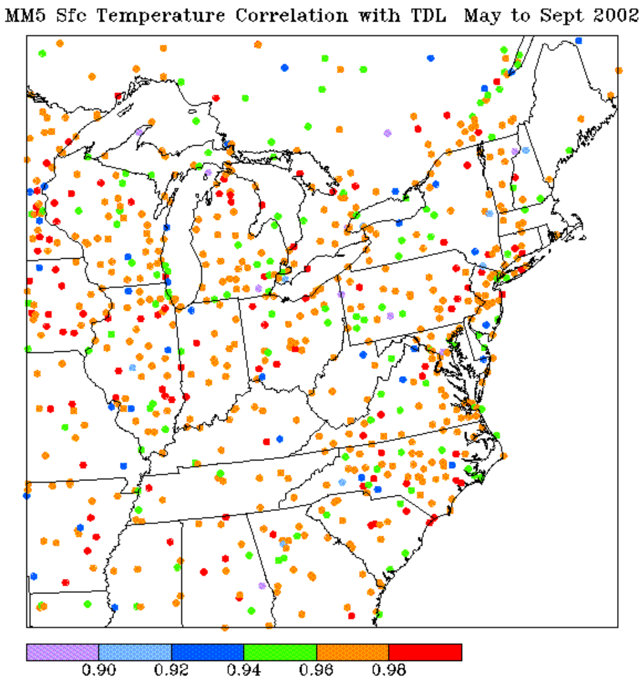
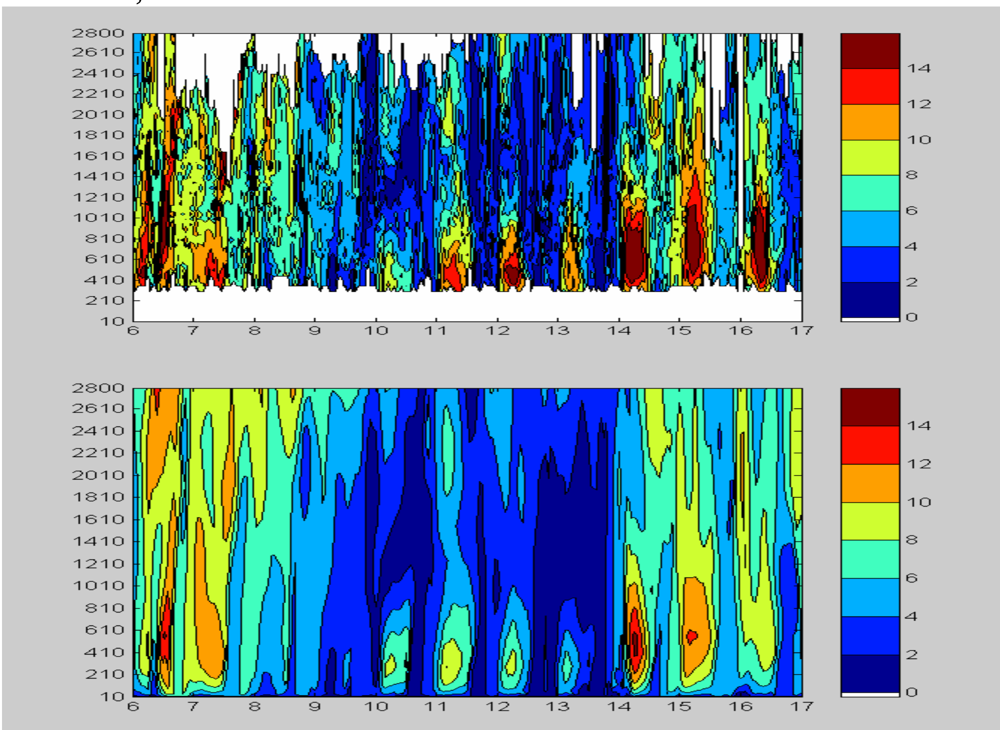


Figure 3b: Spatial distribution of correlation coefficients for Temperature between MM5 and NWS data from May to September 2002.

Richmond, VA



Concord, NH

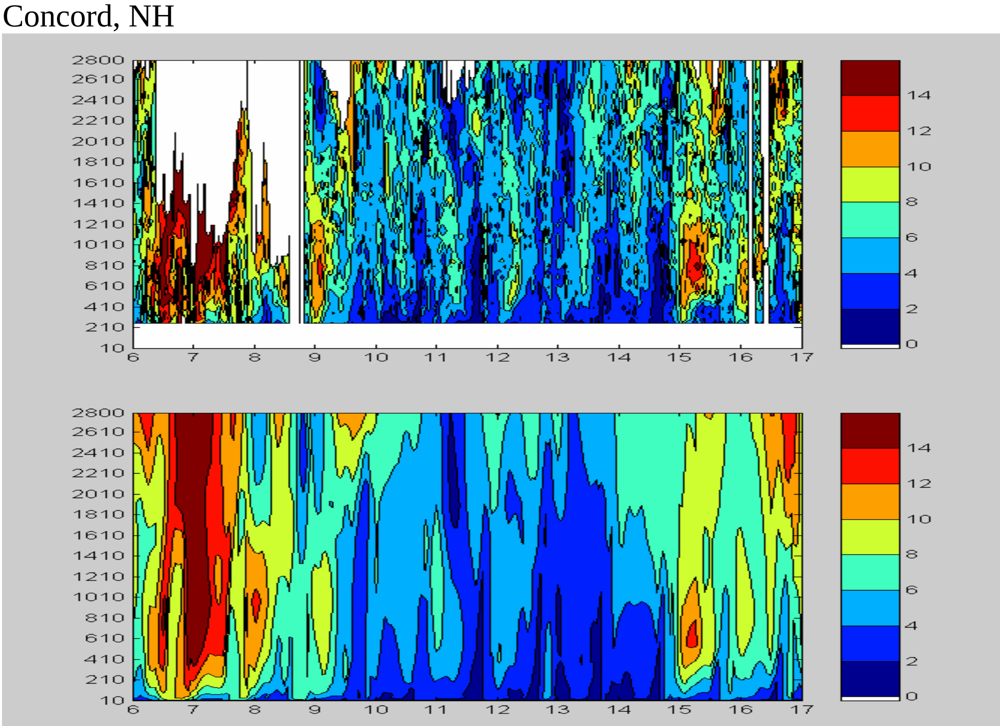


Figure 4: MM5 and Wind profiler comparison for August 6 to 17, 2002 at Richmond, VA and Concord, NH. The upper and lower panes at each station are for MM5 and profiler, respectively. The abcissa represents day and the ordinate the height (m).

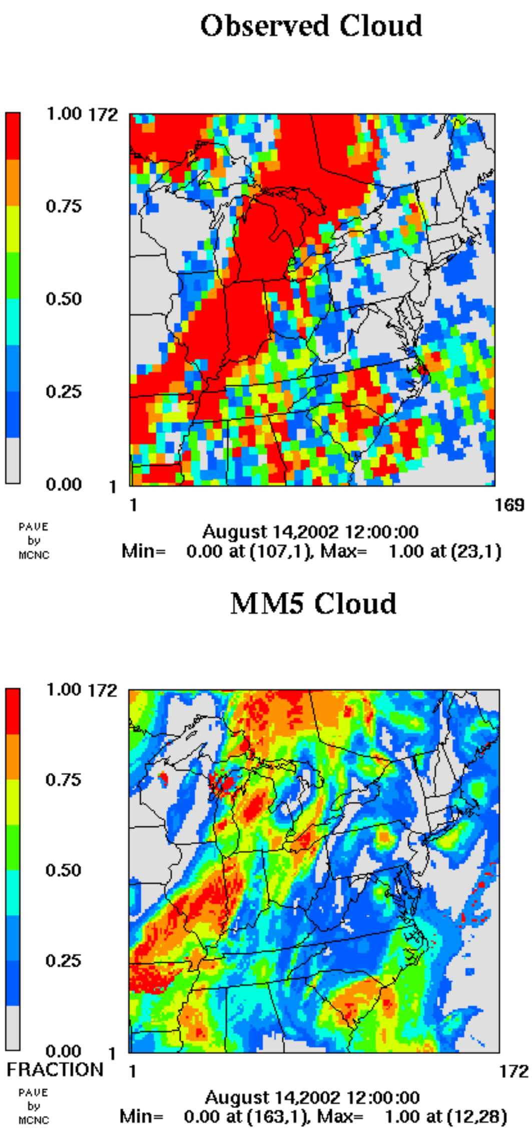


Figure 5: MM5 and Satellite cloud images for August 14, 2002 at 0700 EST

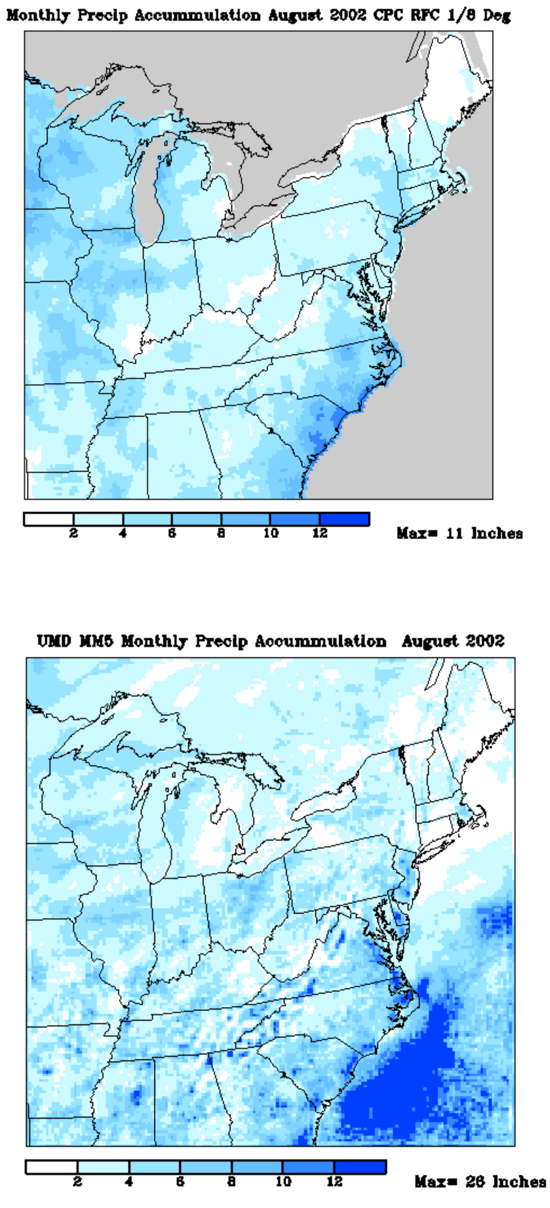


Figure 6: MM5 predicted and measured precipitation over the domain for the month of August 2002

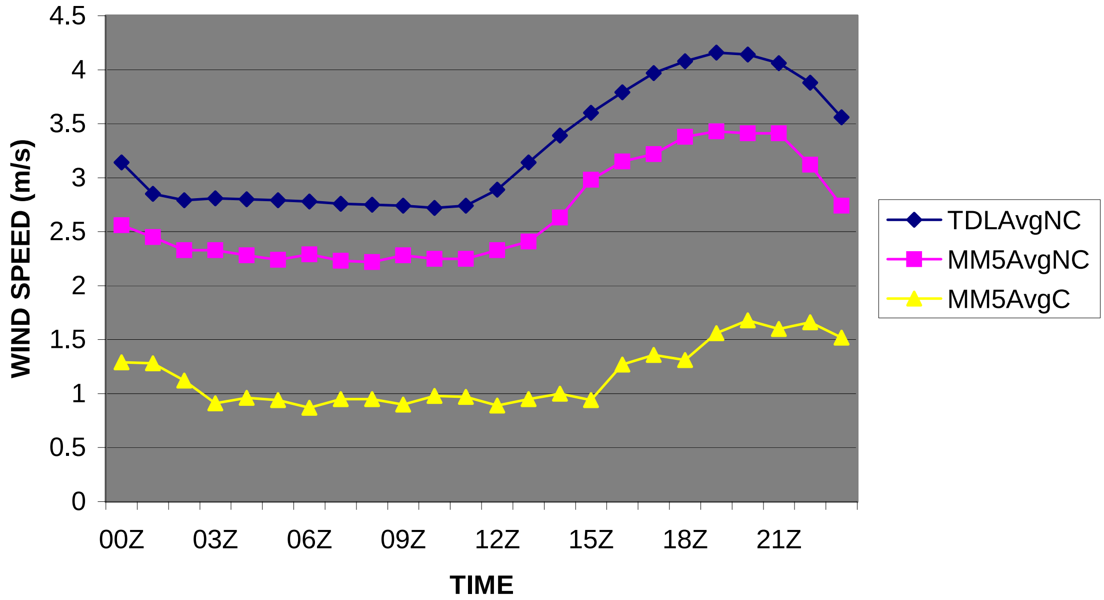


Figure 7: Comparison of averaged wind speed between MM5 and observed under calm (C) and non-calm (NC) conditions.

TSD-1b

Processing of Biogenic Emissions for OTC / MANE-VU Modeling

Bureau of Air Quality Analysis and Research
Division of Air Resources
New York State Department of Environmental Conservation
Albany, NY 12233

September 19, 2006

Biogenic emissions for the time period from January 1, 2002 – December 31, 2002 were calculated by NYSDEC using the Biogenic Emissions Inventory System (BEIS) version 3.12 integrated within SMOKE2.1. General information about BEIS is available at http://www.epa.gov/AMD/biogen.html while documentation about biogenic emissions processing within SMOKE2.1 is available at http://cf.unc.edu/cep/empd/products/smoke/version2.1/html/ch06s10.html and http://cf.unc.edu/cep/empd/products/smoke/version2.1/html/ch06s17.html . Note that the SMOKE documentation refers to BEIS3.09 and has not yet been updated for BEIS3.12. This affects the number of species modeled as well as the use of different speciation profiles. However, the general processing approach has not changed from BEIS3.09 to BEIS3.12. In short, this processing approach is as follows and was utilized by NYSDEC for its biogenic emission processing for 8-hr ozone and $PM_{2.5}$ modeling:

1. **Normbeis3** reads gridded land use data and emissions factors and produces gridded normalized biogenic emissions for 34 species/compounds. The gridded land use includes 230 different land use types. Both summer and winter emissions factors for each species/compound are provided for each of the 230 land use types. On output, **Normbeis3** generates a file `B3GRD` which contains gridded summer and winter emission fluxes for the modeling domain that are normalized to 30 °C and a photosynthetic active radiation (PAR) of 1000 µmol/m^2s. In addition, gridded summer and winter leaf area indices (LAI) are also written to `B3GRD`.

2. **Tmpbeis3** reads the gridded, normalized emissions file `B3GRD` and meteorological data from the MCIP-processed MM5 meteorological fields generated by the University of Maryland for MANE-VU/OTC modeling. Specifically, the following MM5/MCIP meteorological variables are used by **Tmpbeis3** to compute hour-specific, gridded biogenic emissions from the normalized emission fluxed contained in `B3GRD:` layer-1 air temperature (“TA”), layer-1 pressure (“PRES”), total incoming solar radiation at the surface (“RGRND”), and convective (“RC”) and non-convective (“RN”) rainfall. Additionally, the emissions for the 34 species/compounds modeled by BEIS3.12 are converted to CO, NO, and the CB-IV

VOC species utilized in CMAQ via the use of the BEIS3.12-CB-IV speciation profile. In adition, an optional seasonal switch file, `BIOSEASON`, was utilized to decide whether to use summer or winter emissions factors for any given grid cell on any given day. This file was generated by the SMOKE2.1 utility **Metscan** based on MM5 layer-1 air temperatures to determine the date of the last spring frost and first fall frost at each grid cell. Summer emission factors are used by **Tmpbeis3** for the time period between the last spring frost and first fall frost at any given grid cell, and winter emission factors are used for the remaining time period. Documentation for the **Metscan** utility is available at http://cf.unc.edu/cep/empd/products/smoke/version2.1/html/ch05s07.html . An animated GIF file showing the `BIOSEASON` file used by NYSDEC can be found at ftp://ftp.dec.state.ny.us/dar/air_research/chogrefe/biog_reports/b3season_movie.gif

3. For reporting purposes, the hourly, speciated, gridded emissions were aggregated to the county level for each day. For any given grid cell, emissions are distributed among the counties intersecting this grid cell in proportion to the area of each of these counties within the grid cell. The area gridding surrogates needed for this aggregration are based on a file obtained from EPA via http://www.epa.gov/ttn/chief/emch/spatial/new/bgpro.12km_041604.us.gz followed by windowing for the MANE-VU/OTC modeling domain.

Table 1 County and State totals of estimated biogenic emissions (tpy)

State	FIPS	County	NO [TPY]	CO [TPY]	VOC [TPY]
Connecticut	009001	Fairfield	52	894	7150
	009003	Hartford	88	915	8537
	009005	Litchfield	98	1261	12221
	009007	Middlesex	54	615	5587
	009009	New Haven	80	876	7544
	009011	New London	74	906	8960
	009013	Tolland	55	651	5999
	009015	Windham	60	772	8019
Connecticut		**TOTAL**	560	6889	64017
Deleware	010001	Kent	308	1354	15912
	010003	New Castle	143	875	8834
	010005	Sussex	539	2045	21595
Deleware		**TOTAL**	990	4274	46342
DC	011001	Washington	30	150	1726
DC		**TOTAL**	30	150	1726
Maine	023001	Androscoggin	35	885	8204
	023003	Aroostook	741	15531	140877
	023005	Cumberland	49	1298	11528
	023007	Franklin	72	3269	32111
	023009	Hancock	66	2950	27090
	023011	Kennebec	73	1425	12849
	023013	Knox	30	689	6680
	023015	Lincoln	32	849	8072
	023017	Oxford	79	3224	34189
	023019	Penobscot	211	7249	63128
	023021	Piscataquis	146	8638	80748
	023023	Sagadahoc	37	526	4504
	023025	Somerset	173	8413	77850
	023027	Waldo	57	1833	18125
	023029	Washington	144	6459	58678
	023031	York	73	1698	15571
Maine		**TOTAL**	2018	64936	600203
Maryland	024001	Allegany	63	661	8664
	024003	Anne Arundel	79	945	12786
	024005	Baltimore	166	847	8102
	024009	Calvert	59	798	10048
	024011	Caroline	202	648	7907

	024013	Carroll	189	822	7853
	024015	Cecil	86	654	10093
	024017	Charles	78	1079	15042
	024019	Dorchester	134	829	10337
	024021	Frederick	204	1123	10964
	024023	Garrett	102	930	11391
	024025	Harford	141	911	9053
	024027	Howard	75	562	4460
	024029	Kent	177	498	4761
	024031	Montgomery	134	813	6786
	024033	Prince Georges	87	732	10214
	024035	Queen Annes	222	684	7146
	024037	St Marys	99	886	10793
	024039	Somerset	58	498	5796
	024041	Talbot	131	495	5225
	024043	Washington	112	781	7538
	024045	Wicomico	124	796	10304
	024047	Worcester	158	1121	13079
	024510	Baltimore	54	235	1762
Maryland		**TOTAL**	2934	18350	210104
Massachusetts	025001	Barnstable	261	668	5905
	025003	Berkshire	73	1182	11029
	025005	Bristol	107	753	7142
	025007	Dukes	115	252	1728
	025009	Essex	55	794	7128
	025011	Franklin	61	1031	9424
	025013	Hampden	51	904	9201
	025015	Hampshire	61	820	7056
	025017	Middlesex	68	1085	11630
	025019	Nantucket	56	159	1362
	025021	Norfolk	49	615	5513
	025023	Plymouth	170	1197	11876
	025025	Suffolk	26	177	1351
	025027	Worcester	103	1955	23612
Massachusetts		**TOTAL**	1257	11594	113957
New Hampshire	033001	Belknap	25	693	6915
	033003	Carroll	40	1512	14981
	033005	Cheshire	49	1019	10099
	033007	Coos	72	3239	33668
	033009	Grafton	91	2442	23151
	033011	Hillsborough	48	1337	14503
	033013	Merrimack	48	1314	13566
	033015	Rockingham	39	1120	10080
	033017	Strafford	25	686	6617
	033019	Sullivan	45	943	8314
New Hampshire		**TOTAL**	482	14306	141894

New Jersey	034001	Atlantic	135	1225	18890
	034003	Bergen	37	239	2455
	034005	Burlington	151	1827	25255
	034007	Camden	68	491	7751
	034009	Cape May	90	566	7763
	034011	Cumberland	122	773	10699
	034013	Essex	57	199	1831
	034015	Gloucester	119	556	8444
	034017	Hudson	26	125	701
	034019	Hunterdon	81	706	5743
	034021	Mercer	85	475	4889
	034023	Middlesex	98	456	5267
	034025	Monmouth	125	1152	15423
	034027	Morris	63	604	7288
	034029	Ocean	128	1871	27063
	034031	Passaic	41	339	3841
	034033	Salem	123	535	8304
	034035	Somerset	49	518	5548
	034037	Sussex	67	718	7768
	034039	Union	21	168	2191
	034041	Warren	125	517	4505
New Jersey		**TOTAL**	1813	14058	181618
New York	036001	Albany	59	730	6253
	036003	Allegany	129	1218	9526
	036005	Bronx	25	100	657
	036007	Broome	107	879	7861
	036009	Cattaraugus	148	1654	13540
	036011	Cayuga	227	986	7928
	036013	Chautauqua	202	1260	8144
	036015	Chemung	88	521	3911
	036017	Chenango	149	1120	7833
	036019	Clinton	138	1631	13341
	036021	Columbia	96	896	8484
	036023	Cortland	101	616	4280
	036025	Delaware	133	1672	13435
	036027	Dutchess	90	1096	10288
	036029	Erie	165	1127	6898
	036031	Essex	94	2547	20888
	036033	Franklin	228	2337	17197
	036035	Fulton	90	764	5275
	036037	Genesee	201	645	3993
	036039	Greene	47	886	8182
	036041	Hamilton	78	2092	16056
	036043	Herkimer	175	1783	12846
	036045	Jefferson	251	1754	12503
	036047	Kings	15	60	309

	036049	Lewis	154	1693	12116
	036051	Livingston	222	888	6048
	036053	Madison	149	1049	7528
	036055	Monroe	223	990	6237
	036057	Montgomery	106	579	4715
	036059	Nassau	81	408	2859
	036061	New York	16	76	473
	036063	Niagara	335	940	5182
	036065	Oneida	214	1515	10021
	036067	Onondaga	171	929	6259
	036069	Ontario	178	767	6024
	036071	Orange	110	1065	13024
	036073	Orleans	195	635	3314
	036075	Oswego	119	1277	7911
	036077	Otsego	157	1190	7958
	036079	Putnam	32	473	5243
	036081	Queens	20	105	543
	036083	Rensselaer	96	894	7316
	036085	Richmond	47	173	1292
	036087	Rockland	26	300	4006
	036089	St. Lawrence	376	3876	28960
	036091	Saratoga	76	1125	9010
	036093	Schenectady	39	377	3032
	036095	Schoharie	95	737	5496
	036097	Schuyler	87	438	3193
	036099	Seneca	127	438	3305
	036101	Steuben	267	1475	12085
	036103	Suffolk	368	1328	12886
	036105	Sullivan	76	1325	12538
	036107	Tioga	102	730	5400
	036109	Tompkins	96	576	4128
	036111	Ulster	82	1493	15714
	036113	Warren	46	1396	11568
	036115	Washington	183	1109	8355
	036117	Wayne	270	920	5940
	036119	Westchester	35	549	5347
	036121	Wyoming	194	720	3813
	036123	Yates	107	507	4017
New York		**TOTAL**	8313	63436	492483
Pennsylvania	042001	Adams	186	892	8926
	042003	Allegheny	182	948	6727
	042005	Armstrong	108	940	9955
	042007	Beaver	69	600	4895
	042009	Bedford	128	1249	14127
	042011	Berks	280	1377	14146
	042013	Blair	91	729	7579
	042015	Bradford	224	1265	9423

042017	Bucks	144	954	8399
042019	Butler	149	1032	8602
042021	Cambria	128	805	6545
042023	Cameron	25	627	7563
042025	Carbon	53	585	8121
042027	Centre	158	1344	16886
042029	Chester	264	1176	10474
042031	Clarion	85	848	10743
042033	Clearfield	149	1368	13267
042035	Clinton	71	1230	18191
042037	Columbia	106	802	9080
042039	Crawford	204	1297	10839
042041	Cumberland	193	816	9505
042043	Dauphin	116	799	8502
042045	Delaware	35	410	3250
042047	Elk	49	949	8921
042049	Erie	199	1107	8273
042051	Fayette	156	1087	9277
042053	Forest	26	577	7122
042055	Franklin	271	1057	10296
042057	Fulton	93	744	9341
042059	Greene	91	830	6966
042061	Huntingdon	135	1093	12606
042063	Indiana	144	1078	9156
042065	Jefferson	101	865	7362
042067	Juniata	79	588	8263
042069	Lackawanna	58	586	5569
042071	Lancaster	464	1299	9565
042073	Lawrence	114	503	3755
042075	Lebanon	155	623	5827
042077	Lehigh	149	594	6040
042079	Luzerne	75	1013	13215
042081	Lycoming	152	1457	16633
042083	Mc Kean	57	1044	7113
042085	Mercer	175	865	7114
042087	Mifflin	107	620	7508
042089	Monroe	75	773	8856
042091	Montgomery	106	812	6736
042093	Montour	85	321	3306
042095	Northampton	144	506	4416
042097	Northumberland	92	570	6340
042099	Perry	113	804	10216
042101	Philadelphia	29	194	1420
042103	Pike	37	757	9946
042105	Potter	89	1129	9027
042107	Schuylkill	123	1050	15001
042109	Snyder	88	538	6373
042111	Somerset	221	1251	11228

	042113	Sullivan	45	684	5112
	042115	Susquehanna	126	978	6448
	042117	Tioga	176	1313	10942
	042119	Union	71	541	6435
	042121	Venango	72	855	9086
	042123	Warren	76	1031	7352
	042125	Washington	166	1068	7429
	042127	Wayne	89	862	5954
	042129	Westmoreland	199	1297	10589
	042131	Wyoming	60	551	4634
	042133	York	366	1393	12758
Pennsylvania		**TOTAL**	8645	59945	585271
Rhode Island	044001	Bristol	40	90	441
	044003	Kent	41	328	3471
	044005	Newport	37	183	1646
	044007	Providence	39	591	6901
	044009	Washington	54	572	6775
Rhode Island		**TOTAL**	211	1764	19233
Vermont	050001	Addison	186	922	6274
	050003	Bennington	43	896	7349
	050005	Caledonia	58	1149	10239
	050007	Chittenden	74	606	3633
	050009	Essex	61	1315	11795
	050011	Franklin	208	971	5927
	050013	Grand Isle	50	490	3506
	050015	Lamoille	36	727	5627
	050017	Orange	57	1182	10120
	050019	Orleans	120	1570	12842
	050021	Rutland	102	1257	9867
	050023	Washington	47	1099	9502
	050025	Windham	42	1232	10898
	050027	Windsor	57	1330	10796
Vermont		**TOTAL**	1142	14745	118376
Virginia	051001	Accomack	187	959	9472
	051003	Albemarle	140	1246	12533
	051005	Alleghany	35	522	7369
	051007	Amelia	70	915	10717
	051009	Amherst	80	905	10823
	051011	Appomattox	76	830	10447
	051013	Arlington	17	64	531
	051015	Augusta	135	1049	13291
	051017	Bath	46	771	11636
	051019	Bedford	189	1279	13052
	051021	Bland	41	515	7097
	051023	Botetourt	74	780	10211

051025	Brunswick	98	1458	18254
051027	Buchanan	32	722	9557
051029	Buckingham	76	1287	18830
051031	Campbell	112	1078	12933
051033	Caroline	73	1173	16020
051035	Carroll	132	634	6885
051036	Charles City	93	415	4711
051037	Charlotte	84	1219	14277
051041	Chesterfield	69	802	10686
051043	Clarke	56	369	4009
051045	Craig	39	538	7314
051047	Culpeper	105	894	10720
051049	Cumberland	56	814	10677
051051	Dickenson	20	550	6910
051053	Dinwiddie	82	1207	16511
051057	Essex	58	671	7403
051059	Fairfax	111	533	5538
051061	Fauquier	150	1166	14084
051063	Floyd	47	593	6493
051065	Fluvanna	54	775	10756
051067	Franklin	119	1297	15933
051069	Frederick	64	588	8798
051071	Giles	38	508	4918
051073	Gloucester	32	510	5945
051075	Goochland	47	670	10392
051077	Grayson	60	627	8260
051079	Greene	57	434	5727
051081	Greensville	63	735	9009
051083	Halifax	201	1852	22730
051085	Hanover	91	950	12493
051087	Henri	81	427	5468
051089	Henry	59	805	9772
051091	Highland	44	608	8579
051093	Isle Of Wight	178	813	8049
051095	James City	41	314	3989
051097	King And Queen	77	673	7615
051099	King George	62	540	6111
051101	King William	102	712	7846
051103	Lancaster	33	311	3669
051105	Lee	97	680	7221
051107	Loudoun	137	942	8999
051109	Louisa	78	1142	16780
051111	Lunenberg	88	1108	13611
051113	Madison	70	598	7305
051115	Mathews	27	367	4025
051117	Mecklenburg	145	1478	18507
051119	Middlesex	42	480	5561
051121	Montgomery	70	501	5366

051125	Nelson	67	979	12465
051127	New Kent	35	600	8240
051131	Northampton	90	263	2019
051133	Northumberland	88	778	9298
051135	Nottoway	74	894	10670
051137	Orange	98	759	8265
051139	Page	77	540	6705
051141	Patrick	75	884	10255
051143	Pittsylvania	203	1806	22102
051145	Powhatan	47	675	10194
051147	Prince Edward	69	942	12042
051149	Prince George	73	572	6484
051153	Prince William	38	718	10979
051155	Pulaski	61	450	6510
051157	Rappahannock	61	521	7141
051159	Richmond	63	383	4548
051161	Roanoke	63	427	5278
051163	Rockbridge	101	813	9710
051165	Rockingham	189	1020	12959
051167	Russell	56	703	7975
051169	Scott	95	753	9943
051171	Shenandoah	117	757	10570
051173	Smyth	78	603	7159
051175	Southampton	177	1306	15588
051177	Spotsylvania	46	911	12575
051179	Stafford	27	637	8344
051181	Surry	85	784	10024
051183	Sussex	102	1267	16362
051185	Tazewell	77	639	7477
051187	Warren	44	438	6310
051191	Washington	142	632	6822
051193	Westmoreland	101	777	9357
051195	Wise	35	462	5685
051197	Wythe	109	596	7803
051199	York	35	271	3423
051510	Alexandria	38	145	1065
051515	Bedford	22	101	604
051520	Bristol	37	135	1220
051530	Buena Vista	6	43	381
051540	Charlottesville	18	98	528
051550	Chesapeake	71	666	8477
051560	Clifton Forge	27	61	436
051570	Colonial Heights	35	88	662
051580	Covington	24	114	1605
051590	Danville	55	343	3405
051595	Emporia	19	234	3300
051600	Fairfax	18	96	1518
051610	Falls Church	16	98	1120

	051620	Franklin	66	142	1041
	051630	Fredericksburg	14	250	3012
	051640	Galax	45	94	519
	051650	Hampton	24	127	1112
	051660	Harrisonburg	73	143	746
	051670	Hopewell	26	79	711
	051678	Lexington	8	62	620
	051680	Lynchburg	45	250	2135
	051683	Manassas	17	86	743
	051685	Manassas Park	17	50	268
	051690	Martinsville	19	190	1625
	051700	Newport News	63	231	2187
	051710	Norfolk	42	197	2692
	051720	Norton	13	120	1305
	051730	Petersburg	58	171	1419
	051735	Poquoson	17	122	1351
	051740	Portsmouth	34	285	3215
	051750	Radford	27	76	609
	051760	Richmond	29	239	3517
	051770	Roanoke	33	91	770
	051775	Salem	14	61	568
	051790	Staunton	69	205	1550
	051800	Suffolk	118	964	11269
	051810	Virginia Beach	186	924	8724
	051820	Waynesboro	43	120	895
	051830	Williamsburg	3	38	446
	051840	Winchester	42	117	772
Virginia		**TOTAL**	9267	80615	981848

TSD-1c

Emissions Processing for 2002 OTC Regional and Urban 12km Base Year Simulation

Bureau of Air Quality Analysis and Research
Division of Air Resources
New York State Department of Environmental Conservation
Albany, NY 12233

March 19, 2007

Overview

All emissions processing for the revised 2002 OTC regional and urban 12 km base case simulations was performed with SMOKE2.1 compiled on a Red Hat 9.0 Linux operating system with the Portland group fortran compiler version 5.1. The emissions processing was performed on a month-by-month and RPO-by-RPO basis, i.e. SMOKE processing was performed for each month for each of the RPOs (MANE-VU, VISTAS, CENRAP, MRPO) individually as well as for Canada. For each month/RPO combination, a separate SMOKE ASSIGNS file was created, and the length of the episode in each of these ASSIGNS files was set to the entire month. Also, as discussed in Section 3, there was no difference between “episode-average” temperatures and “monthly-average” temperatures for the Mobile6 simulations that used the option of temperature averaging.

This document is structured as follows: A listing of all emission inventories is given in Section 2, organized by RPO and source category. Section 3 discusses the Mobile6 processing approach employed for the different RPOs, while Section 4 describes the processing of biogenic emissions with BEIS3.12. Finally, Sections 5 through7 describe the temporal allocation, speciation, and spatial allocation of the emissions inventories, respectively.

1. Emission Inventories

1.1 MANE-VU

Version 3 of the MANE_VU inventory was utilized to generate CMAQ-ready emissions. This emissions inventory data were obtained from the MANEVU archive in April 2006.

1.1.1 Area Sources

- Files: MANEVU_AREA_SMOKE_INPUT_ANNUAL_SUMMERDAY_040606.txt and MANEVU_AREA_SMOKE_INPUT_ANNUAL_WINTERDAY_040606.txt prepared by PECHAN, downloaded from **ftp.marama.org** (username mane-vu, password exchange)
- Fugitive dust correction: This was applied as county-specific correction factors for SCC’s listed at http://www.epa.gov/ttn/chief/emch/invent/index.html#dust; the correction factor file gcntl.xportfrac.txt was obtained from EPA’s CAIR NODA ftp site http://www.airmodelingftp.com (password protected).; this adjustment was performed using the SMOKE programs cntlmat and grwinven to generate an adjusted IDA inventory file used for subsequent SMOKE processing

1.1.2 Nonroad Sources

- File: MANEVU_NRD2002_SMOKE_030306 prepared by PECHAN; downloaded from **ftp.marama.org** (username mane-vu, password exchange)

1.1.3 Mobile Sources

- VMT/Speed: MANEVU_2002_mbinv_02022006_addCT.txt prepared by PECHAN and NESCAUM; downloaded from http://bronze.nescaum.org/Private/junghun/MANE-VU/onroad_ver3_update/MANEVU_V3_update.tar

1.1.4 Point Sources

- Files: MANEVU_Point_SMOKE_INPUT_ANNUAL_SUMMERDAY_041006.txt and MANEVU_Point_SMOKE_INPUT_ANNUAL_WINTERDAY_041006.txt prepared by PECHAN were downloaded from **ftp.marama.org** (username mane-vu, password exchange)
- Fugitive dust correction: This was applied as county-specific correction factors for SCC's listed at http://www.epa.gov/ttn/chief/emch/invent/index.html#dust; the correction factor file gcntl.xportfrac.txt was obtained from EPA's CAIR NODA ftp site http://www.airmodelingftp.com (password protected).; this adjustment was performed using the SMOKE programs cntlmat and grwinven to generate an adjusted IDA inventory file used for subsequent SMOKE processing
- Corrected the omission of 2,100 tons/year VOC emissions from several point sources in NJ. NJDEP provided updated IDA files on June 30 that were used for modeling.

1.2 CENRAP

The inventory data were obtained from the CENRAP ftp site in March 2006 and reflect version BaseB of the CENRAP inventory.

1.2.1 Area Sources

- Files:
    - CENRAP_AREA_SMOKE_INPUT_ANN_STATES_081705.txt
    - CENRAP_AREA_MISC_SMOKE_INPUT_ANN_STATE_071905.txt
    - CENRAP_AREA_BURNING_SMOKE_INPUT_ANN_TX_ NELI_071905.txt
    - CENRAP_AREA_MISC_SMOKE_INPUT_NH3_MONTH_{MMM} _072805.txt where {MMM} is JAN, FEB, … DEC
    - CENRAP_AREA_SMOKE_INPUT_NH3_MONTH_{MMM} _071905.txt where {MMM} is JAN, FEB, … DEC
- Fugitive dust correction: This was applied as county-specific correction factors for SCC's listed at http://www.epa.gov/ttn/chief/emch/invent/index.html#dust; the correction factor file gcntl.xportfrac.txt was obtained from EPA's CAIR NODA ftp site http://www.airmodelingftp.com (password protected).; this adjustment was performed using the SMOKE programs cntlmat and grwinven to generate an adjusted IDA inventory file used for subsequent SMOKE processing
- Note about area and nonroad source SMOKE processing for the CENRAP region: All area source inventories (both annual and month-specific) were processed in

one step through SMOKE. SMK_AVEDAY_YN was set to N, so seasonal profiles were used to apportion the annual inventories numbers by month. This setting was also used for the nonroad processing performed in a separate step. This was necessary since the month-specific files had zero in their 'average-day' column and the annual total column reflects the "monthly emissions as annual totals" as per header line. Therefore, seasonal profiles are used to apportion both the annual and month-specific files. As described below, we utilized the temporal profiles and cross-reference files generated by CENRAP. However, we did not verify that this approach indeed leads to the intended monthly allocation of ammonia and nonroad emissions.

1.2.2 Nonroad Sources

- Files:
  - CENRAP_NONROAD_SMOKE_INPUT_ANN_071305.txt
  - CENRAP_NONROAD_SMOKE_INPUT_MONTH_{MMM}_071305.txt where {MMM} is JAN, FEB, … DEC

1.2.3 Mobile Sources

- VMT/Speed files:
  - mbinv02_vmt_cenrap_ce.ida
  - mbinv02_vmt_cenrap_no.ida
  - mbinv02_vmt_cenrap_so.ida
  - mbinv02_vmt_cenrap_we.ida

1.2.4 Point Sources

- File: CENRAP_POINT_SMOKE_INPUT_ANNUAL_DAILY_072505.txt
- Fugitive dust correction: This was applied as county-specific correction factors for SCC's listed at http://www.epa.gov/ttn/chief/emch/invent/index.html#dust; the correction factor file gcntl.xportfrac.txt was obtained from EPA's CAIR NODA ftp site http://www.airmodelingftp.com (password protected).; this adjustment was performed using the SMOKE programs cntlmat and grwinven to generate an adjusted IDA inventory file used for subsequent SMOKE processing.

1.3 VISTAS

All VISTAS emission files were obtained from the Alpine Geophysics ftp site. They reflect version BaseG of the VISTAS inventory with the exception of fire emissions which reflect BaseF and BaseD. These files were downloaded between February and August, 2006.

1.3.1 Area Sources

- Files:

    - arinv_vistas_2002g_2453922_w_pmfac.txt
    - ida_ar_fire_2002_vistaonly_basef.ida
- Note: the header lines of these files indicate that the fugitive dust correction was already applied, so no further correction was performed.

1.3.2 <u>Nonroad Sources</u>

- Files:
    - nrinv_vistas_2002g_2453908.txt
    - marinv_vistas_2002g_2453972.txt

1.3.3 <u>Mobile Sources</u>

- VMT/Speed file: mbinv_vistas_02g_vmt_12jun06.txt

1.3.4 <u>Point Sources</u>

- Files:
    - Annual:
        - egu_ptinv_vistas_2002typ_baseg_2453909.txt
        - negu_ptinv_vistas_2002typ_baseg_2453909.txt
        - ptinv_fires_{MM}_typ.vistas.ida where {MM} is 01, 02, 03, etc. depending on the month; these annual point fire files were generated as part of the VISTAS BaseD inventory and were obtained in January 2005
    - Hour-specific:
        - pthour_2002typ_baseg_{MMM}_28jun2006.ems where {MMM} is jan, feb, mar, etc.
        - pthour_fires_{MM}_typ.vistas.ida where {MM} is 01, 02, 03, etc. depending on the month; these hourly point fire files were generated as part of the VISTAS BaseD inventory and were obtained in January 2005
- Note: No fugitive dust correction was performed for these files.

1.4 MRPO

MRPO emissions for SMOKE modeling were generated by Alpine Geophysics through a contract from MARAMA to convert the MRPO BaseK inventory from NIF to IDA format. The files were downloaded from the MARAMA ftp site **ftp.marama.org** (username mane-vu, password exchange) between April and June 2006.

1.4.1 <u>Area Sources</u>

- Files:
    - Annual:
        - arinv_mar_mrpok_2002_27apr2006.txt
        - arinv_other_mrpok_2002_20jun2006.txt
    - Month-specific:

    - arinv_nh3_2002_mrpok_{mmm}_3may2006.txt where {mmm} is jan, feb, etc.
    - dustinv_2002_mrpok_{mmm}_23may2006.txt where {mmm} is jan, feb, etc.
- Fugitive dust correction: This correction was performed only to the arinv_other_mrpok_2002_20jun2006.txt file using county-specific correction factors for SCC's listed at http://www.epa.gov/ttn/chief/emch/invent/index.html#dust; the correction factor file gcntl.xportfrac.txt was obtained from EPA's CAIR NODA ftp site http://www.airmodelingftp.com (password protected).; this adjustment was performed using the SMOKE programs cntlmat and grwinven to generate an adjusted IDA inventory file used for subsequent SMOKE processing.
- Note about area source SMOKE processing: SMOKE processing was performed separately for the annual and month-specific files. For the annual inventory processing, SMK_AVEDAY_YN was set to N, so seasonal profiles were used to apportion the annual inventories numbers by month. For the month-specific inventory processing, this variable was set to Y so that no seasonal profiles would be applied and the inventory numbers in the 'average day' column would be used. To save a SMOKE processing step, the annual "marine" inventory "arinv_mar_mrpok_2002_27apr2006.txt" was processed together with the annual "other area source" inventory "arinv_other_mrpok_2002_20jun2006.txt" even though it technically is part of the nonroad inventory.

1.4.2 Nonroad Sources

- Files: nrinv_2002_mrpok_{mmm}_3may2006.txt where {mmm} is jan, feb, etc.

1.4.3 Mobile Sources

- VMT/Speed file: mbinv_mrpo_02f_vmt_02may06.txt

1.4.4 Point Sources

- Files: ptinv_egu_negu_2002_mrpok_1may2006.txt
- Fugitive dust correction: This correction was performed only to the arinv_other_mrpok_2002_20jun2006.txt file using county-specific correction factors for SCC's listed at http://www.epa.gov/ttn/chief/emch/invent/index.html#dust; the correction factor file gcntl.xportfrac.txt was obtained from EPA's CAIR NODA ftp site http://www.airmodelingftp.com (password protected).; this adjustment was performed using the SMOKE programs cntlmat and grwinven to generate an adjusted IDA inventory file used for subsequent SMOKE processing.

1.5 Canada

1.5.1 Area Sources

- File: AS2000_SMOKEready.txt obtained from ftp://ftp.epa.gov/EmisInventory/canada_2000inventory
- Fugitive dust correction: We applied "divide-by-four" correction for SCC's listed at http://www.epa.gov/ttn/chief/emch/invent/index.html#dust; this adjustment was performed outside SMOKE with in-house Fortran programs. No county/province-specific correction factors were available for Canada

1.5.2 Nonroad Sources

- File: NONROAD2000_SMOKEready.txt obtained from ftp://ftp.epa.gov/EmisInventory/canada_2000inventory

1.5.3 Mobile Sources

- File: MOBILE2000_SMOKEready.txt obtained from ftp://ftp.epa.gov/EmisInventory/canada_2000inventory
- Fugitive dust correction: applied "divide-by-four" correction for SCC's listed at http://www.epa.gov/ttn/chief/emch/invent/index.html#dust; this adjustment was performed outside of SMOKE with in-house Fortran programs. No county/province-specific correction factors were available for Canada.

1.5.4 Point Sources

There has long been difficulty in obtaining an up-to-date Canadian criteria emissions inventory for point sources. This is due largely to confidentiality rights afforded to Canadian facilities. Thus far, the most recent inventory of Canadian point sources is rooted in the 1985 NAPAP data and is close to two decades old. Because there are a number of high emitting industrial facilities in southern Canada it is of particular importance to have a reasonably accurate inventory of these sources especially when modeling air quality over the Northeast and Midwest United States. Toward this end, an effort was made to obtain more recent Canadian point source data and incorporate it into an inventory database, which could then be used for the 2002 OTC air quality modeling.

Perhaps the most accurate and publicly accessible source of Canadian pollutant data is now available from the National Pollutant Release Inventory (NPRI) database. This database contains 268 substances. Facilities that manufacture, process or otherwise use one of these substances and that meet reporting thresholds are required to report these emissions to Environment Canada on an annual basis. The NPRI data are available at Environment Canada's website and can be found at the link http://www.ec.gc.ca/pdb/npri/npri_home_e.cfm. The page hosts an on-line search engine where one can locate emissions by pollutant or location. In addition, the entire database is available for download as an MS Access or Excel file. The NPRI database contains numerous pages with a rather comprehensive list of information. Detailed information is available about each facility, including location, activity and annual emissions. In addition, facilities having stacks with a height of 50 meters or more are required to report stack parameters.

Unfortunately, one of the limitations of the NPRI database for modeling purposes is that the data are only available at the facility level. Emissions models require process level information, so in order to use this data, a few generalizations had to be made. Each facility has a Standard Industrial Classification (SIC) code associated with it; however, emissions models require Source Classification Codes (SCC's). SCC's are of critical importance as the emissions models use these codes for assignment of temporal and speciation profiles. SIC codes describe the general activity of a facility while SCC codes describe specific processes taking place at each facility. While no direct relationship exists between these two codes, a general albeit subjective association can be made.

For the purposes of creating a model-ready inventory file it was necessary to obtain the whole NPRI database. After merging all the necessary components from the NPRI database required in the SMOKE inventory file, the SIC code from each facility was examined and assigned an SCC code. In most cases, only a SCC3 level code was assigned with confidence. While this is admittedly a less than desirable process, it does allow for the use of the most recent emissions from the NPRI database to be used in modeling. Furthermore, having some level of SCC associated with these emissions will ensure that they will be assigned a temporal and speciation profile by the model, other than the default. Once the model-ready inventory file was developed, it was processed through SMOKE.

2. Mobile6 Processing

2.1 MANE-VU

2.1.1 Mobile6 input files

- Month-specific input files were prepared by PECHAN and NESCAUM and were downloaded from http://bronze.nescaum.org/Private/junghun/MANE-VU/onroad_ver3_update/MANEVU_V3_update.tar
- Added the line "REBUILD EFFECTS :0.10" to each file before the SCENARIO record to override the Mobile6 default setting of 0.9 (90%) for the "chip reflash" effectiveness

2.1.2 SMOKE/Mobile6 auxiliary files

- SMOKE/Mobile6 auxiliary files were prepared by PECHAN and NESCAUM and were downloaded from http://bronze.nescaum.org/Private/junghun/MANE-VU/onroad_ver3_update/MANEVU_V3_update.tar

2.1.3 Temperature averaging

- Following the setting in the MANEVU_2002_mvref.txt files, the following procedures were used by SMOKE for temporal and spatial temperature averaging in the calculation of emission factors:
    - Spatial averaging: temperatures were averaged over all counties that share a common reference county (i.e. Mobile6 input file)
    - Temporal averaging for May – September emissions processing: no temporal averaging was used, i.e. day-specific temperatures were used to calculate emission factors for each day.
    - Temporal averaging for non-summer-months emissions processing: Temporal averaging over the duration of the episode (i.e. the entire month, see introduction) was used, i.e. monthly average temperatures were used to calculate the emission factors.

2.2 CENRAP

2.2.1 Mobile6 input files

- Mobile6 input files for the CENRAP region for January and July were contained in the files central_M6_{MMM}.zip, north_M6_{MMM}.zip, south_M6_{MMM}.zip, west_M6_{MMM}.zip where {MMM} is either jan or jul. July input files were used for April – September processing, while January input files were used for the remaining months
- All files were downloaded from the CENRAP ftp site in March 2006.

2.2.2 SMOKE/Mobile6 auxiliary files

- SMOKE/Mobile6 auxiliary files were contained in the files central_M6_RD.zip, north_M6_RD.zip, south_M6_RD.zip, and west_M6_RD.zip. The SMOKE MCREF, MVREF, and MCODES files were contained in the file MOBILESMOKE_Inputs.zip. The MCREF and MVREF files were combined for the different regions (“central”, “east”, “west”, “north”)
- All files were downloaded from the CENRAP ftp site in March 2006.

2.2.3 Temperature averaging

- The following procedures were used by SMOKE for temporal and spatial temperature averaging in the calculation of emission factors according to the setting in the mvref files:
    - Spatial averaging: no spatial averaging of temperatures, i.e. the temperatures for the reference county is used to calculate emission factors for all counties that share this reference county (i.e. Mobile6 input file)
    - Temporal averaging: Temporal averaging over the duration of the episode (i.e. the entire month, see introduction) was used, i.e. monthly average temperatures were used to calculate the emission factors.

2.3 VISTAS

2.3.1 Mobile6 input files

- Month-specific Mobile6 input files were obtained from the Alpine Geophysics ftp site in July 2006. They reflect version BaseG of the VISTAS inventory.

2.3.2 SMOKE/Mobile6 auxiliary files

- SMOKE/Mobile6 auxiliary files utilized were obtained from the Alpine Geophysics ftp site in July 2006. They reflect version BaseG of the VISTAS inventory.

2.3.3 Temperature averaging

- The following procedures were used by SMOKE for the temporal and spatial temperature averaging in the calculation of emission factors according to the setting in the mvref_baseg.36k.ag.txt file:
    - Spatial averaging: temperatures averaged over all counties that share a common reference county (i.e. Mobile6 input file)
    - Temporal averaging: Temporal averaging over the duration of the episode (i.e. the entire month, see introduction) was used, i.e. monthly average temperatures were used to calculate the emission factors.

2.4 MRPO

2.4.1 Mobile6 input files

- Month-specific Mobile6 input files for SMOKE modeling were generated by Alpine Geophysics through a contract from MARAMA. They are based on version BaseK of the MRPO inventory. The files were downloaded from the MARAMA ftp site **ftp.marama.org** (username mane-vu, password exchange) in May 2006.

2.4.2 SMOKE/Mobile6 auxiliary files

- SMOKE/Mobile6 auxiliary files for SMOKE modeling were generated by Alpine Geophysics through a contract from MARAMA. They are based on version BaseK of the MRPO inventory. The files were downloaded from the MARAMA ftp site **ftp.marama.org** (username mane-vu, password exchange) in May 2006.

2.4.3 Temperature averaging

- The following procedures were used by SMOKE for the temporal and spatial temperature averaging in the calculation of emission factors according to the setting in the mvreg_mrpo_basek.txt file:
    - Spatial averaging: temperatures averaged over all counties that share a common reference county (i.e. Mobile6 input file)

- Temporal averaging: Temporal averaging over the duration of the episode (i.e. the entire month, see introduction) was used, i.e. monthly average temperatures were used to calculate the emission factors.

3. Biogenic Emission Processing

Hourly gridded biogenic emissions for the 12 km and 36 km modeling domains were calculated by BEIS3.12 through SMOKE, using MCIP-processed MM5 fields for temperature ("TA", layer-1 temperature), solar radiation ("RGRND"), surface pressure ("PRES"), and precipitation ("RN" and "RC"). A 'seasonal switch' file was generated by the SMOKE utility metscan to determine whether winter or summer emission factors should be used for any given grid cell on any given day. Winter emission factors are used from January 1st through the date of the last frost and again from the data of the first frost in fall through December 31st. Summer emission factors are used for the time period in between. This calculation is performed separately for each grid cell.

4. Temporal Allocation

4.1 MANE-VU

4.1.1 Area and nonroad sources

- Generated as part of the MANE-VU version 1 inventory
- amptpro.m3.us+can.manevu.030205.txt
- amptref.m3.manevu.012405.txt
- downloaded from **ftp.marama.org** (username mane-vu, password exchange) in January 2005

4.1.2 Mobile sources

- MANEVU_2002_mtpro_02022006_addCT.txt
- MANEVU_2002_mtref_02022006_addCT.txt
- prepared by PECHAN and NESCAUM and downloaded from http://bronze.nescaum.org/Private/junghun/MANE-VU/onroad_ver3_update/MANEVU_V3_update.tar

4.1.3 Point Sources

- Based on the same files as for the MANE-VU area and nonroad temporal files listed above, but added the CEM-based 2002 state-specific temporal profiles and cross-references for EGU sources for the MANE-VU states that were generated by VISTAS for their BaseD modeling and obtained in February 2005.
- No CEM-based hour-specific EGU emissions were utilized

4.2 CENRAP

The following temporal profiles and cross-reference files were used:

- Area and nonroad sources:
    - amptpro.m3.us+can.cenrap.010605_incl_nrd.txt
    - amptref.m3.cenrap.010605_add_nh3_and_nrd.txt
- Mobile sources:
    - mtpro.cenrap.v3.txt
    - mtref.cenrap.v3.txt
- Point sources:
    - ptpro.{QQ}.cenrap_egus_cem.00-03avg.121205.txt where {QQ} is Q1 for January/February/March, Q2 for April/May/June, etc.
    - ptref.{QQ}.cenrap_egus_cem.00-03avg.121205.txt where {QQ} is Q1 for January/February/March, Q2 for April/May/June, etc.
- All files were downloaded from the CENRAP ftp site in March 2006.

4.3 VISTAS

The following month-specific temporal profiles and cross-reference files were used:

- Area and nonroad sources:
    - atpro_vistas_basef_15jul05.txt
    - atref_vistas_basef_15jul05.txt
- Mobile sources:
    - mtpro_vistas_basef_04jul05.txt
    - mtref_us_can_vistas_basef_04jul05.txt
- Point sources:
    - ptpro_typ_{MMM}_vistasg_28jun2006.txt where {MMM} is jan, feb, mar, etc.
    - ptref_typ_vistas_baseg_28jun2006.txt
- These files were obtained from the Alpine Geophysics ftp site. They reflect version BaseG of the VISTAS inventory for the point source allocation files and version BaseF for the area, nonroad, and mobile source allocation files. These files were downloaded between February and July, 2006.

4.4 MRPO

The following month-specific temporal profiles and cross-reference files were used for all source categories:

- amptpro_typ_us_can_{MMM}_vistas_27nov04.txt where {MMM} is jan, feb, mar, etc.
- amptref_2002_us_can_vistas_17dec04.txt
- These files were obtained from VISTAS in January 2005 and reflect their BaseD modeling. No updated temporal profiles or cross-reference files were developed for use with the MRPO BaseK inventory.

4.5 Canada

For Canada, the SMOKE2.1 default temporal profiles and cross-reference files (amptpro.m3.us+can.txt and amptref.m3.us+can.txt) were utilized.

5. Speciation

The same speciation profiles (gspro.cmaq.cb4p25.txt) and cross-references (gsref.cmaq.cb4p25.txt) were utilized for all regions and all source categories. Different versions of these files were obtained (SMOKE2.1 default, EPA-CAIR modeling, VISTAS, CENRAP and MANE-VU) and compared. After comparing the creation dates and header lines of these files, it was determined that the EPA-CAIR and MANE-VU files had the most recent updates, and consequently the final speciation profile and cross-reference files used for all regions and source categories was based on the EPA-CAIR files with the addition of MANE-VU specific updates.

6. Spatial Allocation

6.1 U.S.

The spatial surrogates for the 12km domain were extracted from the national grid 12km U.S. gridding surrogates posted at EPA's website at http://www.epa.gov/ttn/chief/emch/spatial/newsurrogate.html
The gridding cross-references were also obtained from this website, but for the processing of MANE-VU area source emissions, MANE-VU specific cross-reference entries posted on the MARAMA ftp site were added.

6.2 Canada

The spatial surrogates for Canadian emissions for the 12km domain were extracted from the national grid 12km Canadian gridding surrogates posted at EPA's website at http://www.epa.gov/ttn/chief/emch/spatial/newsurrogate.html
The gridding cross-references were also obtained from this website.

Reference:

Pechan: (2006) Technical Support document for 2002 MANE-VU SIP Modeling inventories, version 3. Prepared by E. H. Pechan & Associates, Inc. 3622 Lyckan Parkway, Suite 2005, Durham, NC 27707.

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TSD-1d

8-h Ozone modeling using the SMOKE/CMAQ system

Bureau of Air Quality Analysis and Research

Division of Air Resources

New York State Department of Environmental Conservation

Albany, NY 12233

February 1, 2006

Air Quality Modeling Domain

The modeling domain utilized in this application represented a sub-set of the inter-RPO's continental modeling domain that covered the entire 48-state region with emphasis on the Ozone Transport Region. The OTC modeling domain at 12km horizontal mesh is displayed in Figure 1 is part of the 36km continental domain that is designed to provide boundary conditions (BCs). The particulars of the two modeling domains are:

The 36km domain covered the continental US by a 149 by 129 mesh in the east-west and north-south directions, respectively. The domain is based on Lambert Conformal Projection with the center at (97ºW 40ºN) and parallels at 33ºN and 45ºN. As evident from Figure 1, the 12km domain utilized in this analysis covers most areas of the eastern US and has 172 by 172 mesh in the horizontal. Both domains utilize 22 layers in the vertical extending to about 16km with 16 layers placed within the lower 3km.

<u>Photochemical Modeling -- CMAQ</u>

The CMAQ (version 4.5.1) with CB4 chemistry, aerosol module for $PM_{2.5}$ and RADM cloud scheme was utilized in this study. Photochemical modeling was performed with the CCTM software that is part of the CMAQ modeling package. Version 4.5.1 of this modeling software was obtained from the CMAS modeling center at http://www.cmascenter.org. The following module options were used in compiling the CCTM executable:

- Horizontal advection: yamo
- Vertical advection: yamo
- Horizontal diffusion: multiscale
- Vertical diffusion: eddy
- Plume-in-Grid: non operational
- Gas phase chemical mechanism: CB-4
- Chemical solver: EBI
- Aerosol module: aero3
- Process analysis: non operational

The following computational choices were made during compilation:

- Compiler version: PGI 6.0
- Fortran compiler flags:-Mfixed -Mextend -Bstatic -O2 -module ${MODLOC} -I.
- C compiler flags: -v -O2 -I${MPICH}/include
- IOAPI library: version 3.0
- NETCDF library: version 3.6.0
- Parallel processing library version: mpich 1.2.6
- Static compilation on 32-bit system

The following choices were made for running the executable:

- Number of processors: 8
- Domain decomposition for parallel processing: 4 columns, 2 rows
- Number of species written to the layer-1 hourly-average concentration output (ACONC) file: 39 (O3, NO, CO, NO2, HNO3, N2O5, HONO, PNA, PAN, NTR, NH3, SO2, FORM, ALD2, PAR, OLE, ETH, TOL, XYL, ISOP, ASO4I, ASO4J, ANO3I, ANO3J, ANH4I, ANH4J, AORGAI, AORGAJ, AORGPAI, AORGPAJ, AORGBI, AORGBJ, AECI, AECJ, A25I, A25J, ACORS, ASEAS, ASOIL)
- Each daily simulation was performed for 24 hours starting at 05:00 GMT (00:00 EST)

The following postprocessing steps were performed using utility tools from the "ioapi" software package obtained from http://www.baronams.com/products/ioapi/AA.html#tools:

- Extract and combine the following species for each hour for the first 16 model layers from the full 3-D instantaneous concentration output file: O3, CO, NO, NO2, NOY_1 (=*NO* + *NO2* + *PAN* + *HNO3*), NOY_2 (=*NO* + *NO2* + *PAN* + *HNO3* + *HONO* + *N2O5* + *NO3* + *PNA* + *NTR*), HOX (=*OH* + *HO2*), VOC (=*2*ALD2* + *2*ETH* + *FORM* + *5*ISOP* + *2*OLE* + *PAR* + *7*TOL* + *8*XYL*), ISOP, PM2.5 (=*ASO4I* + *ASO4J* + *ANO3I* + *ANO3J* + *ANH4I* + *ANH4J* + *AORGAI* + *AORGAJ* + *1.167*AORGPAI* + *1.167*AORGPAJ* + *AORGBI* + *AORGBJ* + *AECI* + *AECJ* + *A25I* + *A25J*), PM_SULF (=*ASO4I* + *ASO4J*), PM_NITR (=*ANO3I* + *ANO3J*), PM_AMM (=*ANH4I* + *ANH4J*), PM_ORG_SA (=*AORGAI* + *AORGAJ*), PM_ORG_PA (=*1.167*AORGPAI* + *1.167*AORGPAJ*), PM_ORG_SB(=*AORGBI* + *AORGBJ*), PM_ORG_TOT (=*AORGAI* + *AORGAJ* + *1.167*AORGPAI* + *1.167*AORGPAJ* + *AORGBI* + *AORGBJ*), PM_EC (=*AECI* + *AECJ*), PM_OTH (=*A25I* + *A25J*), PM_COARS (=*ACORS* + *ASEAS* + *ASOIL*), SO2, HNO3, NH3, H2O2
- Extract all species for all model layers for the last hour of each daily instantaneous concentration output file to enable "hot" restarts of modeling simulations
- Create daily files of hourly running-average 8-hr ozone concentrations with time stamps assigned to the first hour of the averaging interval

The following files are archived on LTO2 computer tapes (each tape holds approximately 200 Gb of data) for each day:

- Aerosol/visibility file
- Layer-1 hourly-average concentration output file (contains 39 species)
- Dry deposition file
- Wet deposition file
- Extracted 16-layer species file
- Restart file (last hour of full 3-D instantaneous concentration file)
- Hourly 8-hr concentration file

Photolysis Rates

One of the inputs to CMAQ is the photolysis rates. In this study, photolysis rate lookup tables were generated for each day of 2002 with the JPROC software that is part of the CMAQ modeling package. This software was obtained from the CMAS modeling center at http://www.cmascenter.org. Rather than using climatological ozone column data, daily ozone column measurements from the NASA Earthprobe TOMS instrument were downloaded from ftp://toms.gsfc.nasa.gov/pub/eptoms/data/ozone/Y2002/ and used as input to the JPROC processor. It should be noted that TOMS data were missing for the time period from August 3 – 11, 2002. The missing period was filled as follows-- TOMS data file for August 2 was used as JPROC input for August 3^{rd} through August 7^{th}, and the TOMS data file for August 12^{th} was used as JPROC input for August 8^{th} through August 11^{th}.

Boundary Conditions (BCs)

The boundary conditions for the 12km grid were extracted from the 36km CMAQ simulation. The 36km simulation utilized boundary conditions that were based on a one-way nest approach to GEOS-CHEM global model outputs (Moon and Byun 2004, Baker 2005). As stated above, the intent of the 36km CMAQ simulation was to provide the BCs for the 12km model that would be more reflective of the emissions and meteorology rather than to use either clean or arbitrary pollutant fields. Also, in this study the CMAQ simulations utilized a 15-day ramp-up period, thereby minimizing the propagation of the boundary fields into the areas of concern. A report on the setup and application of the 36km CMAQ and the extraction of the BCs is available from NYSDEC.

Meteorological data

The meteorological data for this study was based on MM5 modeling (see Meteorological Modeling, 2007). The MM5 fields are then processed by MCIP version 3.0, a utility available as part of the CCTM software from CMAS Modeling Center (see http://www.cmascenter.org) to provide CMAQ model-ready inputs.

Emissions

The emissions data for 2002 were generated by individual states within the OTR and were assembled and processed through the Mid Atlantic Northeast Visibility Union (MANE-VU), a Regional Planning Organization (RPO). These emissions were then processed by NYSDEC using SMOKE processor to provide CMAQ compatible inputs (Anthro-Emissions 2006). The 2002 emissions for the non-OTR areas within the modeling domain were obtained from the corresponding RPOs and were processed using SMOKE, in a manner similar to that of the OTR.emissions. Details of this processing are outlined in the report (Pechan 2007), and the hourly biogenic emissions (Bio-Emissions, 2006)

CMAQ simulations

CMAQ simulations were performed using the one-way nesting approach in which we perform the continental CMAQ simulation at 36km grid spacing. For this simulation we utilized clean initial conditions with boundary conditions extracted from the simulation of GEOS-CHEM global chemical model. The interface program used in this application was developed by University of Huston (Moon and Byun 2004), which was applied to obtain hourly 36km boundary concentrations from GEOS-CHEM outputs. The CMAQ 36km simulation was initiated from December 15, 2001 with the first 15 days as spin up period and terminated on December 31, 2002. The simulation utilized the 2002 emissions data available from the RPOs and 2002 MM5 meteorological fields developed by the University of Maryland (TSD-1a). The hourly boundary fields for the 12km CMAQ domain were obtained by application of BCON program to the 3-D concentration fields generated by the 36km CMAQ simulation.

The 12km simulations for both base and future year were assigned the boundary conditions based on the 36km CMAQ simulation and clean initial conditions. The simulation period covered was from April 15 through September 30, with the first 15 days of April set as ramp-up or spin-up period and that only data from May 1 through September 30 were used in the analysis. Details on CMAQ setup and run scripts are available from NYSDEC.

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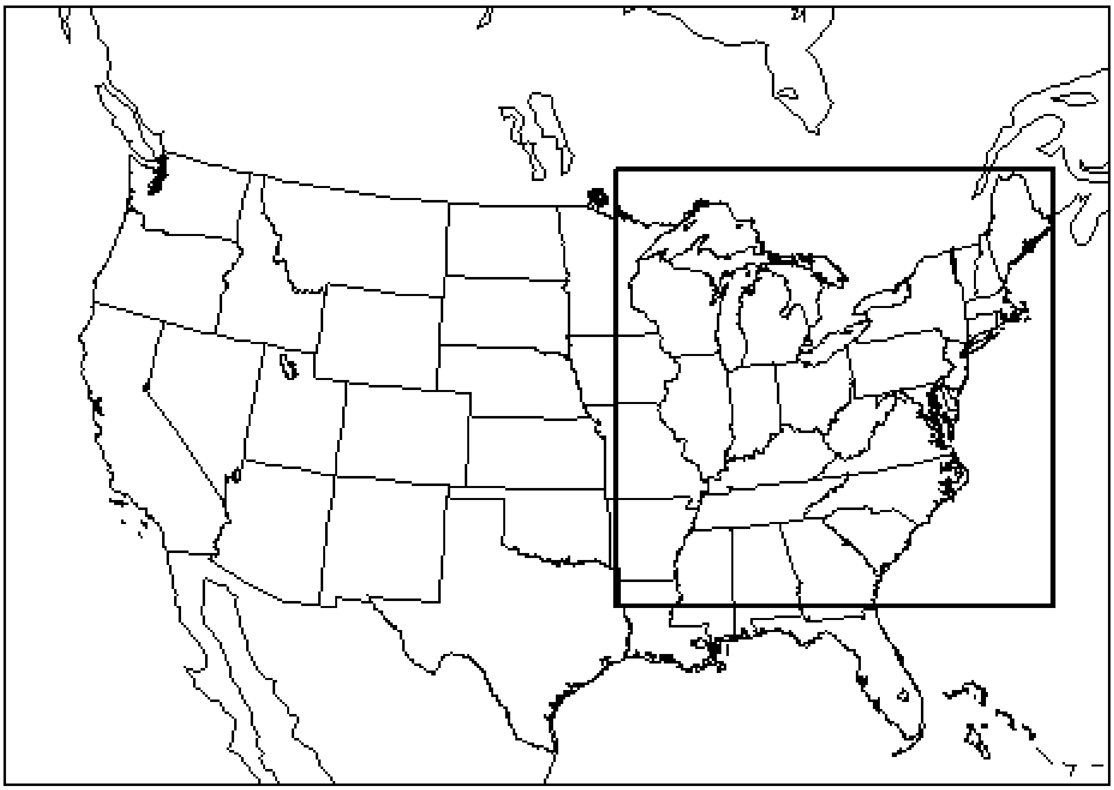
Figure 1 Display of 36- and 12km air quality modeling domains.



TSD-1e

CMAQ Model Performance and Assessment

8-h OTC Ozone Modeling

Bureau of Air Quality Analysis and Research

Division of Air Resources

New York State Department of Environmental Conservation

Albany, NY 12233

March 19, 2006

Air quality model evaluation and assessment

One of the tasks that is required as part of demonstrating attainment for the 8-hr ozone NAAQS is the evaluation and assessment of the air quality modeling system that has been utilized to predict future air quality over the region of interest. As part of the attainment demonstration, the SMOKE/CMAQ modeling system was applied to simulate the pollutant concentration fields for the base year 2002 emissions with the corresponding meteorological information. The modeling databases for meteorology using MM5 (TSD-1a), the emissions using SMOKE (TSD-1b and TSD-1c), and application of CMAQ (TSD-1d) provides simulated pollutant fields that are compared to measurements, in order to establish the credibility of the simulation. In the following sections a comparison between the measured and predicted concentrations is performed and results are presented, demonstrating on an overall basis the utility of the modeling system in this application.

The results presented here should serve as an illustration of some of the evaluation and assessment performed on the base 2002 CMAQ simulation. Additional information can be made available by request from the New York State Department of Environmental Conservation.

Summary of measured data

The ambient air quality data, both gaseous and aerosol species, for the simulation period of May through September 2002 were obtained from the following sources:

- EPA Air Quality System (AQS)
- EPA fine particulate Speciation Trends Network (STN)
- EPA Clean Air Status & Trends Network (CASTNet)
- Interagency Monitoring of PROtected Visual Environments (IMPROVE)
- Pinnacle State Park, NY operated by Atmospheric Science Research Center, University at Albany, Albany, NY
- Harvard Forest, Petersham, MA operated by Harvard University, Boston, MA
- Atmospheric Investigation, Regional Modeling, Analysis and Prediction (AIRMAP) operated by University of New Hampshire, Durham, NH
- NorthEast Ozone & Fine Particle Study (NE-OPS), led by Penn State University and other research groups in Philadelphia, PA
- Aircraft data obtained by the University of Maryland, College Park MD
- Wet deposition data from the National Atmospheric Deposition Program/National Trends Network (NADP/NTN), Atmospheric Integrated Research Monitoring Network (AIRMoN), and the New York State Department of Environmental Conservation (NYSDEC)

Measured data from sites within the Ozone Transport Region (OTR) plus the rest of Virginia were included here. The model-based data were obtained at the grid-cell corresponding to the monitor location; no interpolation was performed.

Ozone (O_3)

Hourly O_3 is measured at a large number of State, Local, and National Air Monitoring Stations (SLAMS/NAMS) across the US on a routine basis, and the data from 208 sites were extracted from the AQS database (http://www.epa.gov/ttn/airs/airsaqs/aqsweb/aqswebhome.html). Hourly O_3 concentrations from the Harvard Forest Environmental Management Site in Petersham, MA (http://www.as.harvard.edu/data/nigec-data.html); Pinnacle State Park in Addison, NY (http://www.asrc.cestm.albany.edu); and the four University of New Hampshire AIRMAP sites (http://airmap.unh.edu) were also included in this database. The EPA CASTNet program collects hourly O_3 at generally rural locations across the US (http://www.epa.gov/castnet); data from 22 sites, including two from West Virginia, were used in the model evaluation.

Fine particulate matter ($PM_{2.5}$)

The 24-hour average Federal Reference Method (FRM) $PM_{2.5}$ mass data collected routinely at SLAMS/NAMS sites across the US were extracted from AQS (257 sites). Hourly $PM_{2.5}$ mass was also included in this database, primarily extracted from AQS (54 sites). Hourly $PM_{2.5}$ mass were also taken from the Thompson Farm, NH AIRMAP site, Pinnacle State Park, and the NE-OPS site in Philadelphia, PA (http://lidar1.ee.psu.edu).

Fine particulate speciation

The 24-hour average $PM_{2.5}$ and fine particulate speciation (sulfate (SO_4), nitrate (NO_3), elemental carbon (EC), organic carbon/organic mass (OC/OM), and soil/crustal matter) from Class I areas across the US, collected every 3rd day, were obtained from the IMPROVE web site (http://vista.cira.colostate.edu/IMPROVE/Default.htm). In addition to these parameters, the EPA STN (http://www.epa.gov/ttn/amtic/speciepg.html) also reports ammonium (NH_4) to AQS; data from this network are collected every 3rd or 6th day. Data from 49 STN sites, generally in urban areas and often collocated with FRM monitors, and 21 IMPROVE sites (including Dolly Sods, WV) were used in this analysis. Organic mass is assumed to equal 1.8×OC, and soil/crustal matter is assumed to consist of oxides of Al, Ca, Fe, Si, and Ti. The STN OC data are blank-corrected by removing a monitor-specific, constant blank, and these values are available from http://www.epa.gov/airtrends/aqtrnd03/pdfs/2_chemspec0fpm25.pdf; the IMPROVE OC blanks are assumed to equal zero.

Criteria gaseous pollutants

Hourly carbon monoxide (CO; 97 sites), nitric oxide (NO; 75 sites), nitrogen dioxide (NO_2; 97 sites) and sulfur dioxide (SO_2; 134 sites) are also included in this model evaluation database. A large majority of these sites are SLAMS/NAMS monitors located primarily in urban in suburban areas, but data from the Harvard Forest, Pinnacle State Park, and AIRMAP sites are also included here.

Non-methane hydrocarbons

While there are several dozen hydrocarbon species measured routinely, for this model evaluation database the focus was on Carbon Bond IV species groups that consist of a single primary species. For this reason only ethene (C_2H_4), isoprene (C_5H_8), and formaldehyde (HCHO) concentrations were extracted from AQS. Hourly C_2H_4 and C_5H_8 data from 19 Photochemical Assessment Monitoring Stations (PAMS) sites and 24-hour average HCHO from 18 air toxics sites are included in this database.

University of Maryland aircraft data

The University of Maryland performed 144 aircraft spirals at 41 regional airport locations over 26 days from May-August 2002 (http://www.atmos.umd.edu/~RAMMPP). Spirals are approximately 20-45 minutes in duration, over which time the atmosphere from about 0-3 km is sampled. The concentrations of O_3, CO, and SO_2 from these spirals were included in this database, and help provide a semi-quantitative evaluation of CMAQ performance above the ground surface. Minute average aircraft data were compared to the nearest instantaneous 3-dimensional CMAQ output.

Wet deposition

The NADP (http://nadp.sws.uiuc.edu) collects wet deposition samples across the US, through the NTN and the AIRMoN. Weekly wet deposition samples are collected by the NTN, while daily or event-based samples were collected by the AIRMoN. The NYSDEC (http://www.dec.state.ny.us) also collects weekly wet deposition samples independently from the NADP. The wet deposition of SO_4^{2-}, NO_3^-, and NH_4^+ from 43 NADP/NTN sites, 7 NADP/AIRMoN sites, and 19 NYSDEC sites are included in this model evaluation database.

Evaluation of CMAQ predictions

The following sections provide model evaluation information for the above referenced pollutants over the OTR portion of the 12-km modeling domain. The statistical formulations that have been computed for each species are as follows: P_i and O_i are the individual (daily maximum 8-hour O_3 or daily average for the other species) predicted and observed concentrations, respectively; $\overline{P}$ and $\overline{O}$ are the average concentrations, respectively, and N is the sample size.

Observed average, in ppb:

$$\overline{O} = \frac{1}{N}\sum O_i$$

Predicted average, in ppb (only use P_i when O_i is valid):

$$\overline{P} = \frac{1}{N}\sum P_i$$

Correlation coefficient, R^2:

$$R^2 = \frac{\left[\sum (P_i - \overline{P})(O_i - \overline{O})\right]^2}{\sum (P_i - \overline{P})^2 \sum (O_i - \overline{O})^2}$$

Normalized mean error (NME), in %:

$$NME = \frac{\sum |P_i - O_i|}{\sum O_i} \times 100\%$$

Root mean square error (RMSE), in ppb:

$$RMSE = \left[\frac{1}{N} \sum (P_i - O_i)^2 \right]^{1/2}$$

Fractional error (FE), in %:

$$FE = \frac{2}{N} \sum \left| \frac{P_i - O_i}{P_i + O_i} \right| \times 100\%$$

Mean absolute gross error (MAGE), in ppb:

$$MAGE = \frac{1}{N} \sum \left| P_i - O_i \right|$$

Mean normalized gross error (MNGE), in %:

$$MNGE = \frac{1}{N} \sum \frac{\left| P_i - O_i \right|}{O_i} \times 100\%$$

Mean bias (MB), in ppb:

$$MB = \frac{1}{N} \sum (P_i - O_i)$$

Mean normalized bias (MNB), in %:

$$MNB = \frac{1}{N} \sum \frac{(P_i - O_i)}{O_i} \times 100\%$$

Mean fractionalized bias (MFB), in %:

$$MFB = \frac{2}{N} \sum \left[\frac{P_i - O_i}{P_i + O_i} \right] \times 100\%$$

Normalized mean bias (NMB), in %:

$$NMB = \frac{\sum (P_i - O_i)}{\sum O_i} \times 100\%$$

Daily maximum 8-hour O_3 concentrations

Model evaluation statistics, based on daily maximum 8-hour average O_3 levels on those days having (1) at least 18 valid observations, or (2) fewer than 18 valid observations but the observed daily maximum O_3 concentration was at least 85 ppb, are presented here for all sites across the OTR and all of VA. The data covered the period May 15 through September 29, excluding July 6-9, when many sites across the eastern US were affected by large forest fires in Quebec. There are 208 SLAMS/NAMS sites and 28 special sites.

These model evaluation statistics were computed using two different threshold values for observed daily maximum 8-hour O_3. First, the statistics were computed using only those days when the observed daily maximum 8-hour O_3 concentration exceeded 40 ppb. Second, the statistics were computed using only those days when the observed daily maximum 8-hour O_3 exceeded 60 ppb. This latter method focuses on the highest O_3 days.

Figures 1-4 display time series of observed and predicted daily maximum 8-hour O_3 concentrations averaged over all sites across the OTR, at SLAMS/NAMS and special sites and for the daily maximum two thresholds. These averages were computed for each day considering all sites that met the corresponding threshold criteria. In general the observed and predicted composite average O_3 concentrations track each other rather well, although there was fairly substantial underprediction during the mid-August period. Also, the model performance tends to be better when the lower cutoff (40 ppb) was considered.

Figures 5-8 display spatial maps of fractional error and mean fractionalized bias for the two threshold levels. At each site the statistics were computed over the entire modeling season. Both the SLAMS/NAMS and special monitors are displayed here. In general, the model performance was better in the vicinity of urban areas and along the northeastern corridor, compared to the performance in rural areas where the model tended to underpredict daily maximum concentrations. The other statistical metrics yielded similar results to FE and MFB.

Table 1 lists the median and range in fractional error, and the mean fractionalized bias of daily maximum 8-hour O_3 calculated at each site over the season, for both observed thresholds (40 and 60 ppb), as well as all sites versus just the SLAMS/NAMS sites. Considering just SLAMS/NAMS sites, FE was always less than 32% for the 40 ppb threshold, and less than 40% for the 60 ppb threshold. Similarly, the MFB at SLAMS/NAMS sites ranged from -29 to +23% for the 40 ppb threshold, and ranged from -40 to +22% for the 60 ppb threshold. Adding the special sites did not affect the statistics substantially.

Diurnal variations of gases

Figures 9-17 display the composite diurnal variations of the species reported hourly – O_3 (SLAMS/NAMS and other/special sites, displayed separately), continuous $PM_{2.5}$, CO, NO, NO_2, SO_2, ethene, and isoprene. The average diurnal variations are for the period of May 15-September 30 – again excluding July 6-9 – considering all sites in the OTR. Note that the O_3 diurnal variations were computed from running 8-hour averages, with hours denoting the start of the 8-hour block. The number of monitors used to compute each composite diurnal variation is shown in each figure.

For O_3, the composite diurnal pattern predicted by CMAQ is fairly similar to that observed, especially at the more urban SLAMS/NAMS monitors. However, on average CMAQ predicts the daily maximum about an hour earlier than observed. For most of the other species presented here, CMAQ tends to predict two daily peaks, one morning and one late afternoon. For some species, such as $PM_{2.5}$ mass the observed concentration on a composite basis has very little diurnal variation. On the other hand, primary pollutants like CO, NO, and ethane, CMAQ exhibits qualitative agreement with the observations.

Daily average concentrations of co-pollutant trace gases

Composite daily average predicted and observed concentrations of CO, NO, NO_2, SO_2, C_2H_4, HCHO, and C_5H_8 across the OTR are displayed in Figures 18-24. Daily average concentrations of the criteria gases, C_2H_4 and C_5H_8 were computed from hourly averages, and only those days having at least 12 hours of valid observed data were considered here. The HCHO data shown here are based on 24-hour average values every 6^{th} day. The criteria gas data cover the period May 15 – September 30, whereas the NMHC data only cover the June 1 – August 31 period, since these data are predominantly PAMS data; however, excluded from this analysis is the July 6-9 period when many sites across the eastern US were affected by large forest fires in Quebec.

Table 2 lists the median and range in mean fractionalized bias calculated at each site over the season used in this analysis. The values listed in Table 2 were computed at each site over the entire season. While the range in MFB is rather large for each species across all sites, the median MFB was below 50% for all species except C_2H_4, which is substantially overpredicted by CMAQ. It should be noted that these species can vary substantially from day to day, and days with very low modeled or observed values can contribute to high MFB.

$PM_{2.5}$ mass and speciation

Composite daily average predicted and observed concentrations of $PM_{2.5}$ mass (both daily average FRM data and continuous data), as well as major speciation –SO_4, NO_3, NH_4, EC, OM (defined here operationally as 1.8×blank-corrected organic carbon), and crustal mass (sum of oxides of Al, Ca, Fe, Si, and Ti) – across the OTR were compared in this analysis. The data cover the period May 15 – September 30, and again the July 6-9 period was excluded, when numerous sites in the eastern US were affected by large forest fires in Quebec. The continuous and FRM $PM_{2.5}$ data are shown every day, since there are ample daily FRM sites across the OTR. The speciation data included here are daily averages every third day, and consist of the largely urban EPA STN and the largely rural IMPROVE network. The two speciation networks collect $PM_{2.5}$, SO_4, NO_3, EC, OM, and crustal mass, while only the STN reports NH_4 at a sufficient number of locations.

Table 3 lists the median and range in mean fractionalized bias calculated at each site over the season used in this analysis. The values listed in Table 3 were computed at each site over the entire season. Figures 25-39 display time series of composite average observed and predicted daily concentrations; in these figures, for each day the statistics were computed using all monitors with valid data. The best qualitative agreement between observed and modeled concentrations is exhibited for $PM_{2.5}$ and SO_4. Note that in the case of crustal mass, the data from July 4 are also not included since this day is greatly affected by fireworks. On July 4, the composite average observed and predicted crustal concentrations were 4.59 $\mu g\ m^{-3}$ and 1.74 $\mu g\ m^{-3}$, respectively at the STN monitors, and 4.46 $\mu g\ m^{-3}$ and 0.99 $\mu g\ m^{-3}$, respectively at the IMPROVE monitors.

As with the gaseous co-pollutant data, there is a substantial spread in MFB across the sites. However, the median MFB for $PM_{2.5}$ mass and SO_4 was generally small (<12%) for both urban and rural sites. CMAQ tends to overpredict NO_3, more so at the IMPROVE sites. CMAQ also tends to underpredict OM at both urban and rural sites, although some of this discrepancy may be attributed to the fact that OM is operationally defined and is highly dependent on the blank correction and multiplier to account for other components of OM not directly measured. CMAQ tends to overpredict both EC and crustal mass, especially at urban sites; similar to OM, the crustal mass overprediction is related to the fact that this parameter is operationally defined.

Wet deposition of sulfate, nitrate, and ammonium

Observed and predicted wet deposition of SO_4, NO_3, and NH_4 were compared over the period May 14 – September 30. For this analysis, weekly or event-based wet deposition amounts from the NADP/NTN (43 sites), NADP/AIRMoN (7 sites), and New York State DEC (19 sites) covering the entire OTR plus all of VA and WV were integrated over the four-and-a-half months. Because the observed weekly wet deposition samples did include July 6-9, the corresponding CMAQ predictions also include this period. Table 4 lists the model evaluation statistics for integrated wet deposition of SO_4, NO_3, and NH_4 at each site over the season, while Figures 40-42 compare the observed and predicted weekly values relative to the 1:1 line.

Overall CMAQ tended to overpredict wet deposition of these ions. On a percentage basis, the overprediction was least for SO_4 and highest for NO_3. The NME, MNGE, MNB, and NMB were less than 50% for the three ions. Given that precipitation is very difficult to predict, especially during the summer months when rainfall can vary tremendously over a 12 km by 12 km area represented by this model grid, CMAQ did a rather good job reproducing seasonal wet deposition over the OTR.

Upper-air O_3, CO, and SO_2 data

The University of Maryland operated an instrumented light aircraft during the summer of 2002. On 26 days from May-August meteorological, trace gas, and particle scattering/absorption data were collected during ascent or descent spirals over 41 regional airports. In all, 144 spirals were performed from near the surface to about 3 km above ground level. For this analysis, composite average profiles of O_3, CO, and SO_2 were created over three time periods: "morning" (08-11 EST), "afternoon" (12-16 EST), and "evening" (17-19 EST). The minute average observed concentrations were aggregated into layer averages, which correspond to the lowest 15 model layers. Model layers are increasingly thick away from the surface; the surface layer is about 20 m thick while the 15^{th} layer is about 500 m thick (and centered about 2.8 km above the ground). Figures 43-51 display the observed and predicted composite vertical profiles of O_3, CO, and SO_2 for the three time periods. In terms of profile shape, CMAQ was in good qualitative agreement for all three species above the surface during the afternoon hours. For CO, the model tends to greatly underpredict observed levels near the surface, whereas the predicted O_3 and SO_2 concentrations are closer to the respective observed values.

Summary

Various model evaluation statistics are presented here for a variety of gaseous and aerosol species in addition to O_3. In general, the CMAQ results were best for daily maximum O_3 and daily average $PM_{2.5}$ and SO_4 mass. Many other species vary tremendously over the course of a day, or from day to day, and small model over- or underprediction at low concentrations can lead to large biases on a composite basis. It is important to demonstrate that the model performs reasonably over the diurnal cycle, not just in terms of daily maximum or average values. Also, it is important to demonstrate that the model can reproduce concentrations above the ground level.

Table 1. Median and range in fractional error (FE, %) and mean fractionalized bias (MFB, %) for daily maximum 8-hour O_3 using the 40 ppb and 60 ppb observed thresholds. The values using only SLAMS/NAMS sites are boldfaced, the values using all sites are in regular font.

Metric, threshold	Range (%)	Median (%)
FE, 40 ppb	+10 to +34% **+10 to +32%**	+15% **+15%**
MFB, 40 ppb	-34 to +23% **-29 to +23%**	-6% **-6%**
FE, 60 ppb	+9 to +40% **+9 to +40%**	+15% **+15%**
MFB, 60 ppb	-40 to +22% **-40 to +22%**	-12% **-11%**

Table 2. Median and range in mean fractionalized bias (%) for daily average CO, NO, NO_2, SO_2, C_2H_4, HCHO, and C_5H8.

Pollutant	Range in MFB (%)	Median MFB (%)
CO (97 sites)	-128 to +144%	-10%
NO (75 sites)	-182 to +116%	-46%
NO_2 (97 sites)	-125 to +107%	+13%
SO_2 (134 sites)	-139 to 140%	+3%
C_2H_4 (19 sites)	+28 to +168%	+86%
HCHO (18 sites)	-66 to +96%	-13%
C_5H_8 (19 sites)	-54 to +165%	+43%

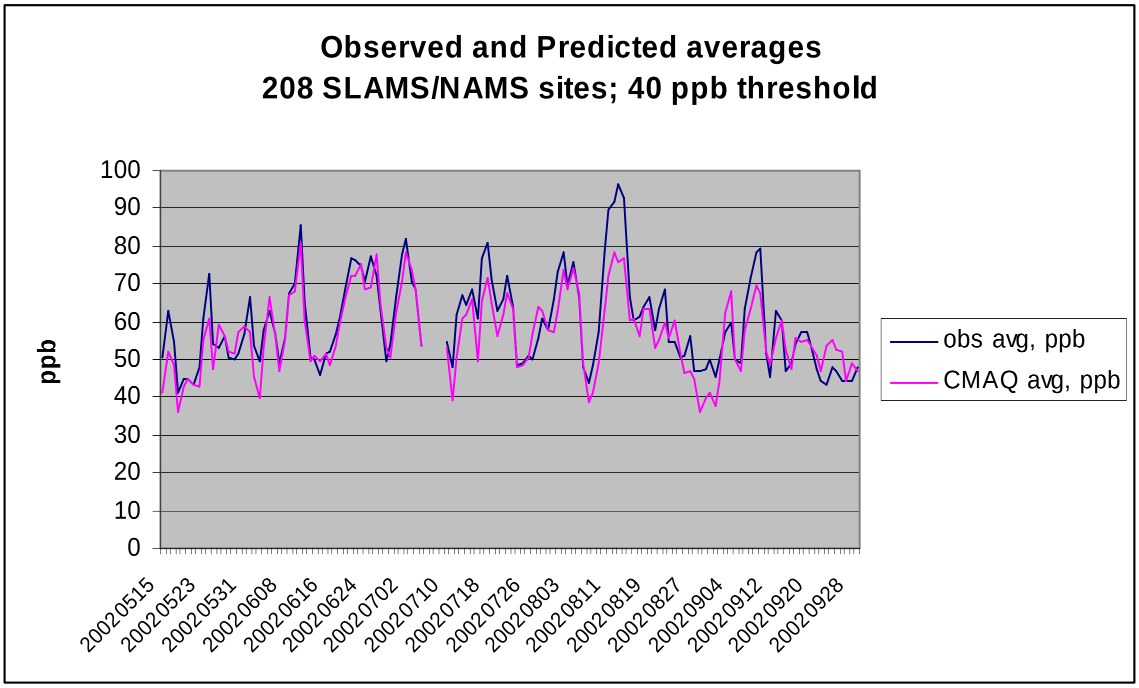
Table 3. Median and range in mean fractionalized bias (%) for daily average $PM_{2.5}$, SO_4, NO_3, NH_4, EC, and OM.

Pollutant	Range in MFB (%)	Median MFB (%)
$PM_{2.5}$ (FRM; 257 sites)	-59 to +119%	-4%
$PM_{2.5}$ (continuous; 57 sites)	-39 to +85%	+5%
STN $PM_{2.5}$ (49 sites)	-45 to +102%	-9%
IMPROVE $PM_{2.5}$ (21 sites)	-36 to +19%	-10%
STN SO_4 (49 sites)	-21 to +60%	+12%
IMPROVE SO_4 (21 sites)	-26 to +16%	-7%
STN NO_3 (49 sites)	-73 to +406%	+25%
IMPROVE NO_3 (21 sites)	-57 to +358%	+64%
STN NH_4 (49 sites)	-36 to +112%	+16%
STN EC (49 sites)	-42 to +269%	+34%
IMPROVE EC (21 sites)	-60 to +146%	-27%
STN OM (49 sites)	-82 to -25%	-58%
IMPROVE OM (21 sites)	-60 to +7%	-40%
STN crustal (49 sites)	+2 to +546%	+182%
IMPROVE crustal (21 sites)	-18 to +163%	+38%

Table 4. Model evaluation statistics for integrated wet deposition of SO_4, NO_3, and NH_4
.

Parameter	SO_4	NO_3	NH_4
Observed average, mg m^{-2}	1063	704	185
Predicted average, mg m^{-2}	946	367	117
Correlation coefficient, R^2	0.17	0.22	0.12
NME, %	34	49	48
RMSE, mg m^{-2}	490	417	109
FE, %	36	62	57
MAGE, mg m^{-2}	365	344	89
MNGE, %	36	45	46
MB, mg m^{-2}	-118	-337	-68
MNB, %	-3	-44	-28
MFB, %	-13	-61	-44
NMB, %	-11	-48	-37

Figure 1.



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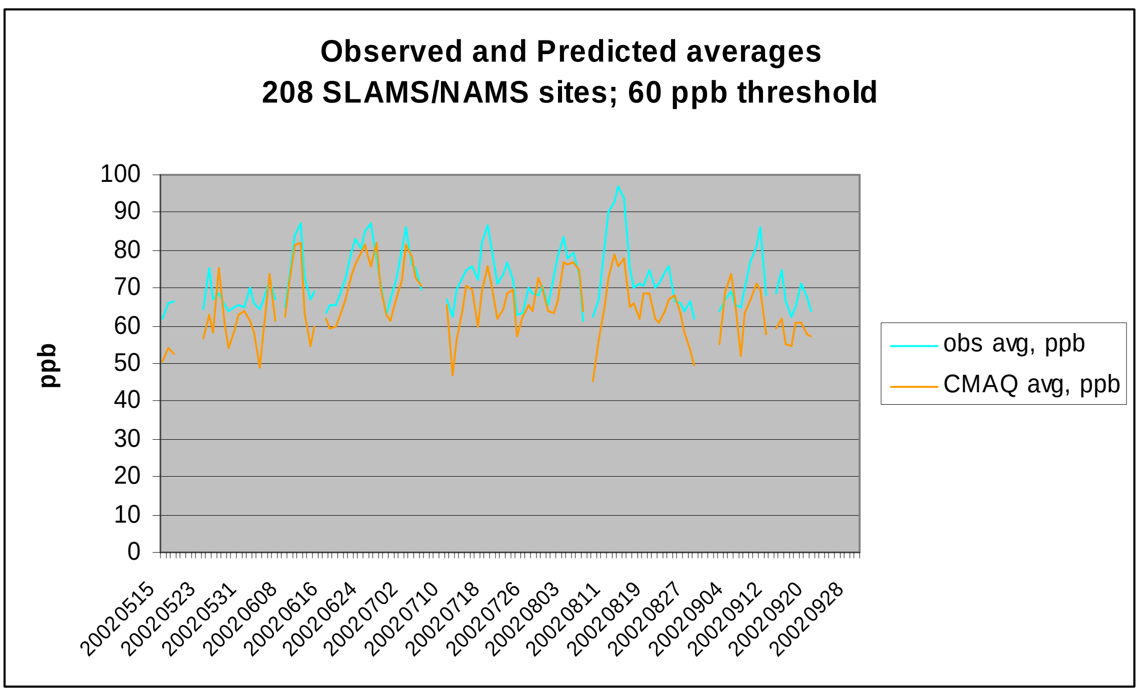

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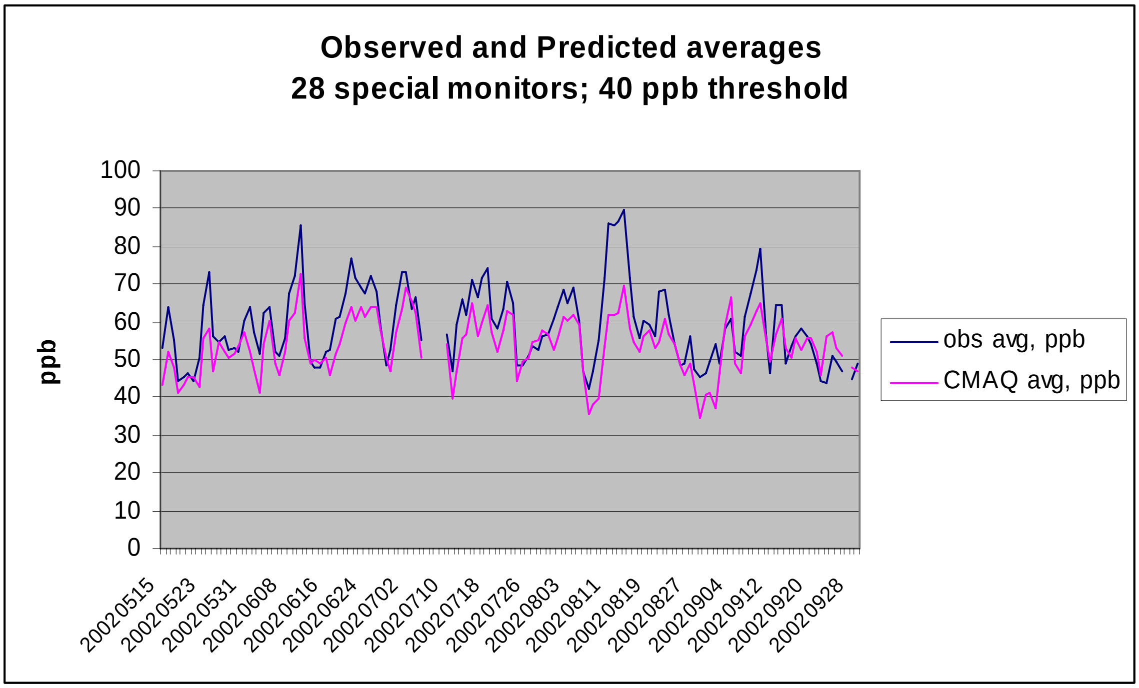

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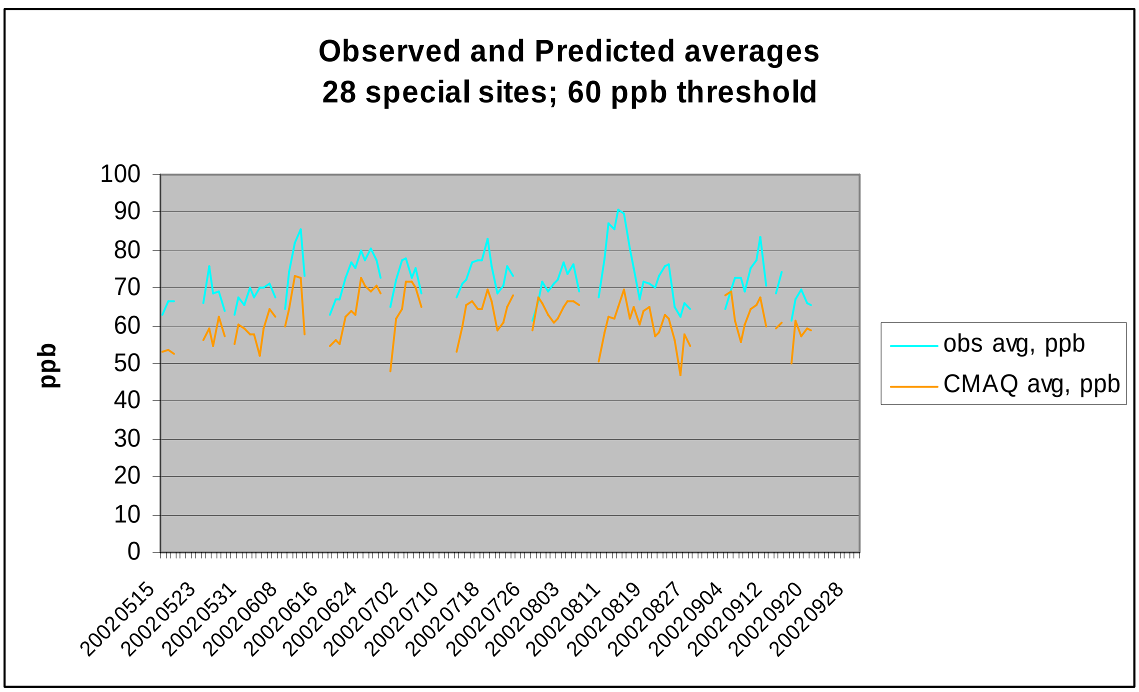

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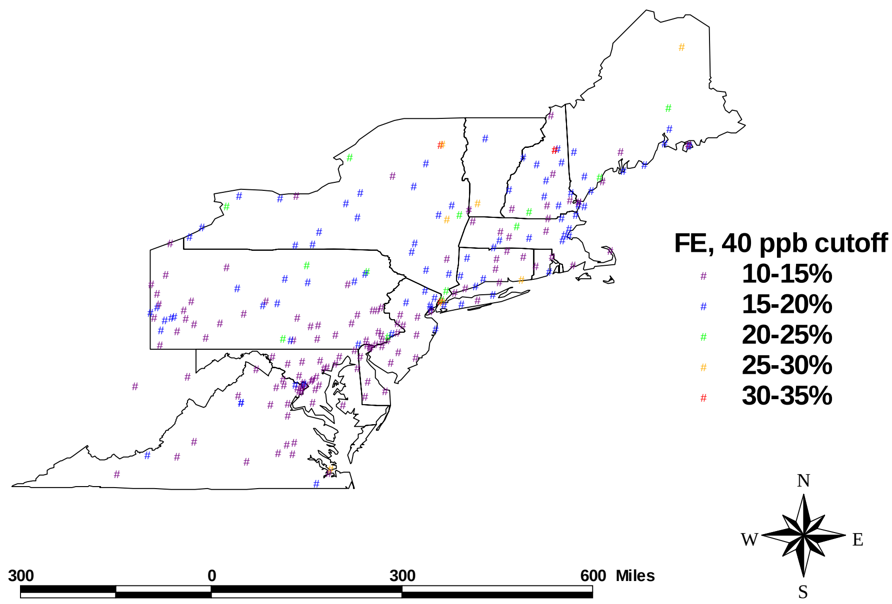

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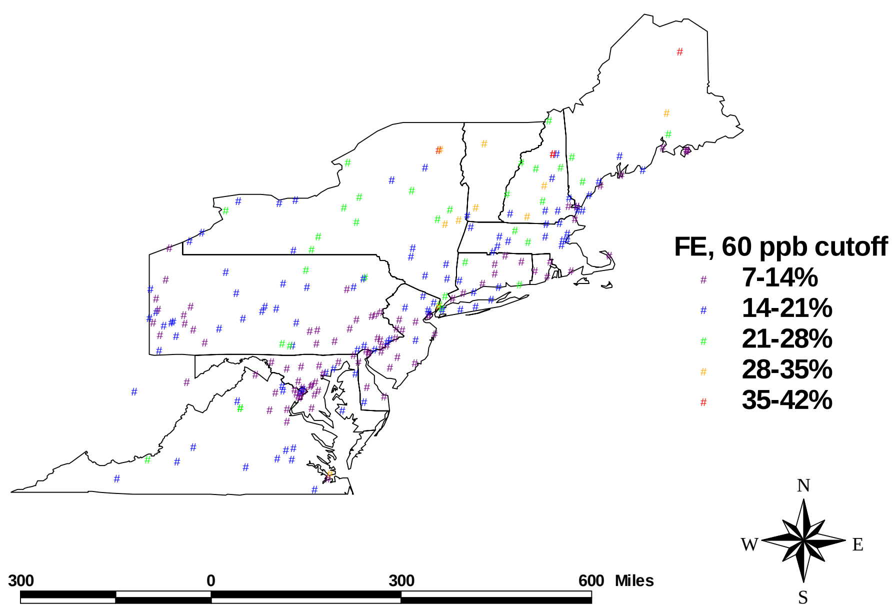

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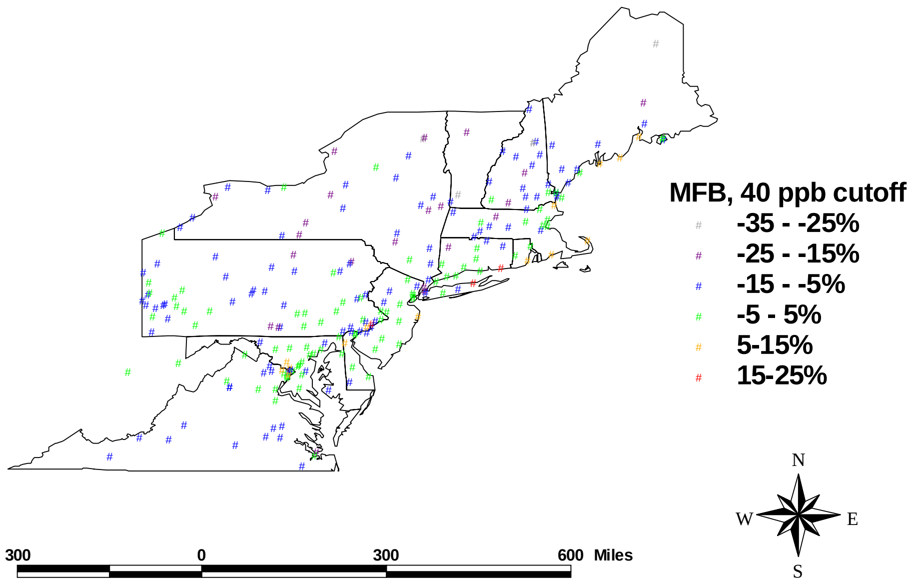

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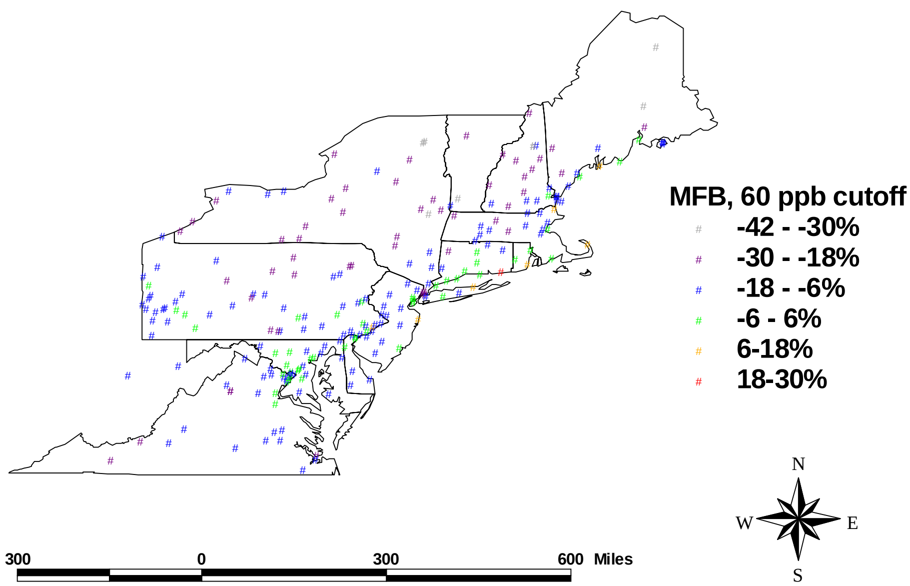

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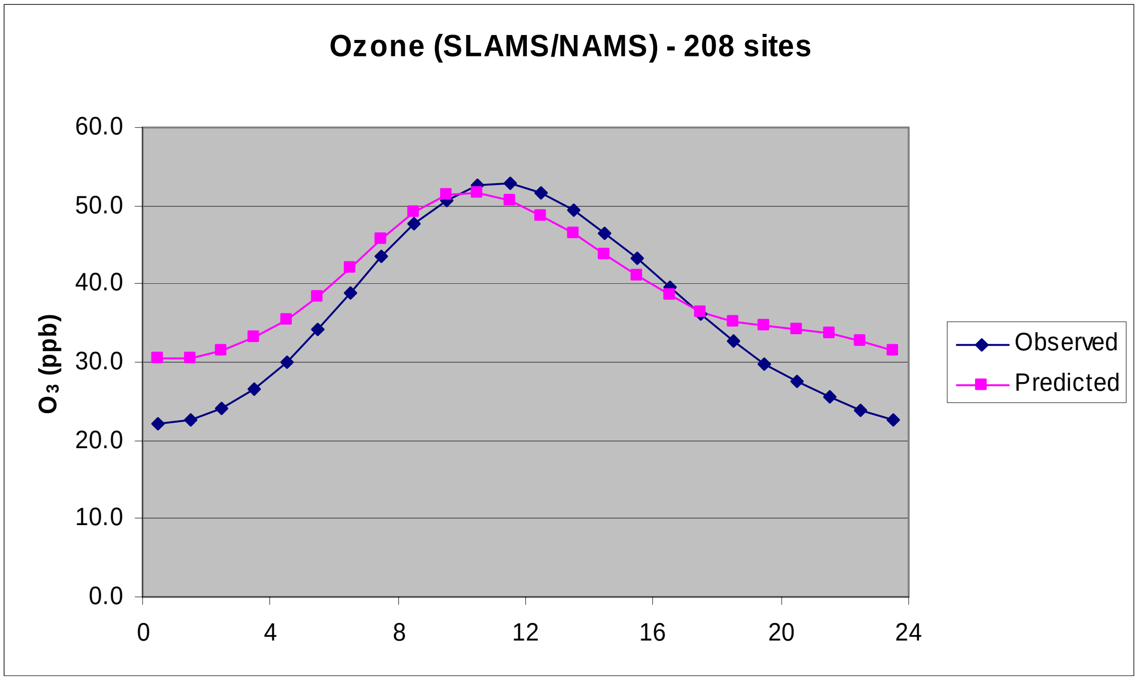

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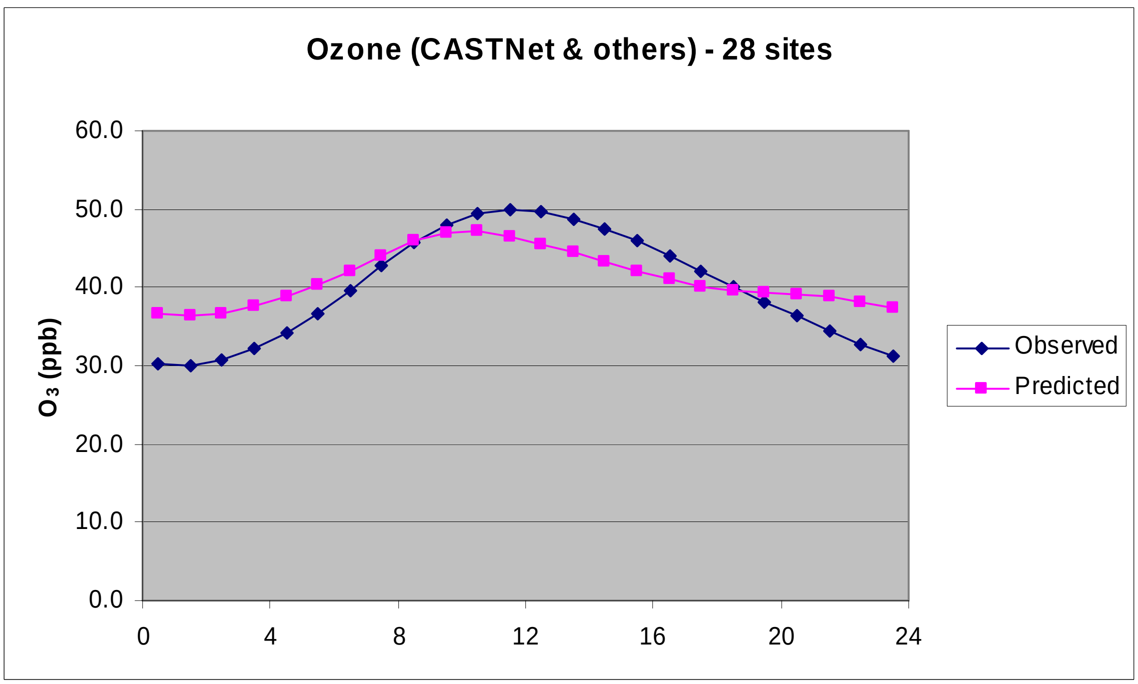

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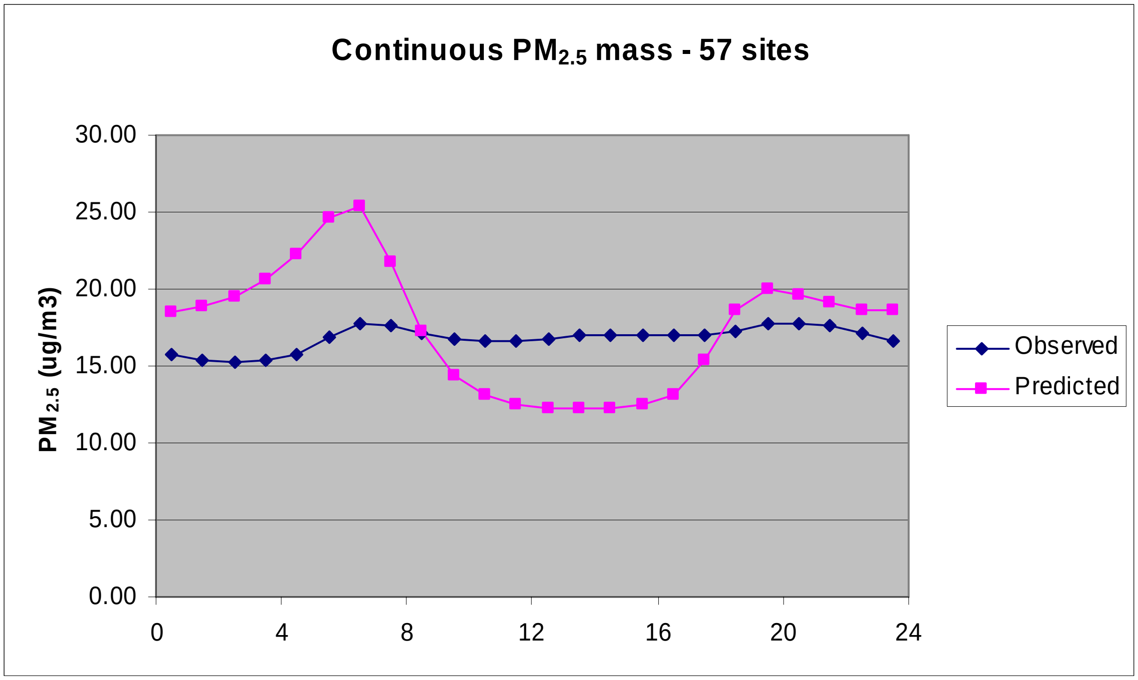

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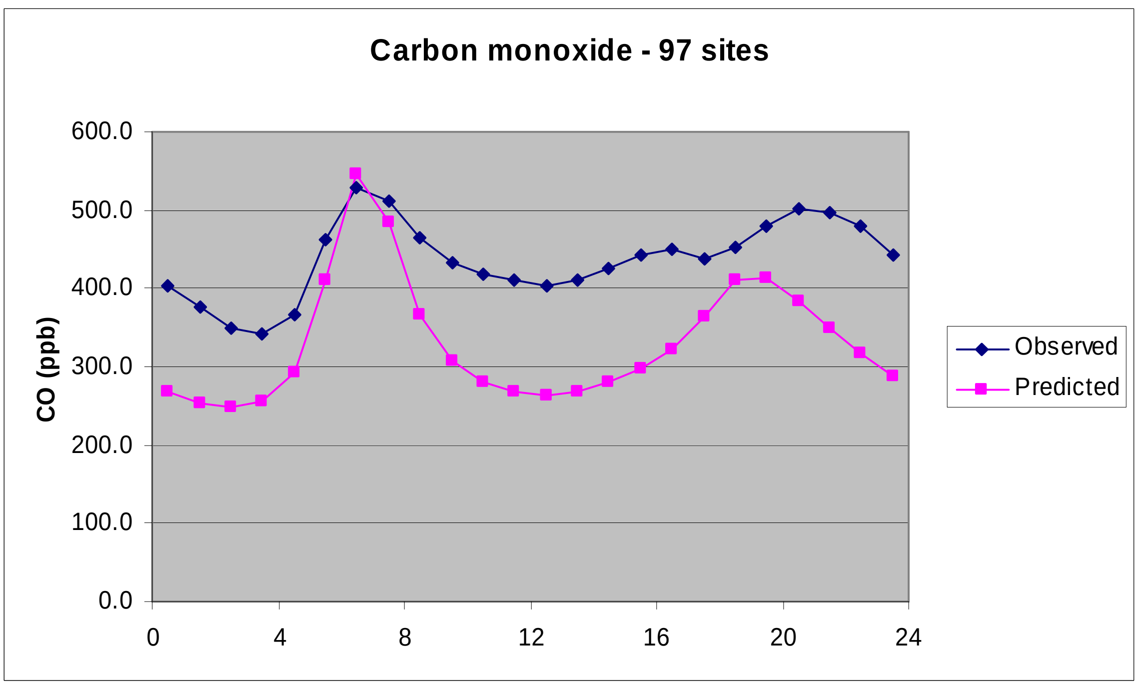

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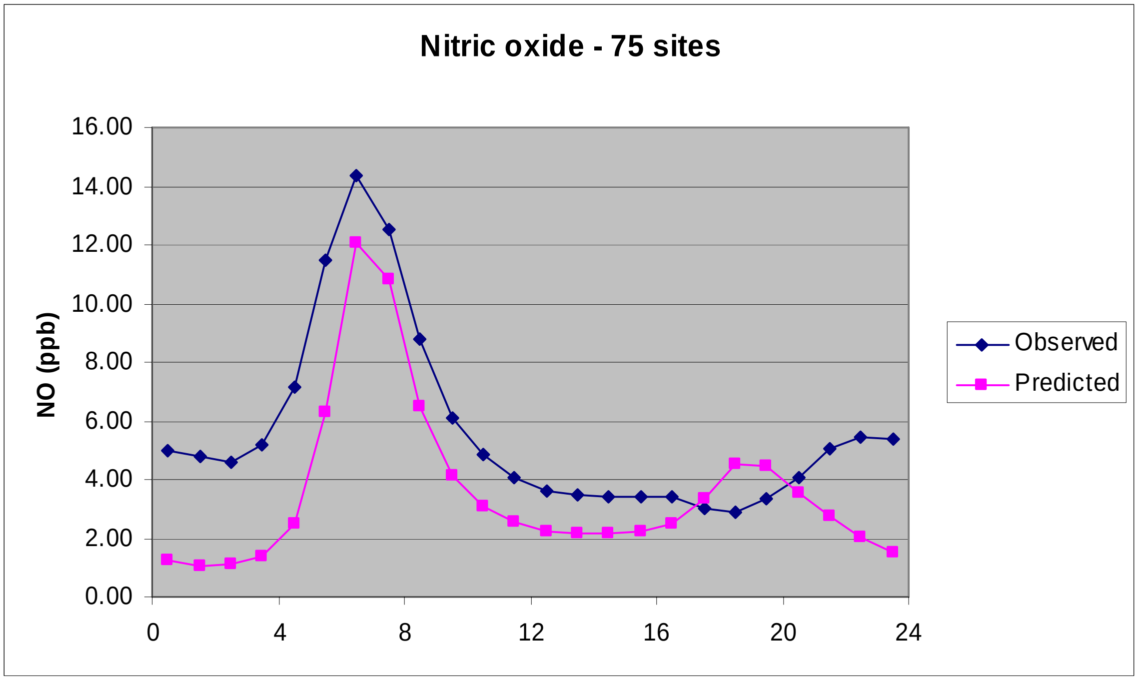

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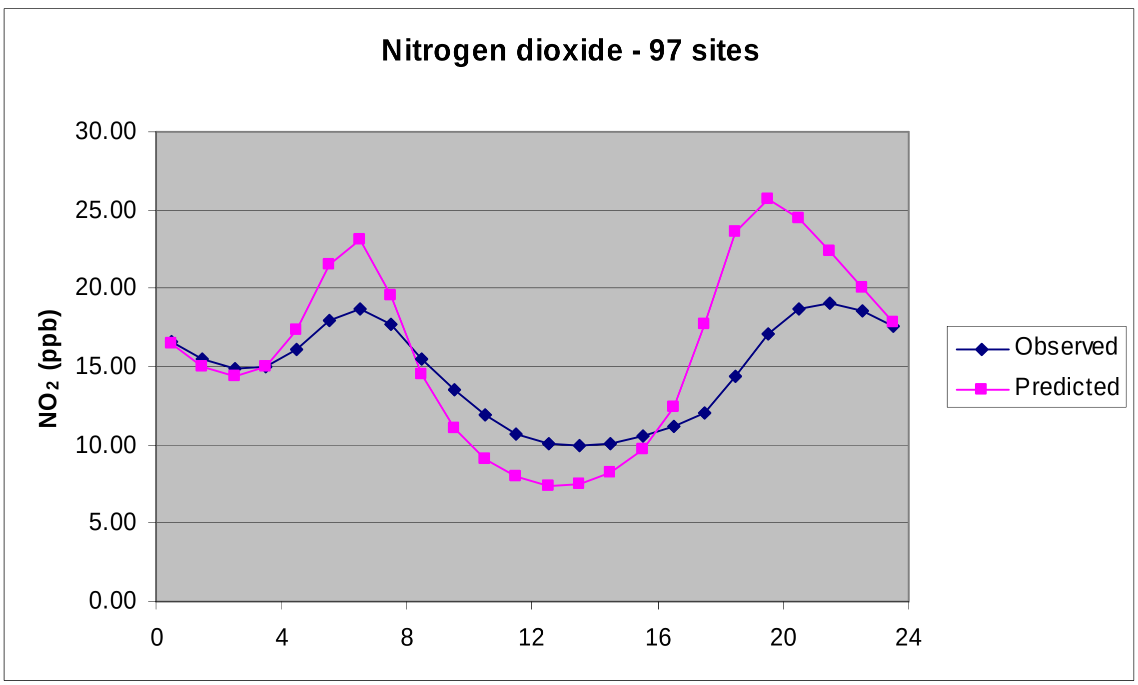

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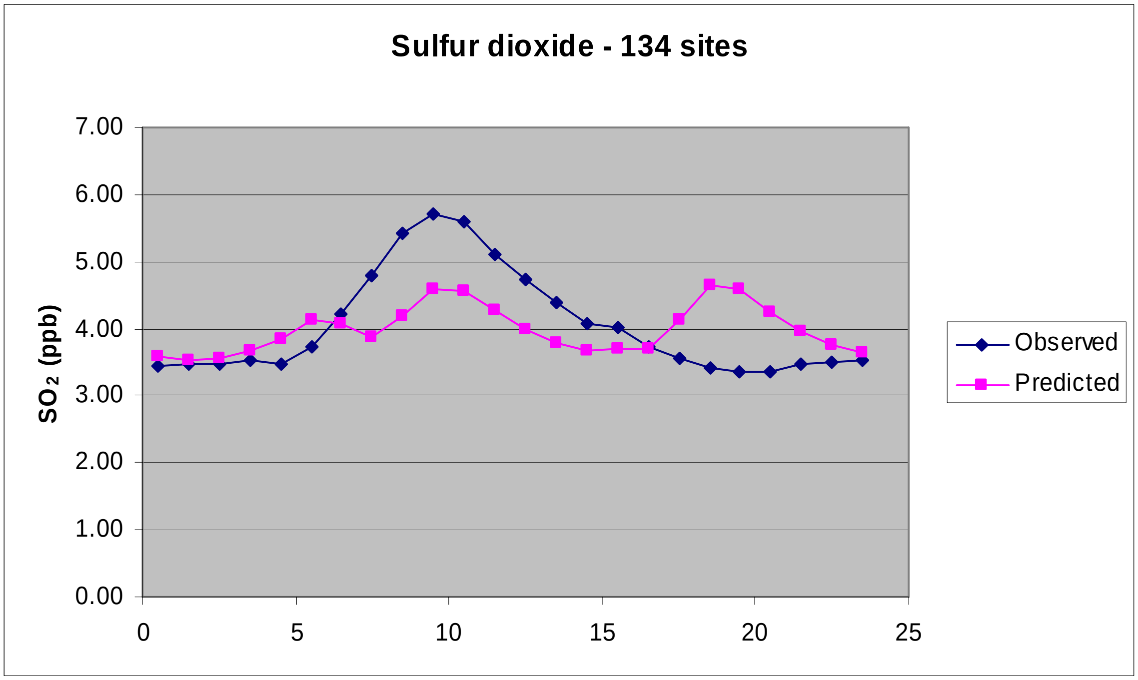

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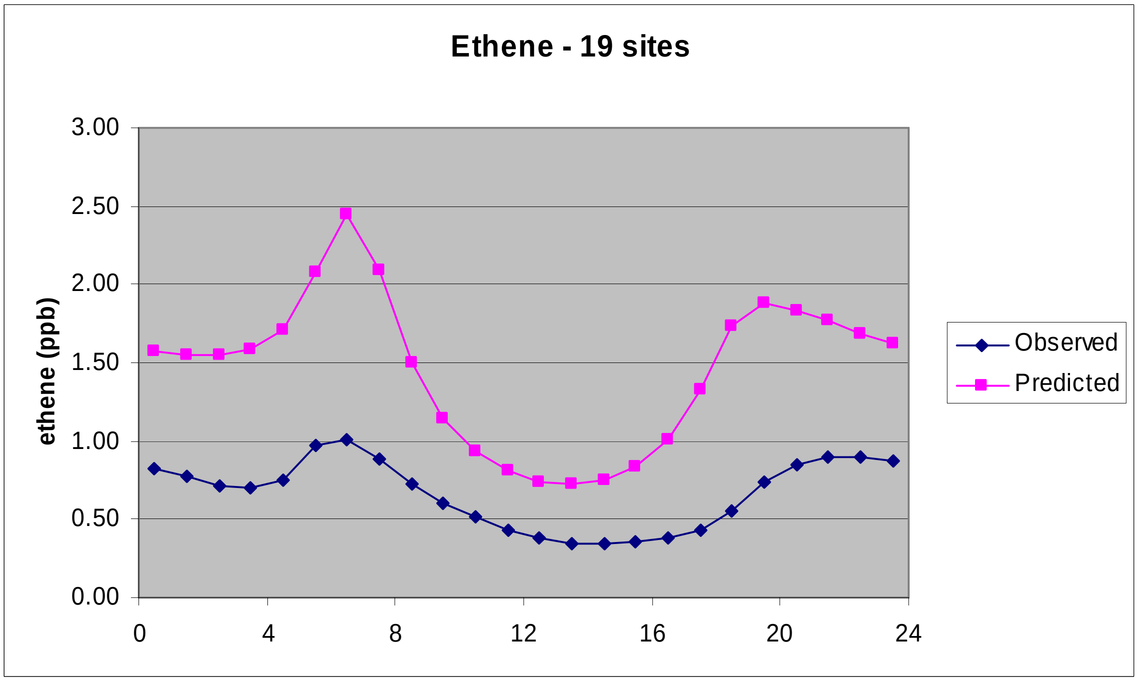

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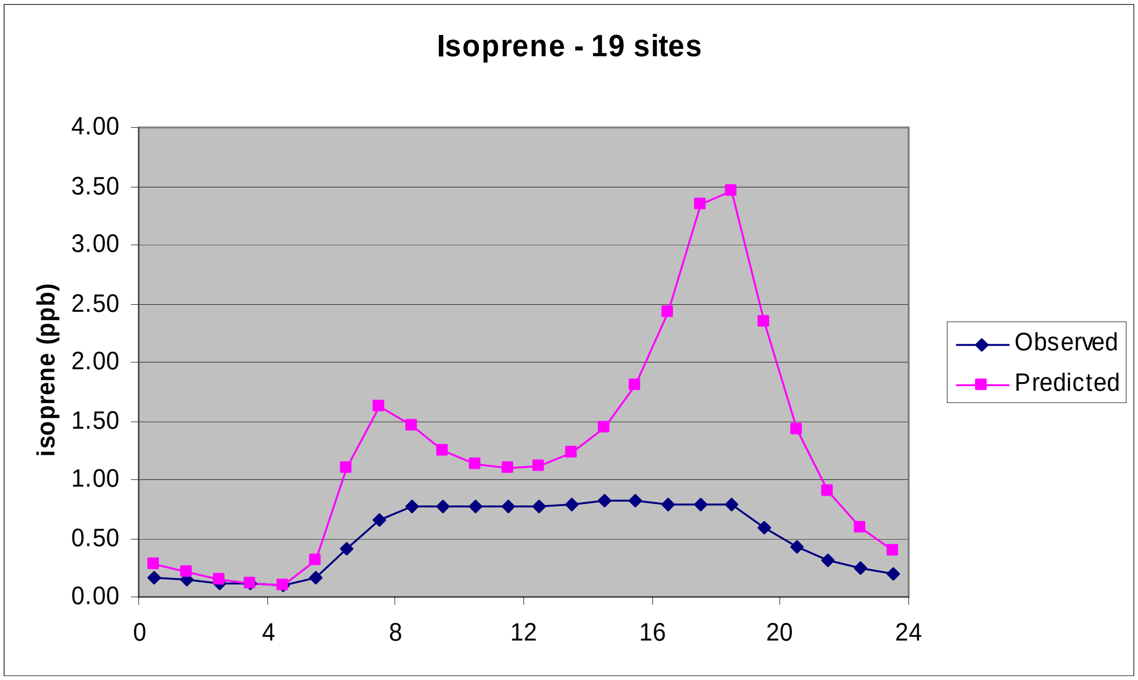

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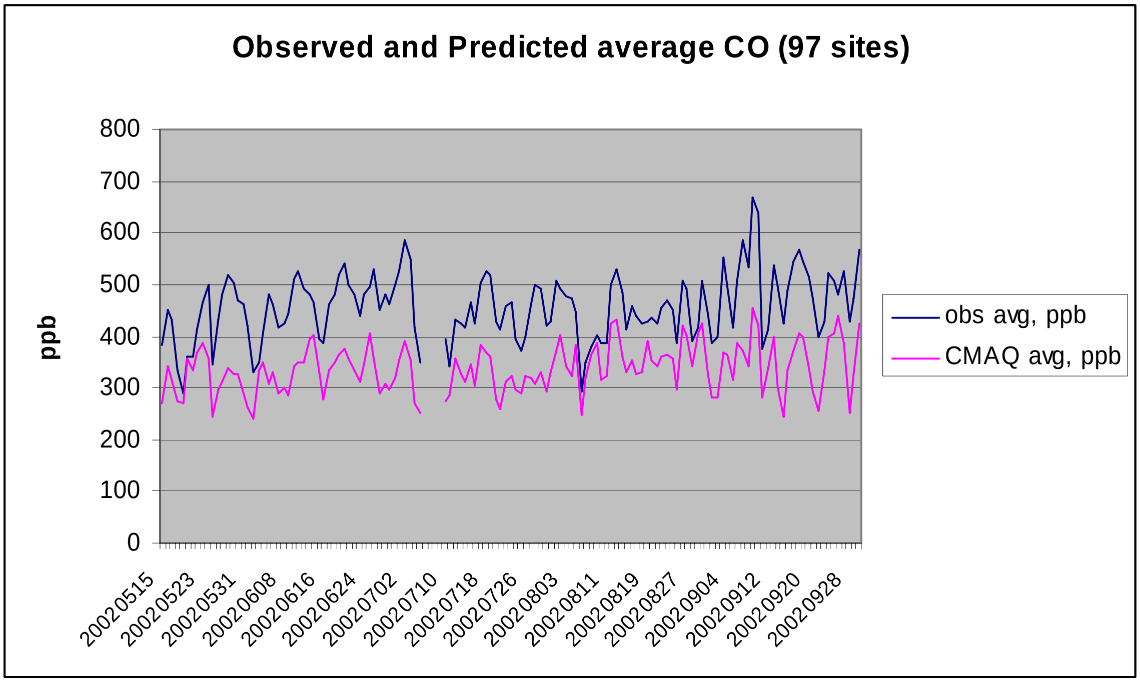

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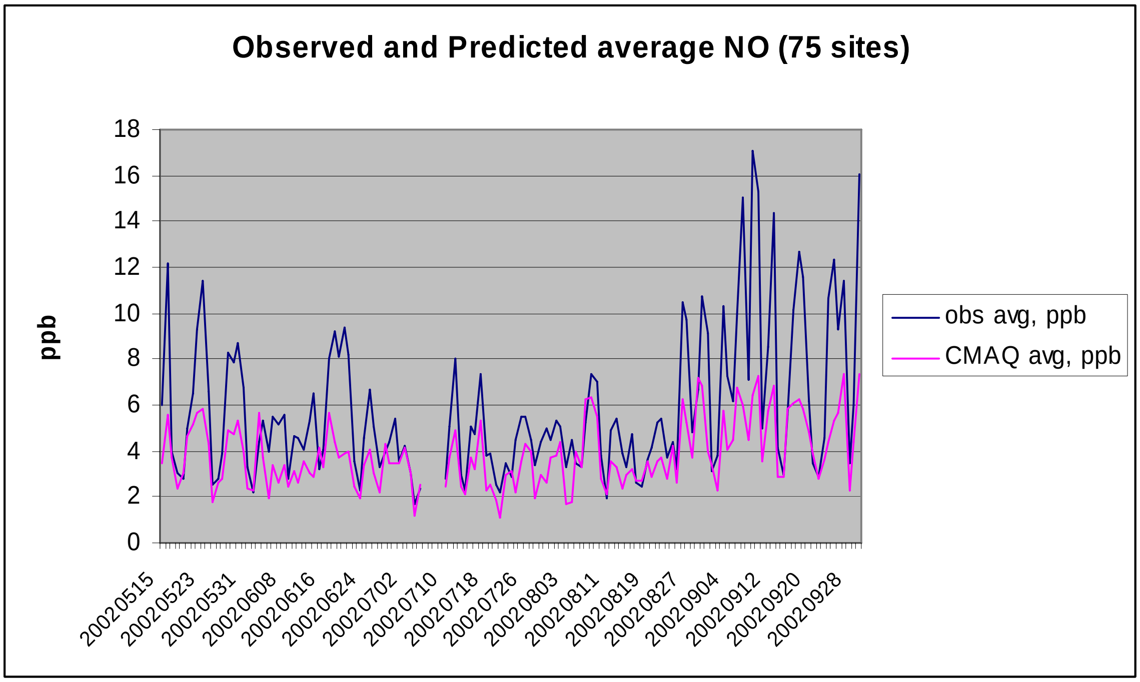

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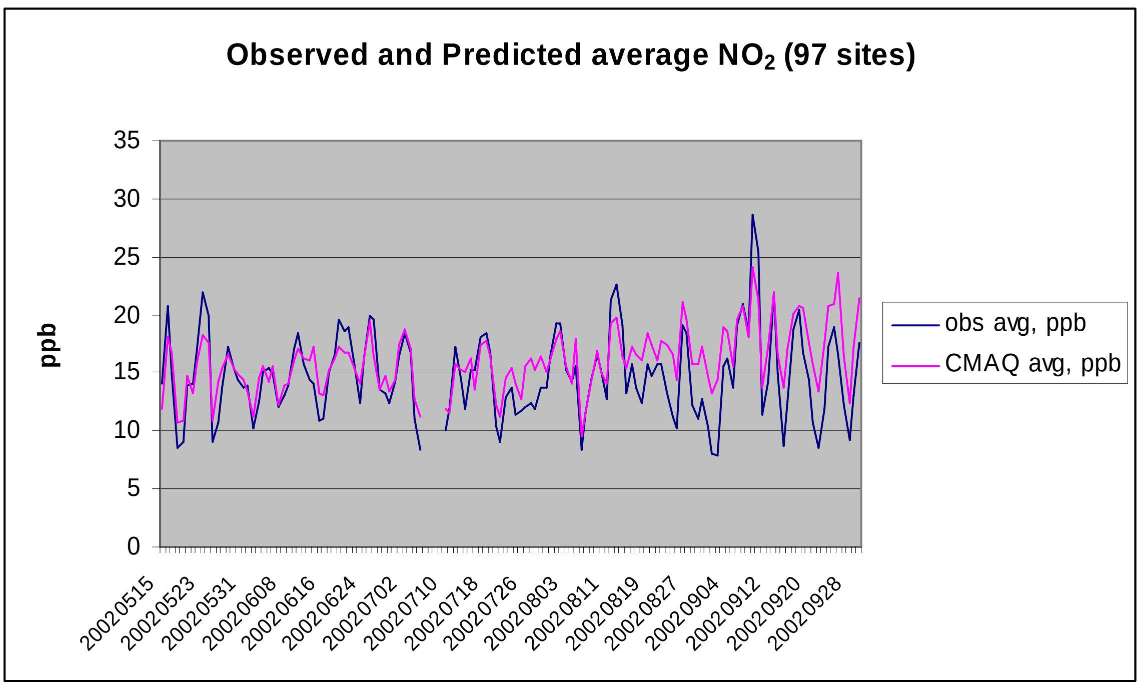

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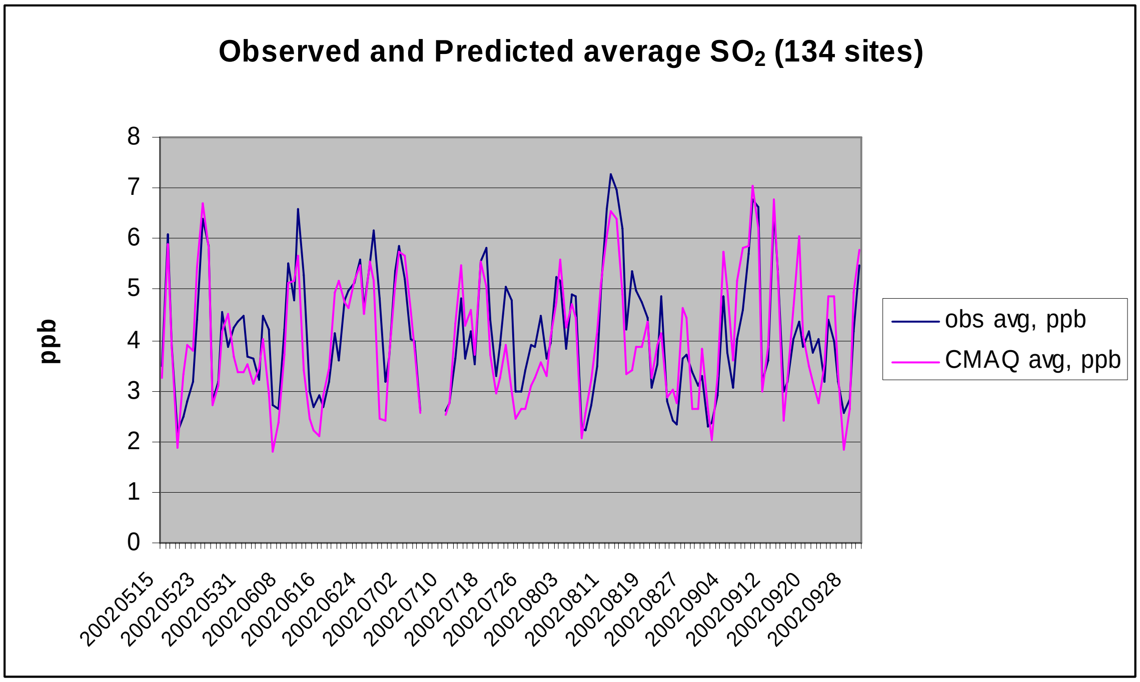

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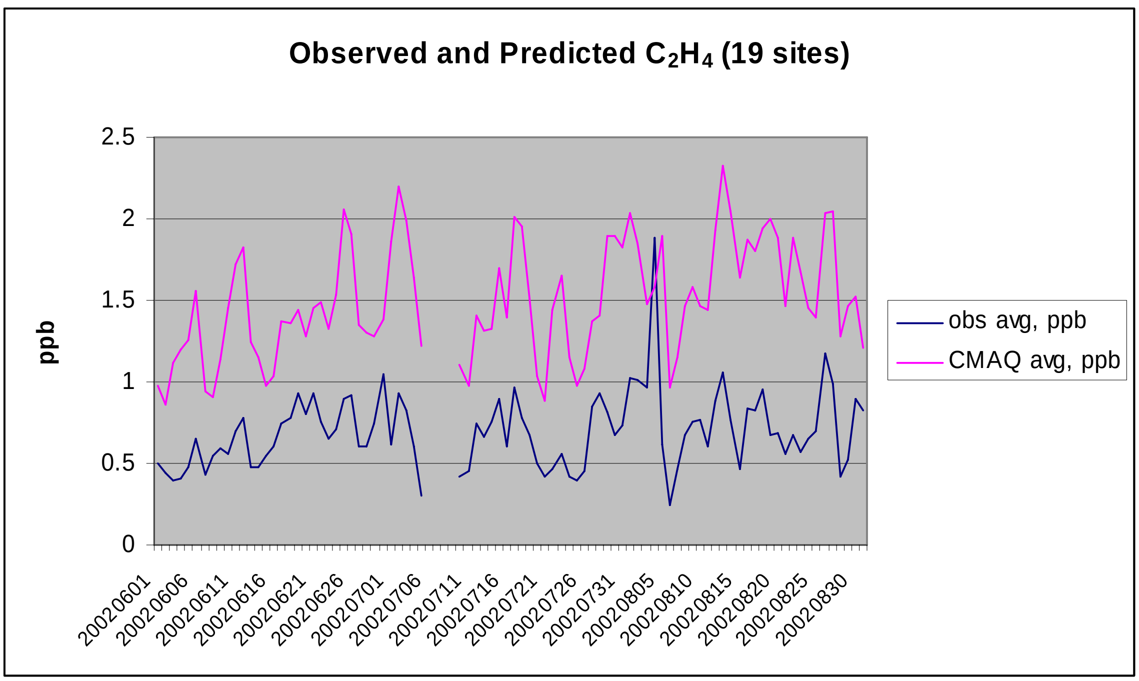

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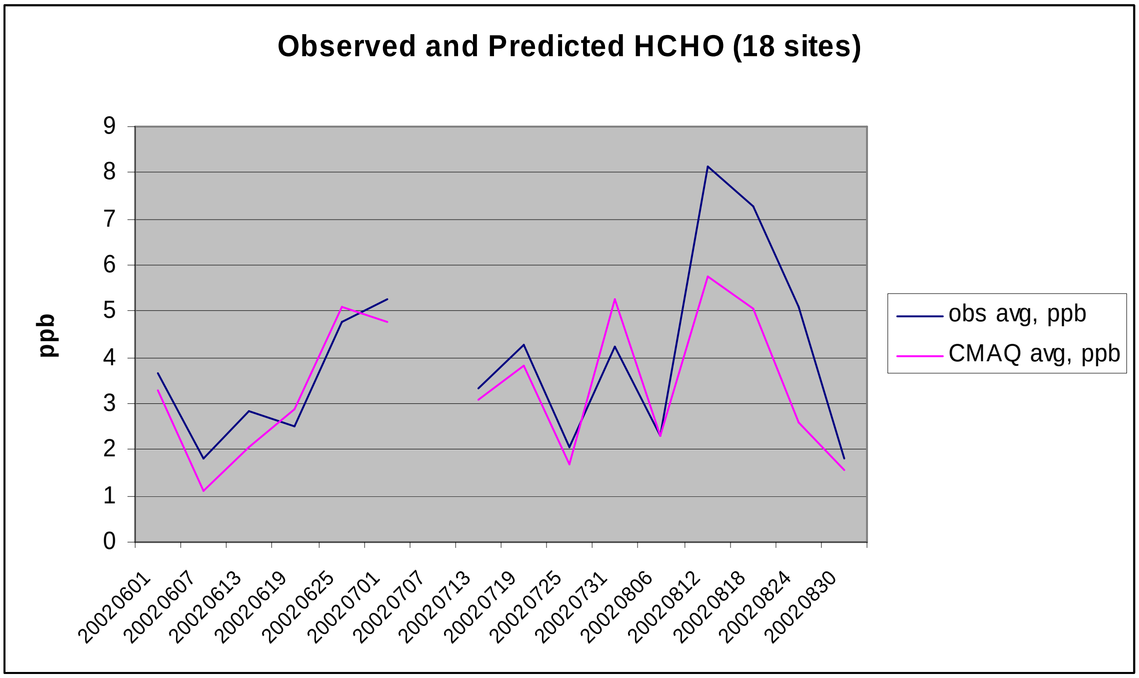

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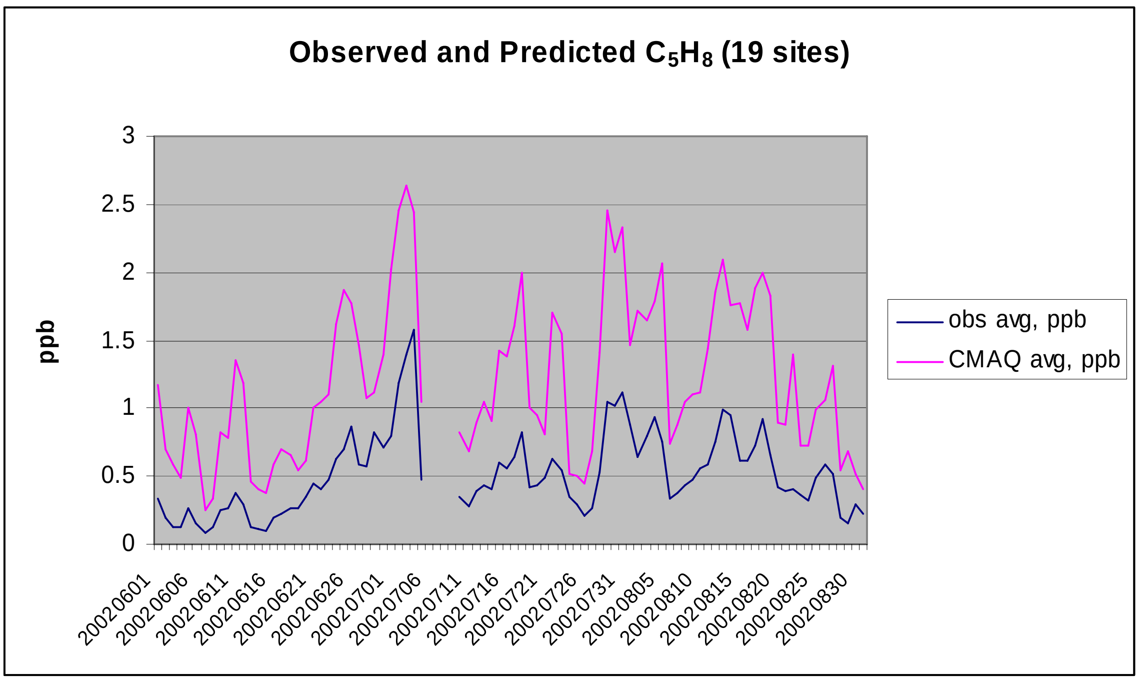

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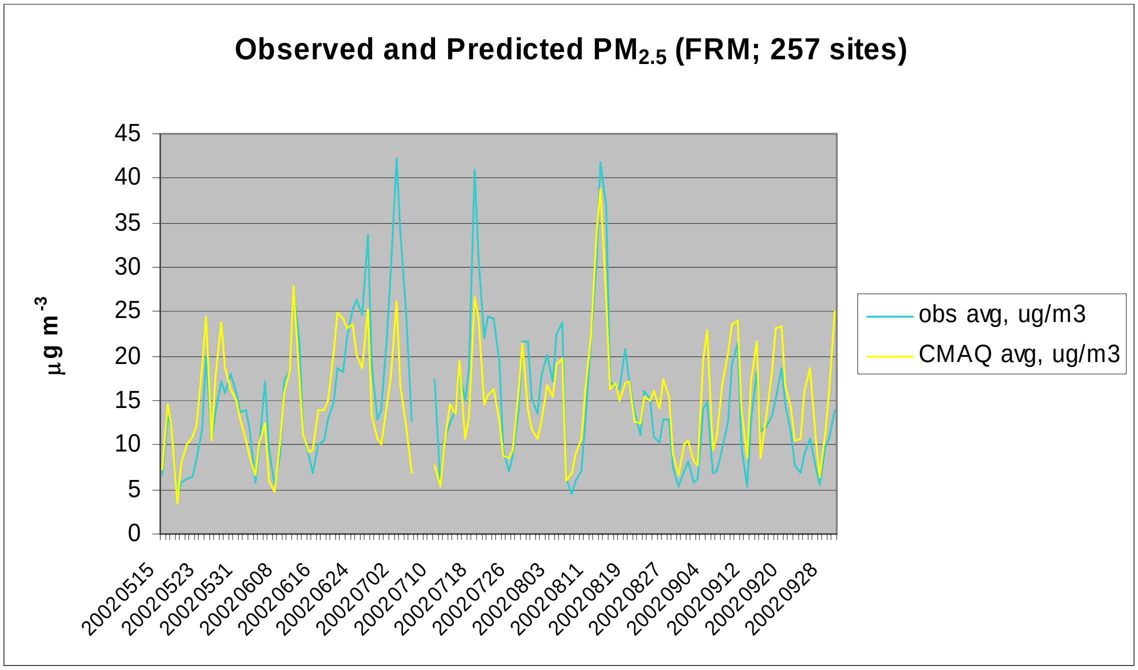

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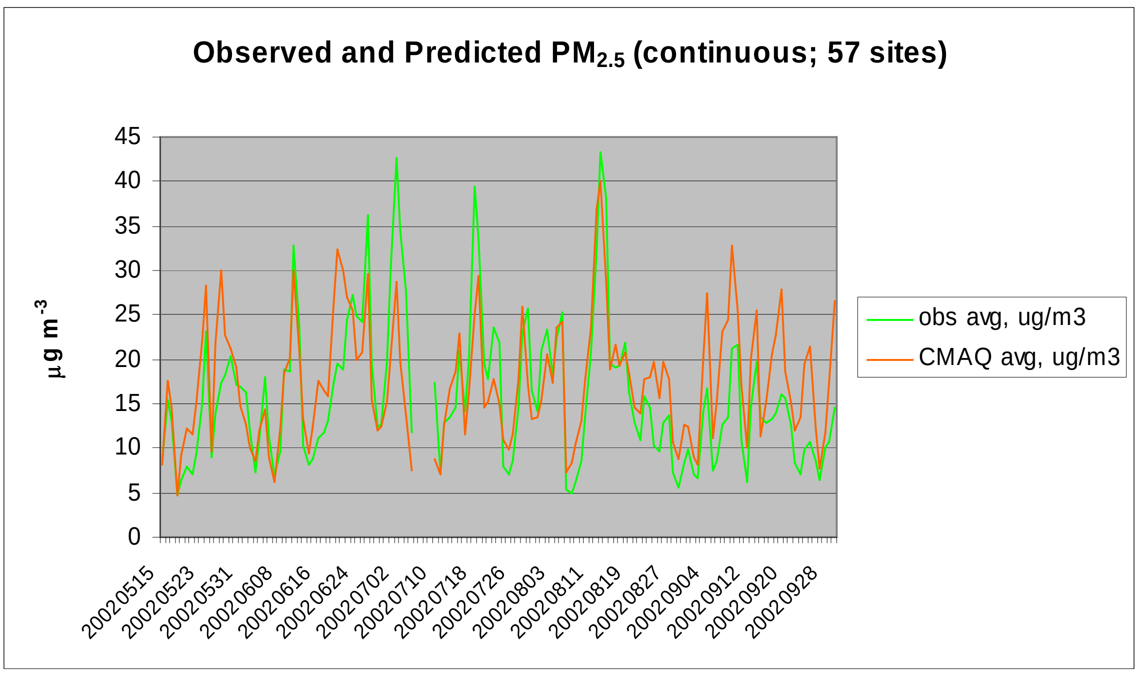

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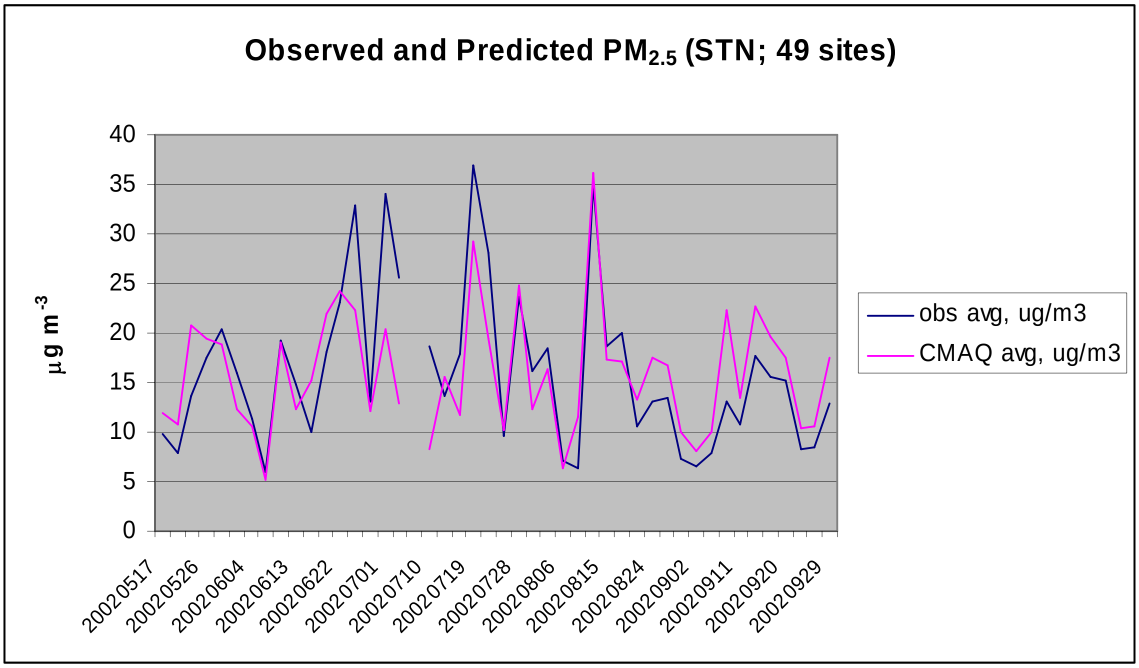

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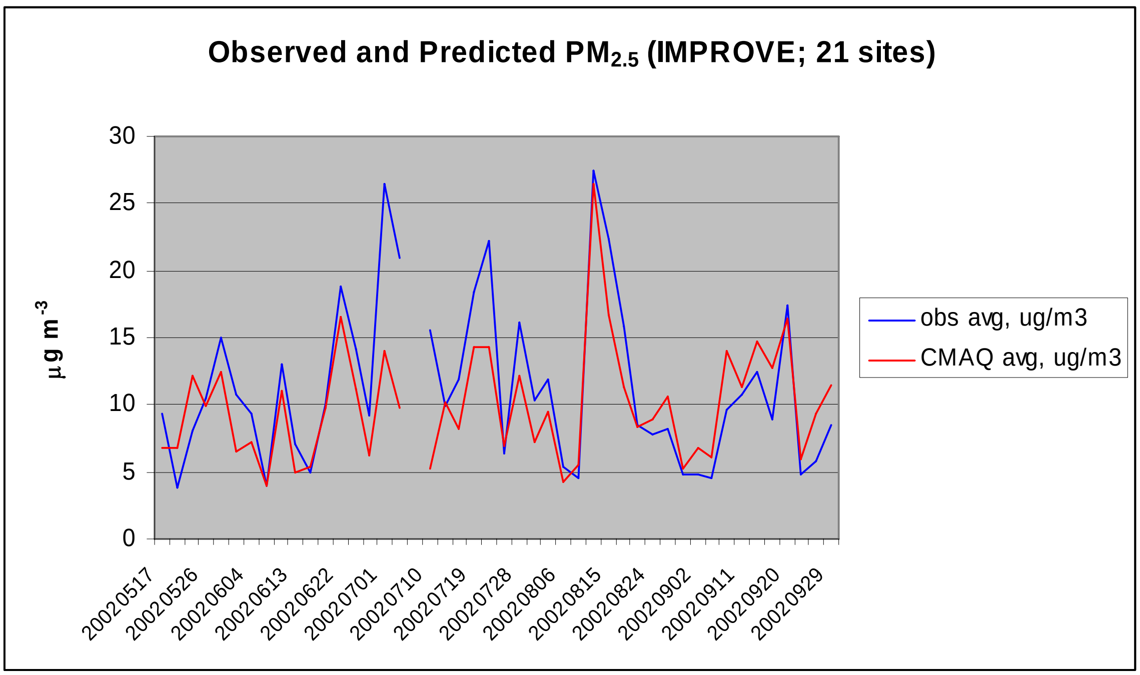

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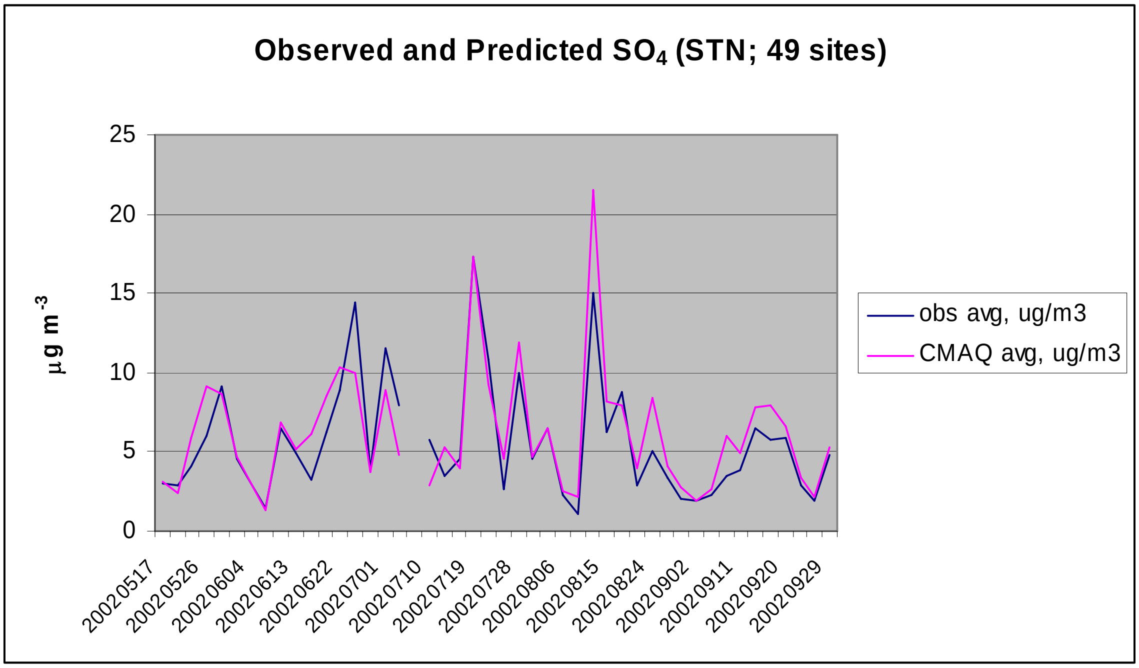

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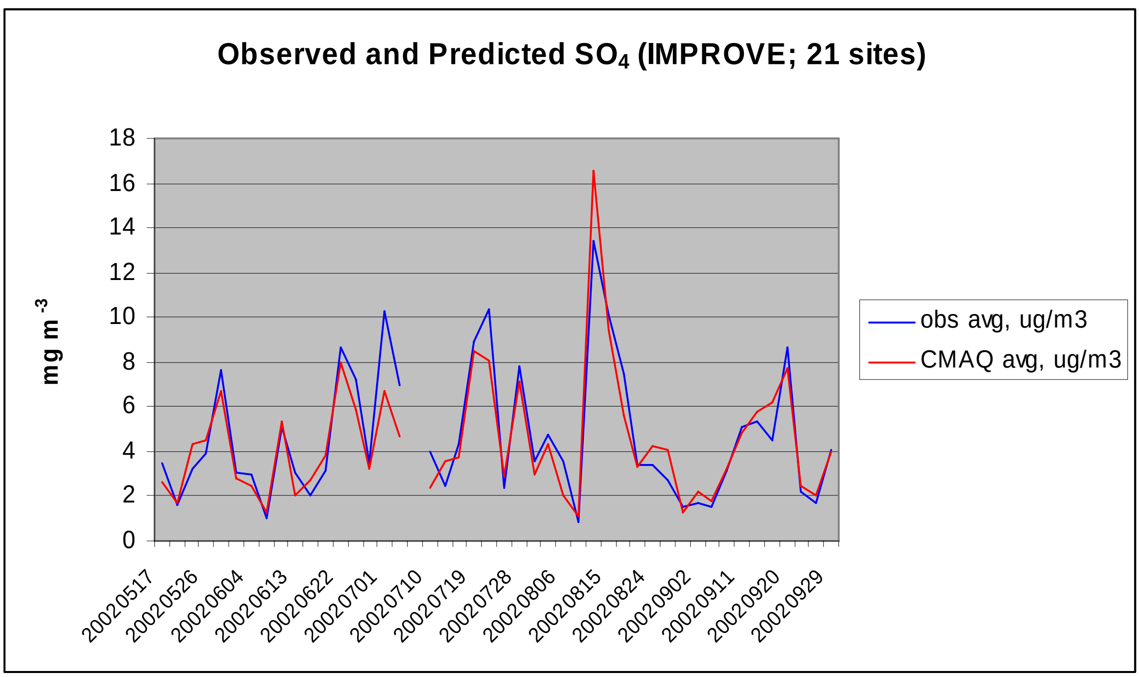

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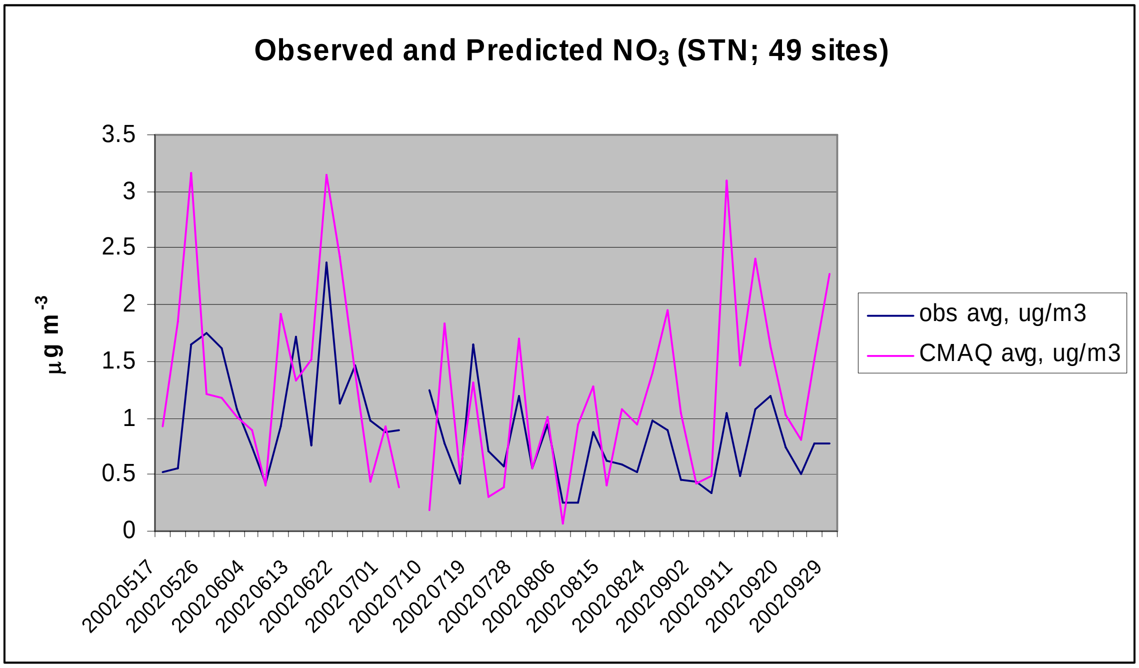

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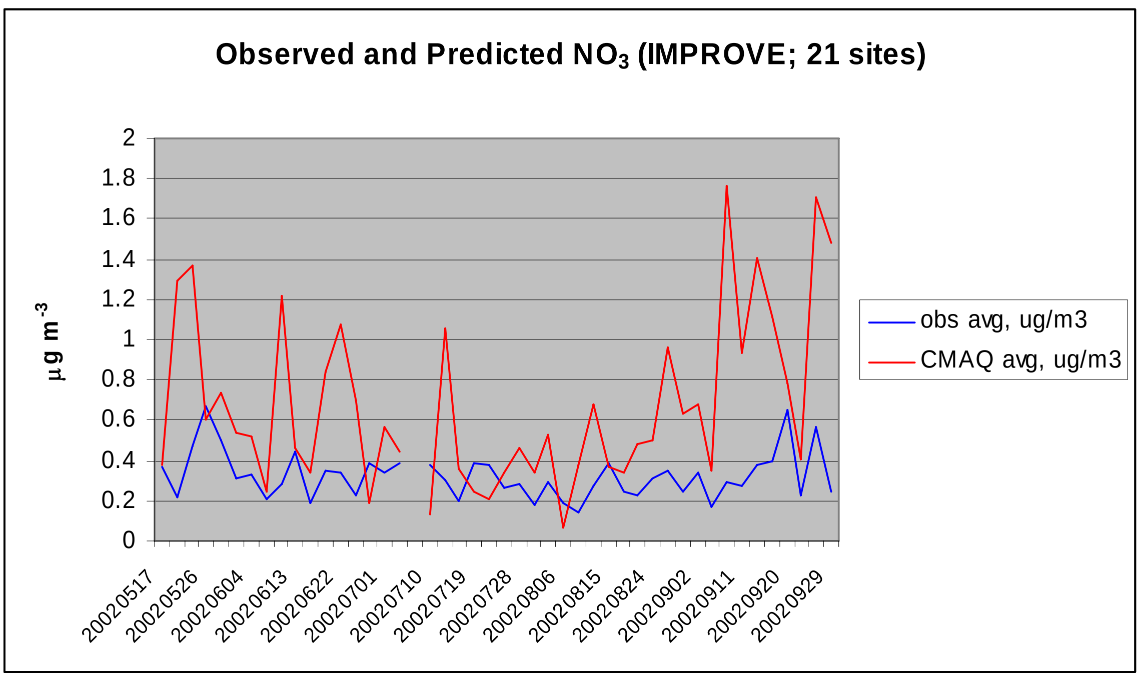

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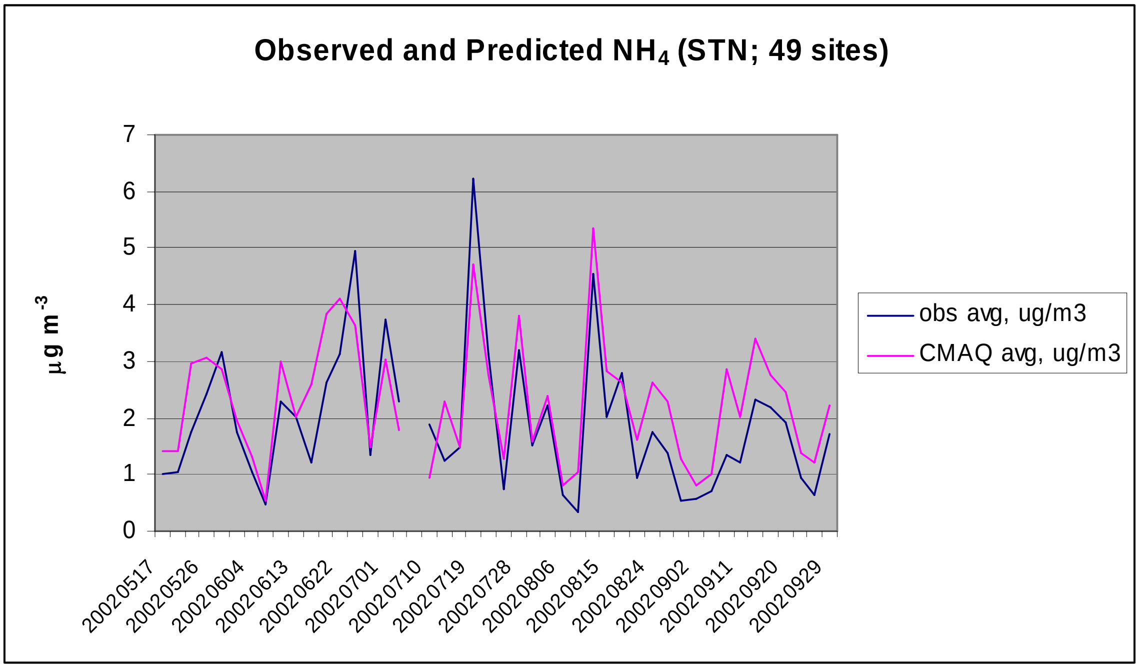

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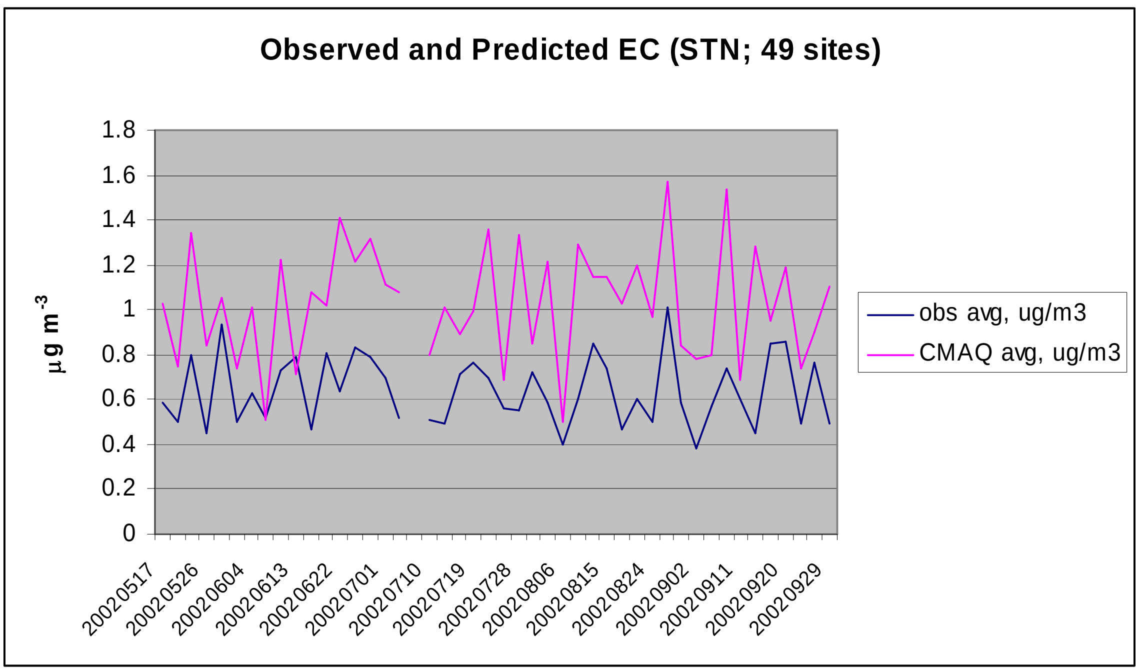

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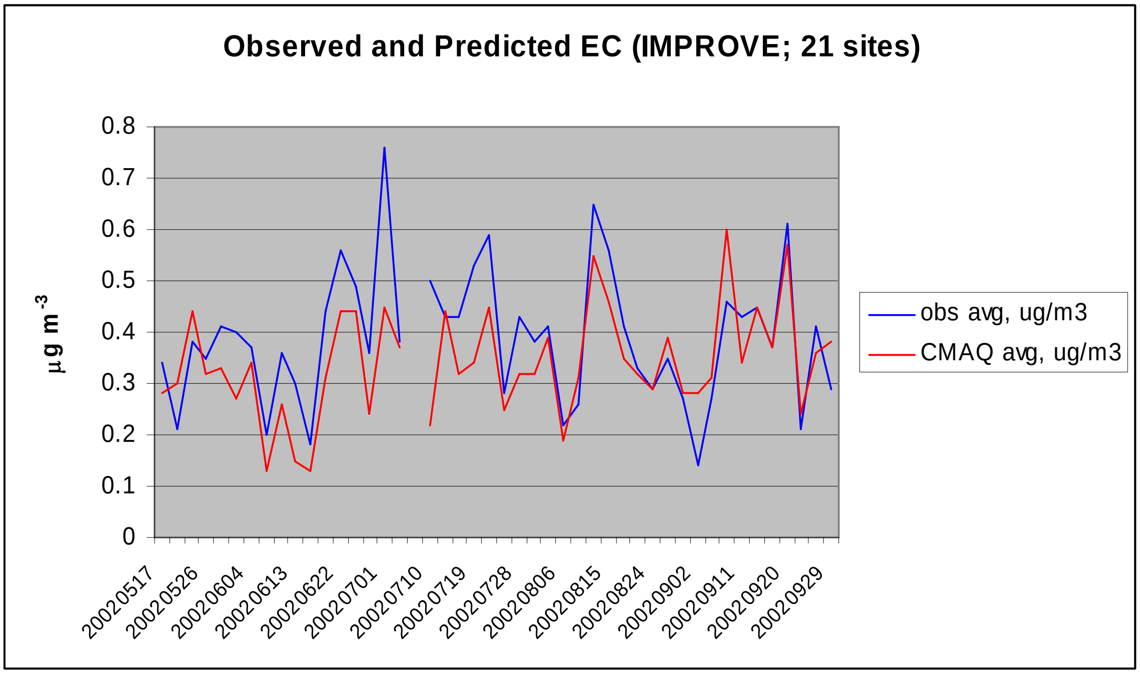

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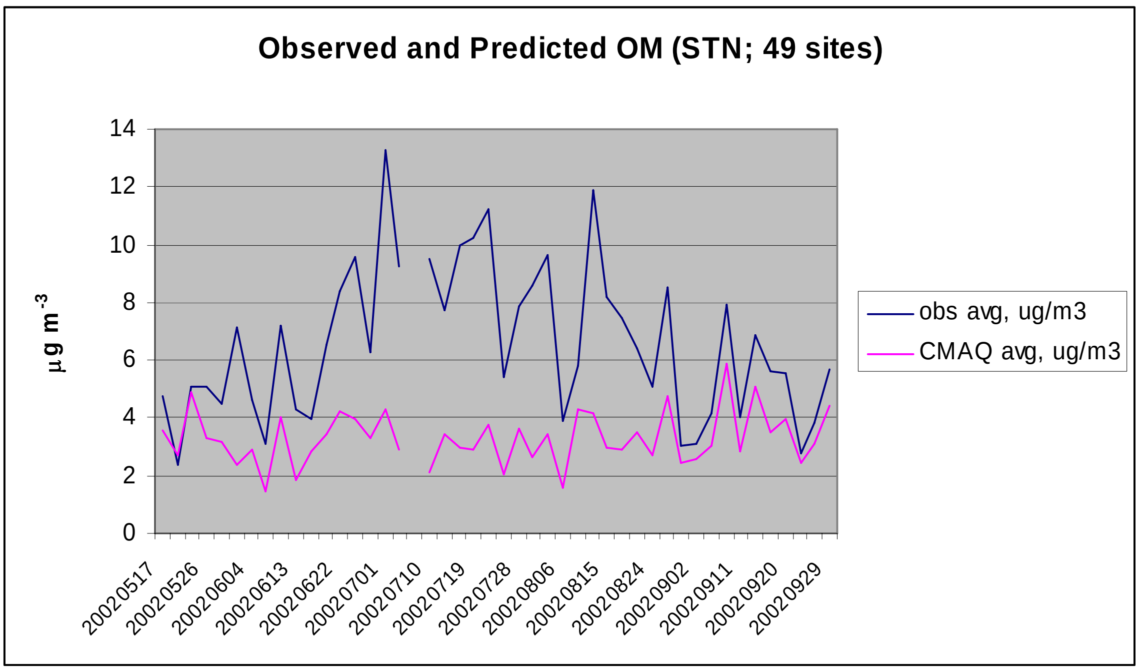

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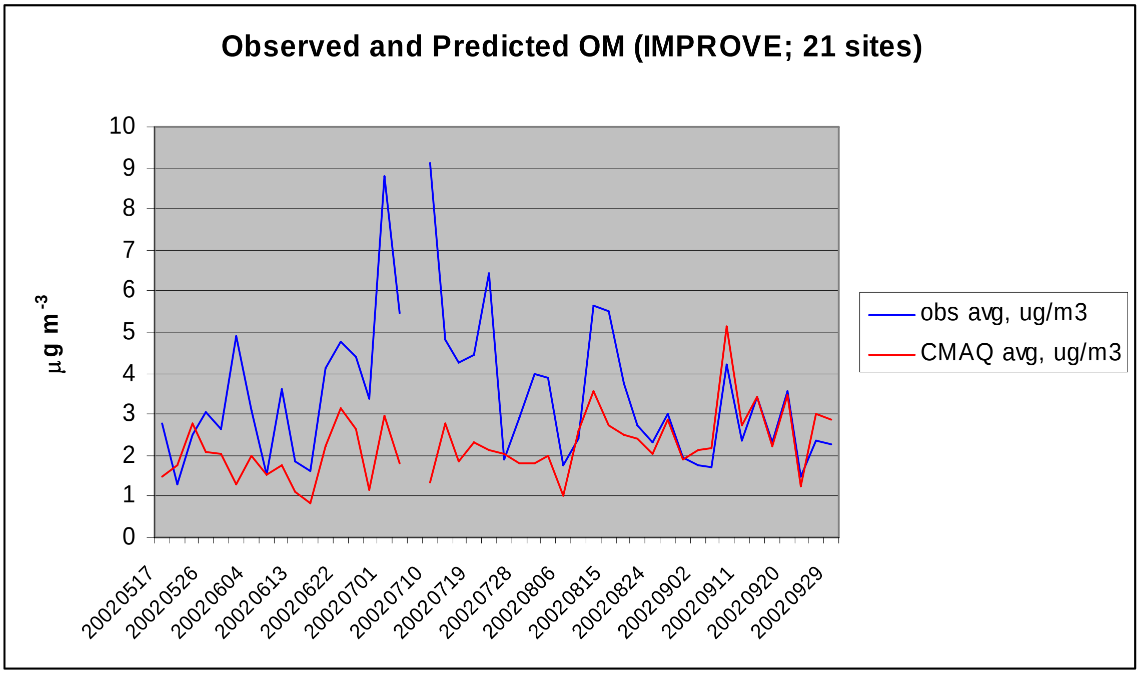

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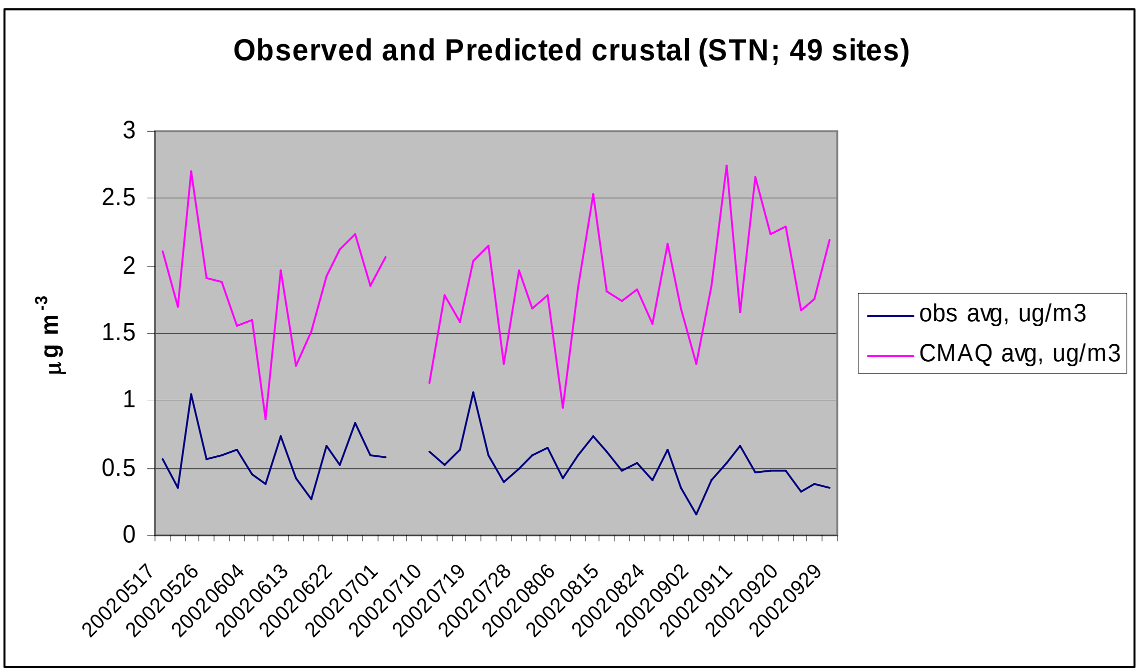

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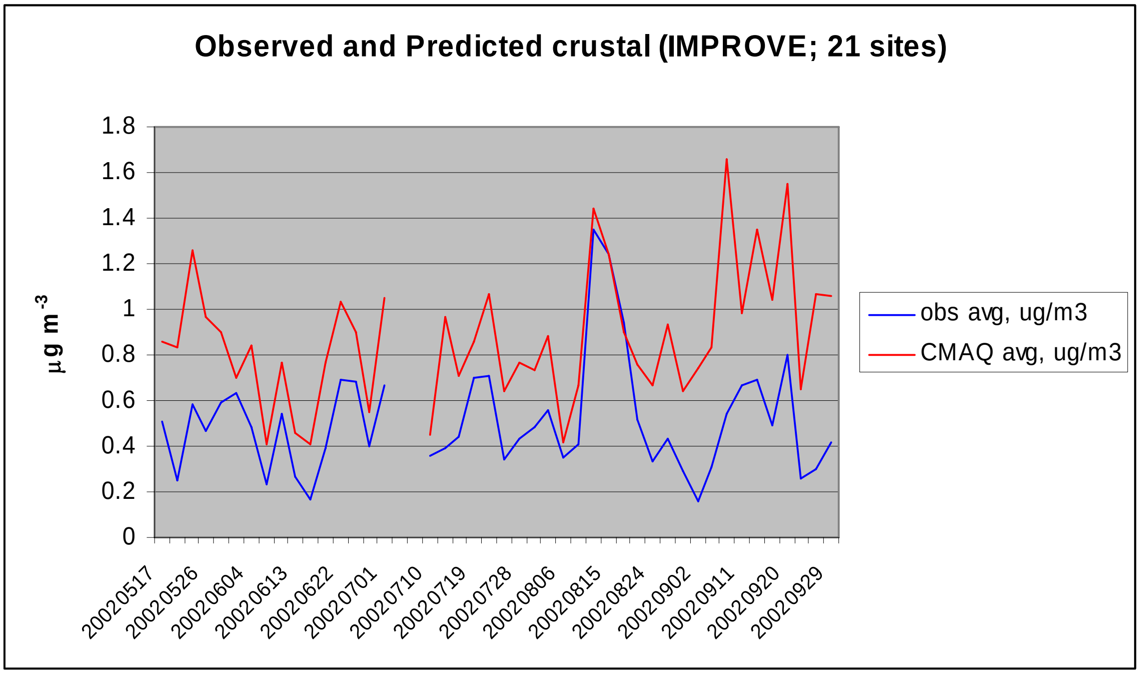

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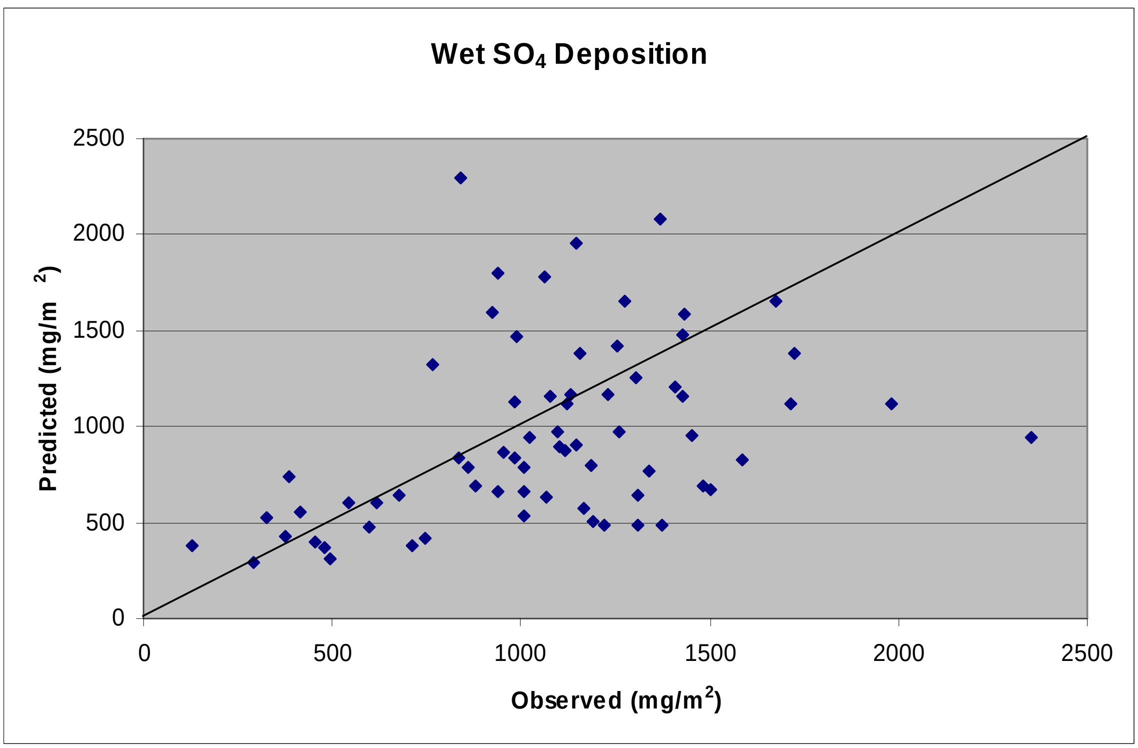

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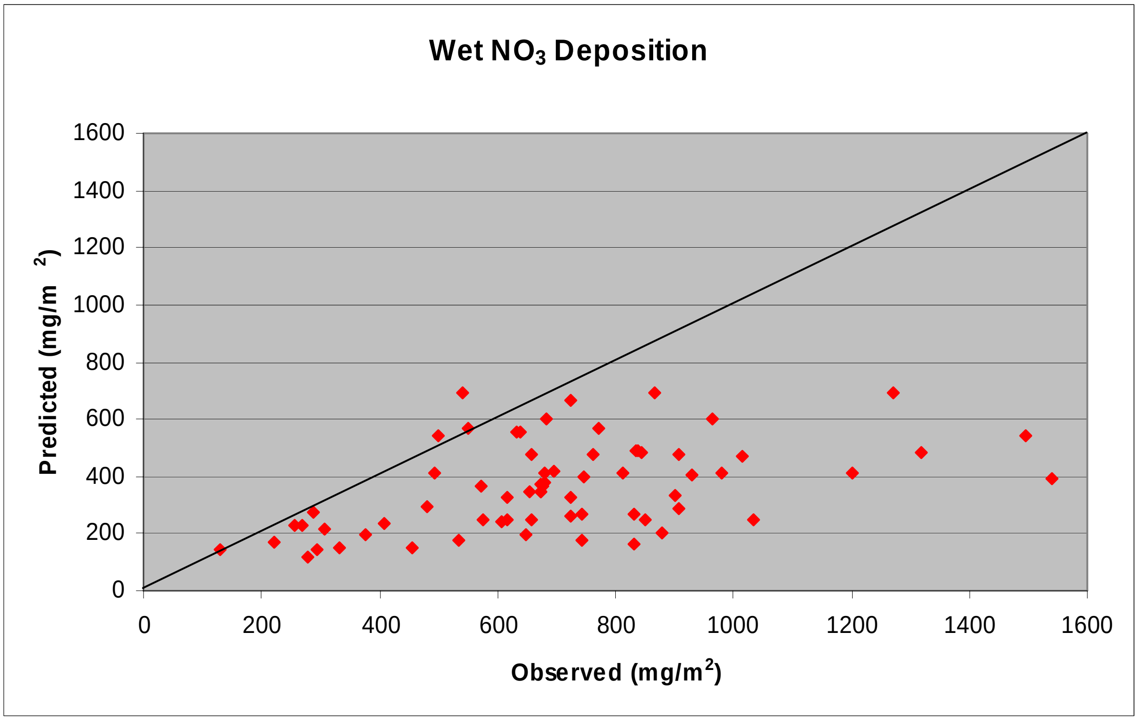

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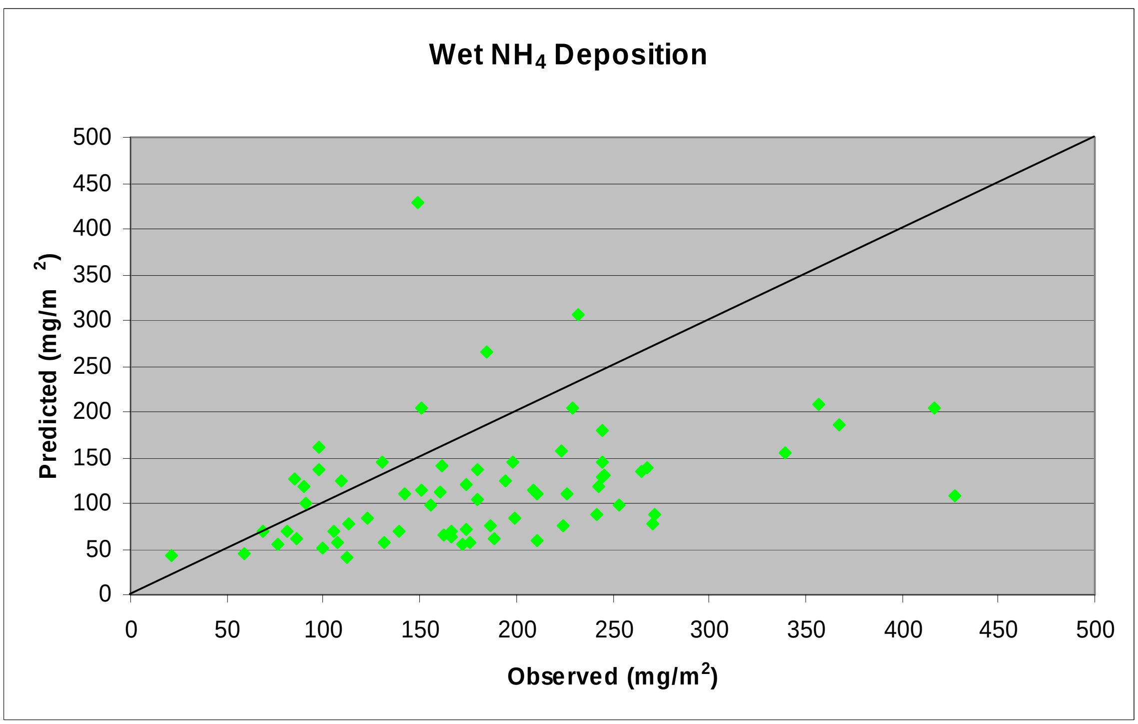

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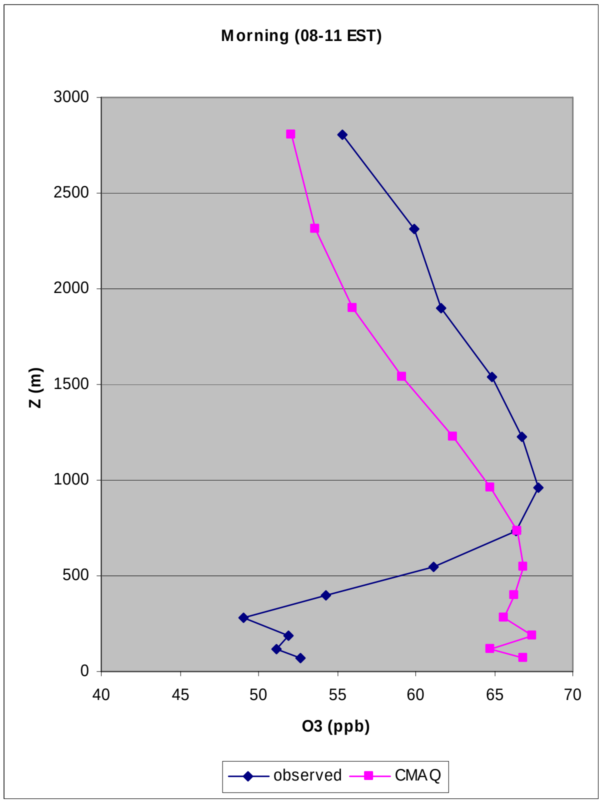

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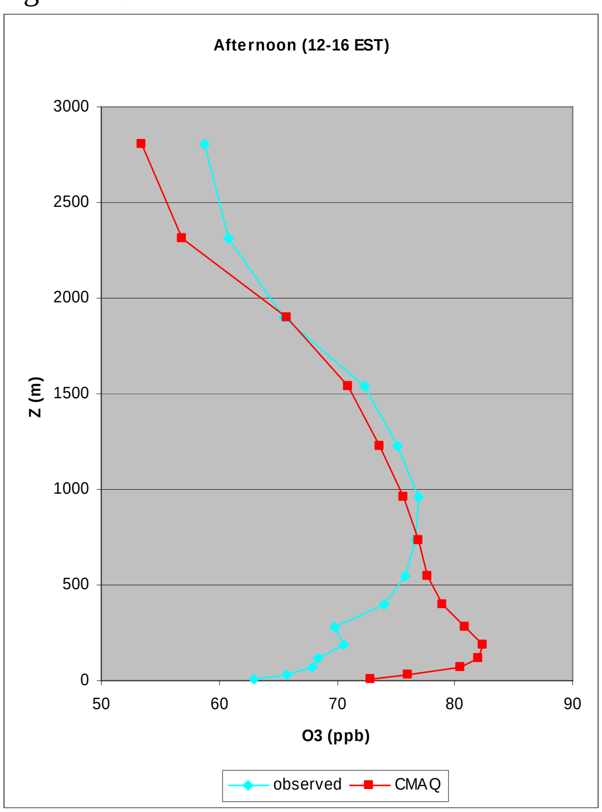

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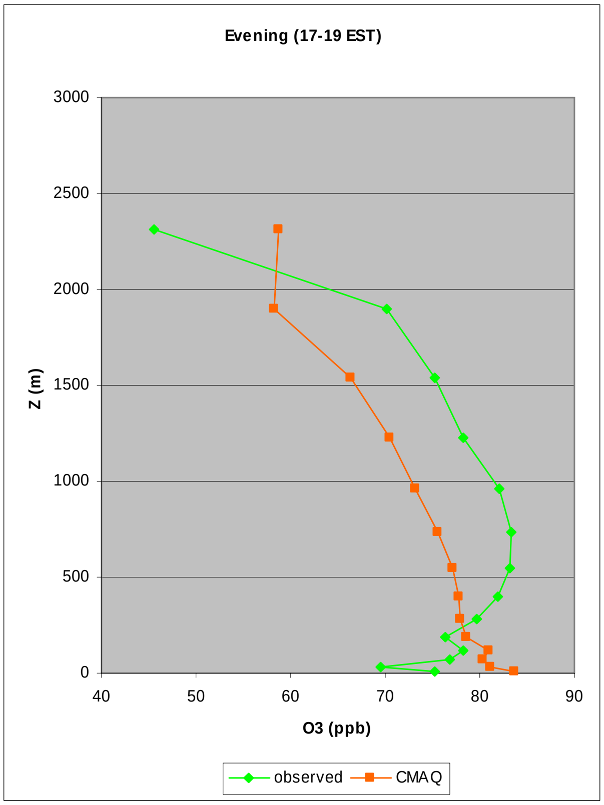

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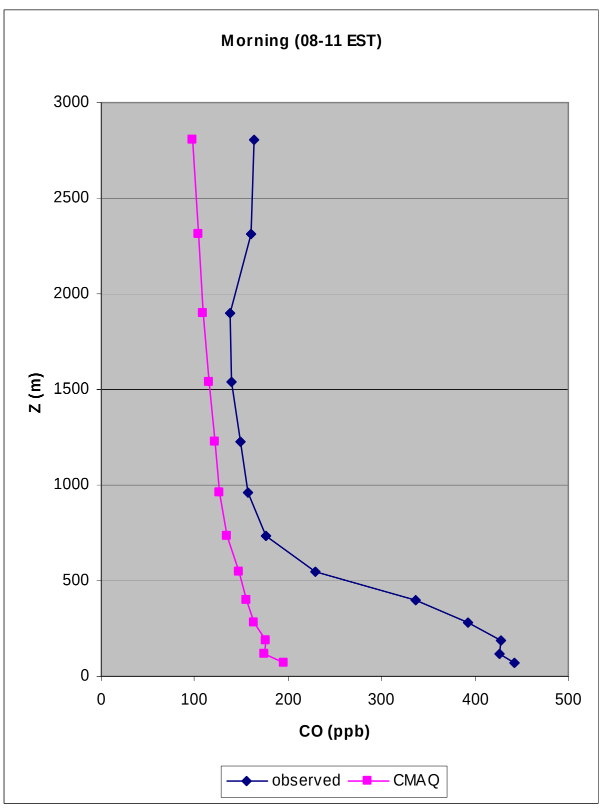

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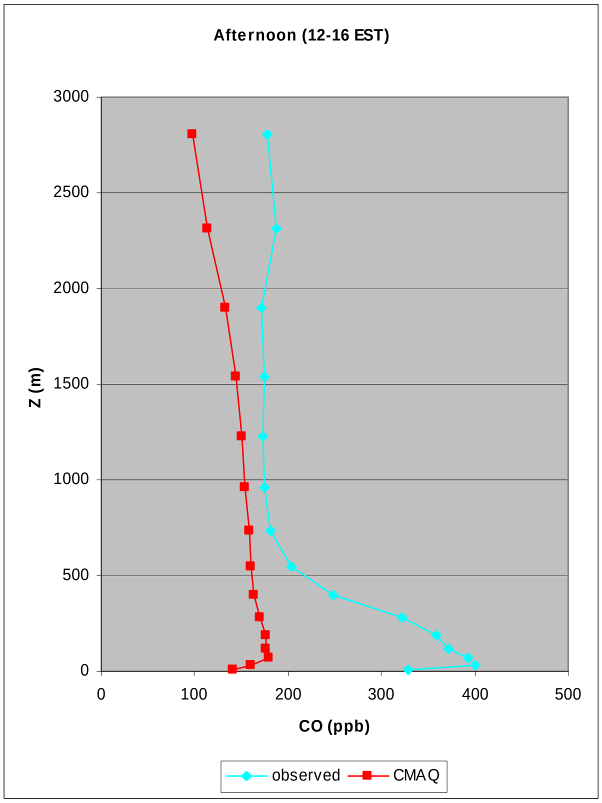

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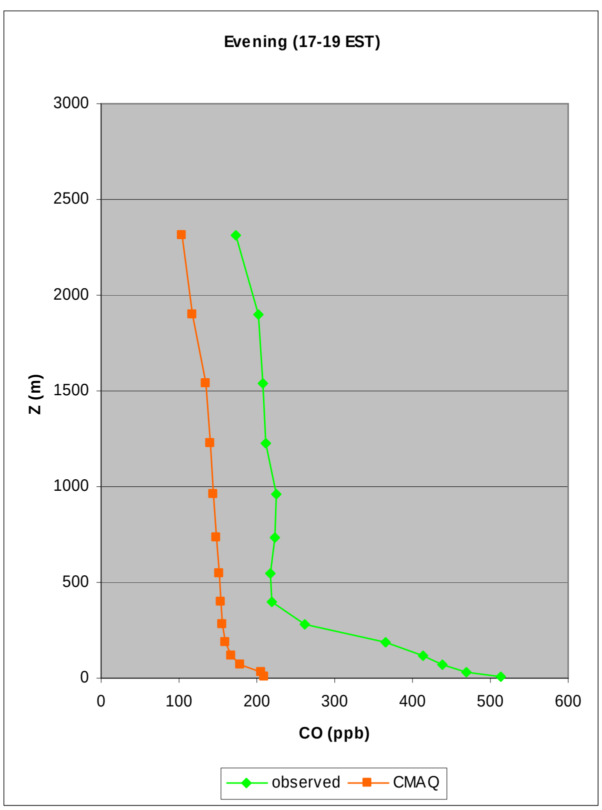

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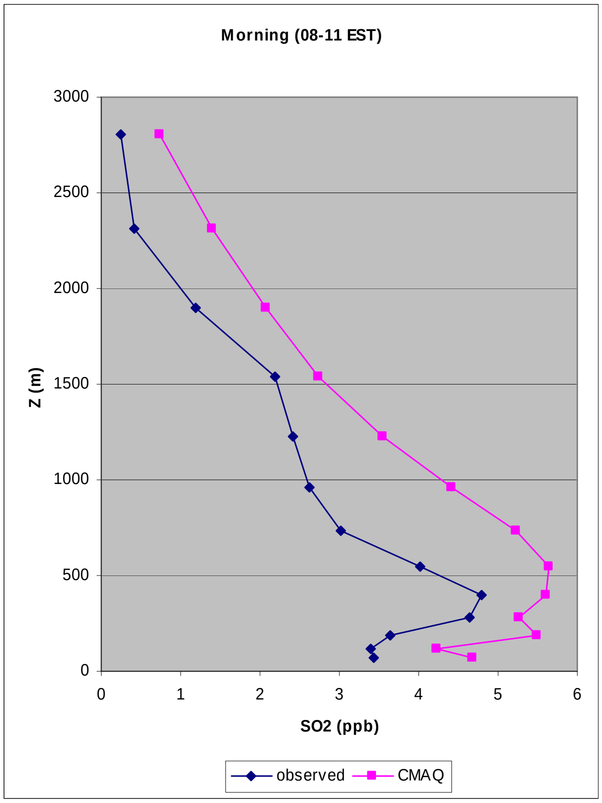

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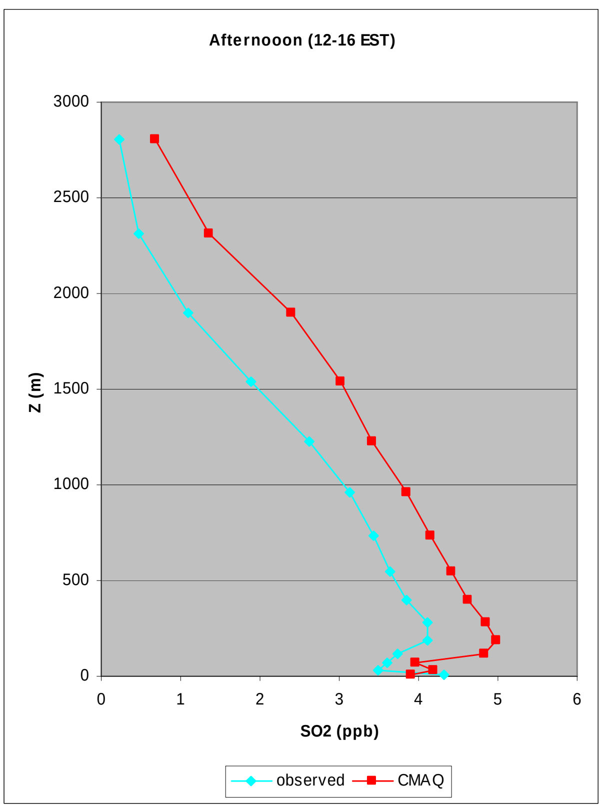

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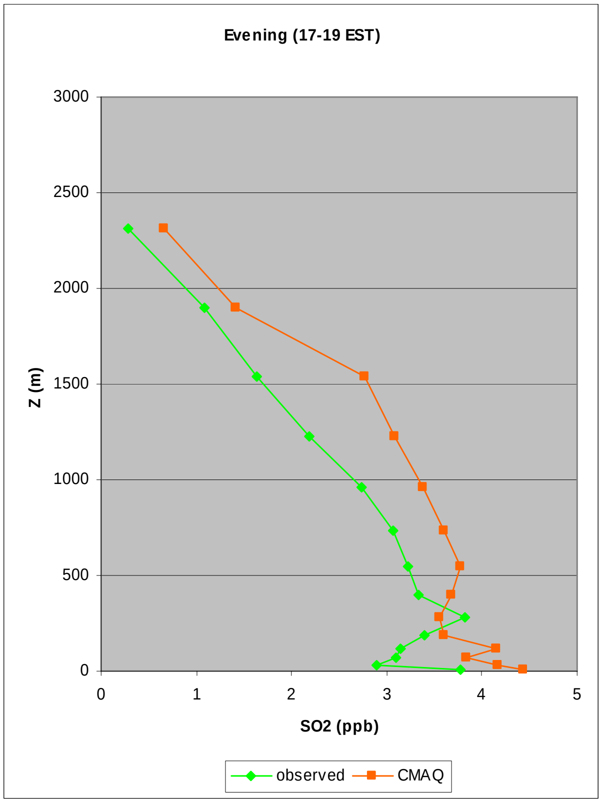

Evening (17-19 EST)
3000
2500
2000
1500
1000
500
0
Z (m)
0
1
2
3
4
5
SO2 (ppb)
observed
CMAQ

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TSD-1f

Future Year Emissions Inventory for

8-h OTC Ozone Modeling

Bureau of Air Quality Analysis and Research

Division of Air Resources

New York State Department of Environmental Conservation

Albany, NY 12233

February 22, 2007

Following the designation of an area as non-attainment for the criteria pollutant Ozone, the Clean Air Act requires submission of an implementation plan, commonly referred to as State Implementation Plan (SIP), demonstrating as to how that area will be meeting the NAAQS in the time period established by the Act. Several areas of the OTR were designated as being in nonattainment for 8-hr ozone (see http://www.epa.gov/ozonedesignations/) with a maximum attainment date of June 2009 and June 2010. However, given that ozone precursors also contribute to $PM_{2.5}$ and other logistics, it was recommended and agreed by the member states that the future year for demonstrating attainment would be 2009. Therefore the OTR states initiated the development of emissions inventories reflecting growth and control from 2002 to 2009 as well as for 2012 and 2018. The 2018 inventory was in response to the need for submission of regional haze SIP, and the 2012 as a next step in the event that attainment for ozone was not feasible in 2009.

Future year emissions inventories within the OTR

The OTR states through MANE-VU contracted MACTEC Federal Programs (called Contractor) develop the 2009, 2012 and 2018 inventories based upon 2002 inventories that the states had previously developed for use in the base year model work. The Contractor in consultation with the states developed the necessary growth and control factors and applied to the 2002 inventory. It should be noted that emissions for mobile sources and the electric energy generating units (EGUs) was not part of the Contractor's effort. The states provided VADEQ and NESCAUM appropriate MOBILE 6 input files along with the projected VMTs, which coupled with the hourly gridded temperature information was used to generate mobile source emissions. As for the emissions from the EGU sector, the inter-RPO work group utilized the Integrated Planning Model (IPM) to develop the state and unit-level emissions. Details on these topics can be found in MACTEC (2007) for non-EGU sectors and in ICF (2005a, 2005b) for the EGU sector. These inventories are identified as 2009 on the way (2009OTW), since they reflect all emission control measures that were promulgated or would become effective on or before 2009.

In addition to these OTW inventories, states have also requested the development of what is termed as beyond on the way (BOTW) inventories for 2009, 2012, and 2018. These inventories are to be based on additional OTC model rules, which would result in reduction in emissions from specific source categories. Details on the development of these controls and the corresponding inventories can be found in MACTEC (2007).

Future year emission inventories outside the OTR

MANE-VU obtained inventories for 2009OTW and 2018OTW as part of the inter-RPO workgroup. However, only MRPO provided emissions for 2012OTW. For the VISTAS region, 2012 emissions were obtained by interpolating area, nonroad, and non-EGU emissions between 2009 and 2018. For mobile sources, VMT were interpolated between

2009 and 2018 and the 2012 emissions were calculated with MOBILE6 using these interpolated VMT and 2012 emission factors. For the CENRAP region, no 2012 emissions were generated, and therefore the 2009 emissions were used in the 2012 CMAQ simulation.

Canadian Emissions

In the case of Canadian emissions, 2010 and 2020 area, non-road, and mobile source emissions were obtained from USEPA (ftp://ftp.epa.gov/EmisInventory/canada_2000inventory/).
Primary $PM_{2.5}$ and PM_{10} emissions for the SCCs listed in http://www.epa.gov/ttn/chief/emch/invent/tf_scc_list2002nei_v2.xls were divided by a factor of 4 to account for the fugitive dust transport fraction correction. EGU point source emissions for 2010 and 2020 were obtained from Environment Canada (Bloomer, 2006), while non-EGU point source emissions were assumed to be the same as those developed for 2002 and described elsewhere (see TSD-1c). The 2010 inventories were used in preparing CMAQ input files for the 2009OTW, 2009BOTW, and 2012BOTW scenarios.

Emissions processing – Application of SMOKE

The 2009OTW, 2009BOTW, and 2012 BOTW inventories were processed by VADEQ and NYSDEC using a template similar to that was used for processing 2002 base year emissions (see TSD-1d, TSD-1j) for the 12 km domain. In particular, all gridding and speciation profiles and cross-reference files as well as all temporal allocation profiles and cross-reference files used in the 2002 processing were also used for future year processing. For each day, the following files were prepared:

2009OTW:

- MANE-VU
  - 2009 OTW V3 area source (VADEQ)
  - 2009 V3 nonroad source (VADEQ)
  - 2009 mobile source (NYSDEC)
  - 2009 OTW V3 non-EGU point source (VADEQ)
  - 2009 IPM2.1.9. EGU point source (VADEQ)
  - 2009 EGU point source, IPM2.1.9. non-fossil fuel units (VADEQ)
- VISTAS
  - 2009 BaseG area source (VADEQ)
  - 2009 BaseG nonroad source (VADEQ)
  - 2009 BaseG non-EGU point source (VADEQ)
  - 2009 IPM2.1.9. EGU point source (incl. post-IPM adjustments) (VADEQ)
  - 2009 BaseG low-level fires (VADEQ)
  - 2009 BaseG elevated source fires (VADEQ)
- MRPO
  - 2009 BaseK area source (NYSDEC)
  - 2009 BaseK area source NH3/dust (NYSDEC)

- 2009 BaseK nonroad source (NYSDEC)
    - 2009 non-EGU point source (VADEQ)
    - 2009 IPM2.1.9. EGU point source (incl. post-IPM adjustments) (VADEQ)
- CENRAP
    - 2009 BaseB area source (VADEQ)
    - 2009 BaseB nonroad source (VADEQ)
    - 2009 non-EGU point source (VADEQ)
    - 2009 IPM2.1.9. EGU point source (VADEQ)
- VISTAS/MRPO/CENRAP ("non-MANE-VU RPOs")
    - 2009 mobile sources for all non-MANE-VU RPOs as implemented in VISTAS 2009 BaseG processing (VADEQ)
- Canada
    - 2010 area sources (NYSDEC)
    - 2010 nonroad sources (NYSDEC)
    - 2010 mobile sources (NYSDEC)
    - point sources (2002 non-EGU point sources; 2010 EGU point sources from IPM) (NYSDEC)
- Biogenics
    - Same as for 2002 base case, calculated with hourly MM5 meteorological fields for 2002 (NYSDEC)

2009 BOTW:

As above for 2009 OTW, with the following two exceptions:

- MANE-VU
    - 2009 BOTW V3 area source (NYSDEC)
    - 2009 BOTW V3 non-EGU point source (NYSDEC)

2012 BOTW:

- MANE-VU
    - 2012 OTW V3 area source (NYSDEC)
    - 2012 V3 nonroad source (NYSDEC)
    - 2012 mobile source (NYSDEC)
    - 2012 OTW V3 non-EGU point source (NYSDEC)
    - 2012 IPM2.1.9. EGU point source (NYSDEC)
    - 2009 EGU point source, IPM2.1.9. non-fossil fuel units (VADEQ)
- VISTAS
    - 2012 BaseG area source (interpolated between 2009 BaseG and 2018 BaseG) (NYSDEC)
    - 2012 BaseG nonroad source (interpolated between 2009 BaseG and 2018 BaseG) (NYSDEC)
    - 2012 BaseG mobile source (interpolated VMT between 2009 BaseG and 2018 BaseG) (NYSDEC)

    - 2012 BaseG non-EGU point source (interpolated between 2009 BaseG and 2018 BaseG) (NYSDEC)
    - 2012 IPM2.1.9. EGU point source (incl. post-IPM adjustments) (NYSDEC)
    - 2009 BaseG low-level fires (VADEQ)
    - 2009 BaseG elevated source fires (VADEQ)
- MRPO
    - 2012 BaseK area source (NYSDEC)
    - 2012 BaseK area source NH3/dust (NYSDEC)
    - 2012 BaseK nonroad source (NYSDEC)
    - 2012 BaseK nonroad source (NYSDEC)
    - 2012 non-EGU point source (NYSDEC)
    - 2012 IPM2.1.9. EGU point source (incl. post-IPM adjustments) (NYSDEC)
- CENRAP
    - 2009 BaseB area source (VADEQ)
    - 2009 BaseB nonroad source (VADEQ)
    - 2009 mobile source (based on VISTAS 2009 BaseG processing) (NYSDEC)
    - 2009 non-EGU point source (VADEQ)
    - 2009 IPM2.1.9. EGU point source (VADEQ)
- Canada
    - 2010 area sources (NYSDEC)
    - 2010 nonroad sources (NYSDEC)
    - 2010 mobile sources (NYSDEC)
    - point sources (2002 non-EGU point sources; 2010 EGU point sources from IPM) (NYSDEC)
- Biogenics
    - Same as for 2002 base case, calculated with hourly MM5 meteorological fields for 2002

References

ICF (2005a) IPM documentation for VISTAS IPM run –e-mail and other communications. Gopal Sistla (gsistla@dec.state.ny.us)

ICF (2005b) Future Year Electricity Generating Sector Emission Inventory Development Using the Integrated Planning Model (IPM®) in Support of Fine Particulate Mass and Visibility Modeling in the VISTAS and Midwest RPO Regions (Final Report) Prepared by ICF Resources, L.L.C., 9300 Lee Highway, Fairfax,VA.

MACTEC (2007) Development of Emission Projection for 2009, 2012, and 2018 for nonEGU point, area, and nonroad sources in the MANE-VU region. www.marama.org/reports

Bloomer, Bryan (2006) Bloomer.Bryan@epamail.epa.gov Personal communication to Gopal Sistla (gsistla@dec.state.ny.us)

TSD-1c (2006) Emissions Processing for 2002 OTC Regional and Urban 12km Base year simulation

TSD-1d (2006) 8-h Ozone Modeling using the SMOKE/CMAQ system

TSD-1j (2007) Emission processing for OTC 2009 OTW/OB 12km CMAQ Simulations

TSD-1g

Relative Response Factor (RRF)
and "Modeled Attainment Test"

Bureau of Air Quality Analysis and Research

Division of Air Resources

New York State Department of Environmental Conservation

Albany, NY 12233

March 19, 2007

EPA guidance (EPA 2005) and the subsequent document (EPA 2006) require the use of a *modeled attainment test* which is described as a procedure in which an air quality model is used to simulate current and future air quality. If future estimates of ozone concentrations are <= 84 ppb, then this element of the attainment test is satisfied. A *modeled attainment demonstration* that consists of (a) analyses which estimate whether selected emissions reductions will result in ambient concentrations that meet the NAAQS or progress goals and (b) an identified set of control measures which will result in the required emissions reductions is provided elsewhere.

For this modeled attainment test, model estimates are used in a "relative" rather than "absolute" sense. That is, one calculates the ratio of the model's future to current (baseline) predictions at ozone monitors. These ratios are called *relative response factors (RRF)*. Future ozone concentrations are estimated at existing monitoring sites by multiplying modeled RRF at locations "near" each monitor by the observation-based monitor-specific "baseline" ozone design value. Therefore, the following equation describes approach as applied to a monitoring site i:

$$(DVF)_i = (RRF)_i \times (DVC)_i \qquad \textbf{(Equation 1)}$$

Where $(DVC)_i$ is the baseline concentration monitored at site i; $(RRF)_i$ is the relative response factor, calculated for site i, and $(DVF)_i$ is the estimated future design value for site i. The RRF is the ratio of the future 8-hour daily maximum concentration predicted at a monitor to the baseline 8-hour daily maximum concentration predicted at the monitor location averaged over multiple days determined from the base case.

The following sections describe the calculation of each of the elements in Equation 1 as implemented by NYSDEC through an in-house computer program (fortran). Note, the subscript "i" from equation is dropped in the following description. However, all calculations are still performed on a monitor-by-monitor basis.

1. Calculation of DVC

Design values (DV) at each monitoring site are calculated in accordance with 40 CFR Part 50.10, Appendix I. The DV is calculated as the 3 year average of the fourth highest monitored daily 8-hour maximum value at each monitoring site. For example, the design value for the 2000-2002 is the average of the fourth highest monitored daily 8-hour maximum values in 2000, 2001 and 2002. Design values are labeled with the *last* year of the design value period, i.e. the design value for the 2000 – 2002 is labeled as "2002 design value".

For the "modeled attainment test", the guidance defines the DVC in Equation 1 as the average of the design values, which straddle the baseline inventory year. In our case, the baseline inventory year is 2002. Therefore, DVC is the average of the "2002 design value" (determined from 2000-2002 observations), the "2003 design value" (determined from 2001-2003 observations), and the "2004 design value" (determined from 2002-2004 observations). Consequently, DVC is derived from observations covering a five year period and is a weighted average with 2002 observations "weighted" three times, 2001 and 2003 observations weighted twice, and 2000 and 2004 observations weighted once.

The following criteria concerning missing DV were implemented in the fortran code calculating DVC:

- For monitors with only four years of consecutive data, the guidance allows DVC to be computed as the average of two DV within that period.
- For monitors with only three years of consecutive data, the DVC is equal to the DV calculated for that three year period
- For monitors with less than three years of consecutive data, no DVC can be estimated

2. Calculation of RRF

The guidance requires the calculation of RRF with CMAQ output from grids that are "near" a monitor. Because of the 12km grid spacing used in the CMAQ simulations, model predictions in a 3*3 grid array centered on the monitoring location are considered "near" that monitor. For each day, the maximum base case and control case concentration within that array is selected for RRF calculation as set forth in the guidance document.

Because photochemical models were found to be less responsive to emission reductions on days of lower simulated ozone concentrations, the guidance recommends applying screening criteria to the daily model predictions at individual monitors to determine whether that day's predictions are to be used to calculate the RRF or not. Only "high ozone days" are to be selected:

RRF = (average control case over high ozone days selected based on base case concentrations) / (average base case over selected high ozone days)

In addition, the guidance recommends that preferably ten or more "high ozone days", as identified below, be selected for RRF calculation. In no case can the RRF be calculated with fewer than five "high ozone days".

The following describes the logic with which NYSDEC implemented these screening criteria into its Fortran code for RRF calculation:

a. Selecting concentrations from grid cells surrounding the monitor

   i. Determine the grid cell in which the monitor is located and include the surrounding 8 grid cells to form a 3*3 grid cell array

   ii. Determine daily maximum 8-hr ozone concentrations for each day for each of the 9 grid cells for both the base case and control case

iii. For each day, pick the highest daily maximum 8-hr ozone value out of all 9 grid cells. This is the daily maximum 8-hr ozone concentration for that monitor for that day to be used in RRF calculations (following the screening criteria below).

iv. This is done for both the base case and the control case. Note that the grid cell selected on any given day for the base case need not be the same as the grid cell selected for the same day in the control case.

b. Selecting modeling days to be used in the RRF computation (again, this is done on a monitor-by-monitor basis)

i. Starting with a ozone threshold (TO_3) of 85 ppb and a minimum required number of days (Dmin) of 10, determine all days for which the simulated base case concentration (as determined in step (a) is at or above the threshold TO_3.

ii. If the number of such days is greater to or equal Dmin, identify these days and proceed to step (c). Otherwise, continue to b(iii), below.

iii. Lower the threshold (TO_3) by 1ppb interval and go back to b(i) to identify the days. If the minimum number of days is not reached then reduce that requirement by 1 but no lower than 5 days and with TO_3 > =70 ppb and go back to b(i). Otherwise proceed to b(iv) below.

iv. Stop. No RRF can be calculated for this monitor because there were less than 5 days with base case daily maximum concentration > =70 ppb.

c. RRF computation: Compute the RRF by averaging the daily maximum 8-hr ozone concentrations for base case and control case determined in step (a) over all of the days determined in step (b). The RRF is the ratio of average control case concentrations over average base case concentrations.

3. Computation of DVF

Compute DVF as the product of DVC from step (1) and RRF from step (2). Note, the following conventions on numerical precision (truncation, rounding) were applied:

a. DV are truncated in accordance with 40 CFR Part 50.10, Appendix I. This applies to the “2002 DV”, the “2003 DV”, and the “2004 DV”

b. DVC (averages of DV over multiple years) are calculated in ppb and carried to 1 significant digit

c. RRF are calculated and carried to three significant digits

d. DVF is calculated by multiplying DVC with RRF, followed by truncation

References

EPA (2005) Guidance on the Use of Models and Other Analyses in Attainment Demonstrations for the 8-hour Ozone NAAQS. EPA-454/R-05-002.

EPA (2006) Guidance on the use of Models and Other Analyses for Demonstrating Attainment of Air Quality Goals for Ozone, $PM_{2.5}$ and Regional Haze. Draft 3.2- September 2006.

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TSD-1h

Projected 8-h ozone air quality over the Ozone Transport Region

Bureau of Air Quality Analysis and Research

Division of Air Resources

New York State Department of Environmental Conservation

Albany, NY 12233

March 19, 2007

The USEPA guidance (EPA 2005 and EPA 2006) recommends the use of relative reduction factor (RRF) approach for demonstrating the attainment of the 8-hr ozone NAAQS. The OTC Modeling committee implemented this recommended approach in performing attainment assessment of the areas.

Attainment year 2009

As described in TSD-1g (2007), the RRFs were determined for all OTR monitors for the two future year simulations with 2009OTW and 2009BOTW emissions data. The base design value (DVc) for 2002 representing the number of DVs estimated on the basis of 3-yr averages available from 2000 to 2004 are listed in Tables 1 and 2 along with the RRF, the number of days, the level of threshold, and future year projected concentrations for each monitor identified by its AIRS ID, common name and the county. The values in bold represent projected design values that exceed the 8-hr ozone NAAQS.

In general both simulations do not differ much from each other in that they yield similar design values with the 2009BOTW providing concentrations that are about one or two ppb lower than the 2009OTW. However it should be noted that the Guidance provides for a window (82 to 87 ppb) that can be considered as demonstrating attainment provided there is sufficient information to support in the form of weight of evidence (WOE) that suggests that the projected design value would be at or less than the 8-hr ozone NAAQS, taking into consideration the current measured design value and other projected emissions reductions within and outside the modeling domain.

If such a consideration is given then there are only 6 monitors above 87 ppb in the OTR, and without such an option of WOE there would be 21 monitors that have projected design value above 84 ppb. It should be noted that in either case, a majority of them are located in the Baltimore–Philadelphia-New York City-Connecticut portion of inner OTR corridor associated with high emissions region.

These Tables also list monitors for which no future DV (DVF) was calculated, listed as -9 in all columns except for DVC, which is a limitation inherent in the method for calculating the RRF. Often these monitors have DVC less than 84 ppb, with the exception of the monitor at the summit of Whiteface, NY (360310002), that has a DVC of 88.3 ppb while at the base of Whiteface (360311003) the measured DVC is 84.3 ppb. In both instances, there were fewer than 5 days that the model simulation predicted base concentrations in the 9-grid cells surrounding these monitors was below the threshold of 70 ppb, resulting in assigning no RRF and no estimate of DVF for these monitors.

Attainment year 2012

One other option that was considered by the OTC Modeling committee is the simulation of 2012BOTW emissions within the OTR. The details of the development of the 2012BOTW inventory are provided in TSD-1f (2007). The CMAQ simulation was performed with the 2012BOTW emissions in the OTR with the remainder of the modeling domain also at 2012 emissions. The results of the simulation were processed in a manner similar to those of 2009 and the resulting future year design values are listed in Table 3 in a format similar to those in Tables 1 and 2.

The listed future DVs indicate that there are 5 monitors that would have a projected design value above 84 ppb, again located in the inner OTR corridor. However it should be noted that if consideration is given to these monitors along with WOE then these would be within the prescribed range of WOE, thereby demonstrating ***modeled attainment for all monitors in the OTR*** under this scenario.

Non-monitored locations

One of the requirements of the EPA guidance is the need to investigate if there are locations within the modeling domain where the predicted future design values (DVF) are above the level of NAAQS but are not associated with a monitor to provide DVC. While the EPA has recommended the use of modeled attainment test software (MATS) to investigate such occurrences, it was decided by the Modeling committee that such an assessment should be undertaken by the individual areas themselves as part of their SIP analysis.

References

EPA (2005) Guidance on the Use of Models and Other Analyses in Attainment Demonstrations for the 8-hour Ozone NAAQS. EPA-454/R-05-002.

EPA (2006) Guidance on the use of Models and Other Analyses for Demonstrating Attainment of Air Quality Goals for Ozone, $PM_{2.5}$ and Regional Haze. Draft 3.2-September 2006.

TSD-1f (2007) Future Year Emissions Inventory for 8-h OTC Ozone Modeling

TSD-1g (2007) Relative response factor (RRF) and “Modeled Attainment Test”

Table 1 Projected 8-hr Ozone Design Values over OTR based on 2009OTW Emissions Inventory

AIRS-ID	County	Monitor	#ofDV	DVC	DVF	RRF	#Days	Threshold
340290006	Ocean	Colliers Mills	3	106	**92**	0.87	20	85
90013007	Fairfield	Stratford	3	98.3	**90**	0.922	38	85
361030009	Suffolk	Holtsville	3	97	**90**	0.928	34	85
90093002	New Haven	Madison	3	98.3	**89**	0.908	39	85
340070003	Camden	Camden	3	98.3	**88**	0.9	26	85
340155001	Gloucester	Clarksboro	3	98.3	**88**	0.9	25	85
420170012	Bucks	Bristol	3	99	**88**	0.898	25	85
90010017	Fairfield	Greenwich	3	95.7	**87**	0.915	30	85
340071001	Camden	Ancora St. Hos	3	100.7	**87**	0.873	27	85
421010024	Philadelphia	Northeast (Air	3	96.7	**87**	0.903	23	85
90011123	Fairfield	Danbury	3	95.7	**86**	0.9	18	85
340210005	Mercer	Rider Univ.	3	97	**86**	0.891	23	85
510130020	Arlington	Arlington Co.	3	96.7	**86**	0.897	24	85
510590018	Fairfax	Fairfax Co. -	3	96.7	**86**	0.892	20	85
90019003	Fairfield	Westport	3	94	**85**	0.911	37	85
90070007	Middlesex	Middletown	3	95.7	**85**	0.892	21	85
90099005	New Haven	Hamden	3	93.3	**85**	0.915	25	85
240251001	Harford	Edgewood	3	100.3	**85**	0.854	41	85
340030005	Bergen	Teaneck	3	91.7	**85**	0.93	18	85
361030002	Suffolk	Babylon	3	93.7	**85**	0.917	22	85
361192004	Westchester	White Plains	3	91.3	**85**	0.936	22	85
240030014	Anne Arundel	Davidsonville	3	98	84	0.86	30	85
240030019	Anne Arundel	Ft. Meade	3	97	84	0.871	30	85
340230011	Middlesex	Rutgers Univ.	3	96	84	0.876	22	85
340250005	Monmouth	Monmouth Univ.	3	95.7	84	0.881	45	85
340273001	Morris	Chester	3	95.3	84	0.884	13	85
360290002	Erie	Amherst	3	95.7	84	0.884	11	78
360850067	Richmond	Susan Wagner	3	93	84	0.905	42	85
510590030	Fairfax	Fairfax Co. -	3	95	84	0.887	21	85
250213003	Norfolk	MILTON	1	91	83	0.914	13	85
340190001	Hunterdon	Flemington	3	95.3	83	0.88	15	85
510591005	Fairfax	Fairfax Co. -	1	94	83	0.887	21	85
516500004	Hampton City	Hampton	3	88.3	83	0.94	36	85
110010043	DC	McMillan Reser	3	92.7	82	0.89	22	85
240259001	Harford	Aldino	3	97	82	0.849	35	85
240330002	Prince Georges	Greenbelt	2	94	82	0.874	28	85
250092006	Essex	LYNN	3	90	82	0.918	16	85
360631006	Niagara	Middleport	3	91.7	82	0.895	15	85
360790005	Putnam	Mt. Ninham	3	91.3	82	0.899	14	85
420290050	Chester	West Chester	1	95	82	0.871	12	85
421010014	Philadelphia	Northwest (Rox	3	90.7	82	0.913	20	85
440090007	Washington	EPA Lab	3	93.3	82	0.879	33	85

518000004	Suffolk City	Suffolk - TCC	3	87	82	0.953	26	85
100031010	New Castle	Brandywine	3	92.7	81	0.878	19	85
240150003	Cecil	Fair Hill	3	97.7	81	0.834	18	85
240338003	Prince Georges	PG Coun.Eques.	1	94	81	0.87	28	85
340110007	Cumberland	Millville	3	95.7	81	0.849	16	85
360130006	Chautauqua	Dunkirk	3	93	81	0.878	20	85
360270007	Dutchess	Millbrook	3	92	81	0.882	12	80
420030010	Allegheny	Pittsburgh (Ca	3	90.7	81	0.9	16	85
420070002	Beaver	Hookstown	3	91.3	81	0.89	10	82
420450002	Delaware	Chester	3	91.7	81	0.887	23	85
420910013	Montgomery	Norristown	3	92.3	81	0.886	21	85
510850003	Hanover	Hanover Co.	2	92	81	0.886	11	85
90131001	Tolland	Stafford	3	92.3	80	0.872	11	85
240053001	Baltimore	Essex	3	91.3	80	0.881	48	85
240290002	Kent	Millington	3	95.3	80	0.842	17	85
250010002	Barnstable	TRURO	3	92	80	0.879	23	85
250051002	Bristol	FAIRHAVEN	3	91	80	0.882	23	85
250130008	Hampden	CHICOPEE	3	92	80	0.877	10	83
250250041	Suffolk	BOSTON (Long I	3	88.7	80	0.911	21	85
360450002	Jefferson	Perch River	3	91.3	80	0.879	10	81
420030008	Allegheny	Lawrenceville	3	89.3	80	0.9	16	85
420030067	Allegheny	South Fayette	3	89.3	80	0.899	13	85
440030002	Kent	Alton Jones	3	93.3	80	0.866	17	85
510360002	Charles City	Charles City C	3	89.3	80	0.9	14	85
515100009	Alexandria Cit	Alexandria	3	90	80	0.892	20	85
90110008	New London	Groton	3	90	79	0.883	38	85
100031007	New Castle	Lums Pond	2	94.5	79	0.846	18	85
100031013	New Castle	Bellefonte	3	90.3	79	0.876	21	85
110010025	DC	Takoma Park	3	88.7	79	0.895	24	85
110010041	DC	River Terrace	3	89	79	0.89	22	85
230090102	Hancock	ANP Cadillac M	3	91.7	79	0.871	10	82
420290100	Chester	New Garden (Ai	3	94.7	79	0.839	19	85
100010002	Kent	Killens Pond	3	88.3	78	0.893	25	85
340315001	Passaic	Ramapo	3	86.7	78	0.9	19	85
360050083	Bronx	Botanical Gard	3	83.7	78	0.939	20	85
420031005	Allegheny	Harrison Twp	3	91.3	78	0.864	14	85
420070005	Beaver	Brighton Twp	3	89.7	78	0.876	12	82
420490003	Erie	Erie	3	89	78	0.88	23	85
420770004	Lehigh	Allentown	3	90.7	78	0.87	11	84
420950025	Northampton	Freemansburg	3	90	78	0.874	11	85
440071010	Providence	Francis School	3	89.7	78	0.872	17	85
510870014	Henrico	Henrico Co.	3	88.3	78	0.893	15	85
511071005	Loudon	Loudoun Co.	3	90	78	0.872	15	85
90031003	Hartford	E. Hartford	3	88	77	0.88	16	85
90050005	Litchfield	Cornwall	1	89	77	0.874	11	84
100051003	Sussex	Lewes	3	87	77	0.896	26	85
230312002	York	Kennebunkport	3	88.3	77	0.877	19	85
240051007	Baltimore	Padonia	3	88.7	77	0.874	26	85

340010005	Atlantic	Nacote Creek	3	89	77	0.876	27	85
340170006	Hudson	Bayonne	3	84.7	77	0.911	22	85
420050001	Armstrong	Kittanning	3	90.7	77	0.856	11	84
420550001	Franklin	Methodist Hill	3	90.7	77	0.849	11	77
420710007	Lancaster	Lancaster	3	90.7	77	0.853	17	85
420850100	Mercer	Farrell	3	91.3	77	0.85	10	82
421290008	Westmoreland	Greensburg	3	88	77	0.881	18	85
421330008	York	York	3	89	77	0.866	17	85
510595001	Fairfax	Fairfax Co. -	3	88	77	0.886	21	85
100051002	Sussex	Seaford	3	90	76	0.846	10	80
240170010	Charles	S Maryland	3	93	76	0.819	17	85
240313001	Montgomery	Rockville	3	86.7	76	0.885	26	85
250094004	Essex	NEWBURY	3	86	76	0.884	27	85
360130011	Chautauqua	Westfield	3	87	76	0.88	12	85
420110009	Berks	Reading	3	88.7	76	0.861	10	85
420958000	Northampton	Easton	3	88	76	0.873	12	85
421250005	Washington	Charleroi	3	86.3	76	0.883	15	85
240130001	Carroll	South Carroll	3	88.7	75	0.853	12	85
250154002	Hampshire	WARE	3	86.3	75	0.877	10	81
360551004	Monroe	Rochester	3	83.7	75	0.898	18	85
361030004	Suffolk	Riverhead	3	83	75	0.904	36	85
420590002	Greene	Holbrook	3	87.7	75	0.858	10	85
421010136	Philadelphia	Southwest (Elm	3	83	75	0.907	23	85
510410004	Chesterfield	Chesterfield C	3	84.7	75	0.893	10	85
510590005	Fairfax	Fairfax Co. -	3	87	75	0.871	18	85
511790001	Stafford	Stafford Co.	3	86	75	0.878	36	85
230313002	York	Kittery	3	85.3	74	0.871	16	85
240210037	Frederick	Frederick Airp	3	87.3	74	0.858	11	85
250171102	Middlesex	STOW	3	85.7	74	0.875	10	80
330111010	Hillsborough	Nashua	2	86	74	0.871	10	75
360010012	Albany	Loudonville	3	83	74	0.899	8	70
360810124	Queens	Queens College	2	83	74	0.895	26	85
360910004	Saratoga	Stillwater	3	84.7	74	0.878	6	70
361173001	Wayne	Williamson	3	84	74	0.889	18	85
420431100	Dauphin	Hershey	3	86.7	74	0.857	16	85
421255001	Washington	Florence	3	85.7	74	0.868	10	83
511530009	Prince William	Prince William	3	85	74	0.876	12	83
230052003	Cumberland	Cape Elizabeth	3	84.3	73	0.874	18	85
230130004	Knox	Port Clyde	3	83.7	73	0.873	13	85
240430009	Washington	Hagerstown	3	85.3	73	0.857	10	84
250034002	Berkshire	ADAMS	3	83.3	73	0.881	9	70
330115001	Hillsborough	Peterborough	1	84	73	0.877	10	73
360671015	Onondoga	East Syracuse	3	82.3	73	0.896	8	70
360715001	Orange	Valley Central	3	84.7	73	0.87	10	76
420010002	Adams	Biglerville (P	3	85	73	0.868	10	80
420070014	Beaver	Beaver Falls	3	85	73	0.868	10	83
420430401	Dauphin	Harrisburg	3	85	73	0.862	15	85
421174000	Tioga	Tioga County (	3	85	73	0.859	5	70

421250200	Washington	Washington	3	85.3	73	0.86	11	85
511611004	Roanoke	Roanoke Co.	3	83.7	73	0.873	11	76
230090103	Hancock	ANP McFarland	3	83.7	72	0.872	10	82
250130003	Hampden	AGAWAM	1	83	72	0.878	10	83
250270015	Worcester	WORCESTER	3	84	72	0.867	10	79
330150012	Rockingham	Rye	2	83.5	72	0.871	16	85
420110001	Berks	Kutztown	2	84.5	72	0.858	10	85
420334000	Clearfield	Moshannon (PSU	3	87.3	72	0.827	11	76
421290006	Wetsmoreland	Murrysville	3	82	72	0.89	20	85
510690010	Frederick	Frederick Co.	3	82.7	72	0.873	11	81
518000005	Suffolk City	Suffolk - Holl	3	82.3	72	0.878	10	76
420210011	Cambria	Johnstown	3	85	71	0.844	10	85
420274000	Centre	Penn Nursery (	3	84.7	71	0.85	11	74
420690101	Lacakawana	Peckville	3	83.3	71	0.858	10	75
420990301	Perry	Perry County	3	83.3	71	0.853	10	77
511130003	Madison	Madison Co. -	3	84.7	71	0.845	11	71
420270100	Centre	State College	3	84.3	70	0.839	10	76
420692006	Lacakawana	Scranton	3	82	70	0.858	10	75
420791101	Luzerene	Wilkes-Barre	3	83.7	70	0.844	10	76
500030004	Bennington	Bennington	3	79.7	70	0.888	8	70
510330001	Caroline	Caroline Co.	3	82.3	70	0.852	10	84
360650004	Oneida	Camden	3	79.7	69	0.869	10	70
420130801	Blair	Altoona	3	83.3	69	0.837	10	80
420810100	Lycoming	Montoursville	1	82	69	0.851	11	75
230112005	Kennebec	Gardiner Pray	3	78	68	0.872	10	71
330150013	Rockingham	999	1	80	68	0.86	10	73
420791100	Luzerene	Nanticoke	3	81.7	68	0.844	10	76
330173002	Strafford	Rochester	2	78.5	67	0.863	11	71
510610002	Fauqier	Fauquier Co.	3	79.3	67	0.852	11	73
511390004	Page	Page Co.	3	79.7	67	0.844	12	72
250250042	Suffolk	BOSTON (Harris	3	73	66	0.91	16	85
420730015	Lawrence	New Castle	3	78.3	66	0.849	10	83
230090301	Hancock	Castine	1	75	65	0.878	10	79
250150103	Hampshire	AMHERST	3	74.7	65	0.878	10	76
420814000	Lycoming	Tiadaghton (PS	3	78.7	65	0.837	10	72
511630003	Rockbridge	Rockbridge Co.	3	76.7	65	0.856	8	70
230310038	York	West Buxton	1	75	64	0.862	9	70
330050007	Cheshire	Keene	3	74.3	64	0.869	10	72
360430005	Herkimer	Nick's Lake	3	74	64	0.874	6	70
421010004	Philadelphia	Frankford (Lab	3	71.3	64	0.908	25	85
250090005	Essex	LAWRENCE	1	70	61	0.883	10	82
330150015	Rockingham	Portsmouth	1	68	59	0.871	16	85
CC0040002	999	Roosevelt-Camp	3	58.3	51	0.889	10	75
230038001	Aroostook	Ashland135	3	64	-9	-9	-9	-999
230173001	Oxford	North Lovell	3	60.7	-9	-9	-9	-999
230194007	Penobscot	Howland	3	66.7	-9	-9	-9	-999
230194008	Penobscot	Holden Rider B	2	79	-9	-9	-9	-999
330012004	Belknap	Laconia	2	76.5	-9	-9	-9	-999

330031002	Carroll	Conway	1	67	-9	-9	-9	-999
330090008	Grafton	Haverhill	3	70.3	-9	-9	-9	-999
330130007	Merrimack	Concord	3	74.7	-9	-9	-9	-999
330190003	Sullivan	Claremont	3	74.3	-9	-9	-9	-999
360150003	Chemung	Elmira	3	80.3	-9	-9	-9	-999
360310002	Essex	Whiteface Summ	3	88.3	-9	-9	-9	-999
360310003	Essex	Whiteface Base	3	84.3	-9	-9	-9	-999
360410005	Hamilton	Piseco Lake	3	78.7	-9	-9	-9	-999
360530006	Madison	Camp Georgetow	3	79.7	-9	-9	-9	-999
361111005	Ulster	Belleayre	3	81.3	-9	-9	-9	-999
500070007	Chittenden	Underhill	3	77	-9	-9	-9	-999
511970002	Wythe	Wythe Co.	3	79.7	-9	-9	-9	-999

Table 2 Projected 8-hr Ozone Design Values over OTR based on 2009BOTW Emissions Inventory

AIRS-ID	County	Monitor	#ofDV	DVC	DVF	RRF	#Days	Threshold
340290006	Ocean	Colliers Mills	3	106	**92**	0.868	20	85
90013007	Fairfield	Stratford	3	98.3	**90**	0.919	38	85
361030009	Suffolk	Holtsville	3	97	**89**	0.926	34	85
90093002	New Haven	Madison	3	98.3	**88**	0.905	39	85
340070003	Camden	Camden	3	98.3	**88**	0.898	26	85
340155001	Gloucester	Clarksboro	3	98.3	**88**	0.898	25	85
420170012	Bucks	Bristol	3	99	**88**	0.896	25	85
90010017	Fairfield	Greenwich	3	95.7	**87**	0.913	30	85
340071001	Camden	Ancora St. Hos	3	100.7	**87**	0.872	27	85
421010024	Philadelphia	Northeast (Air	3	96.7	**87**	0.901	23	85
340210005	Mercer	Rider Univ.	3	97	**86**	0.889	23	85
510130020	Arlington	Arlington Co.	3	96.7	**86**	0.895	24	85
510590018	Fairfax	Fairfax Co. -	3	96.7	**86**	0.891	20	85
90011123	Fairfield	Danbury	3	95.7	**85**	0.897	18	85
90019003	Fairfield	Westport	3	94	**85**	0.909	37	85
90099005	New Haven	Hamden	3	93.3	**85**	0.912	25	85
240251001	Harford	Edgewood	3	100.3	**85**	0.852	41	85
340030005	Bergen	Teaneck	3	91.7	**85**	0.928	18	85
361030002	Suffolk	Babylon	3	93.7	**85**	0.917	22	85
361192004	Westchester	White Plains	3	91.3	**85**	0.935	22	85
90070007	Middlesex	Middletown	3	95.7	84	0.888	21	85
240030014	Anne Arundel	Davidsonville	3	98	84	0.858	30	85
240030019	Anne Arundel	Ft. Meade	3	97	84	0.869	30	85
340250005	Monmouth	Monmouth Univ.	3	95.7	84	0.88	45	85
340273001	Morris	Chester	3	95.3	84	0.882	13	85
360290002	Erie	Amherst	3	95.7	84	0.884	11	78
360850067	Richmond	Susan Wagner	3	93	84	0.904	42	85
510590030	Fairfax	Fairfax Co. -	3	95	84	0.886	21	85
340190001	Hunterdon	Flemington	3	95.3	83	0.877	15	85
340230011	Middlesex	Rutgers Univ.	3	96	83	0.874	22	85
510591005	Fairfax	Fairfax Co. -	1	94	83	0.886	21	85
110010043	DC	McMillan Reser	3	92.7	82	0.888	22	85
240259001	Harford	Aldino	3	97	82	0.846	35	85
250092006	Essex	LYNN	3	90	82	0.916	16	85
250213003	Norfolk	MILTON	1	91	82	0.911	13	85
420290050	Chester	West Chester	1	95	82	0.868	12	85
421010014	Philadelphia	Northwest (Rox	3	90.7	82	0.911	20	85
516500004	Hampton City	Hampton	3	88.3	82	0.939	36	85
518000004	Suffolk City	Suffolk - TCC	3	87	82	0.952	26	85
100031010	New Castle	Brandywine	3	92.7	81	0.875	19	85
240150003	Cecil	Fair Hill	3	97.7	81	0.831	18	85
240330002	Prince Georges	Greenbelt	2	94	81	0.872	28	85
240338003	Prince	PG Coun.Eques.	1	94	81	0.868	28	85

	Georges							
340110007	Cumberland	Millville	3	95.7	81	0.847	16	85
360130006	Chautauqua	Dunkirk	3	93	81	0.876	20	85
360631006	Niagara	Middleport	3	91.7	81	0.893	15	85
360790005	Putnam	Mt. Ninham	3	91.3	81	0.895	14	85
420030010	Allegheny	Pittsburgh (Ca	3	90.7	81	0.898	16	85
420070002	Beaver	Hookstown	3	91.3	81	0.889	10	82
420450002	Delaware	Chester	3	91.7	81	0.885	23	85
420910013	Montgomery	Norristown	3	92.3	81	0.883	21	85
440090007	Washington	EPA Lab	3	93.3	81	0.876	33	85
510850003	Hanover	Hanover Co.	2	92	81	0.885	11	85
90131001	Tolland	Stafford	3	92.3	80	0.867	11	85
240053001	Baltimore	Essex	3	91.3	80	0.879	48	85
250010002	Barnstable	TRURO	3	92	80	0.877	23	85
250130008	Hampden	CHICOPEE	3	92	80	0.872	10	83
250250041	Suffolk	BOSTON (Long I	3	88.7	80	0.909	21	85
360270007	Dutchess	Millbrook	3	92	80	0.879	12	80
420030008	Allegheny	Lawrenceville	3	89.3	80	0.898	16	85
420030067	Allegheny	South Fayette	3	89.3	80	0.897	13	85
440030002	Kent	Alton Jones	3	93.3	80	0.862	17	85
510360002	Charles City	Charles City C	3	89.3	80	0.899	14	85
515100009	Alexandria Cit	Alexandria	3	90	80	0.891	20	85
90110008	New London	Groton	3	90	79	0.879	38	85
100031007	New Castle	Lums Pond	2	94.5	79	0.843	18	85
110010025	DC	Takoma Park	3	88.7	79	0.894	24	85
110010041	DC	River Terrace	3	89	79	0.888	22	85
230090102	Hancock	ANP Cadillac M	3	91.7	79	0.869	10	82
240290002	Kent	Millington	3	95.3	79	0.838	17	85
250051002	Bristol	FAIRHAVEN	3	91	79	0.878	23	85
360450002	Jefferson	Perch River	3	91.3	79	0.876	10	81
420290100	Chester	New Garden (Ai	3	94.7	79	0.835	19	85
100010002	Kent	Killens Pond	3	88.3	78	0.891	25	85
100031013	New Castle	Bellefonte	3	90.3	78	0.873	21	85
360050083	Bronx	Botanical Gard	3	83.7	78	0.939	20	85
420031005	Allegheny	Harrison Twp	3	91.3	78	0.862	14	85
420070005	Beaver	Brighton Twp	3	89.7	78	0.874	12	82
420490003	Erie	Erie	3	89	78	0.879	23	85
420770004	Lehigh	Allentown	3	90.7	78	0.867	11	84
420950025	Northampton	Freemansburg	3	90	78	0.87	11	85
510870014	Henrico	Henrico Co.	3	88.3	78	0.892	15	85
511071005	Loudon	Loudoun Co.	3	90	78	0.87	15	85
90031003	Hartford	E. Hartford	3	88	77	0.876	16	85
90050005	Litchfield	Cornwall	1	89	77	0.87	11	84
100051003	Sussex	Lewes	3	87	77	0.893	26	85
230312002	York	Kennebunkport	3	88.3	77	0.875	19	85
240051007	Baltimore	Padonia	3	88.7	77	0.872	26	85
340010005	Atlantic	Nacote Creek	3	89	77	0.874	27	85
340170006	Hudson	Bayonne	3	84.7	77	0.911	22	85

340315001	Passaic	Ramapo	3	86.7	77	0.898	19	85
420050001	Armstrong	Kittanning	3	90.7	77	0.854	11	84
420850100	Mercer	Farrell	3	91.3	77	0.85	10	82
421290008	Westmoreland	Greensburg	3	88	77	0.878	18	85
440071010	Providence	Francis School	3	89.7	77	0.868	17	85
510595001	Fairfax	Fairfax Co. -	3	88	77	0.885	21	85
240313001	Montgomery	Rockville	3	86.7	76	0.883	26	85
360130011	Chautauqua	Westfield	3	87	76	0.879	12	85
420550001	Franklin	Methodist Hill	3	90.7	76	0.841	11	77
420710007	Lancaster	Lancaster	3	90.7	76	0.843	17	85
420958000	Northampton	Easton	3	88	76	0.869	12	85
100051002	Sussex	Seaford	3	90	75	0.843	10	80
240130001	Carroll	South Carroll	3	88.7	75	0.847	12	85
240170010	Charles	S Maryland	3	93	75	0.816	17	85
250094004	Essex	NEWBURY	3	86	75	0.882	27	85
250154002	Hampshire	WARE	3	86.3	75	0.873	10	81
420110009	Berks	Reading	3	88.7	75	0.855	10	85
421010136	Philadelphia	Southwest (Elm	3	83	75	0.905	23	85
421250005	Washington	Charleroi	3	86.3	75	0.879	15	85
421330008	York	York	3	89	75	0.853	17	85
510410004	Chesterfield	Chesterfield C	3	84.7	75	0.892	10	85
510590005	Fairfax	Fairfax Co. -	3	87	75	0.869	18	85
511790001	Stafford	Stafford Co.	3	86	75	0.876	36	85
230313002	York	Kittery	3	85.3	74	0.869	16	85
250171102	Middlesex	STOW	3	85.7	74	0.87	10	80
330111010	Hillsborough	Nashua	2	86	74	0.867	10	75
360551004	Monroe	Rochester	3	83.7	74	0.895	18	85
360810124	Queens	Queens College	2	83	74	0.894	26	85
361030004	Suffolk	Riverhead	3	83	74	0.901	36	85
361173001	Wayne	Williamson	3	84	74	0.886	18	85
420590002	Greene	Holbrook	3	87.7	74	0.855	10	85
421255001	Washington	Florence	3	85.7	74	0.867	10	83
511530009	Prince William	Prince William	3	85	74	0.873	12	83
230052003	Cumberland	Cape Elizabeth	3	84.3	73	0.873	18	85
240210037	Frederick	Frederick Airp	3	87.3	73	0.846	11	85
250034002	Berkshire	ADAMS	3	83.3	73	0.877	9	70
330115001	Hillsborough	Peterborough	1	84	73	0.873	10	73
360010012	Albany	Loudonville	3	83	73	0.89	8	70
360671015	Onondoga	East Syracuse	3	82.3	73	0.889	8	70
360715001	Orange	Valley Central	3	84.7	73	0.868	10	76
360910004	Saratoga	Stillwater	3	84.7	73	0.869	6	70
420070014	Beaver	Beaver Falls	3	85	73	0.866	10	83
420431100	Dauphin	Hershey	3	86.7	73	0.845	16	85
421250200	Washington	Washington	3	85.3	73	0.858	11	85
230090103	Hancock	ANP McFarland	3	83.7	72	0.871	10	82
230130004	Knox	Port Clyde	3	83.7	72	0.871	13	85
240430009	Washington	Hagerstown	3	85.3	72	0.845	10	84
250130003	Hampden	AGAWAM	1	83	72	0.873	10	83

250270015	Worcester	WORCESTER	3	84	72	0.863	10	79
330150012	Rockingham	Rye	2	83.5	72	0.869	16	85
421174000	Tioga	Tioga County (	3	85	72	0.856	5	70
421290006	Wetsmoreland	Murrysville	3	82	72	0.887	20	85
511611004	Roanoke	Roanoke Co.	3	83.7	72	0.872	11	76
518000005	Suffolk City	Suffolk - Holl	3	82.3	72	0.876	10	76
420010002	Adams	Biglerville (P	3	85	71	0.837	10	80
420110001	Berks	Kutztown	2	84.5	71	0.852	10	85
420210011	Cambria	Johnstown	3	85	71	0.841	10	85
420274000	Centre	Penn Nursery (	3	84.7	71	0.843	11	74
420334000	Clearfield	Moshannon (PSU	3	87.3	71	0.824	11	76
420430401	Dauphin	Harrisburg	3	85	71	0.841	15	85
510690010	Frederick	Frederick Co.	3	82.7	71	0.869	11	81
511130003	Madison	Madison Co. -	3	84.7	71	0.844	11	71
420270100	Centre	State College	3	84.3	70	0.833	10	76
420690101	Lacakawana	Peckville	3	83.3	70	0.849	10	75
420791101	Luzerene	Wilkes-Barre	3	83.7	70	0.838	10	76
420990301	Perry	Perry County	3	83.3	70	0.841	10	77
500030004	Bennington	Bennington	3	79.7	70	0.883	8	70
360650004	Oneida	Camden	3	79.7	69	0.867	10	70
420130801	Blair	Altoona	3	83.3	69	0.835	10	80
420692006	Lacakawana	Scranton	3	82	69	0.849	10	75
420810100	Lycoming	Montoursville	1	82	69	0.845	11	75
510330001	Caroline	Caroline Co.	3	82.3	69	0.85	10	84
330150013	Rockingham	999	1	80	68	0.858	10	73
420791100	Luzerene	Nanticoke	3	81.7	68	0.839	10	76
230112005	Kennebec	Gardiner Pray	3	78	67	0.869	10	71
330173002	Strafford	Rochester	2	78.5	67	0.86	11	71
510610002	Fauqier	Fauquier Co.	3	79.3	67	0.85	11	73
511390004	Page	Page Co.	3	79.7	67	0.842	12	72
250250042	Suffolk	BOSTON (Harris	3	73	66	0.908	16	85
420730015	Lawrence	New Castle	3	78.3	66	0.848	10	83
230090301	Hancock	Castine	1	75	65	0.879	10	79
250150103	Hampshire	AMHERST	3	74.7	65	0.874	10	76
420814000	Lycoming	Tiadaghton (PS	3	78.7	65	0.832	10	72
511630003	Rockbridge	Rockbridge Co.	3	76.7	65	0.855	8	70
230310038	York	West Buxton	1	75	64	0.86	9	70
330050007	Cheshire	Keene	3	74.3	64	0.865	10	72
360430005	Herkimer	Nick's Lake	3	74	64	0.873	6	70
421010004	Philadelphia	Frankford (Lab	3	71.3	64	0.906	25	85
250090005	Essex	LAWRENCE	1	70	61	0.88	10	82
330150015	Rockingham	Portsmouth	1	68	59	0.869	16	85
CC0040002	999	Roosevelt-Camp	3	58.3	51	0.888	10	75
230038001	Aroostook	Ashland135	3	64	-9	-9	-9	-999
230173001	Oxford	North Lovell	3	60.7	-9	-9	-9	-999
230194007	Penobscot	Howland	3	66.7	-9	-9	-9	-999

230194008	Penobscot	Holden Rider B	2	79	-9	-9	-9	-999
330012004	Belknap	Laconia	2	76.5	-9	-9	-9	-999
330031002	Carroll	Conway	1	67	-9	-9	-9	-999
330090008	Grafton	Haverhill	3	70.3	-9	-9	-9	-999
330130007	Merrimack	Concord	3	74.7	-9	-9	-9	-999
330190003	Sullivan	Claremont	3	74.3	-9	-9	-9	-999
360150003	Chemung	Elmira	3	80.3	-9	-9	-9	-999
360310002	Essex	Whiteface Summ	3	88.3	-9	-9	-9	-999
360310003	Essex	Whiteface Base	3	84.3	-9	-9	-9	-999
360410005	Hamilton	Piseco Lake Camp	3	78.7	-9	-9	-9	-999
360530006	Madison	Georgetow	3	79.7	-9	-9	-9	-999
361111005	Ulster	Belleayre	3	81.3	-9	-9	-9	-999
500070007	Chittenden	Underhill	3	77	-9	-9	-9	-999
511970002	Wythe	Wythe Co.	3	79.7	-9	-9	-9	-999

Table 3 Projected 8-hr Ozone Design Values over OTR based on 2012BOTW Emissions Inventory

AIRS-ID	County	Monitor	#ofDV	DVC	DVF	RRF	#Days	Threshold
340290006	Ocean	Colliers Mills	3	106	**87**	0.828	20	85
90013007	Fairfield	Stratford	3	98.3	**86**	0.885	38	85
361030009	Suffolk	Holtsville	3	97	**86**	0.896	34	85
340155001	Gloucester	Clarksboro	3	98.3	**85**	0.865	25	85
420170012	Bucks	Bristol	3	99	**85**	0.859	25	85
90010017	Fairfield	Greenwich	3	95.7	84	0.882	30	85
90093002	New Haven	Madison	3	98.3	84	0.859	39	85
340070003	Camden	Camden	3	98.3	84	0.862	26	85
421010024	Philadelphia	Northeast (Air	3	96.7	84	0.87	23	85
510130020	Arlington	Arlington Co.	3	96.7	84	0.875	24	85
510590018	Fairfax	Fairfax Co. -	3	96.7	84	0.87	20	85
340071001	Camden	Ancora St. Hos	3	100.7	83	0.827	27	85
361030002	Suffolk	Babylon	3	93.7	83	0.892	22	85
361192004	Westchester	White Plains	3	91.3	83	0.912	22	85
90011123	Fairfield	Danbury	3	95.7	82	0.86	18	85
90019003	Fairfield	Westport	3	94	82	0.875	37	85
90099005	New Haven	Hamden	3	93.3	82	0.881	25	85
240251001	Harford	Edgewood	3	100.3	82	0.821	41	85
340030005	Bergen	Teaneck	3	91.7	82	0.901	18	85
340210005	Mercer	Rider Univ.	3	97	82	0.855	23	85
360290002	Erie	Amherst	3	95.7	82	0.866	11	78
510590030	Fairfax	Fairfax Co. -	3	95	82	0.871	21	85
516500004	Hampton City	Hampton	3	88.3	82	0.93	36	85
240030019	Anne Arundel	Ft. Meade	3	97	81	0.838	30	85
360850067	Richmond	Susan Wagner	3	93	81	0.875	42	85
510591005	Fairfax	Fairfax Co. -	1	94	81	0.871	21	85
518000004	Suffolk City	Suffolk - TCC	3	87	81	0.942	26	85
90070007	Middlesex	Middletown	3	95.7	80	0.846	21	85
240030014	Anne Arundel	Davidsonville	3	98	80	0.822	30	85
340230011	Middlesex	Rutgers Univ.	3	96	80	0.837	22	85
340250005	Monmouth	Monmouth Univ.	3	95.7	80	0.844	45	85
340273001	Morris	Chester	3	95.3	80	0.84	13	85
360631006	Niagara	Middleport	3	91.7	80	0.882	15	85
110010043	DC	McMillan Reser	3	92.7	79	0.862	22	85
240330002	Prince Georges	Greenbelt	2	94	79	0.842	28	85
250092006	Essex	LYNN	3	90	79	0.883	16	85
250213003	Norfolk	MILTON	1	91	79	0.878	13	85
340190001	Hunterdon	Flemington	3	95.3	79	0.837	15	85
360130006	Chautauqua	Dunkirk	3	93	79	0.854	20	85
420030010	Allegheny	Pittsburgh (Ca	3	90.7	79	0.874	16	85
421010014	Philadelphia	Northwest (Rox	3	90.7	79	0.882	20	85
510850003	Hanover	Hanover Co.	2	92	79	0.864	11	85
100031010	New Castle	Brandywine	3	92.7	78	0.842	19	85
240259001	Harford	Aldino	3	97	78	0.81	35	85

240338003	Prince Georges	PG Coun.Eques.	1	94	78	0.834	28	85
360450002	Jefferson	Perch River	3	91.3	78	0.862	10	81
420030008	Allegheny	Lawrenceville	3	89.3	78	0.874	16	85
420290050	Chester	West Chester	1	95	78	0.829	12	85
420450002	Delaware	Chester	3	91.7	78	0.855	23	85
420910013	Montgomery	Norristown	3	92.3	78	0.853	21	85
515100009	Alexandria Cit	Alexandria	3	90	78	0.87	20	85
110010025	DC	Takoma Park	3	88.7	77	0.874	24	85
240053001	Baltimore	Essex	3	91.3	77	0.854	48	85
240150003	Cecil	Fair Hill	3	97.7	77	0.794	18	85
250250041	Suffolk	BOSTON (Long I	3	88.7	77	0.876	21	85
340110007	Cumberland	Millville	3	95.7	77	0.805	16	85
360270007	Dutchess	Millbrook	3	92	77	0.838	12	80
360790005	Putnam	Mt. Ninham	3	91.3	77	0.851	14	85
420030067	Allegheny	South Fayette	3	89.3	77	0.867	13	85
440090007	Washington	EPA Lab	3	93.3	77	0.833	33	85
510360002	Charles City	Charles City C	3	89.3	77	0.869	14	85
511071005	Loudon	Loudoun Co.	3	90	77	0.856	15	85
100031007	New Castle	Lums Pond	2	94.5	76	0.805	18	85
110010041	DC	River Terrace	3	89	76	0.862	22	85
240290002	Kent	Millington	3	95.3	76	0.802	17	85
250010002	Barnstable	TRURO	3	92	76	0.829	23	85
250051002	Bristol	FAIRHAVEN	3	91	76	0.838	23	85
340170006	Hudson	Bayonne	3	84.7	76	0.902	22	85
360050083	Bronx	Botanical Gard	3	83.7	76	0.917	20	85
420490003	Erie	Erie	3	89	76	0.861	23	85
420850100	Mercer	Farrell	3	91.3	76	0.842	10	82
440030002	Kent	Alton Jones	3	93.3	76	0.815	17	85
510595001	Fairfax	Fairfax Co. -	3	88	76	0.871	21	85
510870014	Henrico	Henrico Co.	3	88.3	76	0.872	15	85
90110008	New London	Groton	3	90	75	0.837	38	85
90131001	Tolland	Stafford	3	92.3	75	0.821	11	85
100010002	Kent	Killens Pond	3	88.3	75	0.86	25	85
100031013	New Castle	Bellefonte	3	90.3	75	0.84	21	85
230090102	Hancock	ANP Cadillac M	3	91.7	75	0.823	10	82
250130008	Hampden	CHICOPEE	3	92	75	0.826	10	83
420031005	Allegheny	Harrison Twp	3	91.3	75	0.83	14	85
420070002	Beaver	Hookstown	3	91.3	75	0.827	10	82
420290100	Chester	New Garden (Ai	3	94.7	75	0.797	19	85
420770004	Lehigh	Allentown	3	90.7	75	0.828	11	84
100051003	Sussex	Lewes	3	87	74	0.862	26	85
240051007	Baltimore	Padonia	3	88.7	74	0.838	26	85
240313001	Montgomery	Rockville	3	86.7	74	0.862	26	85
340010005	Atlantic	Nacote Creek	3	89	74	0.837	27	85
340315001	Passaic	Ramapo	3	86.7	74	0.862	19	85
360130011	Chautauqua	Westfield	3	87	74	0.859	12	85
420050001	Armstrong	Kittanning	3	90.7	74	0.817	11	84
420070005	Beaver	Brighton Twp	3	89.7	74	0.835	12	82

420950025	Northampton	Freemansburg	3	90	74	0.829	11	85
421290008	Westmoreland	Greensburg	3	88	74	0.845	18	85
440071010	Providence	Francis School	3	89.7	74	0.825	17	85
510590005	Fairfax	Fairfax Co. -	3	87	74	0.854	18	85
511790001	Stafford	Stafford Co.	3	86	74	0.869	36	85
90031003	Hartford	E. Hartford	3	88	73	0.833	16	85
90050005	Litchfield	Cornwall	1	89	73	0.826	11	84
100051002	Sussex	Seaford	3	90	73	0.814	10	80
230312002	York	Kennebunkport	3	88.3	73	0.827	19	85
420550001	Franklin	Methodist Hill	3	90.7	73	0.81	11	77
420710007	Lancaster	Lancaster	3	90.7	73	0.809	17	85
421250005	Washington	Charleroi	3	86.3	73	0.853	15	85
421330008	York	York	3	89	73	0.821	17	85
510410004	Chesterfield	Chesterfield C	3	84.7	73	0.862	10	85
240170010	Charles	S Maryland	3	93	72	0.784	17	85
250094004	Essex	NEWBURY	3	86	72	0.838	27	85
360551004	Monroe	Rochester	3	83.7	72	0.872	18	85
360810124	Queens	Queens College	2	83	72	0.87	26	85
361173001	Wayne	Williamson	3	84	72	0.859	18	85
420110009	Berks	Reading	3	88.7	72	0.821	10	85
420590002	Greene	Holbrook	3	87.7	72	0.823	10	85
420958000	Northampton	Easton	3	88	72	0.826	12	85
421010136	Philadelphia	Southwest (Elm	3	83	72	0.872	23	85
511530009	Prince William	Prince William	3	85	72	0.857	12	83
511611004	Roanoke	Roanoke Co.	3	83.7	72	0.867	11	76
240130001	Carroll	South Carroll	3	88.7	71	0.811	12	85
250154002	Hampshire	WARE	3	86.3	71	0.828	10	81
360010012	Albany	Loudonville	3	83	71	0.863	8	70
360671015	Onondoga	East Syracuse	3	82.3	71	0.866	8	70
230313002	York	Kittery	3	85.3	70	0.822	16	85
240210037	Frederick	Frederick Airp	3	87.3	70	0.812	11	85
250034002	Berkshire	ADAMS	3	83.3	70	0.842	9	70
250171102	Middlesex	STOW	3	85.7	70	0.826	10	80
330111010	Hillsborough	Nashua	2	86	70	0.821	10	75
360910004	Saratoga	Stillwater	3	84.7	70	0.834	6	70
361030004	Suffolk	Riverhead	3	83	70	0.852	36	85
420070014	Beaver	Beaver Falls	3	85	70	0.832	10	83
421174000	Tioga	Tioga County (	3	85	70	0.831	5	70
421290006	Wetsmoreland	Murrysville	3	82	70	0.861	20	85
510690010	Frederick	Frederick Co.	3	82.7	70	0.852	11	81
511130003	Madison	Madison Co. -	3	84.7	70	0.834	11	71
230052003	Cumberland	Cape Elizabeth	3	84.3	69	0.825	18	85
240430009	Washington	Hagerstown	3	85.3	69	0.812	10	84
330115001	Hillsborough	Peterborough	1	84	69	0.83	10	73
360715001	Orange	Valley Central	3	84.7	69	0.826	10	76
420010002	Adams	Biglerville (P	3	85	69	0.814	10	80
420110001	Berks	Kutztown	2	84.5	69	0.818	10	85
420210011	Cambria	Johnstown	3	85	69	0.814	10	85

420334000	Clearfield	Moshannon (PSU	3	87.3	69	0.795	11	76
420431100	Dauphin	Hershey	3	86.7	69	0.806	16	85
421250200	Washington	Washington	3	85.3	69	0.82	11	85
421255001	Washington	Florence	3	85.7	69	0.808	10	83
510330001	Caroline	Caroline Co.	3	82.3	69	0.843	10	84
518000005	Suffolk City	Suffolk - Holl	3	82.3	69	0.85	10	76
230090103	Hancock	ANP McFarland	3	83.7	68	0.824	10	82
230130004	Knox	Port Clyde	3	83.7	68	0.824	13	85
250130003	Hampden	AGAWAM	1	83	68	0.829	10	83
250270015	Worcester	WORCESTER	3	84	68	0.816	10	79
330150012	Rockingham	Rye	2	83.5	68	0.822	16	85
360650004	Oneida	Camden	3	79.7	68	0.858	10	70
420274000	Centre	Penn Nursery (	3	84.7	68	0.814	11	74
420430401	Dauphin	Harrisburg	3	85	68	0.801	15	85
420130801	Blair	Altoona	3	83.3	67	0.813	10	80
420270100	Centre	State College	3	84.3	67	0.804	10	76
420690101	Lacakawana	Peckville	3	83.3	67	0.815	10	75
420791101	Luzerene	Wilkes-Barre	3	83.7	67	0.805	10	76
420990301	Perry	Perry County	3	83.3	67	0.808	10	77
500030004	Bennington	Bennington	3	79.7	67	0.847	8	70
420692006	Lacakawana	Scranton	3	82	66	0.815	10	75
420810100	Lycoming	Montoursville	1	82	66	0.812	11	75
510610002	Fauqier	Fauquier Co.	3	79.3	66	0.839	11	73
511390004	Page	Page Co.	3	79.7	66	0.83	12	72
420791100	Luzerene	Nanticoke	3	81.7	65	0.806	10	76
230112005	Kennebec	Gardiner Pray	3	78	64	0.822	10	71
330150013	Rockingham	999	1	80	64	0.806	10	73
360430005	Herkimer	Nick's Lake	3	74	64	0.871	6	70
420730015	Lawrence	New Castle	3	78.3	64	0.82	10	83
511630003	Rockbridge	Rockbridge Co.	3	76.7	64	0.842	8	70
250250042	Suffolk	BOSTON (Harris	3	73	63	0.874	16	85
330173002	Strafford	Rochester	2	78.5	63	0.812	11	71
420814000	Lycoming	Tiadaghton (PS	3	78.7	63	0.804	10	72
230090301	Hancock	Castine	1	75	62	0.832	10	79
250150103	Hampshire	AMHERST	3	74.7	62	0.833	10	76
421010004	Philadelphia	Frankford (Lab	3	71.3	62	0.872	25	85
330050007	Cheshire	Keene	3	74.3	61	0.821	10	72
230310038	York	West Buxton	1	75	60	0.809	9	70
250090005	Essex	LAWRENCE	1	70	58	0.833	10	82
330150015	Rockingham	Portsmouth	1	68	55	0.822	16	85
CC0040002	999	Roosevelt-Camp	3	58.3	49	0.852	10	75
230038001	Aroostook	Ashland135	3	64	-9	-9	-9	-999
230173001	Oxford	North Lovell	3	60.7	-9	-9	-9	-999
230194007	Penobscot	Howland	3	66.7	-9	-9	-9	-999
230194008	Penobscot	Holden Rider B	2	79	-9	-9	-9	-999
330012004	Belknap	Laconia	2	76.5	-9	-9	-9	-999
330031002	Carroll	Conway	1	67	-9	-9	-9	-999
330090008	Grafton	Haverhill	3	70.3	-9	-9	-9	-999

330130007	Merrimack	Concord	3	74.7	-9	-9	-9	-999
330190003	Sullivan	Claremont	3	74.3	-9	-9	-9	-999
360150003	Chemung	Elmira	3	80.3	-9	-9	-9	-999
360310002	Essex	Whiteface Summ	3	88.3	-9	-9	-9	-999
360310003	Essex	Whiteface Base	3	84.3	-9	-9	-9	-999
360410005	Hamilton	Piseco Lake	3	78.7	-9	-9	-9	-999
360530006	Madison	Camp Georgetow	3	79.7	-9	-9	-9	-999
361111005	Ulster	Belleayre	3	81.3	-9	-9	-9	-999
500070007	Chittenden	Underhill	3	77	-9	-9	-9	-999
511970002	Wythe	Wythe Co.	3	79.7	-9	-9	-9	-999

TSD-1i

A Modeling Protocol for the OTC SIP Quality Modeling System for Assessment of the Ozone National Ambient Air Quality Standard in the Ozone Transport Region

December 31, 2006

The Modeling Committee of the
Ozone Transport Commission

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APPENDIX A: Workgroups for the Development and Application of the OTC SIP Quality Modeling System For Assessment of the Ozone National Ambient Air Quality Standard in the Ozone Transport Region

APPENDIX B: Work Plan for the Development and Application of the OTC SIP Quality Modeling System For Assessment of the Ozone National Ambient Air Quality Standard in the Ozone Transport Region

1 STUDY DESIGN

1.1 Background

Moderate non-attainment areas in the Ozone Transport Region (OTR) are required to attain the 8-hour ozone NAAQS by 2010. Modeled or monitored attainment is based on the summer ozone season preceding 2010, so the target year for attainment modeling is 2009 for moderate non-attainment areas. The Ozone Transport Commission (OTC) has embarked on the task of preparing a State Implementation Plan (SIP) ozone modeling system for exercising photochemical grid model(s) to assess the impact of candidate ozone control strategies in moderate and serious non-attainment areas in the OTR. The OTC Directors endorsed the Modeling Protocol for the OTC SIP Quality Modeling System For Assessment of the Ozone National Ambient Air Quality Standard in the Ozone Transport Region at the November 12-13, 2003 Fall meeting of the OTC. The subject protocol has been modified since then to incorporate CMAQ model modifications and emission inventory improvements.

This modeling protocol outlines procedures to prepare and use the OTC SIP ozone modeling system to help design an ozone attainment strategy to attain the ozone 8-hour NAAQS in the OTR. Emission inventories for point, area, on–road and off-road sources of NO_x, VOC and CO will be developed for a base year of 2002. BEIS3 will be used to estimate biogenic emissions. MM5 will be used at a 12 km grid resolution and, in the photochemical grid model, 4 km grid cells will be nested in urban areas where appropriate. A model performance evaluation will be prepared for 2002. If model performance is satisfactory, emission input files reflecting candidate control strategy scenarios for 2009 will be prepared, and 2009 ozone levels will be simulated with the modeling system. OTC States with moderate and serious non-attainment areas will then use these modeling results to help support required ozone attainment demonstrations. However, it has become apparent that modeling at a higher resolution than 12 km is not possible without improvements in the modeling system in terms of the physical and chemical formulation as well as the need for development of emissions estimates at spatial resolutions higher than county-level estimates.

1.2 Objective

The New York Department of Environmental Conservation has agreed to be the lead agency for developing a SIP quality ozone modeling system for assessing the future year attainment of the ozone 8-hour NAAQS in the OTR. The CMAQ model will be used to evaluate the effectiveness of control strategies in the OTR Modeling Domain. The regulatory objective will be to design an ozone control strategy that will result in attainment of the 8-hour ozone NAAQS in moderate non-attainment areas by 2009.

1.3 Photochemical Modeling System

The OTC Modeling Committee in its prior work exercised both CMAQ and CAMx and noticed that even though these models had performed similarly in estimating ozone on an over-all basis, the level of agreement between the simulated and measured concentrations varied from good to bad depending on the model and depending upon the simulation day. So, as part of this protocol, both models (which continue to be updated by their developers) will be applied for an episode that occurred in 2002. However, it was soon recognized that there was a need for application of a *one-atmosphere* modeling system that would provide estimates of both ozone and particulate matter and that the same base year emissions and meteorological data would be utilized in the development of appropriate SIPs. This together with USEPA's launching of the CMAS center that provides a venue for sharing information from other modelers led the OTC modeling committee to select the CMAQ model for application in its SIP Quality Ozone Modeling System for testing the effectiveness of proposed control strategies in the OTR.

The OTC Modeling Committee also examined the performances of two emissions processors (EMS2001 and SMOKE, both using CB4 chemistry) from prior work and concluded that there are differences between them that could be minimized by forcing the models to use a common speciation and surrogate database. Since CMAQ was the air quality model of choice, given that it handled inputs from SMOKE more readily than it did from the EMS2001 processor, the SMOKE emission processor was selected for constructing emission files for the SIP Quality Ozone Modeling System for the OTR Domain.

1.4 Deliverables

The key deliverables for the SIP quality ozone modeling system for the OTR are listed below.

- Select Ozone Episodes
- Prepare Meteorological Fields
- Prepare 2002 Emission Inventories for each OTC State
- Acquire 2002 Emission Inventories for non-OTC States in the OTR Domain
- Prepare 2002 Emission Input Files for the OTR Domain
- Complete 2002 Model Performance Evaluation for the OTR Domain
- Prepare 2009 CAA Emission Inventories for each OTC State
- Acquire 2009 CAA Emission Inventories for non-OTC States in the OTR Domain
- Prepare 2009 CAA Emission Input Files for the OTR Domain
- Complete Modeling Runs for 2009 CAA Scenarios
- Design Control Strategy for the OTR Modeling Domain.
- Prepare 2009 Emission Input Files for OTR Control Strategy
- Complete Modeling Runs for the OTR Control Strategy for 2009
- Complete Evaluation Report for 2009 Control Strategy

1.5 Schedule

The schedule for developing the SIP quality modeling system and the assessment of the ozone NAAQS in the Ozone Transport Region is provided in Appendix A. Because of delays encountered in developing, integrating and processing state-of-the-art emission inventories from Regional Planning Organizations in the MANE-VU modeling domain, schedule target dates have been moved back approximately 9 months (complete Modeling TSD report in March of 2007 instead of June of 2006).

2 MANAGEMENT STRUCTURE

2.1 OTR Oversight Committee (Appendix B)

OTC Air Directors will serve as the OTR Oversight Committee. The Air Directors will ensure that 2002 and 2009 CAA emission inventories are prepared for each OTC state in the OTR Modeling Domain, and will also be responsible for obtaining emission inventories for the non OTR States that are part of the OTR Modeling Domain. The Air Directors will oversee the design of ozone control strategies for the OTR, and will make the final decision on any funding needed to develop the OTC SIP Quality Modeling System. The Air Directors will review all OTC SIP Quality Modeling System documentation before it is released to interested parties. The state members of the OTC Modeling Committee will keep Air Directors informed of the development of the OTC SIP Quality Modeling System.

2.2 OTR Photochemical Modeling Workgroup (Appendix B)

OTR Photochemical Modeling Workgroup will be responsible for preparing the modeling assessment of the ozone NAAQS in the OTR. The Workgroup will be responsible for collecting and processing model input data, setting up all model input files, performing model runs, and interpreting and documenting the results of the modeling analyses for the OTR domain.
The Workgroup will prepare and submit all OTC SIP quality modeling system documentation to the OTC Air Directors.

2.3 OTR Meteorological Modeling Workgroup (Appendix B)

The OTR Meteorological Modeling Workgroup will be responsible for preparing and assessing MM5 meteorological fields for the OTR Modeling Domain. This Workgroup will also work with the OTR Photochemical Modeling Workgroup to prepare all meteorological input files for the OTC SIP quality modeling system.

2.4 OTR Emission Inventory Development Workgroup (Appendix B)

The OTR Emission Inventory Development Workgroup will be responsible for obtaining and developing guidance for preparing 2002 and 2009 state emission inventories for all states in the OTR. The OTC Air Directors will be responsible for obtaining emission inventories for non-OTR states in the OTR Modeling Domain. The Mid-Atlantic Regional Air Management Association (MARAMA) and the Mid-Atlantic /Northeast Visibility Union (MANE-VU) organizations will provide funding for contractors and work with OTR states to help prepare state-of-the-art 2002 emission files, 2009 CAA emission files and 2009 Control Strategy emission files for the OTR Modeling Domain.

2.5 OTR Control Strategy Development Workgroup (Appendix B)

The OTR Control Strategy Development Workgroup will be responsible for designing an ozone control strategy for the OTR Domain that will attain the ozone NAAQS by 2009 in moderate non-attainment areas and 2012 in serious non-attainment areas. The Workgroup will work with the

OTC stationary /area source committee and the OTC mobile source committee to design an effective ozone control strategy for the OTR domain.

3 OTR MODELING DOMAIN

3.1 Description

The OTR modeling domain (see Figure 1) follows the national grid adopted by the Regional Haze Regional Planning Organizations (RPOs), but with focus on the eastern U.S. The areal extent of the domain was selected such that the northeastern areas of Maine are inside the domain. Based upon the existing computer resources, the southern and western boundaries were limited to the region shown in Figure 1. At a horizontal grid resolution of 12 km, there are 172 grids in the east-west and 172 grids in north-south direction. Details of the modeling system setup can be found at ftp://ftp.dec.state.ny.us/dar/air_research/gsistla/otc-mm5-cmaq-grid-def.doc

3.2 Horizontal Grid Size

Following EPA and as noted above, a 12 km grid resolution will be used for the domain. A coarser mesh may not be appropriate for urban area applications. Modeling at a higher resolution than 12 km will not be performed at this time; to do would require improvements in the modeling system in terms of the physical and chemical formulation as well as the need for development of emissions at a higher spatial resolution than that for the currently available county-level estimates.

3.3 Number of Vertical Layers

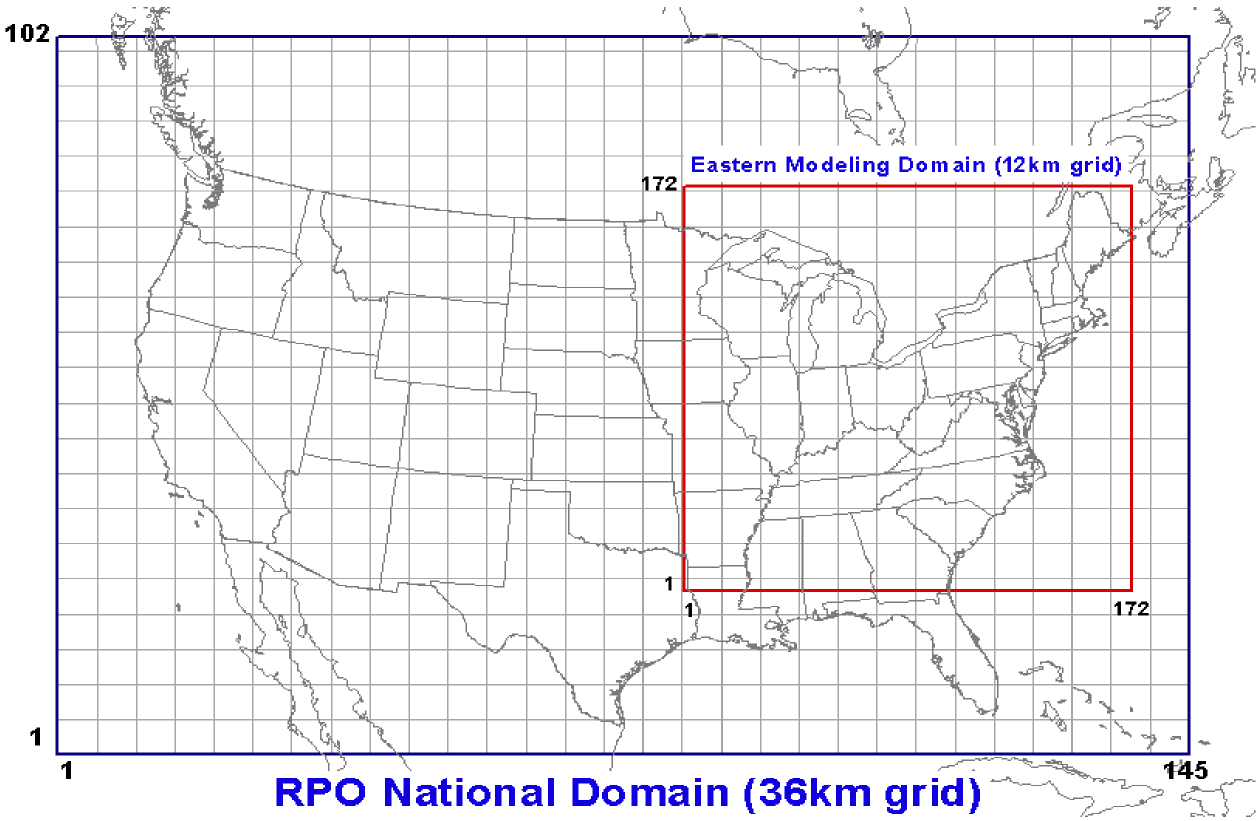
Similar to the horizontal grid spacing which is fixed by the default set forth in the design of the meteorological model, in this case 12 km, the definition of the vertical structure could also be adopted one-to-one based upon the meteorological model which has 29 layers. However, given the computational resources and runtime needs the number of vertical layers in the photochemical model was limited to 22, of which the lower 16 layers (approximately 3km) were set one-to-one with those of the meteorological model.

4 OZONE EPISODES

4.1 Episode Selection Criteria

Since it would be impractical to model every violation day, EPA has recommended targeting a select group of episode days for ozone attainment demonstrations. Such episode days should be (1) meteorologically representative of typical high ozone exceedance days in the domain, and (2) so severe that any control strategies predicted to attain the ozone NAAQS for that episode day would also result in attainment for all other exceedance days.

Figure 1: OTC Modeling Domain with areal extent of 12km and 36km grids



4.2 Proposed Episode Selection Procedure

While the above-suggested approach is perhaps feasible for isolated urban areas, such an approach may not be meaningful given the areal extent of concern and the modeling domain. Also, selection of episodes from different years would require the generation of the meteorological fields and emissions database, which would be an extremely difficult proposition given the modeling domain. The 2002 ozone season had a significant number of exceedance days (the spatial distribution of the daily 1-hr and 8-hr maxima over the eastern U. S. can be examined at the site ftp://ftp.state.ny.us/dar/air_research/htdocs/index.html). It was decided that the 5-month ozone season of 2002 would be simulated with the OTC SIP Quality Modeling System which will involve investigating numerous ozone episodes and would provide for better assessment of the simulated pollutant fields. The Environ report “Determination of Representativeness of 2002 Ozone Season for Ozone Transport Region SIP Modeling” demonstrated that 2002 episode days are (1) meteorologically representative of typical high ozone exceedance days in the domain, and (2) are probably so severe that control strategies predicted to attain the ozone NAAQS for those episode day would also result in attainment for all other exceedance days.

5 METEOROLOGICAL FIELDS

5.1 MM5 Meteorological Fields

The MM5 setup has been described by Zhang (2000) for generating meteorological fields based on a modified Blackadar scheme for the boundary layer. Since there are a variety of options that can be exercised in the application of MM5, initial testing was performed for a high ozone event of 2002 with the most commonly used default options as well as with modified boundary layer schemes (Zhang and Zheng 2004). A set of options was selected and used by Prof. Zhang of UMD in consultation with NYDEC Staff for running MM5 for the 2002 5-month ozone season.

5.2 Quality Assurance of Meteorological Fields

As a part of this effort, the simulated meteorological fields will be compared to data collected under CASTNET as well as with observations from the National Weather Service (NWS). Prior experience has shown that these approaches provide for an independent assessment of the simulated meteorological conditions. Also, data from any other special measurements will be sought and compared with the simulated fields. This analysis should provide a degree of confidence in the simulated meteorological fields and their use in photochemical grid modeling. This work will be coordinated through the meteorological model work group.

6 BASE CASE EMISSION INVENTORIES FOR 2002

6.1 2002 Base Case Emission Inventories for OTC states

Each state in the OTR Domain will prepare a 2002 base year emission Inventory that include VOC, NO_x, and CO for a typical ozone summer day. States are to follow EPA guidance documents for this base year inventory, which is due to EPA by June 1, 2004. Note this inventory may also qualify as the consolidated emissions regulatory report (CERR).

Emissions for all categories will be estimated for each county and state and the seasonal factors will facilitate spatial and temporal adjustments for modeling. Point and area source data will be submitted by individual states to EPA for uploading to EPA's National Emission Inventory (NEI) database using the required EPA format. MOBILE6.2 input files and VMT data will be submitted to NEI so that EPA can generate on-road mobile emissions for each state by county in a format that can be easily gridded and speciated. Similarly, off-road input files will be sent to EPA for running the latest NONROAD model.

It is anticipated that these state inventories will follow the EPA prescribed approach and should be formatted in a consistent manner. While this protocol deals with 8-hr ozone issues, the inventory would also contain the necessary information for exercising the particulate option of the photochemical model. This would be of help in those cases where the one-atmosphere option is to be exercised in the assessment. Biogenic emissions will be estimated with EPA's BEIS-3 emissions model.

6.2 2002 Base Case Emission Inventories for All Other States in the OTR Domain

A 2002 base year emission inventory that includes VOC, NO_x, and CO for a typical ozone summer day will be obtained for all non-OTC states in the OTR domain. It is anticipated that these inventories will be developed following EPA guidance, and will be formatted in a consistent manner.

7 BASE CASE EMISSION INPUT FILES FOR 2002

7.1 Preparation of 2002 Emission Input Files for the OTR Domain

Emissions data will be processed using SMOKE. The surrogate data files for the OTR grid have been previously developed by NY DEC and will be used in this study. For those pollutants that depend upon ambient temperature, MM5 layer-1 gridded temperature fields will be used.

7.2 Quality Assurance of 2002 Emission Input Files for the OTR Domain

The processing of the emissions data will include several quality checks before the data are exercised in the simulations. Prior experience has shown that considerable time and resources are often invested in developing the gridded emissions data. While there are many avenues to improve or correct the data, based upon consensus of the OTC Photochemical Modeling Workgroup, a definite closure of the emissions processing will be adhered to and any further changes or corrections will be archived and incorporated at a later date. In performing this work, close attention will be paid to the emissions within the OTR and, if necessary, corrections will be incorporated on the advice of the OTC Photochemical Modeling Workgroup.

Biogenic emissions will be prepared for each episode day using BEIS-3. The temperature data from MM5 layer-1 will be used along with cloud cover information obtained from MM5.

8 AIR QUALITY DATA

8.1 Initial Conditions

Prior experience has shown that a 3-day ramp-up period is sufficient to establish pollutant levels that are encountered in the beginning of the ozone episode. In this application clean conditions will be assumed for the 1st hour of the simulation along with the emissions and boundary conditions as described below. Since the application was to be in one-atmosphere mode using a common platform, it was determined that a longer ramp-up period of 15 days was needed because experiments indicated that some of the $PM_{2.5}$ species from the initial conditions (IC) were retained for ramp-up periods of 10 days or less. Thus the CMAQ model run will start on May 1, 2002; the first 15 days are assumed to be ramp-up days and will not used for performance evaluation purposes.

8.2 Boundary Conditions

In prior studies attempts were made to include any available information from ozonesondes and monitors that are near the western and northern boundaries of the modeling domain. For this study, similar attempts will be made to obtain pollutant data at the boundaries.

For boundary conditions, NY DEC will run CMAQ with the continental 36 km grid using GEOS-CHEM simulation data for 2002. The GEOS-CHEM information will be obtained by NESCAUM from Prof. Daniel Jacob's group of Harvard University. Hour by hour boundary conditions will then be extracted from the continental 36 km CMAQ run results and used for the OTR 12 km modeling domain.

8.3 Ambient Air Quality Data

Ambient air quality data will be extracted from the EPA AQS archive for ozone, CO, NO_x, and total and speciated hydrocarbons reported as part of the PAMS network. Also, data from CASTNET will be obtained. Since the OTR modeling domain extends over two time zones, while the model simulations are reflective of a single time zone, EST, there will be a need to ”correct” the clock and assemble the ambient air quality database. Any special measurements that are relevant to this study during the summer of 2002 will also be acquired, including upper air measurements.

9 DIAGNOSTIC ANALYSES

9.1 Quality Assurance Tests of Input Components

Before proceeding with modeling, all air quality, emissions, and meteorological data will be reviewed to ensure completeness, accuracy, and consistency. Any errors, missing data or inconsistencies will be addressed using appropriate methods that are consistent with standard practices.

9.2 Diagnostic Tests

Attempts will be made to perform diagnostic tests to ensure that the simulated ozone patterns are in agreement with observed patterns over the entire simulation period. While it is unrealistic to expect day-to-day agreement between the measured and predicted data, close attention will be paid to the changes in pattern of the measured ozone levels and the ability of the model to capture such changes.

10 MODEL PERFORMANCE EVALUATION

10.1 Performance Criteria

This is an area that will likely require dialog among member states. While there are many statistical tests that can be applied to predicted ozone concentrations, it is important to define a priori some of the conditions of the analysis and the targets of evaluation. Also, it is important to define the areal extent for which the assessment needs to be done to address the performance of the model. Statistical tests are to be applied to the precursor data as well, recognizing that all tests applied to the ozone data may or may not be valid.

As part of the model assessment, qualitative analysis will also be performed by comparing predicted and measured pollutant fields to establish if the spatial patterns are captured by the modeling system. This is a critical step, since the measured concentrations may fall into a neighboring grid cell (but not at the measured location itself) and may be found to be in good agreement.

Another area that is quite important is the predictive ability of the model with respect to height. Recognizing that the pollutants trapped above the mixed layer during the overnight hours would mix down during the daytime, comparison will be made between measurements and model predictions. Special attention will be paid to elevated monitoring stations, such as the television tower near Durham, North Carolina; the Sears Tower in Chicago, Illinois, and monitors located at elevated rural stations at Whiteface Mountain, NY.

10.2 Statistical Performance Measures

The recommended EPA procedures will be used to calculate the recommended performance measures. At a minimum, the following three statistical performance measures will be used to assess CAMx model performance for each episode.

- Unpaired highest-prediction accuracy

  This measure quantifies the difference between the highest observed eight-hour value in the domain and the highest predicted value in the domain. The acceptable performance range is plus or minus 15-20 percent.

- Normalized bias

  This measure indicates the degree to which simulated eight-hour values are over or under-predicted. The acceptable performance range is plus or minus 5-15 percent.

- Gross error of all pairs above 40 ppb

  This measure indicates the average discrepancy between predicted and observed values and provides an overall assessment of model performance. The acceptable performance range is 30-35 percent.

11 CAA EMISSION INVENTORIES FOR 2009

11.1 CAA Emission Inventories for OTR States for 2009

Each OTC state in the OTR Domain will prepare a 2009 CAA emission **i**nventory that is consistent with the regulations and rules adopted or expected to be in-place. The inventory will be developed consistent with EPA guidance. The states will develop the information on growth factors and controls used in the development of the inventory. Each state will submit a report on the development of these future year inventories.

Since the electric energy generation and use are highly inter-connected, coupled with the existing rules on trading and banking of pollutants, it is expected that an inventory consistent with this information would be developed for all electric energy generation units using models such as IPM**.**

Recognizing that any prediction of future emissions are subject to changes, the OTC Modeling Committee would develop a decision framework on obtaining these emissions to be consistent with the OTC SIP quality modeling system schedule (Appendix A).

11.2 CAA Emission Inventories for all non-OTR States for 2009

A 2009 CAA emission inventory that includes VOC, NO_x, and CO for a typical ozone summer day will be obtained for all non-OTC states in the OTR. It is anticipated that these inventories will be developed following EPA guidance, and will be formatted in a consistent manner.

12 CAA EMISSION INPUT FILES FOR 2009 FOR THE OTR DOMAIN

12.1 CAA Emission Input Files for OTR Domain for 2009

2009 CAA emissions data will be processed using SMOKE. For pollutants that depend on ambient temperature, MM5 layer-1 gridded temperature fields will be used to estimate hourly emission rates. The biogenic emission input files prepared for the base 2002 will be used as a surrogate for 2009 biogenic emissions. These emissions data will be processed using the quality assurance checks described in section 7.2.

It should be noted that the CAA means all on the books and on the way control measures (OTB/OTW) scheduled to be in effect by 2009.

13 OTR DOMAIN OZONE CONTROL STRATEGY

13.1 OTC CALGRID System Screening Runs

A series of CALGRID screening runs will be performed to investigate the level of emissions reductions needed both within and outside of the OTR. This will help identify potential emission reductions scenarios that can be used for CMAX future year SIP modeling runs.

13.2 OTC SIP Modeling Platform Runs

OTC SIP modeling platform CAA runs for 2009 will be reviewed to help determine the level of emissions reductions needed to attain the ozone NAAQS. VOC and NOX sensitivity runs will also be performed to help identify potential emission reductions scenarios that can be used to lower ozone levels in the OTR.

13.3 Analysis of Available Air Quality and Emission Databases

A review of air quality and emission databases (for example, EPA Clear Skies and Transport Rule emission files) will be performed to help identify potential source sectors of ozone precursors. Analysis of available EPA modeling results will also be performed to help identify potential source sectors of ozone precursors in, and upwind, of the OTR domain.

13.4 Ozone Control Strategy for the OTR Domain

The OTR Control Strategy Development Team will review CALGRID results, other available databases**,** and EPA databases, to help identify potential control programs. The Team will work with OTR states and the OTC stationary, area and mobile source committees to design ozone control strategies for the OTR Domain with the goal of meeting regulatory target dates.

14 OZONE CONTROL STRATEGY EMISSION INPUT FILES

14.1 Ozone Control Strategy Emission Input Files for the OTR Domain for 2009

Emissions files for the selected ozone control strategy for the OTR Domain for 2009 will be prepared in a consistent manner as per schedule. If necessary, additional IPM simulations may be performed to obtain EGU emission estimates.

15 OZONE PREDICTIONS FOR 2009

15.1 Initial Conditions

The initial conditions at the startup will be “clean”. The OTR Modeling Team will use the 2002 initial condition files as a surrogate for initial conditions for 2009 modeling runs.

15.2 Boundary conditions

EPA will be consulted for guidance in estimating boundary conditions for 2009 or, under default, would utilize those adapted for the Base 2002 base year simulation. It should be noted that the default option was used for the 2009 CMAQ simulation.

15.3 CAA Ozone Predictions for 2009

The model will be run with the CAA emission files developed for 2009. Tile plots, difference plots, and model statistics will be prepared to help characterize the extent of any remaining non-attainment areas predicted in the OTR in 2009.

15.4 Ozone Control Strategy Predictions for 2009.

The model will be run with OTR control strategy emission files prepared for 2009. Tile plots, difference plots and model statistics will be prepared to help characterize the extent of any remaining non-attainment areas predicted in the OTR for the year 2009.

16 DOCUMENTATION

A report titled "Assessment of the Ozone National Ambient Air Quality Standards in the Ozone Transport Region will be prepared by the OTR Modeling Team". The report would cover model performance evaluation, and an evaluation of the OTR control strategy runs for 2009. This technical document will be made available to all interested parties and will be used by the member States in their SIP submission documentation as needed.

17 REFERENCES

Environ (2006): Determination of Representativeness of 2002 Ozone Season for Ozone Transport Region SIP Modeling

Dalin Zhang (2000): Development of meteorological database for summer 1997 using MM5 at 12 km resolution in Photochemical Model Simulations

Dalin Zhang and William Zheng (2004): Diurnal cycles of surface winds and temperatures as simulated by five boundary-layer parameterizations, Journal of Appl. Meteorology 43, 157-169

Gopal Sistla (1999): Development of a surrogate database for use in Regional/Urban-scale Modeling at 4 km spatial resolution (see http://envpro.ncsc.org/emcenter/)

Wick Havens (2000): Development of an Emissions Inventory for Regional/Urban-scale Modeling, MARAMA-RTC (see http://www.marama.org/)

APPENDIX A

Workgroups for the Development and Application of the OTC SIP Quality Modeling System for Assessment of the Ozone National Ambient Air Quality Standard in the Ozone Transport Region

OTC Photochemical Modeling Workgroup

State Lead	Gopal Sistla
OTC contact	Tom Frankiewicz
Chair OTC Modeling Committee	Barbara Kwetz

Delaware	Mohammed Majeed
DC	Rama Tangirala
Maine	Tom Downs
Maryland	Mike Woodman
Massachusetts	Steve Dennis
New Hampshire	Jeff Underhill
New York	Gopal Sistla
Pennsylvania	Tim Leon Gurrero
NESCAUM	Gary Kleiman
EPA	Invited for selected discussions

OTC Meteorological Modeling Workgroup

State Lead	Mike Woodman
OTC contact	Tom Frankiewicz
Connecticut	Dave Wackter
Delaware	Mohammed Majeed
DC	Rama Tangirala
Maine	Tom Downs
Maryland	Tad Aburn Matt Seybold Mike Woodman Jeff Stehr
Massachusetts	Rich Fields
New Hampshire	Jeff Underhill
New Jersey	Alan Dresser
New York	Gopal Sistla
Pennsylvania	Tim Leon Gurrero
Vermont	Paul Wishinski
Virginia	Kirit Chaudhar
MARAMA	Serpil Kayin
NESCAUM	Gary Kleiman
EPA	Invited for selected discussions

OTC Emission Inventory Development Workgroup

State Lead	Ray Malenfant
OTC contact	Tom Frankiewicz
Connecticut	Bill Simpson
Delaware	Dave Fees
DC	Rama Tangirala
Maine	Dave Wright
Maryland	Roger Thgunell
Massachusetts	Ken Santlal
New Hampshire	Mike Fitzgerald Andy Bodnarik
New Jersey	Joan Held
New York	Jim Ralston
Pennsylvania	Dean Van Orden
Rhode Island	Karen Slattery
Vermont	Jeff Merrell
Virginia	Tom Ballou
MARAMA	Serpil Kayin
EPA	Invited for selected discussions

OTC/MANE-VU Control Strategies Workgroup

State Lead	Jeff Underhill
OTC contact	Tom Frankiewicz
Connecticut	Dave Wackter Kurt Kebschull
Delaware	Ray Malenfant Mohammed Majeed
Maine	Jeff Crawford Tom Downs
Maryland	Tad Aburn Matt Seybold Mike Woodman Jeff Stehr
Massachusetts	Eileen Hiney Steve Dennis
New Hampshire	Jeff Underhill Andy Bodnarik
New Jersey	Bob Stern Ray Papalski Alan Dresser Robert Huizer
New York	Gopal Sistla
Pennsylvania	Wick Havens Tim Leon Gurrero
Rhode Island	Barbara Morin
Vermont	Paul Wishinski
Virginia	Kirit Chaudhar
MARAMA	Serpil Kayin Megan Schuster
NESCAUM	Leah Weiss Gary Kleiman
EPA	Invited for selected discussions

APPENDIX B

Work Plan for the Development and Application of the OTC SIP Quality Modeling System.

Work plan for the Development and Application of the OTC SIP Quality Modeling System[†]

Task No.	Activity or Task	Initial Target Date	Organization(s) Performing Task	Remarks & Status Notes & Revisions
	Initial Planning			
1	Prepare a Work plan and a Modeling Protocol for the development of the OTC SIP quality modeling system to address ozone non-attainment problems in the OTR.	Nov 03	NY, MA	Completed
	Meteorology			
2 3 4	Complete MM5 modeling for 2002 (May thru Sep) Episode evaluation and assessment Evaluate MM5 data and process for photochemical models.	Dec 04 Dec 04 Mar 05	MD (UMCP), NY Contract Support MD (UMCP), NY	In progress In progress Inn progress
	Emissions Inventories			
5 6 7 8	Prepare 2002 emission inventories for MANEVU states in the OTR Domain. Obtain 2002 emission inventories for non-MANEVU states in the OTR Domain. Prepare 2009 CAA emission inventories for MANEVU states in the OTR Domain. Obtain 2009 CAA emission inventories for non-MANEVU states in the OTR Domain.	Jan 05 Jan 05 Aug 05 Aug 05	MARAMA MARAMA MARAMA MARAMA	
	Emission Input files			
9 10 11	Prepare 2002 emission files for the OTR domain with SMOKE and /or EMS2001, and QA emissions data. Prepare 2009 CAA emission files for the OTR domain with SMOKE and /or EMS2001, and QA emissions data. Prepare 2009 emission files for OTR control strategy with SMOKE and /or EMS2001, and QA emissions data.	Nov 04 Nov 05 Nov 05	NY NY NY	Delayed until Jan 05

Task No.	Activity or Task	Initial Target Date	Organization(s) Performing Task	Remarks & Status Notes & Revisions
	Modeling			
12	Complete 2002 model performance evaluation for OTR Domain.	May 05	NY	
13	Test model sensitivity to NOx, VOC reductions and potential control measure options.	Sep 05	NY	
14	Complete modeling runs for 2009 CAA scenarios.	Jan 06	NY	
15	Complete modeling runs for 2009 OTR control strategy	Jan 06	NY	
	OTR Control Strategy Development			
16	Perform screening runs with OTC CALGRID modeling system	Mar 05	OTR Control Strategy Development Workgroup	
17	Review air quality and emission databases to help identify potential sources of ozone in the OTR.	Jul 05	OTR Control Strategy Development Workgroup	
18	Design Control Strategy for the OTR Domain	Sep 05	OTR Control Strategy Development Workgroup	
	Reports			
19	Complete technical support documents presenting regional OTR modeling and air quality/emission database analyses. (These two documents will provide technical support for state ozone SIPs.	Jun 06	NY, other OTC states	This will allow states nine months to prepare SIP revisions due in April 2007.
	Management			
20	Day-to-day management and coordination.	on-going	OTC Modeling Committee	
21	Provide direction, oversight, and obtain any necessary funding.	on-going	OTC Air Directors	

† To be used as needed for Ozone SIPs in the OTR. Based on EPA draft guidance, Ozone SIPs expected submission by April 2007.

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Emission Processing for OTC 2009 OTW/OTB 12km CMAQ Simulations

Office of Air Data Analysis
Air Division
Virginia Department of Environmental Quality
Richmond, VA

February 19, 2007

Overview

The OTC 2009 OTW/OTB emission modeling was conducted at the Virginia Department of Environmental Quality (DEQ). The modeling followed and retained the framework of the previous (original) OTC 2002/2009 emission modeling done by the New York State Department of Environmental Conservation (NYSDEC). Several changes and corrections had been made throughout the entire modeling period. Virginia DEQ was in close contact with NYSDEC which provided many premerged netCDF files for inclusion in the merging process to obtain final SMOKE outputs for CMAQ simulations.

Emissions for all source categories were processed by SMOKE2.1. The SMOKE programs downloaded from Community Modeling and Analysis System (CMAS) website have been compiled for LINUX system and ready for usage. If existing compiled codes returned errors, such as in the case of large MCIP files, compiled versions provided by NYSDEC and available at Ozone Research Center's (ORC) ftp sites were used instead.

Data Sources

The majority of raw input data files were provided to DEQ by Greg Stella of AlpineGeophysics through its ftp site at alpinegeophysics.com. Different versions of 2009 SMOKE emission modeling have been conducted over the years by AlpineGeophysics. The version of input data files used for OTC 2009 OTW/OTB emission modeling was labeled as BaseG of the AlpineGeophysics.

In some source categories, primarily in MANEVU and Canada regions, several changes and corrections in emissions were made at various stage of SMOKE modeling, causing the outputs using AlpineGeophysics files to be discarded. SMOKE modeling of those categories (described below) was performed by NYSDEC which made netCDF outputs available at Ozone Research Center's ftp site at ozoneresearch.org. In such cases, DEQ used the premerged netCDF files directly for final merging.

SMOKE Processing

The OTC 12km regional and urban scale modeling domain encompasses four RPOs: VISTAS, MANEVU, CENRAP, and MRPO. Part of Canada also falls in the modeling domain.

The OTC 2009 OTW/OTB emissions were processed roughly on a month-by-month and RPO-by-RPO basis. SMOKE modeling was conducted for each month for each of the four individual RPOs as well as for Canada (completed by NYSDEC), except for mobile source category, which was done by two sub-RPOs: one for MANEVU and the other for the combination of VISTAS, CENRAP, and MRPO. A separate SMOKE ASSIGNS file was created for each RPO and/or source category. The episode length in the ASSIGNS files varies from one month to the entire year.

Five major emission source categories (listed below) were included in the OTC 2009 OTW/OTB SMOKE modeling. Sub-categories were lumped into the major categories here for presentation purpose but were treated as separate categories in processing. For example, low-level wildfire was treated as area source, whereas high-level wildfire was modeled as point source. In addition, point source category was further divided into EGU and non-EGU. Minor sources such as non-fossil fuels and marine vessel were processed as well. Table~1 summarizes input files and other relevant information for each of the RPOs and Canada.

(1) Area (including low-level wildfire and NH3);
(2) Nonroad (including marine vessel);
(3) Point (including EGU, Non-EGU, non-fossil fuels and wildfires);
(4) Mobile;
(5) Biogenic.

For VISTAS region (only), AlpineGeophysics has developed annual, daily, or hourly emissions data for EGU and high-level wildfire source categories. SMOKE run script parameters of DAY_SPECIFIC_YN and/or HOUR_SPECIFIC_YN were turned on (to Y) and month-specific temporal profiles of BaseG were applied to make sure those more detailed inventory files were used to override annual emissions.

Mobile source emissions were divided into two groups for processing. The original input file (mbinv_vistas_09g_vmt_12jun06.txt) provided by AlpineGeophysics contains VMT data for all four RPOs. The MANEVU portion was first removed from the original file and the revised file (otherRPOs.mb.vmt.emis) which contains VMT data for the remaining three RPOs (VISTAS, CENRAP, MRPO) was then used as the input inventory for processing. The MANEVU portion removed from the original file was processed separately on its own as another group.

MOBILE6 Processing

As described above, mobile source emissions for three RPOs --- VISTAS, CENRAP, and MRPO --- were grouped and processed together. To estimate vehicle emission factors in MOBILE6, temperature averaging of space and time were specified in input file of mvref_vistas_2009g_26aug06.txt as follows:

(1) Spatial averaging: temperatures were averaged over all counties that share a common reference county;

(2) Temporal averaging: temperatures were averaged over the duration of the episode, which in present case is one month.

The averaging described above is consistent with the original OTC 2002/2009 emission processing done by NYSDEC. DEQ also processed MANEVU portion of mobile source. However, due to the inconsistency of temporal profile and cross-reference file used between DEQ's run and the original 2002/2009 run by NYSDEC, those outputs were discarded. NYSDEC re-processed the MANEVU portion and provided netCDF files to

DEQ for final merging. The re-processed MANEVU run by NYSDEC reflects updated mobile source information in New Jersey and Connecticut.

Speciations, Temporal and Spatial Allocations

For consistency, the OTC 2009 OTW/OTB input profiles for speciations, temporal, and spatial allocations remained the same as the original OTC 2002/2009 emission modeling done by NYSDEC, even though more up-to-date profiles (such as those marked with BaseG or later) were available at the AlpineGeophysics. No attempt was made to examine the effects of different versions of profiles on daily emissions.

Fugitive Dust Corrections

Fugitive dust emissions were corrected in SMOKE by two-step process.   First, SMKINVEN and CNTLMAT were executed with two separate input files: (1) the original inventory file, and (2) a controlled matrix file of 2009 dust projection factors. A new inventory file containing adjusted emissions was created in SMKINVEN/CNTLMAT run. The new file was then used as the inventory input for regular SMOKE processing of SMKINVEN, SPCMAT, GRDMAT, TEMPORAL, LAYPOINT (for point source), and SMKMERGE. The source categories which went through this two-step process included non-EGU for VISTAS, MANEVU, CENRAP, and MRPO, and area sources for MANEVU and CENRAP.

Canadian and Biogenic Emissions

Canadian emissions of all four source categories (area, nonroad, point, mobile) and domain-wide biogenic emissions were processed by NYSDEC. Details on how emission modeling of these categories was conducted have been documented in ``Emission Processing for the Revised 2002 OTC Regional and Urban 12 km Base Case Simulations" by NYSDEC. DEQ obtained premerged netCDF files for these source categories from ORC ftp site and used them directly for final merging.

Premerged netCDF Files

In December 2006, NYSDEC made further adjustments to ammonia and dust emissions of MRPO region and ran through SMOKE with the adjusted emissions. Three of MRPO's source categories were affected: area, nonroad, and NH3. As a result, outputs generated by DEQ for the three affected MRPO's categories were discarded. Canadian emissions of all four source categories (area, nonroad, point and mobile) were also re-processed by NYSDEC with updated information.   Seven newer versions, three for MRPO and four for Canada, of premerged netCDF files reflecting the adjustments were made available at ORC ftp site. The updated premerged netCDF files were used to replace earlier versions in the final merging process.

SMOKE Merging

A total of twenty-seven netCDF files were merged together to produce daily total emissions for use as inputs to CMAQ:

(1) Six for VISTAS (excluding mobile);
(2) Five for MANEVU (excluding mobile);
(3) Four for CENRAP (excluding mobile);
(4) Five for MRPO (excluding mobile);
(5) Two for mobile source emissions;
(6) Four for Canadian emissions;
(7) One for domain-wide biogenic emissions.

Table~1 lists the categories (indicated by sequential numbers) which were combined in the merging process.

BOTW Emissions

The differences between 2009 BOTW and 2009 OTW/OTB emissions lie in the area and non-EGU sources of MANEVU region where more controlled emissions are in effect for BOTW than for OTW/OTB. NYSDEC generated premerged netCDF files for BOTW run. To obtain 2009 OTC BOTW emissions, the two affected MANEVU source categories for OTW/OTB run were substituted and replaced by the new BOTW premerged files in the final merging process.

Table 1. 2009 OTW/OTB Emissions Processing Summary			
Category	**Files**	**Files Source**	**Notes**
VISTAS			
(1) Area	arinv_vistas_2009g 2453922 w pmfac.txt	Alpine Geophysics	
(2) Non-Road	nrinv_vistas_2009g 2453908.txt	Alpine Geophysics	
	marinv_vistas_2009g 2453972.txt	Alpine Geophysics	marine vessel emissions
(3) Non-EGU	negu_ptinv_vistas_2009_baseg_2453957.txt	Alpine Geophysics	
(4) EGU	egu_ptinv_vistas_2009_baseg_2453990.txt	Alpine Geophysics	annual emissions
	pthour_2009_baseg_mon_2453990.ems	Alpine Geophysics	hourly emissions, mon=may,jun,...
(5) Low Fire	area_level_res_vistas2002_baseg.ida	Alpine Geophysics	treated as area sources
(6) High Fire	ptinv.plume.vistasbaseg09.num.ida	Alpine Geophysics	treated as point sources; annual data
	ptday.plume.vistasbaseg09.num.ida	Alpine Geophysics	daily data; num=1,2,...
	pthour.plume.vistasbaseg09.num.ida	Alpine Geophysics	hourly data; num=1,2,...
(7) Mobile	otherRPOs.mb.vmt.emis	Revised from AlpineG	contains VISTAS/CENRAP/MRPO
MANE-VU			
(8) Area	MANEVU2009OTBAreaV3_1_woodburn.incl.IDA.txt	Alpine Geophysics	if BOTW, premerged netCDF for merging
(9) Non-Road	2009MANEVUNRNIFV3_0_NonRoad_IDA.NJ_x.txt	Alpine Geophysics	
(10) Non-EGU	manevu2009noneguv3_0_point_ida.txt	Alpine Geophysics	if BOTW, premerged netCDF for merging
(11) EGU	ptinv_egu_2009_manevu_10aug2006.txt	Alpine Geophysics	annual emissions
(12) Non-Fossil EGU	manevu_nonfossil_2009_19sept2006.txt	Alpine Geophysics	non-fossil fuel emissions
(13) Mobile	netCDF file	Alpine Geophysics	netCDF used for merging
CENRAP			
(14) Area	cenrap_area_burning_smoke_2009_input_ann_tx_neli_071905_2453959.txt	Alpine Geophysics	
	cenrap_area_misc_2009_smoke_input_ann_state_071905_2453959.txt	Alpine Geophysics	
	cenrap_area_misc_2009_smoke_output_nh3_annual_072805 rev_2453959.txt	Alpine Geophysics	
	arinv.cenrap_2009_09_xfact.ida.txt	Alpine Geophysics	
	cenrap_area_smoke_2009_output_nh3_annual_071905_rev_2453959.txt	Alpine Geophysics	
(15) Non-Road	cenrap_nonroad_smoke_2009_output_annual_071305_rev.txt	Alpine Geophysics	
(16) Non-EGU	ptinv_negu_cenrap2009_25aug2006.ida	Alpine Geophysics	
(17) EGU	ptinv_egu_2009_cenrap_10aug2006.txt	Alpine Geophysics	annual emissions
Mobile	otherRPOs.mb.vmt.emis	Revised from AlpineG	VISTAS/CENRAP/MRPO
MRPO			
(18) Area	arinv_other_mrpok_2009_10aug2006.txt	Alpine Geophysics	dust correction; premerged netCDF
	dustinv_mrpo_basef4_2009_10nov05.ida	Alpine Geophysics	
(19) NH3	nh3inv_2009_mrpok_ann_10aug2006.txt	Alpine Geophysics	dust correction; premerged netCDF
(20) Non-Road	nrinv_mrpo_g_09_2453958 adj.txt	Alpine Geophysics	dust correction; premerged netCDF
	arinv_mar_mrpok_2009_7aug2006.txt	Alpine Geophysics	
(21) Non-EGU	ptinv_negu_2009_mrpok_10aug2006.txt	Alpine Geophysics	
(22) EGU	ptinv_egu_2009_mrpok_10aug2006.txt	Alpine Geophysics	annual emissions
Mobile	otherRPOs.mb.vmt.emis	Revised from AlpineG	VISTAS/CENRAP/MRPO

Table 1. 2009 OTW/OTB Emissions Processing Summary			
Category	**Files**	**Files Source**	**Notes**
CANADA			
(23) Area	netCDF file	NYSDEC; downloaded from OTC ftp site	premerged netCDF for merging
(24) Non-Road	netCDF file	NYSDEC; downloaded from OTC ftp site	premerged netCDF for merging
(25) Point	netCDF file	NYSDEC; downloaded from OTC ftp site	premerged netCDF for merging
(26) Mobile	netCDF file	NYSDEC; downloaded from OTC ftp site	premerged netCDF for merging
BIOGENIC			
(27) Biogenic	netCDF file	NYSDEC; downloaded from OTC ftp site	domain-wide emissions; premerged netCDF for merging

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Trends in Measured 1-h Ozone Concentrations over the OTR modeling domain

Bureau of Air Quality Analysis and Research

Division of Air Resources

New York State Department of Environmental Conservation

Albany, NY 12233

February 19, 2007

Ozone Trend Analysis

Trends in raw and meteorologically adjusted 1-hour ozone were calculated at several AQS monitoring sites in the Northeast. A summary of the analysis is provided below, and a detailed description of the met-adjustment procedure is outlined in Milanchus et al. (1998) and references contained including those related to the Kolmogorov-Zurbenko (KZ) method used in this analysis to estimate trends.

Data

Ozone time series were obtained at many monitoring sites in the Northeastern United States. From these data, log of daily maximum one hour ozone were calculated. In addition, several meteorological variables were obtained from National Weather service stations in the Northeast. These included surface temperature, dew point and specific humidity with dew point depression being calculated. Daily maximum values were calculated for each of the meteorological variable times series. The time span of data considered for both ozone and meteorological variables was from 1985 to 2005. In addition, this analysis focused on the ozone season (April 15 through October 15) of each year.

Summary of Trend analysis

In calculating raw ozone trends, a KZ365,3 filter was applied to the log of daily maximum ozone time series to obtain the long-term trend component. A linear regression is then performed to get the trend estimate.

For the met-adjusted trends, the time series of ozone and meteorological variables must first be separated into the baseline and short-term time scales. A KZ15,5 was used for this separation. The effects of meteorology are then removed from these components independently. Applying the KZ15,5 filter to the raw data (log of daily maximum ozone and daily maximum met. variables) produces the baseline component. The short term component is then obtained by subtracting the baseline from the raw data. For this analysis, temperature and dew point depression were removed from the short-term component, while temperature and specific humidity were removed from the baseline component.

Once the baseline and short-term components are isolated a multiple least squares regression is performed on each component with the respective meteorological components. Next, the residuals from the multiple regression on the short-term are added to the residuals from the baseline to get the met-adjusted ozone time series. A KZ365,3 filter is then applied to the met-adjusted ozone to get the long-term component of met-adjusted ozone. A linear regression is then applied to the long-term met-adjusted ozone to get a trend estimate and 95% confidence interval. Trend values that are negative represent a decreasing trend in ozone, while positive values indicate an upward trend. In this analysis, trends were calculated for 4 different time periods; 1985 to 2005, 1990 to 2005, 1995 to 2005 and 2000 to 2005. Only trends that were significant at the 95% confidence level were reported. Tables 1to 4 list the raw and met-adjusted trends for each of these time periods over the OTR. The total number of ozone monitors varied in these time periods, as there were often changes in the location of the monitor due to operational logistics. Figures 1a and 1b provide a graphical representation of the trends for the 1990 to 2005 time period.

Results

Trends in both raw and meteorologically adjusted ozone are found to vary substantially over different time periods and from location to location. Trends were calculated for all ozone monitors located within the modeling domain, although the following discussion is focused on the New York CMSA, and that similar analysis could be performed for other areas of the OTR. In general, there is a decreasing trend in raw ozone over the New York, New Jersey and Connecticut area for all the time periods considered. Monitors in New York tend to show more decreasing trends when consideration is given to the longer time period of 1985 to 2005, and less for the shorter period of 1995 to 2005. Only one monitor in New Jersey continues to show an increasing trend in raw ozone levels irrespective of the 3 time periods, while Connecticut has the highest number of monitors that display an increasing trend particularly for the 1990 to 2005 period.

When meteorologically adjusted ozone is considered, the general trend over the tri-state area is one of decreasing ozone. The majority of New York monitors show decreasing trends in met-adjusted ozone with the most being in the 1985 to 2005 and 1995 to 2005 time periods and the least during the 1990 to 2005 time period. As with raw ozone concentrations, New Jersey has only one monitor showing an upward trend and only for the 1990 to 2005 time period. Monitors in Connecticut show a general downward trend in met-adjusted ozone with the majority of these occurring in the 1985 to 2005 time period and the least in the 1990 to 2005 period. Although we see a fairly consistent decrease in both raw and meteorologically adjusted ozone, it is not uncommon to see trends of different magnitude or even trend directions in nearby monitors that is probably a reflection of differences in emissions and titration effects on ozone.

Reference:

Milanchus et al., (1998) “Evaluating the effectiveness of ozone management efforts in the presence of meteorological variability”, JA&WMA, 48, 201-215.

Table 1 Raw and Met-adjusted trends in 1-hr ozone concentrations over the OTR for 1985-2005 ozone seasons

STATE	AIRS ID	STATION	LOCATION	RAW TRENDS		MET-ADJUSTED TRENDS	
				Slope (%/yr)	95% CI	Slope (%/yr)	95% CI
CT	90010017	GREENWICH	GREENWICH POINT PARK	-0.118	0.015	-0.234	0.017
CT	90011123	DANBURY	TRAILER, W. CONNECTICUT STATE UNIVERSITY	0.041	0.019	-0.083	0.021
CT	90013007	STRATFORD	USCG LIGHTHOUSE , PROSPECT STREET	-0.558	0.017	-0.823	0.019
CT	90031003	E. HARTFORD	MCAULIFFEE PARK	0.395	0.019	0.422	0.014
CT	90070007	MIDDLETOWN	CONN. VALLEY HOSP., SHEW HALL, EASTERN D	-0.097	0.014	-0.197	0.011
CT	90093002	MADISON	HAMMONASSET STATE PARK	0.056	0.015		
CT	90110008	GROTON	UNIVERSITY OF CONNECTICUT, AVERY POINT	-0.758	0.015	-0.807	0.019
CT	90131001	STAFFORD	ROUTE 190, SHENIPSIT STATE FOREST	-0.176	0.015	-0.218	0.013
DC	110010025	NOT IN A CITY	TAKOMA SC. PINEY BRANCH RD & DAHLIA ST N	-0.464	0.022	-0.191	0.015
ME	230052003	CAPE ELIZABETH	TWO LIGHTS STATE PARK	-0.943	0.014	-0.847	0.013
ME	230312002	NOT IN A CITY	OCEAN AVE/PARSONS WAY, KENNEBUNKPORT	-0.794	0.016	-0.712	0.013
MD	240030014	NOT IN A CITY	QUEEN ANNE AND WAYSON ROADS	-0.904	0.024	-0.698	0.019
MD	240051007	COCKEYSVILLE	GREENSIDE DRIVE COCKEYSVILLE MD	-0.596	0.015	-0.326	0.010
MD	240053001	ESSEX	WOODWARD & DORSEY RDS ,ESSEX MD	-0.493	0.014	-0.221	0.012
MD	240130001	NOT IN A CITY	1300 W. OLD LIBERTY ROAD, WINFIELD,MD	-0.841	0.014	-0.566	0.010
MD	240170010	NOT IN A CITY	SO MD CORRECTIONAL CAMP, HUGHESVILLE	-0.780	0.020	-0.557	0.015
MD	240251001	EDGEWOOD	EDGEWOOD ARMY CHEM CENTER EDGEWOOD	-0.537	0.016	-0.296	0.016
MD	240313001	ROCKVILLE	LOTHROP E SMITH ENV.ED CENTER ROCKVILLE	-0.604	0.022	-0.441	0.018
MA	250010002	TRURO	FOX BOTTOM AREA-CAPE COD NAT'L SEA SHR	0.029	0.018	-0.312	0.020
MA	250051002	FAIRHAVEN	LEROY WOOD SCHOOL	-0.186	0.019	-0.301	0.020
MA	250130008	CHICOPEE	ANDERSON ROAD AIR FORCE BASE	-0.201	0.019	-0.072	0.016

MA	250154002	WARE	QUABBIN SUMMIT	-0.520	0.015	-0.576	0.014
NH	330050007	KEENE	RAILROAD STREET	-0.140	0.036	-0.360	0.005
NH	330190003	CLAREMONT	SOUTH STREET	0.390	0.068	0.210	0.037
NJ	340010005	NOT IN A CITY	BRIGANTINE WILDLIFE REFUGE,NACOTE CREEK	-0.999	0.020	-0.914	0.020
NJ	340070003	NOT IN A CITY	COPEWOOD E. DAVIS STS; TRAILER	-0.692	0.021	-0.729	0.020
NJ	340071001	NOT IN A CITY	ANCORA STATE HOSPITAL, ANCORA	-0.838	0.014	-0.752	0.016
NJ	340110007	NOT IN A CITY	LINCOLN AVE.&HIGHWAY 55,NE OF MILLVILLE	-0.767	0.014	-0.551	0.015
NJ	340150002	NOT IN A CITY	CLARKSBORO,SHADY LANE REST HOME	-0.686	0.011	-0.580	0.012
NJ	340170006	BAYONNE	VETERANS PARK ON NEWARK BAY	-0.988	0.014	-0.784	0.015
NJ	340190001	FLEMINGTON	RARITAN STP,RTE.613S, THREE BRIDGES	-0.326	0.013	-0.118	0.016
NJ	340210005	NOT IN A CITY	RIDER COLLEGE;LAWRENCE TOWNSHIP	-0.825	0.014	-0.753	0.012
NJ	340273001	NOT IN A CITY	BLDG.#1, BELL LABS, OFF ROUTE 513	-0.823	0.015	-0.645	0.017
NY	360010012	ALBANY	LOUDONVILLE RESERVOIR			0.169	0.010
NY	360150003	ELMIRA	SULLIVAN ST., WATER TR. PL.	-0.056	0.017	0.036	0.016
NY	360290002	AMHERST	AUDUBON GOLF COURSE, MAPLE ROAD	0.066	0.027	0.334	0.027
NY	360310002	NOT IN A CITY	SUMMIT,WHITEFACE MTN,WEATHER STATION	-0.319	0.012	-0.376	0.027
NY	360310003	NOT IN A CITY	BASE WHITEFACE MTN,ASRC,SUNY	-0.528	0.026	-0.441	0.025
NY	360450002	NOT IN A CITY	VADAI ROAD, PERCH RIVER, BROWNVILLE	-0.147	0.024	-0.255	0.024
NY	360631006	NOT IN A CITY	MIDDLEPORT STP, NORTH HARTLAND RD	-0.317	0.017	-0.059	0.017
NY	360850067	NEW YORK CITY	SUSAN WAGNER HS, ,	-0.643	0.018	-0.399	0.022
NY	360930003	SCHENECTADY	MT.PLEASANT HS,	-0.123	0.016	0.016	0.011
NY	361030002	BABYLON	EAST FARMINGDALE WATER DIST.,GAZZA BLVD.	-0.315	0.018	-0.678	0.014
NY	361030004	RIVERHEAD	39 SOUND AVENUE,RIVERHEAD	-0.163	0.051	-0.089	0.038
NY	361173001	NOT IN A CITY	WAYNE EDUCATIONAL CENTER, WILLIAMSON	-0.929	0.020	-0.618	0.016
NY	361192004	WHITE PLAINS	WHITE PLAINS PUMP STATION,ORCHARD STREE	-0.424	0.018	-0.330	0.018
PA	420030008	PITTSBURGH	BAPC 301 39TH STREET BLDG #7	0.148	0.034	0.678	0.031
PA	420030067	NOT IN A CITY	OLD OAKDALE ROAD SOUTH FAYETTE	0.879	0.037	1.204	0.035
PA	420070014	BEAVER FALLS	EIGHT STREET AND RIVER ALLEY	-0.251	0.016	0.121	0.015
PA	420110009	READING	UGI CO MONGANTOWN RD AND PROSPECT ST	-0.304	0.016	-0.269	0.014

PA	420130801	ALTOONA	2ND AVE & 7TH ST	-0.207	0.016	0.141	0.014
PA	420170012	BRISTOL (BORO)	ROCKVIEW LANE	-0.609	0.012	-0.522	0.015
PA	420210011	NOT IN A CITY	MILLER AUTO SHOP 1 MESSENGER ST	-0.020	0.018	0.327	0.017
PA	420430401	HARRISBURG	1833 UPS DRIVE HARRISBURG PA	-0.188	0.017	-0.130	0.013
PA	420431100	HERSHEY	SIPE AVE & MAE STREET	-0.297	0.017	-0.279	0.014
PA	420450002	CHESTER	FRONT ST & NORRIS ST	-0.585	0.014	-0.379	0.015
PA	420692006	SCRANTON	GEORGE ST TROOP AND CITY OF SCRANTON	-0.163	0.017	-0.218	0.017
PA	420710007	LANCASTER CITY	ABRAHAM LINCOLN JR HIGH GROFFTOWN RD	0.178	0.020	0.265	0.019
PA	420730015	NEW CASTLE	CROTON ST & JEFFERSON ST.	-0.091	0.014	0.112	0.014
PA	420770004	ALLENTOWN	STATE HOSPITAL REAR 1600 HANOVER AVE	-0.054	0.017	-0.056	0.018
PA	420791100	NANTICOKE	255 LOWER BROADWAY	-0.073	0.020	-0.110	0.024
PA	420791101	WILKES-BARRE	CHILWICK & WASHINGTON STS	0.132	0.017	0.089	0.016
PA	420850100	NOT IN A CITY	PA518 (NEW CASTLE ROAD) & PA418			0.164	0.013
PA	420910013	NORRISTOWN	STATE ARMORY - 1046 BELVOIR RD	-0.323	0.016	-0.142	0.017
PA	420990301	NOT IN A CITY	ROUTE 34 LITTLE BUFFALO STATE PARK	-0.274	0.017	-0.052	0.016
PA	421010014	PHILADELPHIA	ROXY WATER PUMP STA EVA-DEARNLEY STS	-0.991	0.012	-0.720	0.014
PA	421010024	PHILADELPHIA	GRANT-ASHTON ROADS PHILA NE AIRPORT	-0.408	0.024	-0.374	0.029
PA	421250005	CHARLEROI	CHARLER01 WASTE TREATMENT PLANT	0.060	0.023	0.386	0.022
PA	421250200	WASHINGTON	MCCARRELL AND FAYETTE STS	-0.273	0.017	0.094	0.017
PA	421330008	YORK	HILL ST.	-0.071	0.016	0.060	0.018
RI	440030002	NOT IN A CITY	W. ALTON JONES CAMPUS URI PARKERFIELD	-0.752	0.017	-0.888	0.018
VA	510130020	NOT IN A CITY	S 18TH AND HAYES ST	-0.529	0.015	-0.195	0.011
VA	510410004	NOT IN A CITY	BEACH,INTERSECTION OF CO.ROADS 655 & 654	-0.555	0.020	-0.122	0.018
VA	510590018	NOT IN A CITY	MT.VERNON 2675 SHERWOOD HALL LANE	-0.939	0.014	-0.530	0.013
VA	510595001	MC LEAN	LEWINSVILLE 1437 BALLS HILL RD	-0.540	0.014	-0.209	0.015
VA	510610002	NOT IN A CITY	RT651 C PHELPS WILDLIFE MANAGEMENT AREA	-1.145	0.019	-0.741	0.016
VA	510870014	NOT IN A CITY	2401 HARTMAN STREET MATH & SCIENCE CTR	-0.427	0.015		
VA	511130003	NOT IN A CITY	SHENANDOAH NP BIG MEADOWS	-0.031	0.021	0.067	0.018
VA	511611004	VINTON	EAST VINTON ELEMENTARY SCHOOL	-0.374	0.022	-0.180	0.019
VA	515100009	ALEXANDRIA	517 N SAINT ASAPH ST, ALEXANDRIA HEALTH	0.104	0.024	0.400	0.020
VA	518000004	SUFFOLK	TIDEWATER COMM. COLL.. FREDERIC CAMPUS	-0.287	0.024	0.072	0.020

Table 2 Raw and Met-adjusted trends in 1-hr ozone concentrations over the OTR for 1990-2005 ozone seasons

STATE	AIRS ID	STATION	LOCATION	RAW TRENDS		MET-ADJUSTED TRENDS	
				Slope (%/yr)	95% CI	Slope (%/yr)	95% CI
CT	090010017	GREENWICH	GREENWICH POINT PARK	0.165	0.022	0.202	0.024
CT	090011123	DANBURY	TRAILER, W. CONNECTICUT STATE UNIVERSITY	0.591	0.024	0.646	0.023
CT	090013007	STRATFORD	USCG LIGHTHOUSE , PROSPECT STREET	0.078	0.018	-0.123	0.019
CT	090031003	EAST HARTFORD	MCAULIFFEE PARK	0.046	0.027	0.208	0.018
CT	090070007	MIDDLETOWN	CONN. VALLEY HOSP., SHEW HALL, EASTERN D	0.225	0.017	0.171	0.012
CT	090093002	MADISON	HAMMONASSET STATE PARK	-0.203	0.022	-0.167	0.025
CT	090110008	GROTON	UNIVERSITY OF CONNECTICUT, AVERY POINT	-0.402	0.022	-0.295	0.026
CT	090131001	STAFFORD	ROUTE 190, SHENIPSIT STATE FOREST	-0.114	0.019	-0.104	0.015
DC	110010025	NOT IN A CITY	TAKOMA SC. PINEY BRANCH RD & DAHLIA ST N	-0.357	0.029	-0.088	0.021
ME	230052003	CAPE ELIZABETH	TWO LIGHTS STATE PARK	-0.858	0.021	-0.684	0.02
ME	230312002	NOT IN A CITY	OCEAN AVE/PARSONS WAY, KENNEBUNKPORT	-0.874	0.015	-0.746	0.013
MD	240030014	NOT IN A CITY	QUEEN ANNE AND WAYSON ROADS	-0.805	0.037	-0.518	0.032
MD	240051007	COCKEYSVILLE	GREENSIDE DRIVE COCKEYSVILLE MD	-0.805	0.021	-0.416	0.013
MD	240053001	ESSEX	WOODWARD & DORSEY RDS ,ESSEX MD	-0.396	0.020		
MD	240130001	NOT IN A CITY	1300 W. OLD LIBERTY ROAD, WINFIELD,MD	-0.940	0.019	-0.553	0.013
MD	240170010	NOT IN A CITY	SO MD CORRECTIONAL CAMP, HUGHESVILLE	-0.644	0.029	-0.501	0.025
MD	240251001	EDGEWOOD	EDGEWOOD ARMY CHEM CENTER EDGEWOOD	-0.555	0.020	-0.144	0.018
MD	240313001	ROCKVILLE	LOTHROP E SMITH ENV.ED CENTER ROCKVILLE	-0.730	0.035	-0.542	0.031
MA	250010002	TRURO	FOX BOTTOM AREA-CAPE COD NAT'L Sea shr	0.134	0.019	0.202	0.019
MA	250051002	FAIRHAVEN	LEROY WOOD SCHOOL	0.337	0.025	0.314	0.027
MA	250130008	CHICOPEE	ANDERSON ROAD AIR FORCE BASE	0.252	0.023	0.473	0.018

MA	250154002	WARE	QUABBIN SUMMIT	-0.793	0.016	-0.706	0.014
NH	330050007	KEENE	RAILROAD STREET	-0.150	0.072	-0.180	0.065
NH	330190003	CLAREMONT	SOUTH STREET	0.570	0.045	0.550	0.012
NJ	340010005	NOT IN A CITY	BRIGANTINE WILDLIFE REFUGE,NACOTE CREEK	-1.291	0.031	-1.308	0.031
NJ	340070003	NOT IN A CITY	COPEWOOD E. DAVIS STS; TRAILER	-0.089	0.025	-0.043	0.022
NJ	340071001	NOT IN A CITY	ANCORA STATE HOSPITAL, ANCORA	-0.720	0.017	-0.544	0.023
NJ	340110007	NOT IN A CITY	LINCOLN AVE.&HIGHWAY 55,NE OF MILLVILLE	-0.592	0.021	-0.257	0.022
NJ	340150002	NOT IN A CITY	CLARKSBORO,SHADY LANE REST HOME	-0.743	0.016	-0.473	0.018
NJ	340170006	BAYONNE	VETERANS PARK ON NEWARK BAY	-1.137	0.019	-0.782	0.022
NJ	340190001	FLEMINGTON	RARITAN STP,RTE.613S, THREE BRIDGES	-0.208	0.019	0.121	0.023
NJ	340210005	NOT IN A CITY	RIDER COLLEGE;LAWRENCE TOWNSHIP	-1.027	0.021	-0.828	0.019
NJ	340273001	NOT IN A CITY	BLDG.#1, BELL LABS, OFF ROUTE 513	-0.863	0.024	-0.575	0.029
NY	360010012	ALBANY	LOUDONVILLE RESERVOIR	-0.148	0.019	0.154	0.014
NY	360150003	ELMIRA	SULLIVAN ST., WATER TR. PL.			0.066	0.026
NY	360290002	AMHERST	AUDUBON GOLF COURSE, MAPLE ROAD	1.008	0.031	1.358	0.031
NY	360310002	NOT IN A CITY	SUMMIT,WHITEFACE MTN,WEATHER STATION	-0.447	0.016	-0.376	0.027
NY	360310003	NOT IN A CITY	BASE WHITEFACE MTN,ASRC,SUNY	-0.517	0.027	-0.441	0.025
NY	360450002	NOT IN A CITY	VADAI ROAD, PERCH RIVER, BROWNVILLE	0.626	0.027	0.533	0.029
NY	360631006	NOT IN A CITY	MIDDLEPORT STP, NORTH HARTLAND RD	0.213	0.020	0.529	0.019
NY	360850067	NEW YORK CITY	SUSAN WAGNER HS	-0.400	0.027		
NY	360930003	SCHENECTADY	MT.PLEASANT HS.	-0.043	0.021	0.255	0.015
NY	361030002	BABYLON	EAST FARMINGDALE WATER DIST.,GAZZA BLVD.	-0.927	0.016	-1.101	0.016
NY	361030004	RIVERHEAD	39 SOUND AVENUE,RIVERHEAD	-0.170	0.051	-0.089	0.038
NY	361173001	NOT IN A CITY	WAYNE EDUCATIONAL CENTER, WILLIAMSON	-0.841	0.033	-0.408	0.025
NY	361192004	WHITE PLAINS	WHITE PLAINS PUMP STATION,ORCHARD Str	-0.250	0.026	0.084	0.024
PA	420030008	PITTSBURGH	BAPC 301 39TH STREET BLDG #7	0.871	0.050	1.486	0.045
PA	420030067	NOT IN A CITY	OLD OAKDALE ROAD SOUTH FAYETTE	1.406	0.052	1.767	0.046
PA	420070014	BEAVER FALLS	EIGHT STREET AND RIVER ALLEY	-0.118	0.026	0.417	0.023
PA	420110009	READING	UGI CO MONGANTOWN RD AND PROSPECT ST	-0.143	0.024		

PA	420130801	ALTOONA	2ND AVE & 7TH ST	-0.274	0.024	0.190	0.021
PA	420170012	BRISTOL (BOROUG	ROCKVIEW LANE	-0.536	0.019	-0.322	0.024
PA	420210011	NOT IN A CITY	MILLER AUTO SHOP 1 MESSENGER ST	0.085	0.029	0.564	0.026
PA	420430401	HARRISBURG	1833 UPS DRIVE HARRISBURG PA	-0.142	0.027	0.048	0.018
PA	420431100	HERSHEY	SIPE AVE & MAE STREET	-0.251	0.026	-0.120	0.022
PA	420450002	CHESTER	FRONT ST & NORRIS ST	-0.464	0.021	-0.042	0.022
PA	420692006	SCRANTON	GEORGE ST TROOP AND CITY OF SCRANTON	-0.253	0.025	-0.097	0.026
PA	420710007	LANCASTER CITY	ABRAHAM LINCOLN JR HIGH GROFFTOWN RD	0.124	0.029	0.329	0.029
PA	420730015	NEW CASTLE	CROTON ST & JEFFERSON ST.	0.075	0.022	0.394	0.022
PA	420770004	ALLENTOWN	STATE HOSPITAL REAR 1600 HANOVER AVE	0.272	0.026	0.346	0.026
PA	420791100	NANTICOKE	255 LOWER BROADWAY	0.467	0.026	0.640	0.030
PA	420791101	WILKES-BARRE	CHILWICK & WASHINGTON STS	-0.327	0.022	-0.134	0.024
PA	420850100	NOT IN A CITY	PA518 (NEW CASTLE ROAD) & PA418	0.104	0.022	0.360	0.020
PA	420910013	NORRISTOWN	STATE ARMORY - 1046 BELVOIR RD	-0.404	0.026	0.125	0.027
PA	420990301	NOT IN A CITY	ROUTE 34 LITTLE BUFFALO STATE PARK	-0.284	0.027	-0.441	0.019
PA	421010014	PHILADELPHIA	ROXY WATER PUMP STA EVA-DEARNLEY STS	-0.773	0.017	0.430	0.037
PA	421250200	WASHINGTON	MCCARRELL AND FAYETTE STS	-0.091	0.027	0.444	0.027
PA	421330008	YORK	HILL ST.	0.296	0.021	0.535	0.023
RI	440030002	NOT IN A CITY	W. ALTON JONES CAMPUS URI PARKERFIELD	-0.166	0.019	-0.204	0.021
VA	510130020	NOT IN A CITY	S 18TH AND HAYES ST	-0.347	0.021	-0.109	0.016
VA	510410004	NOT IN A CITY	BEACH,INTERSECTION OF CO.ROADS 655 & 654	-0.454	0.031	-0.081	0.028
VA	510590018	NOT IN A CITY	MT.VERNON 2675 SHERWOOD HALL LANE	-0.631	0.020	-0.377	0.020
VA	510595001	MC LEAN	LEWINSVILLE 1437 BALLS HILL RD	-0.384	0.021	-0.091	0.021
VA	510610002	NOT IN A CITY	RT651 C PHELPS WILDLIFE MANAGEMENT AREA	-1.288	0.029	-1.044	0.023
VA	510870014	NOT IN A CITY	2401 HARTMAN STREET MATH & SCIENCE CTR	-0.645	0.021	-0.206	0.019
VA	511130003	NOT IN A CITY	SHENANDOAH NP BIG MEADOWS	-0.387	0.029	-0.319	0.024
VA	511611004	VINTON	EAST VINTON ELEMENTARY SCHOOL	-0.281	0.036	-0.199	0.027
VA	515100009	ALEXANDRIA	517 N SAINT ASAPH ST, ALEXANDRIA HEALTH	0.041	0.031	0.180	0.028
VA	518000004	SUFFOLK	TIDEWATER COMM. COLLEGE, FREDERIC CAMPUS	-0.825	0.025	-0.074	0.028

Table 3 Raw and Met-adjusted trends in 1-hr ozone concentrations over the OTR for 1995-2005 ozone seasons

STATE	AIRS ID	STATION	LOCATION	RAW TRENDS		MET-ADJUSTED TRENDS	
				Slope (%/yr)	95% CI	Slope (%/yr)	95% CI
CT	090010017	GREENWICH	GREENWICH POINT PARK			-0.288	0.033
CT	090011123	DANBURY	TRAILER, W. CONNECTICUT STATE UNIVERSITY	0.807	0.037	0.506	0.038
CT	090013007	STRATFORD	USCG LIGHTHOUSE , PROSPECT STREET	-0.037	0.034	-0.398	0.035
CT	090031003	EAST HARTFORD	MCAULIFFEE PARK	-0.843	0.036	-0.458	0.017
CT	090070007	MIDDLETOWN	CONN. VALLEY HOSP., SHEW HALL, EASTERN D	0.111	0.033	0.067	0.023
CT	090093002	MADISON	HAMMONASSET STATE PARK	-0.610	0.035	-0.913	0.040
CT	090110008	GROTON	UNIVERSITY OF CONNECTICUT, AVERY POINT	-0.887	0.040	-1.023	0.046
CT	090131001	STAFFORD	ROUTE 190, SHENIPSIT STATE FOREST	-0.259	0.038	-0.250	0.028
DC	110010025	NOT IN A CITY	TAKOMA SC. PINEY BRANCH RD & DAHLIA ST N	-0.917	0.051	-0.459	0.037
ME	230052003	CAPE ELIZABETH	TWO LIGHTS STATE PARK	-1.251	0.037	-1.135	0.034
ME	230312002	NOT IN A CITY	OCEAN AVE/PARSONS WAY, KENNEBUNKPORT	-0.828	0.029	-0.911	0.025
MD	240030014	NOT IN A CITY	QUEEN ANNE AND WAYSON ROADS	-1.987	0.060	-1.460	0.056
MD	240051007	COCKEYSVILLE	GREENSIDE DRIVE COCKEYSVILLE MD	-0.804	0.039	-0.350	0.026
MD	240053001	ESSEX	WOODWARD & DORSEY RDS ,ESSEX MD	-0.324	0.038	0.213	0.032
MD	240130001	NOT IN A CITY	1300 W. OLD LIBERTY ROAD, WINFIELD,MD	-1.212	0.033	-0.698	0.026
MD	240170010	NOT IN A CITY	SO MD CORRECTIONAL CAMP, HUGHESVILLE	-1.542	0.045	-1.171	0.042
MD	240251001	EDGEWOOD	EDGEWOOD ARMY CHEM CENTER EDGEWOOD	-0.737	0.040	-0.154	0.038
MD	240313001	ROCKVILLE	LOTHROP E SMITH ENV.ED CENTER ROCKVILLE	-1.873	0.056	-1.446	0.050
MA	250010002	TRURO	FOX BOTTOM AREA-CAPE COD NAT'L	-0.152	0.030	-0.267	0.030

			SEASHORE				
MA	250051002	FAIRHAVEN	LEROY WOOD SCHOOL	-0.145	0.025	-0.268	0.031
MA	250130008	CHICOPEE	ANDERSON ROAD AIR FORCE BASE	0.276	0.044	0.515	0.032
MA	250154002	WARE	QUABBIN SUMMIT	-0.215	0.026	-0.420	0.022
NH	330050007	KEENE	RAILROAD STREET	-0.140	0.097	-0.170	0.089
NH	330190003	CLAREMONT	SOUTH STREET	0.560	0.090	0.550	0.033
NJ	340010005	NOT IN A CITY	BRIGANTINE WILDLIFE REFUGE,NACOTE CREEK	-2.237	0.041	-2.354	0.044
NJ	340070003	NOT IN A CITY	COPEWOOD E. DAVIS STS; TRAILER	0.330	0.044	-0.278	0.040
NJ	340071001	NOT IN A CITY	ANCORA STATE HOSPITAL, ANCORA	-1.046	0.021	-1.292	0.031
NJ	340110007	NOT IN A CITY	LINCOLN AVE.&HIGHWAY 55,NE OF MILLVILLE	-0.653	0.034	-0.324	0.045
NJ	340150002	NOT IN A CITY	CLARKSBORO,SHADY LANE REST HOME	-0.850	0.027	-0.902	0.030
NJ	340170006	BAYONNE	VETERANS PARK ON NEWARK BAY	-0.987	0.035	-1.198	0.036
NJ	340190001	FLEMINGTON	RARITAN STP,RTE.613S, THREE BRIDGES	-0.250	0.026	-0.358	0.026
NJ	340210005	NOT IN A CITY	RIDER COLLEGE;LAWRENCE TOWNSHIP	-0.798	0.035	-1.098	0.034
NJ	340273001	NOT IN A CITY	BLDG.#1, BELL LABS, OFF ROUTE 513	-1.293	0.043	-1.491	0.040
NY	360010012	ALBANY	LOUDONVILLE RESERVOIR	-0.050	0.039	-0.339	0.021
NY	360150003	ELMIRA	SULLIVAN ST., WATER TR. PL.	-0.312	0.045	-0.373	0.042
NY	360290002	AMHERST	AUDUBON GOLF COURSE, MAPLE ROAD	1.091	0.050	1.203	0.047
NY	360310002	NOT IN A CITY	SUMMIT,WHITEFACE MTN,WEATHER STATION	-0.290	0.022	-0.058	0.025
NY	360310003	NOT IN A CITY	BASE WHITEFACE MTN,ASRC,SUNY	-0.479	0.049	-0.701	0.042
NY	360450002	NOT IN A CITY	VADAI ROAD, PERCH RIVER, BROWNVILLE	0.122	0.049	0.047	0.045
NY	360631006	NOT IN A CITY	MIDDLEPORT STP, NORTH HARTLAND RD	0.086	0.035	0.296	0.031
NY	360850067	NEW YORK CITY	SUSAN WAGNER HS	-1.031	0.030	-1.261	0.048
NY	360930003	SCHENECTADY	MT.PLEASANT HS.	0.180	0.042	-0.095	0.028
NY	361030002	BABYLON	EAST FARMINGDALE WATER DIST.,GAZZA BLVD.	-0.706	0.024	-0.958	0.031
NY	361030004	RIVERHEAD	39 SOUND AVENUE,RIVERHEAD	-1.590	0.057	-1.312	0.035
NY	361173001	NOT IN A CITY	WAYNE EDUCATIONAL CENTER, WILLIAMSON	-1.594	0.060	-1.184	0.042
NY	361192004	WHITE PLAINS	WHITE PLAINS PUMP STATION,ORCHARD ST	-0.352	0.048	-0.371	0.042
PA	420030008	PITTSBURGH	BAPC 301 39TH STREET BLDG #7	-1.114	0.042	-0.341	0.046

PA	420030067	NOT IN A CITY	OLD OAKDALE ROAD SOUTH FAYETTE	-0.675	0.053	-0.110	0.049
PA	420070014	BEAVER FALLS	EIGHT STREET AND RIVER ALLEY	-0.968	0.030	-0.262	0.035
PA	420110009	READING	UGI CO MONGANTOWN RD AND PROSPECT ST	-0.398	0.041	-0.310	0.027
PA	420130801	ALTOONA	2ND AVE & 7TH ST	-1.096	0.033	-0.451	0.035
PA	420170012	BRISTOL (BOROUG	ROCKVIEW LANE	-0.886	0.035	-1.164	0.035
PA	420210011	NOT IN A CITY	MILLER AUTO SHOP 1 MESSENGER ST	-0.681	0.050		
PA	420430401	HARRISBURG	1833 UPS DRIVE HARRISBURG PA	-0.378	0.053	-0.190	0.035
PA	420431100	HERSHEY	SIPE AVE & MAE STREET	-0.905	0.041	-0.839	0.036
PA	420450002	CHESTER	FRONT ST & NORRIS ST	-0.868	0.037	-0.762	0.034
PA	420692006	SCRANTON	GEORGE ST TROOP AND CITY OF SCRANTON	-0.902	0.042	-1.131	0.036
PA	420710007	LANCASTER CITY	ABRAHAM LINCOLN JR HIGH GROFFTOWN RD	-0.836	0.038	-1.101	0.028
PA	420730015	NEW CASTLE	CROTON ST & JEFFERSON ST.	-0.697	0.031	-0.529	0.029
PA	420770004	ALLENTOWN	STATE HOSPITAL REAR 1600 HANOVER AVE	-0.516	0.043	-0.557	0.042
PA	420791100	NANTICOKE	255 LOWER BROADWAY	-0.203	0.047	-0.375	0.050
PA	420791101	WILKES-BARRE	CHILWICK & WASHINGTON STS	-0.837	0.038	-1.076	0.031
PA	420850100	NOT IN A CITY	PA518 (NEW CASTLE ROAD) & PA418	-0.641	0.035	-0.518	0.023
PA	420910013	NORRISTOWN	STATE ARMORY - 1046 BELVOIR RD	-1.211	0.040	-1.094	0.037
PA	420990301	NOT IN A CITY	ROUTE 34 LITTLE BUFFALO STATE PARK	-0.937	0.041	-0.888	0.033
PA	421010014	PHILADELPHIA	ROXY WATER PUMP STA EVA-DEARNLEY STS	-1.056	0.027	-1.223	0.022
PA	421010024	PHILADELPHIA	GRANT-ASHTON ROADS PHILA NE AIRPORT	-0.337	0.054	-1.442	0.055
PA	421250005	CHARLEROI	CHARLER01 WASTE TREATMENT PLANT	-1.480	0.052	-0.892	0.058
PA	421250200	WASHINGTON	MCCARRELL AND FAYETTE STS	-0.876	0.044	-0.227	0.048
PA	421330008	YORK	HILL ST.	0.326	0.036	0.159	0.036
RI	440030002	NOT IN A CITY	W. ALTON JONES CAMPUS URI PARKERFIELD	0.044	0.031	-0.128	0.032
VA	510130020	NOT IN A CITY	S 18TH AND HAYES ST	-0.492	0.036		
VA	510410004	NOT IN A CITY	BEACH,INTERSECTION OF CO.ROADS 655 & 654	-1.333	0.039	-0.972	0.040
VA	510590018	NOT IN A CITY	MT.VERNON 2675 SHERWOOD HALL LANE	-0.659	0.036	-0.604	0.037
VA	510595001	MC LEAN	LEWINSVILLE 1437 BALLS HILL RD	-0.164	0.039	0.138	0.038
VA	510610002	NOT IN A CITY	RT651 C PHELPS WILDLIFE MANAGEMENT AREA	-2.029	0.050	-1.963	0.030
VA	510870014	NOT IN A CITY	2401 HARTMAN STREET MATH & SCIENCE CTR	-0.871	0.042	-0.659	0.036

VA	511130003	NOT IN A CITY	SHENANDOAH NP BIG MEADOWS	-1.406	0.044	-1.230	0.029
VA	511611004	VINTON	EAST VINTON ELEMENTARY SCHOOL	-1.186	0.063	-1.099	0.043
VA	515100009	ALEXANDRIA	517 N SAINT ASAPH ST, ALEXANDRIA HEALTH	-0.399	0.048	0.080	0.032
VA	518000004	SUFFOLK	TIDEWATER COMM. COLLEGE, FREDERIC CAMPUS	-0.822	0.047	-0.179	0.049

Table 3 Raw and Met-adjusted trends in 1-hr ozone concentrations over the OTR for 2000-2005 ozone seasons

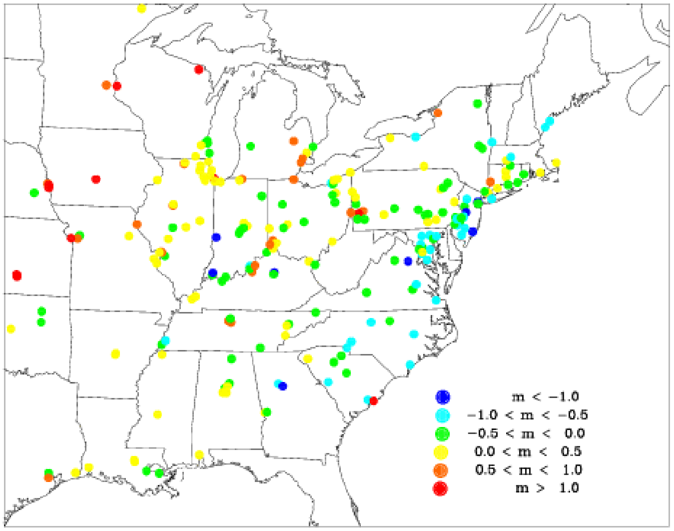
STATE	AIRS ID	STATION	LOCATION	RAW TRENDS		MET-ADJUSTED TRENDS	
				Slope (%/yr)	95% CI	Slope (%/yr)	95% CI
CT	090010017	GREENWICH	GREENWICH POINT PARK	-0.749	0.096	-1.670	0.051
CT	090011123	DANBURY	TRAILER, W. CONNECTICUT STATE UNIVERSITY	0.750	0.090	-0.111	0.052
CT	090013007	STRATFORD	USCG LIGHTHOUSE , PROSPECT STREET	-0.313	0.088	-1.191	0.060
CT	090031003	EAST HARTFORD	MCAULIFFEE PARK	-0.170	0.110	-0.472	0.039
CT	090070007	MIDDLETOWN	CONN. VALLEY HOSP., SHEW HALL, EASTERN D	-0.333	0.093	-0.486	0.056
CT	090093002	MADISON	HAMMONASSET STATE PARK	-0.994	0.092	-1.786	0.078
CT	090110008	GROTON	UNIVERSITY OF CONNECTICUT, AVERY POINT	-1.237	0.064	-1.830	0.045
CT	090131001	STAFFORD	ROUTE 190, SHENIPSIT STATE FOREST	-0.230	0.110	-0.485	0.059
DC	110010025	NOT IN A CITY	TAKOMA SC. PINEY BRANCH RD & DAHLIA ST N	-0.484	0.081	-1.473	0.054
ME	230052003	CAPE ELIZABETH	TWO LIGHTS STATE PARK	-1.917	0.106	-1.030	0.084
ME	230312002	NOT IN A CITY	OCEAN AVE/PARSONS WAY, KENNEBUNKPORT	-1.108	0.086	-0.978	0.076
MD	240030014	NOT IN A CITY	QUEEN ANNE AND WAYSON ROADS	-2.268	0.103	-2.596	0.112
MD	240051007	COCKEYSVILLE	GREENSIDE DRIVE COCKEYSVILLE MD	-0.814	0.103	-1.377	0.059
MD	240053001	ESSEX	WOODWARD & DORSEY RDS ,ESSEX MD	-0.305	0.123	-0.757	0.080
MD	240130001	NOT IN A CITY	1300 W. OLD LIBERTY ROAD, WINFIELD,MD	-1.578	0.077	-1.961	0.016
MD	240170010	NOT IN A CITY	SO MD CORRECTIONAL CAMP, HUGHESVILLE MD	-1.881	0.058	-3.100	0.061
MD	240251001	EDGEWOOD	EDGEWOOD ARMY CHEM CENTER EDGEWOOD MD	-1.266	0.122	-1.552	0.089
MD	240313001	ROCKVILLE	LOTHROP E SMITH ENV.ED CENTER ROCKVILLE	-2.649	0.116	-3.603	0.108
MA	250010002	TRURO	FOX BOTTOM AREA-CAPE COD NAT'L SEASHORE	0.304	0.064	-0.542	0.054

MA	250051002	FAIRHAVEN	LEROY WOOD SCHOOL	-0.942	0.054	-0.961	0.067
MA	250130008	CHICOPEE	ANDERSON ROAD AIR FORCE BASE	-0.369	0.123	0.393	0.083
MA	250154002	WARE	QUABBIN SUMMIT	0.678	0.067		
NH	330050007	KEENE	RAILROAD STREET	0.479	0.093	0.214	0.075
NH	330190003	CLAREMONT	SOUTH STREET	0.361	0.093	0.112	0.081
NJ	340010005	NOT IN A CITY	BRIGANTINE WILDLIFE REFUGE,NACOTE CREEK	-2.644	0.090	-2.813	0.100
NJ	340070003	NOT IN A CITY	COPEWOOD E. DAVIS STS; TRAILER	-0.906	0.128	-2.066	0.089
NJ	340071001	NOT IN A CITY	ANCORA STATE HOSPITAL, ANCORA	-1.359	0.049	-1.871	0.061
NJ	340110007	NOT IN A CITY	LINCOLN AVE.&HIGHWAY 55,NE OF MILLVILLE	-1.517	0.092	-1.541	0.124
NJ	340150002	NOT IN A CITY	CLARKSBORO,SHADY LANE REST HOME	-1.279	0.076	-1.155	0.064
NJ	340170006	BAYONNE	VETERANS PARK ON NEWARK BAY	-1.603	0.077	-2.175	0.038
NJ	340190001	FLEMINGTON	RARITAN STP,RTE.613S, THREE BRIDGES	-0.384	0.073	-0.700	0.050
NJ	340210005	NOT IN A CITY	RIDER COLLEGE;LAWRENCE TOWNSHIP	-1.535	0.086	-2.178	0.075
NJ	340273001	NOT IN A CITY	BLDG.#1, BELL LABS, OFF ROUTE 513	-2.419	0.112	-2.929	0.104
NY	360010012	ALBANY	LOUDONVILLE RESERVOIR			-0.667	0.062
NY	360150003	ELMIRA	SULLIVAN ST., WATER TR. PL.	-2.157	0.100	-2.626	0.073
NY	360290002	AMHERST	AUDUBON GOLF COURSE, MAPLE ROAD	-0.579	0.099	-1.111	0.092
NY	360310002	NOT IN A CITY	SUMMIT,WHITEFACE MTN,WEATHER STATION	-0.206	0.051	-0.357	0.056
NY	360310003	NOT IN A CITY	BASE WHITEFACE MTN,ASRC,SUNY			-0.326	0.121
NY	360450002	NOT IN A CITY	VADAI ROAD, PERCH RIVER, BROWNVILLE	-1.208	0.148	-1.649	0.122
NY	360631006	NOT IN A CITY	MIDDLEPORT STP, NORTH HARTLAND RD	-0.158	0.095	-0.438	0.091
NY	360850067	NEW YORK CITY	SUSAN WAGNER HS, BRIELLE AVE.& MANOR RD,	-1.704	0.064	-2.593	0.076
NY	360930003	SCHENECTADY	MT.PLEASANT HS, NORWOOD AVE.& FOREST RD.	-0.716	0.117	-1.310	0.071
NY	361030002	BABYLON	EAST FARMINGDALE WATER DIST.,GAZZA BLVD.	-0.367	0.061	-0.482	0.080
NY	361030004	RIVERHEAD	39 SOUND AVENUE,RIVERHEAD	-0.714	0.128	-0.543	0.070
NY	361173001	NOT IN A CITY	WAYNE EDUCATIONAL CENTER, WILLIAMSON	-3.545	0.125	-2.090	0.082
NY	361192004	WHITE PLAINS	WHITE PLAINS PUMP STATION,ORCHARD STREET	-0.631	0.158	-1.199	0.115
NY	360130006	DUNKIRK	STP LAKESIDE BLD DUNKIRK	-1.019	0.048	-1.297	0.032

NY	360130011	NOT IN A CITY	TOWN OF WESTFIELD	-1.004	0.068	-0.714	0.071
NY	360270007	NOT IN A CITY	VILLAGE OF MILLBROOK	-1.980	0.125	-2.539	0.085
NY	360715001	NOT IN A CITY	1175 ROUTE 17K, MONTGOMERY	0.899	0.057	0.639	0.032
NY	360790005	NOT IN A CITY	NYSDEC FIELD HQTRS GYPSY TRAIL ROAD	-0.247	0.121	-0.739	0.079
PA	420030008	PITTSBURGH	BAPC 301 39TH STREET BLDG #7	-2.115	0.093	-2.154	0.090
PA	420030067	NOT IN A CITY	OLD OAKDALE ROAD SOUTH FAYETTE	-1.333	0.077	-1.409	0.030
PA	420070014	BEAVER FALLS	EIGHT STREET AND RIVER ALLEY	-1.497	0.061	-1.646	0.031
PA	420110009	READING	UGI CO MONGANTOWN RD AND PROSPECT ST	-0.237	0.105	-1.184	0.059
PA	420130801	ALTOONA	2ND AVE & 7TH ST	-1.356	0.073	-1.378	0.056
PA	420170012	BRISTOL (BOROUG	ROCKVIEW LANE	-2.197	0.086	-3.095	0.060
PA	420210011	NOT IN A CITY	MILLER AUTO SHOP 1 MESSENGER ST	-1.941	0.064	-2.058	0.044
PA	420430401	HARRISBURG	1833 UPS DRIVE HARRISBURG PA	0.709	0.122		
PA	420431100	HERSHEY	SIPE AVE & MAE STREET	-1.675	0.109	-2.838	0.071
PA	420450002	CHESTER	FRONT ST & NORRIS ST	-0.335	0.110	-0.091	0.050
PA	420692006	SCRANTON	GEORGE ST TROOP AND CITY OF SCRANTON	-1.071	0.121	-2.145	0.080
PA	420710007	LANCASTER CITY	ABRAHAM LINCOLN JR HIGH GROFFTOWN RD	-0.273	0.090	-1.212	0.031
PA	420730015	NEW CASTLE	CROTON ST & JEFFERSON ST.	0.131	0.072	0.182	0.072
PA	420770004	ALLENTOWN	STATE HOSPITAL REAR 1600 HANOVER AVE	-1.201	0.080	-2.283	0.056
PA	420791100	NANTICOKE	255 LOWER BROADWAY(NEXT TO LEON&EDDY'S)	-2.157	0.106	-3.038	0.084
PA	420791101	WILKES-BARRE	CHILWICK & WASHINGTON STS	-0.257	0.112	-1.430	0.081
PA	420850100	NOT IN A CITY	PA518 (NEW CASTLE ROAD) & PA418	-0.667	0.092	-0.680	0.059
PA	420910013	NORRISTOWN	STATE ARMORY - 1046 BELVOIR RD	-2.263	0.082	-2.191	0.033
PA	420990301	NOT IN A CITY	ROUTE 34 LITTLE BUFFALO STATE PARK	-0.838	0.115	-1.120	0.047
PA	421010014	PHILADELPHIA	ROXY WATER PUMP STA EVA-DEARNLEY STS	-0.741	0.077	-0.963	0.030
PA	421010024	PHILADELPHIA	GRANT-ASHTON ROADS PHILA NE AIRPORT	0.339	0.122	-2.539	0.169
PA	421250005	CHARLEROI	CHARLER01 WASTE TREATMENT PLANT	-1.514	0.068	-1.750	0.047
PA	421250200	WASHINGTON	MCCARRELL AND FAYETTE STS	-2.408	0.086	-2.456	0.059
PA	421330008	YORK	HILL ST.	0.370	0.076	-0.409	0.011
RI	440030002	NOT IN A CITY	W. ALTON JONES CAMPUS URI PARKERFIELD WE	-0.980	0.085	-1.434	0.074

VA	510130020	NOT IN A CITY	S 18TH AND HAYES ST	-0.310	0.101	-1.544	0.062
VA	510410004	NOT IN A CITY	BEACH,INTERSECTION OF CO.ROADS 655 & 654	-2.087	0.057	-2.585	0.055
VA	510590018	NOT IN A CITY	MT.VERNON 2675 SHERWOOD HALL LANE	-1.402	0.062	-1.770	0.041
VA	510595001	MC LEAN	LEWINSVILLE 1437 BALLS HILL RD	-0.939	0.100	-1.553	0.065
VA	510610002	NOT IN A CITY	RT651 C PHELPS WILDLIFE MANAGEMENT AREA	-2.613	0.077	-3.255	0.033
VA	510870014	NOT IN A CITY	2401 HARTMAN STREET MATH & SCIENCE CTR	-1.367	0.093	-2.160	0.053
VA	511130003	NOT IN A CITY	SHENANDOAH NP BIG MEADOWS	-1.848	0.060	-1.629	0.068
VA	511611004	VINTON	EAST VINTON ELEMENTARY SCHOOL	-3.062	0.081	-3.146	0.035
VA	515100009	ALEXANDRIA	517 N SAINT ASAPH ST, ALEXANDRIA HEALTH			-0.982	0.091
VA	518000004	SUFFOLK	TIDEWATER COMM. COLLEGE, FREDERIC CAMPUS	-2.007	0.049	-0.779	0.034

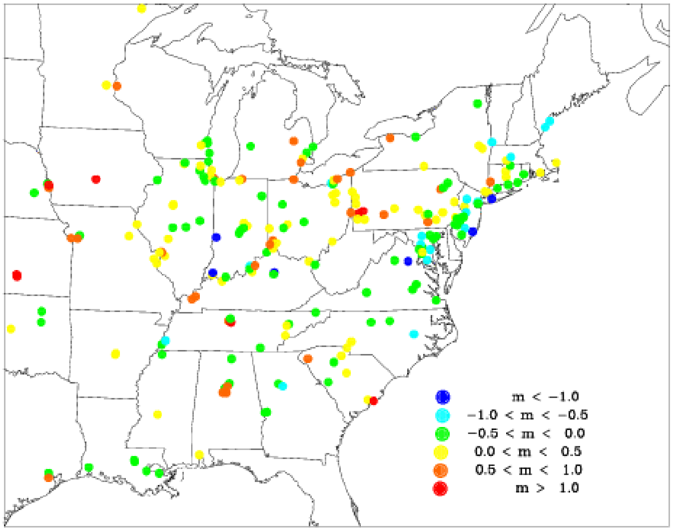
Linear Trends in Long-Term Daily Maximum
Ozone at AIRS Sites
(1990-2005, Raw Data)



(Only trends significant at the 95% confidence level are shown.)

Figure 1a

Linear Trends in Long-Term Daily Maximum
Ozone at AIRS Sites
(1990-2005, Met-Adjusted Data)



(Only trends significant at the 95% confidence level are shown.)

Figure 1b

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Department of Environmental Conservation
Division of Air Resources

NEW YORK STATE IMPLEMENTATION PLAN FOR OZONE (8-HOUR NAAQS)

ATTAINMENT DEMONSTRATION FOR NEW YORK METRO AREA

APPENDIX F

FINAL PROPOSED REVISION FEBRUARY 2008

New York State Department of Environmental Conservation
ELIOT SPITZER, GOVERNOR ***ALEXANDER GRANNIS, COMMISSIONER***

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Final Report

Future Year Electricity Generating Sector Emission Inventory Development Using the Integrated Planning Model (IPM®) in Support of Fine Particulate Mass and Visibility Modeling in the VISTAS and Midwest RPO Regions

Prepared for

Visibility Improvement State and Tribal Association of the Southeast (VISTAS)

Prepared by

ICF Resources, L.L.C.
9300 Lee Highway
Fairfax, VA 22031

April 2005

Table of Contents

A. Overview

In order to model regional haze, visibility and other air quality issues, Visibility Improvement State and Tribal Association of the Southeast (VISTAS) awarded a contract to ICF Resources, L.L.C. (ICF) in August 2004, seeking ICF's services to generate future year emission inventory for the electric generating sector of the contiguous United States using the Integrated Planning Model (IPM®).

IPM is a dynamic linear optimization model that can be used to examine air pollution control policies for various pollutants throughout the contiguous U.S. for the entire electric power system. The dynamic nature of IPM enables the projection of the behavior of the power system over a specified future period. The optimization logic determines the least-cost means of meeting electric generation and capacity requirements while complying with specified constraints including air pollution regulations, transmission bottlenecks, and plant-specific operational constraints. The versatility of IPM allows users to specify which constraints to exercise and populate IPM with their own datasets.

This report summarizes the analysis that ICF has performed in generating the future year electricity generating sector emission inventory by using IPM (hereafter, the analysis is referred to as the VISTAS analysis). The model assumptions and data used in this analysis are presented in Section B and the Appendix. The results are presented in Section C and the analysis limitations are presented in Section D.

Since the modeling is based on the EPA's prior analyses for which detailed public documentation is available, we have summarized only the incremental changes that were proposed by VISTAS and MRPO as part of this analysis. For detailed documentation on EPA's prior modeling using IPM, please visit www.epa.gov/airmarkets/epa-ipm.

B. Modeling Assumptions

The VISTAS analysis is based on the USEPA Modeling Applications Using IPM (V.2.1.6). As per the analytical needs of VISTAS and MRPO, the following changes were made to the underlying assumptions in the US EPA Base Case (V2.1.6) in this analysis:

i) The underlying database in the VISTAS analysis is US EPA's National Electric Energy Data System (NEEDS[1]) NODA Database, with changes based upon the comments and technical directions from VISTAS and MRPO's stakeholders. The changes focused on existing installations of NO_x, SO_2 and particulate matter (PM) controls, NO_x emission rates, SO_2 emission limits, capacity of existing units, heat rate and unit identifications of selected units in the VISTAS and MRPO regions. These changes are summarized in detail in Appendix 1.

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[1] The NEEDS database contains the existing and planned/committed unit data in EPA modeling applications of IPM. NEEDS includes basic geographic, operating, air emissions, and other data on these generating units. For data sources underlying NEEDS and description of fields as well as the documentation on EPA Modeling Applications Using IPM (V.2.1.6), please visit website http://www.epa.gov/airmarkets/epa-ipm/index.html

ii) The analysis covers the period between 2007 and 2030. To make the model size and run time tractable, IPM is run for a number of selected years within the study horizon known as run years. Each run year represents several calendar years in the study horizon, and all calendar years within the study horizon are mapped to their representative run years. Although results are only reported for the run years, IPM takes into account all years in the study horizon while developing the projections. Table 1 summarizes the mapping between the run years and the calendar years. Model results are available for all run years; the last run year (2026) results are, however, not recommended to be used because of end-year effects.

Table 1: IPM Run Years

Run Year	Calendar Years
2007	2007-2007
2009	2008-2009
2010	2010-2012
2015	2013-2017
2018	2018-2018
2020	2019-2022
2026	2023-2030

iii) The Duke Power and Progress Energy SO_2 and NO_x control technology investment strategies for complying with North Carolina's Clean Smokestacks Rule were explicitly hardwired in the analysis.

iv) The CAIR rule implemented as part of this analysis is broadly consistent with the Environmental Protection Agency 40 CFR Parts 51, et al. Supplemental Proposal for the Rule to Reduce Interstate Transport of Fine Particulate Matter and Ozone (Clean Air Interstate Rule), proposed on June 10, 2004. Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, New Jersey, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Texas, Virginia, West Virginia, Wisconsin are the states affected by the CAIR SO_2 and the CAIR annual NO_x policies starting 2010. Connecticut is affected by an ozone season NO_x policy. The CAIR plants affected by the annual NO_x policy are capped at 1.6 million tons starting 2010 and 1.33 million tons starting 2015. The power plants affected by the CAIR SO_2 policy have to surrender 2 Title IV SO_2 allowances for every ton of SO_2 emitted starting 2010 and 3 Title IV SO_2 allowances for every ton of SO_2 emitted starting 2015.

C. Analysis Results

ICF ran IPM under two future scenarios – Base Case and CAIR Case. The Base Case represents the current operation of the power system under currently known laws and regulations, including those that come into force in the study horizon. The CAIR Case is the Base Case with the proposed CAIR rule superimposed. The run results were parsed at the unit level for the 2009 and 2018 run years. Appendix 2 summarizes the SO_2 and NO_x emission results on a state level. The following paragraphs discuss the results from the two runs.

1. Emissions

Table 2 presents the emissions from the Base Case and the CAIR Case in the VISTAS analysis.

Table 2: SO_2 and NO_x Emissions from the Electric Power Sector (Million Tons)

		Base Case		CAIR Case	
		2009	**2018**	**2009**	**2018**
CAIR Affected Region	**SO_2**	9.1	8.2	5.3	4.1
	NO_x*	2.9	3.0	2.8	1.4
VISTAS States	**SO_2**	3.44	2.96	2.28	1.42
	NO_x	1.09	1.09	1.07	0.44
Midwest RPO States	**SO_2**	3.05	2.61	1.51	1.33
	NO_x	0.83	0.88	0.83	0.34

*Note: Excludes Connecticut

In the CAIR region, compared with the Base Case, SO_2 emissions would be reduced by 3.8 million tons in 2009 and by 4.1 million tons in 2018. The NO_x emissions would be cut by 1.6 million tons annually in 2018, compared with the Base Case.

Total projected state-level emissions for SO_2 and NO_x for both the Base Case and the CAIR Case are included in Tables A11, A12, A13, and A14 in the Appendix.

2. Projected Costs

For the proposed CAIR region, the analysis projects the annualized incremental cost for the US to be $2.1 billion in 2009 and $3.6 billion in 2018. This represents a 3.3% increase in production cost in 2009 and a 4.6% increase in 2018 over the base case. The production cost as projected by IPM includes the capital costs of new investment decisions, fuel costs and the operation and maintenance costs of power plants. The marginal costs of emission reductions (allowance prices) in the CAIR case are shown in Table 3.

Table 3: Marginal Costs of Emission Reductions in CAIR Case (1999 $)

		2009	2018
Marginal Cost ($/ton)	SO_2	700	1,100
	NO_x	1,500	1,700

3. Projected Control Technology Retrofits

In the VISTAS analysis, the proposed CAIR policy requires the installation of an additional 67 GW of SO_2 scrubbers and an additional 35 GW of selective catalytic reduction (SCR) on existing coal capacity by 2018 (see Table 4). The pool of existing SCR's that are used during the ozone season in the NO_x SIP call region in the Base Case are allowed to operate year-round in the CAIR Case.

Table 4: Pollution Control Installations by Technology in 2018 (GW)

Technology	Base Case (Cumulative)	CAIR Case (Cumulative)
Scrubber	19	86
SCR	33	67

4. Projected Generation Mix

Table 5 shows the generation mix under the proposed CAIR policy. Coal-fired generation and natural gas-fired generation are projected to remain relatively unchanged due to the phased-in nature of the proposed CAIR.

Relative to the Base Case, in 2009, 2.7 GW of coal-fired capacity is projected to be uneconomic to maintain (approximately 1%) and 90 MW of coal-fired capacity is projected to repower to natural gas in the CAIR Case.

Table 5: National Generation Mix (BkWh's)

Generating Fuel Use	2009		2018	
	Base Case	CAIR Case	Base Case	CAIR Case
Coal	2,115	2,072	2,219	2,154
Oil/Natural Gas	821	862	1,301	1,364
Other	1,197	1,197	1,196	1,194

5. Projected Coal Production for the Electric Power Sector

Coal production for electricity generation is expected to increase with or without the proposed CAIR (Table 6). The reductions in emissions from the power sector will be met through the installation of pollution controls for SO_2 and NO_x.

Table 6: Coal Production in the Electric Power Sector (Million Tons)

Supply Area	2009		2018	
	Base Case	CAIR Case	Base Case	CAIR Case
Appalachia	327	296	297	306
Interior	182	184	189	212
West	528	545	611	550
National	1,038	1,025	1,096	1,067

6. Projected Retail Electricity Prices

National average retail electricity prices in the CAIR Case are projected to increase 2.4 percent in 2009 and 1.6 percent in 2018. Table 7 and Table 8 summarize the national and regional level retail electricity prices. These estimates were developed using the Retail Electricity Price Model.

Table 7: National Average Retail Electricity Prices (1999 Mills/kWh)

	Base Case	CAIR Case	Percent Change
2009	59.4	60.9	2.4%
2018	63.2	64.3	1.6%

Source: Retail Electricity Price Model as documented in http://www.epa.gov/clearskies/tech_sectiong.pdf

Retail electricity prices by NERC region are in Table 8

Table 8: Retail Electricity Prices by NERC Region (1999 Mills/kWh)

Power Region	Primary States Included	Base Case		CAIR Case	
		2009	2018	2009	2018
ECAR	OH,MI,IN,KY,WV,PA	51.3	56.7	53.8	58.7
ERCOT	TX	53.0	65.0	54.8	65.3
MAAC	PA,NJ,MD,DC,DE	56.9	69.3	59.5	71.6
MAIN	IL,MO,WI	51.9	60.3	53.6	61.7
MAPP	MN,IA,SD,ND,NE	54.6	49.4	54.7	49.8
NY	NY	80.0	88.1	81.8	89.6
NE	VT,NH,ME,MA,CT,RI	73.8	82.8	75.4	83.5
FRCC	FL	70.8	68.8	71.7	69.6
STV	VA,NC,SC,GA,AL,MS,TN,AR,LA	56.4	54.1	57.4	55.3
SPP	KS,OK,MO	52.8	57.4	53.7	58.0
PNW	WA,OR,ID	50.1	48.0	50.6	48.0
RM	MT,WY,CO,UT,NM,AZ,NV,ID	61.5	65.1	62.1	65.2
CALI	CA	96.8	98.2	97.6	98.3

Source: Retail Electricity Price Model as documented in http://www.epa.gov/clearskies/tech_sectiong.pdf

7. Projected Fuel Price Impacts

The impacts of the CAIR on mine mouth coal prices and natural gas prices at the Henry Hub are summarized in Table 9.

Table 9: Average Coal Mine Mouth and Henry Hub Natural Gas Prices (1999$/MMBtu)

Fuel	Base Case		CAIR Case	
	2009	2018	2009	2018
Coal	0.62	0.55	0.60	0.55
Natural Gas	2.77	2.97	2.9	2.99

D. Limitations of Analysis

VISTAS modeling using IPM is based on various economic and engineering input assumptions that are inherently uncertain, such as assumptions for future fuel prices, electricity demand growth and the cost and performance of control technologies. As configured, IPM does not take into account demand response (i.e., consumer reaction to changes in electricity prices).

E. Appendix

1. Changes made to the NEEDS NODA Database for the VISTAS Analysis

NEEDS NODA is the most recent version of the NEEDS database that EPA has made public. It contains existing and planned/committed generation unit data in the contiguous United States. In Appendix 1, the changes suggested by VISTAS and MRPO stakeholders are presented side by side against the values in the original NEEDS NODA for comparison. For description of the items changed, please visit website http://www.epa.gov/airmarkets/epa-ipm/index.html.

Table A1 Changes made to NO_x Post Combustion Control Installations on Existing Units

Plant Name	Unique ID	Post Combustion NO_x Control (NEEDS NODA)	Post Combustion NO_x Control (VISTAS)	Data Source*
ASHEVILLE	2706_B_1	SNCR	None	Progress Energy **
BARRY	3_B_1	SNCR	None	Southern Company
BARRY	3_B_2	SNCR	None	Southern Company
BARRY	3_B_3	SNCR	None	Southern Company
BARRY	3_B_4	SNCR	None	Southern Company
Barry	3_G_A1	None	SCR	Southern Company
Barry	3_G_A2ST	None	SCR	Southern Company
MT STORM	3954_B_3	None	SCR	NC-WV-SC
PLEASANTS	6004_B_1	None	SCR	NC-WV-SC
PLEASANTS	6004_B_2	None	SCR	NC-WV-SC
Victor J Daniel Jr	6073_G_3	None	SCR	Southern Company
Victor J Daniel Jr	6073_G_3CT	None	SCR	Southern Company
Victor J Daniel Jr	6073_G_4CT	None	SCR	Southern Company

* Data Source shows the names of sheets in NEEDS-NODA-VISTAS-Aug18Rev.xls, provided by Gregory Stella, VISTAS Technical Advisor for Emissions Inventories.

** Progress Energy Compliance Plan for NC Clean Smokestacks Rule shows the existing NO_x control as AEFLGR and not SNCR.

Table A2 Changes made to NO_x Emission Rates (lbs/MMBtu)

Plant Name	Unique ID	Mode1 Rate** (VISTAS)	Mode2 Rate** (VISTAS)	Mode3 Rate** (VISTAS)	Mode4 Rate** (VISTAS)	Data Source*
GREENE COUNTY	10_B_1	0.718	0.718	0.468	0.468	Southern Company
GREENE COUNTY	10_B_2	0.416	0.416	0.380	0.380	Southern Company
Greene County	10_G_GT10	0.090	0.090	0.090	0.090	Southern Company
Greene County	10_G_GT2	0.090	0.090	0.090	0.090	Southern Company
Greene County	10_G_GT3	0.090	0.090	0.090	0.090	Southern Company
Greene County	10_G_GT4	0.090	0.090	0.090	0.090	Southern Company
Greene County	10_G_GT5	0.090	0.090	0.090	0.090	Southern Company
Greene County	10_G_GT6	0.090	0.090	0.090	0.090	Southern Company
Greene County	10_G_GT7	0.090	0.090	0.090	0.090	Southern Company
Greene County	10_G_GT8	0.090	0.090	0.090	0.090	Southern Company
Greene County	10_G_GT9	0.090	0.090	0.090	0.090	Southern Company
CROSS	130_B_1	0.100	0.100	0.100	0.100	SC
CROSS	130_B_2	0.100	0.100	0.100	0.100	SC
EATON	2046_B_1	0.280	0.280	0.280	0.280	Southern Company
EATON	2046_B_2	0.280	0.280	0.280	0.280	Southern Company
EATON	2046_B_3	0.280	0.280	0.280	0.280	Southern Company
Chevron Oil	2047_G_1	0.320	0.320	0.320	0.320	Southern Company
Chevron Oil	2047_G_2	0.320	0.320	0.320	0.320	Southern Company
Chevron Oil	2047_G_3	0.320	0.320	0.320	0.320	Southern Company
Chevron Oil	2047_G_4	0.320	0.320	0.320	0.320	Southern Company
Chevron Oil	2047_G_5	0.064	0.064	0.064	0.064	Southern Company
SWEATT	2048_B_1	0.280	0.280	0.280	0.280	Southern Company
SWEATT	2048_B_2	0.280	0.280	0.280	0.280	Southern Company
Sweatt	2048_G_A	0.320	0.320	0.320	0.320	Southern Company
JACK WATSON	2049_B_1	0.280	0.280	0.280	0.280	Southern Company
JACK WATSON	2049_B_2	0.280	0.280	0.280	0.280	Southern Company
JACK WATSON	2049_B_3	0.280	0.280	0.280	0.280	Southern Company
JACK WATSON	2049_B_4	0.470	0.470	0.415	0.415	Southern Company
JACK WATSON	2049_B_5	0.590	0.590	0.415	0.415	Southern Company
Jack Watson	2049_G_A	0.880	0.880	0.880	0.880	Southern Company
E C GASTON	26_B_1	0.473	0.473	0.473	0.473	Southern Company
E C GASTON	26_B_2	0.473	0.473	0.473	0.473	Southern Company
E C GASTON	26_B_3	0.457	0.457	0.457	0.457	Southern Company
E C GASTON	26_B_4	0.457	0.457	0.457	0.457	Southern Company
E C GASTON	26_B_5	0.429	0.060	0.429	0.060	Southern Company
E C Gaston	26_G_GT4	0.880	0.880	0.880	0.880	Southern Company
ASHEVILLE	2706_B_1	0.491	0.319	0.491	0.319	-
CLIFFSIDE	2721_B_5	0.294	0.070	0.294	0.070	NC-WV-SC
BARRY	3_B_1	0.500	0.500	0.500	0.500	Southern Company
BARRY	3_B_2	0.500	0.500	0.500	0.500	Southern Company
BARRY	3_B_3	0.300	0.300	0.300	0.300	Southern Company
BARRY	3_B_4	0.290	0.290	0.290	0.290	Southern Company
BARRY	3_B_5	0.380	0.380	0.380	0.380	Southern Company
Barry	3_G_A1	0.013	0.013	0.013	0.013	Southern Company
Barry	3_G_A1CT	0.013	0.013	0.013	0.013	Southern Company
Barry	3_G_A1ST	0.013	0.013	0.013	0.013	Southern Company
Barry	3_G_A2C1	0.013	0.013	0.013	0.013	Southern Company
Barry	3_G_A2C2	0.013	0.013	0.013	0.013	Southern Company
Barry	3_G_A2ST	0.013	0.013	0.013	0.013	Southern Company
W S LEE	3264_B_1	0.393	0.393	0.250	0.250	NC-WV-SC
W S LEE	3264_B_2	0.415	0.415	0.250	0.250	NC-WV-SC
W S Lee	3264_G_4	0.320	0.320	0.320	0.320	SC
W S Lee	3264_G_5	0.320	0.320	0.320	0.320	SC
W S Lee	3264_G_6	0.320	0.320	0.320	0.320	SC
MCMEEKIN	3287_B_MC	0.350	0.350	0.350	0.350	SC

Plant Name	Unique ID	Mode1 Rate** (VISTAS)	Mode2 Rate** (VISTAS)	Mode3 Rate** (VISTAS)	Mode4 Rate** (VISTAS)	Data Source*
	M1					
MCMEEKIN	3287_B_MCM2	0.350	0.350	0.350	0.350	SC
MT STORM	3954_B_3	0.604	0.060	0.604	0.060	NC-WV-SC
JAMES H MILLER JR	6002_B_1	0.275	0.060	0.275	0.060	Southern Company
JAMES H MILLER JR	6002_B_2	0.247	0.060	0.247	0.060	Southern Company
JAMES H MILLER JR	6002_B_3	0.306	0.070	0.306	0.070	Southern Company
JAMES H MILLER JR	6002_B_4	0.275	0.070	0.275	0.070	Southern Company
PLEASANTS	6004_B_1	0.302	0.060	0.302	0.060	NC-WV-SC
PLEASANTS	6004_B_2	0.335	0.060	0.335	0.060	NC-WV-SC
WANSLEY	6052_B_1	0.405	0.070	0.405	0.070	Southern Company
WANSLEY	6052_B_2	0.390	0.070	0.390	0.070	Southern Company
Wansley	6052_G_5A	0.880	0.880	0.880	0.880	Southern Company
VICTOR J DANIEL JR.	6073_B_1	0.310	0.310	0.310	0.310	Southern Company
VICTOR J DANIEL JR.	6073_B_2	0.350	0.350	0.350	0.350	Southern Company
Victor J Daniel Jr	6073_G_3	0.013	0.013	0.013	0.013	Southern Company
Victor J Daniel Jr	6073_G_3CT	0.013	0.013	0.013	0.013	Southern Company
Victor J Daniel Jr	6073_G_3ST	0.013	0.013	0.013	0.013	Southern Company
Victor J Daniel Jr	6073_G_4	0.013	0.013	0.013	0.013	Southern Company
Victor J Daniel Jr	6073_G_4CT	0.013	0.013	0.013	0.013	Southern Company
Victor J Daniel Jr	6073_G_4ST	0.013	0.013	0.013	0.013	Southern Company
MCINTOSH	6124_B_1	0.613	0.613	0.410	0.410	Southern Company
McIntosh	6124_G_CT1	0.090	0.090	0.090	0.090	Southern Company
McIntosh	6124_G_CT2	0.090	0.090	0.090	0.090	Southern Company
McIntosh	6124_G_CT3	0.090	0.090	0.090	0.090	Southern Company
McIntosh	6124_G_CT4	0.090	0.090	0.090	0.090	Southern Company
McIntosh	6124_G_CT5	0.090	0.090	0.090	0.090	Southern Company
McIntosh	6124_G_CT6	0.090	0.090	0.090	0.090	Southern Company
McIntosh	6124_G_CT7	0.090	0.090	0.090	0.090	Southern Company
McIntosh	6124_G_CT8	0.090	0.090	0.090	0.090	Southern Company
WINYAH	6249_B_1	0.100	0.100	0.100	0.100	SC
WINYAH	6249_B_2	0.120	0.120	0.120	0.120	SC
WINYAH	6249_B_3	0.120	0.120	0.120	0.120	SC
WINYAH	6249_B_4	0.120	0.120	0.120	0.120	SC
SCHERER	6257_B_1	0.450	0.450	0.150	0.150	Southern Company
SCHERER	6257_B_2	0.450	0.450	0.150	0.150	Southern Company
SCHERER	6257_B_3	0.300	0.300	0.150	0.150	Southern Company
SCHERER	6257_B_4	0.300	0.300	0.150	0.150	Southern Company
Wilson	6258_G_5A	0.880	0.880	0.880	0.880	Southern Company
Wilson	6258_G_5B	0.880	0.880	0.880	0.880	Southern Company
Wilson	6258_G_5C	0.880	0.880	0.880	0.880	Southern Company
Wilson	6258_G_5D	0.880	0.880	0.880	0.880	Southern Company
Wilson	6258_G_5E	0.880	0.880	0.880	0.880	Southern Company
Wilson	6258_G_5F	0.880	0.880	0.880	0.880	Southern Company
Wilson	6258_G_IC1	0.880	0.880	0.880	0.880	Southern Company
CRIST	641_B_2	0.280	0.280	0.280	0.280	Southern Company
CRIST	641_B_3	0.280	0.280	0.280	0.280	Southern Company
CRIST	641_B_4	0.400	0.400	0.240	0.240	Southern Company

Plant Name	Unique ID	Mode1 Rate** (VISTAS)	Mode2 Rate** (VISTAS)	Mode3 Rate** (VISTAS)	Mode4 Rate** (VISTAS)	Data Source*
CRIST	641_B_5	0.400	0.400	0.240	0.240	Southern Company
CRIST	641_B_7	0.482	0.060	0.482	0.060	Southern Company
SCHOLZ	642_B_1	0.540	0.540	0.320	0.320	Southern Company
SCHOLZ	642_B_2	0.570	0.570	0.320	0.320	Southern Company
SMITH	643_B_1	0.490	0.490	0.240	0.240	Southern Company
SMITH	643_B_2	0.410	0.410	0.410	0.410	Southern Company
Lansing Smith	643_G_CT1	0.880	0.880	0.880	0.880	Southern Company
GADSDEN	7_B_1	0.544	0.544	0.544	0.544	Southern Company
GADSDEN	7_B_2	0.544	0.544	0.544	0.544	Southern Company
Atkinson	700_G_5A	0.320	0.320	0.320	0.320	Southern Company
Atkinson	700_G_5B	0.320	0.320	0.320	0.320	Southern Company
BOWEN	703_B_1BLR	0.405	0.070	0.405	0.070	Southern Company
BOWEN	703_B_2BLR	0.405	0.070	0.405	0.070	Southern Company
BOWEN	703_B_3BLR	0.409	0.070	0.409	0.070	Southern Company
BOWEN	703_B_4BLR	0.419	0.070	0.419	0.070	Southern Company
Bowen	703_G_6	0.880	0.880	0.880	0.880	Southern Company
HAMMOND	708_B_1	0.800	0.800	0.410	0.410	Southern Company
HAMMOND	708_B_2	0.800	0.800	0.410	0.410	Southern Company
HAMMOND	708_B_3	0.800	0.800	0.410	0.410	Southern Company
HAMMOND	708_B_4	0.404	0.070	0.404	0.070	Southern Company
HARLLEE BRANCH	709_B_1	0.800	0.800	0.519	0.519	Southern Company
HARLLEE BRANCH	709_B_2	0.800	0.800	0.374	0.374	Southern Company
HARLLEE BRANCH	709_B_3	0.800	0.800	0.381	0.381	Southern Company
HARLLEE BRANCH	709_B_4	0.800	0.800	0.381	0.381	Southern Company
JACK MCDONOUGH	710_B_MB1	0.450	0.450	0.230	0.230	Southern Company
JACK MCDONOUGH	710_B_MB2	0.450	0.450	0.230	0.230	Southern Company
Jack McDonough	710_G_3A	0.320	0.320	0.320	0.320	Southern Company
Jack McDonough	710_G_3B	0.320	0.320	0.320	0.320	Southern Company
MCMANUS	715_B_1	0.310	0.310	0.310	0.310	Southern Company
MCMANUS	715_B_2	0.310	0.310	0.310	0.310	Southern Company
McManus	715_G_3A	0.880	0.880	0.880	0.880	Southern Company
McManus	715_G_3B	0.880	0.880	0.880	0.880	Southern Company
McManus	715_G_3C	0.880	0.880	0.880	0.880	Southern Company
McManus	715_G_4A	0.880	0.880	0.880	0.880	Southern Company
McManus	715_G_4B	0.880	0.880	0.880	0.880	Southern Company
McManus	715_G_4C	0.880	0.880	0.880	0.880	Southern Company
McManus	715_G_4D	0.880	0.880	0.880	0.880	Southern Company
McManus	715_G_4E	0.880	0.880	0.880	0.880	Southern Company
McManus	715_G_4F	0.880	0.880	0.880	0.880	Southern Company
McManus	715_G_IC1	3.200	3.200	3.200	3.200	Southern Company
MITCHELL	727_B_3	0.625	0.625	0.625	0.625	Southern Company
Mitchell	727_G_4A	0.880	0.880	0.880	0.880	Southern Company
Mitchell	727_G_4B	0.880	0.880	0.880	0.880	Southern Company
Mitchell	727_G_4C	0.880	0.880	0.880	0.880	Southern Company

* Data Source shows the names of sheets in NEEDS-NODA-VISTAS-Aug18Rev.xls, provided by Gregory Stella, VISTAS Technical Advisor for Emissions Inventories. “SC” reflects the spreadsheet CopyofSCIPMdata.xls. Rate changes include VISTAS interpretation of stakeholder submitted data.

**

Mode 1 Rate (Uncontrolled Base Rate) – This emission rate reflects current configuration of combustion controls. If a post combustion NO_x control such as a SCR or a SNCR exists, it is assumed that it is not operating.

Mode 2 Rate (Controlled Base Rate) – This emission rate reflects current configuration of combustion controls. If a post combustion NO_x control such as a SCR or a SNCR exists, it is assumed that it is operating.

Mode 3 Rate (Uncontrolled Policy Rate) – This emission rate reflects a state of the art configuration of combustion controls. If a post combustion NO_x control such as a SCR or a SNCR exists, it is assumed that it is not operating.
Mode 4 Rate (Controlled Policy Rate) – This emission rate reflects a state of the art configuration of combustion controls. If a post combustion NO_x control such as a SCR or a SNCR exists, it is assumed that it is operating.

For more details on the development of these rates please refer to
http://www.epa.gov/airmarkets/epa-ipm/section3powsysop.pdf

Table A3 Changes made to SO_2 Scrubber Installations on Existing Units

Plant Name	Unique ID	Wet/DryScrubber (NEEDS NODA)	Wet/DryScrubber (VISTAS)	Data Source*
NORTH BRANCH POWER STATION	7537_B_1A	Dry Scrubber	-	NC-WV-SC
NORTH BRANCH POWER STATION	7537_B_1B	Dry Scrubber	-	NC-WV-SC
Morgantown Energy Facility	10743_G_GEN1	Dry Scrubber	-	NC-WV-SC

* Data Source shows the name of sheets in NEEDS-NODA-VISTAS-Aug18Rev.xls, provided by Gregory Stella, VISTAS Technical Advisor for Emissions Inventories.

Table A4 Changes made to SO_2 Emission Rate Limits (lbs/MMBtu)

Plant Name	Unique ID	SO_2 Rate (NEEDS NODA)	SO_2 Rate (VISTAS)	Data Source*
GREENE COUNTY	10_B_1	4.000	1.197	Southern Company
GREENE COUNTY	10_B_2	4.000	1.197	Southern Company
EATON	2046_B_1	4.800	0.001	Southern Company
EATON	2046_B_2	4.800	0.001	Southern Company
EATON	2046_B_3	4.800	0.001	Southern Company
SWEATT	2048_B_1	4.800	0.001	Southern Company
SWEATT	2048_B_2	4.800	0.001	Southern Company
JACK WATSON	2049_B_1	4.800	0.001	Southern Company
JACK WATSON	2049_B_2	4.800	0.001	Southern Company
JACK WATSON	2049_B_3	4.800	0.001	Southern Company
JACK WATSON	2049_B_4	4.800	0.885	Southern Company
JACK WATSON	2049_B_5	4.800	0.885	Southern Company
E C GASTON	26_B_1	3.800	1.667	Southern Company
E C GASTON	26_B_2	3.800	1.667	Southern Company
E C GASTON	26_B_3	3.800	1.667	Southern Company
E C GASTON	26_B_4	3.800	1.667	Southern Company
E C GASTON	26_B_5	3.800	1.667	Southern Company
BUCK	2720_B_5	2.300	1.630	NC-WV-SC
BUCK	2720_B_6	2.300	1.630	NC-WV-SC
BUCK	2720_B_7	2.300	1.630	NC-WV-SC
BUCK	2720_B_8	2.300	1.630	NC-WV-SC
BUCK	2720_B_9	2.300	1.630	NC-WV-SC
CLIFFSIDE	2721_B_1	2.300	2.200	NC-WV-SC
CLIFFSIDE	2721_B_2	2.300	2.200	NC-WV-SC
CLIFFSIDE	2721_B_3	2.300	2.200	NC-WV-SC
CLIFFSIDE	2721_B_4	2.300	2.200	NC-WV-SC
CLIFFSIDE	2721_B_5	2.300	2.200	NC-WV-SC
DAN RIVER	2723_B_1	2.300	1.810	NC-WV-SC
DAN RIVER	2723_B_2	2.300	1.810	NC-WV-SC
DAN RIVER	2723_B_3	2.300	1.810	NC-WV-SC
BARRY	3_B_1	1.800	1.197	Southern Company
BARRY	3_B_2	1.800	1.197	Southern Company
BARRY	3_B_3	1.800	1.197	Southern Company
BARRY	3_B_4	1.800	1.197	Southern Company
BARRY	3_B_5	1.800	1.197	Southern Company
JAMES H MILLER JR	6002_B_1	1.800	0.795	Southern Company
JAMES H MILLER JR	6002_B_2	1.800	0.795	Southern Company
JAMES H MILLER JR	6002_B_3	1.800	0.795	Southern Company
JAMES H MILLER JR	6002_B_4	1.800	0.795	Southern Company
VICTOR J DANIEL JR.	6073_B_1	4.800	0.885	Southern Company
VICTOR J DANIEL JR.	6073_B_2	4.800	0.885	Southern Company
SCHERER	6257_B_1	1.200	0.796	Southern Company
SCHERER	6257_B_2	1.200	0.796	Southern Company
SCHERER	6257_B_3	1.200	0.796	Southern Company
SCHERER	6257_B_4	1.200	0.796	Southern Company
CRIST	641_B_2	0.740	0.001	Southern Company

Plant Name	Unique ID	SO_2 Rate (NEEDS NODA)	SO_2 Rate (VISTAS)	Data Source*
CRIST	641_B_3	0.740	0.001	Southern Company
CRIST	641_B_4	5.900	1.197	Southern Company
CRIST	641_B_5	5.900	1.197	Southern Company
CRIST	641_B_6	5.900	1.197	Southern Company
CRIST	641_B_7	5.900	1.197	Southern Company
SCHOLZ	642_B_1	6.170	1.200	Southern Company
SCHOLZ	642_B_2	6.170	1.200	Southern Company
SMITH	643_B_1	6.170	1.197	Southern Company
SMITH	643_B_2	6.170	1.197	Southern Company
GADSDEN	7_B_1	4.000	2.500	Southern Company
GADSDEN	7_B_2	4.000	2.500	Southern Company
BOWEN	703_B_1BLR	4.580	1.667	Southern Company
HAMMOND	708_B_1	4.580	1.667	Southern Company
HAMMOND	708_B_2	4.580	1.667	Southern Company
HAMMOND	708_B_3	4.580	1.667	Southern Company
HAMMOND	708_B_4	4.580	1.667	Southern Company
HARLLEE BRANCH	709_B_1	4.580	1.667	Southern Company
HARLLEE BRANCH	709_B_2	4.580	1.667	Southern Company
HARLLEE BRANCH	709_B_3	4.580	1.667	Southern Company
HARLLEE BRANCH	709_B_4	4.580	1.667	Southern Company
JACK MCDONOUGH	710_B_MB1	4.580	1.667	Southern Company
JACK MCDONOUGH	710_B_MB2	4.580	1.667	Southern Company
MCMANUS	715_B_1	3.159	2.620	Southern Company
MCMANUS	715_B_2	3.159	2.620	Southern Company
MITCHELL	727_B_3	4.580	2.500	Southern Company
YATES	728_B_Y2BR	4.580	1.667	Southern Company
YATES	728_B_Y3BR	4.580	1.667	Southern Company
YATES	728_B_Y4BR	4.580	1.667	Southern Company
YATES	728_B_Y5BR	4.580	1.667	Southern Company
KRAFT	733_B_1	4.580	1.270	Southern Company
KRAFT	733_B_2	4.580	1.270	Southern Company
KRAFT	733_B_3	4.580	1.270	Southern Company
KRAFT	733_B_4	0.800	0.001	Southern Company
RIVERSIDE	734_B_11	2.632	0.001	Southern Company
RIVERSIDE	734_B_12	3.159	0.001	Southern Company
RIVERSIDE	734_B_4	2.632	0.001	Southern Company
RIVERSIDE	734_B_5	2.632	0.001	Southern Company
RIVERSIDE	734_B_6	2.632	0.001	Southern Company
GORGAS	8_B_10	4.000	1.667	Southern Company
GORGAS	8_B_6	4.000	2.500	Southern Company
GORGAS	8_B_7	4.000	2.500	Southern Company
GORGAS	8_B_8	4.000	1.667	Southern Company
GORGAS	8_B_9	4.000	1.667	Southern Company

- Data Source shows the names of sheets in NEEDS-NODA-VISTAS-Aug18Rev.xls, provided by Gregory Stella, VISTAS Technical Advisor for Emissions Inventories.

Table A5 Changes made to Particulate Matter (PM) Control Installations on Existing Units

Plant Name	Unique ID	PM Control (NEEDS NODA)	PM Control (VISTAS)	Data Sources *
G G ALLEN	2718_B_3	Hot-side ESP	Cold-side ESP	NC-WV-SC
G G ALLEN	2718_B_5	Hot-side ESP	Cold-side ESP	NC-WV-SC
WESTON	4078_B_3	Hot-side ESP + Fabric Filter	Fabric Filter	Wisconsin

* Data Sources shows the name of sheets in NEEDS-NODA-VISTAS-Aug18Rev.xls, provided by Gregory Stella, VISTAS Technical Advisor for Emissions Inventories.

Table A6 Changes made to Summer Net Dependable Capacity (MW)

Plant Name	Unique ID	Capacity (NEEDS NODA)	Capacity (VISTAS)	Data Source*
VACA_SC_Combined Cycle	077_C_077	1317	807	SC
CRIST	641_B_1	24	0 **	Southern Company
Lansing Smith	A274_G_A274	500	530	Southern Company
Atkinson	700_G_5A	32	15.3	Southern Company
Atkinson	700_G_5B	32	15.3	Southern Company
Dahlberg	7709_G_10	75	80	Southern Company
Dahlberg	7709_G_9	75	80	Southern Company
FRANKLIN	A7840_G_A331	570	630	Southern Company
Mill Creek	A294_G_A294	320	326.8	NC-WV-SC
Mill Creek	A295_G_A295	240	245.1	NC-WV-SC
Mill Creek	A296_G_A296	80	81.7	NC-WV-SC
SCE&G Hardeeville	3286_C_2		170	SC
SCE&G Hardeeville	3286_C_3		170	SC
SCE&G Hardeeville	3286_C_4		170	SC
Cross 3	130_C_3		660	SC

* Data Source shows the name of sheets in NEEDS-NODA-VISTAS-Aug18Rev.xls, provided by Gregory Stella, VISTAS Technical Advisor for Emissions Inventories. “SC” reflects the spreadsheet CopyofSCIPMdata.xls.

** Zero capacity denotes that the unit was retired in 2002.

Table A7 Changes made to Heat Rate (Btu/kWh)

Plant Name	Unique ID	ORIS Code	BGCI	Unit ID	Heat Rate (NEEDS NODA)	Heat Rate (VISTAS)	Data Source*
ALLEN S KING	1915_B_1	1915	B	1	8879	9229	Minnesota

* Data Source shows the name of sheets in NEEDS-NODA-VISTAS-Aug18Rev.xls, provided by Gregory Stella, VISTAS Technical Advisor for Emissions Inventories.

Table A8 Changes made to Unit ID

Plant Name	Unique ID	ORIS Code	BGCI	Unit ID (NEEDS NODA)	Unit ID (VISTAS)	Data Source*
Talbot County Energy	A397_G_A397	7916	G	397	1	Oglethorpe
Talbot County Energy	A398_G_A398	7916	G	398	2	Oglethorpe
Talbot County Energy	A399_G_A399	7916	G	399	3-4	Oglethorpe
Talbot County Energy	A400_G_A400	7916	G	400	5-6	Oglethorpe
Mill Creek	A294_G_A294	7981	G	294	1-4	NC-WV-SC
Mill Creek	A295_G_A295	7981	G	295	5-7	NC-WV-SC
Mill Creek	A296_G_A296	7981	G	296	8	NC-WV-SC

* Data Source shows the name of sheets in NEEDS-NODA-VISTAS-Aug18Rev.xls, provided by Gregory Stella, VISTAS Technical Advisor for Emissions Inventories.

Table A9 Duke and Progress Energy SO_2 Control Plan for North Carolina Clean Smokestacks Rule

Unit	Technology	Operation Date	Company
Asheville 1	Scrubber	2005	Progress Energy
Asheville 2	Scrubber	2006	Progress Energy
Cape Fear 5	Scrubber	2012	Progress Energy
Cape Fear 6	Scrubber	2011	Progress Energy
Mayo 1	Scrubber	2008	Progress Energy
Roxboro 1	Scrubber	2009	Progress Energy
Roxboro 2	Scrubber	2007	Progress Energy
Roxboro 3	Scrubber	2007	Progress Energy
Roxboro 4	Scrubber	2007	Progress Energy
Sutton 3	Scrubber	2012	Progress Energy
Allen 1	Scrubber	2011	Duke Power
Allen 2	Scrubber	2011	Duke Power
Allen 3	Scrubber	2011	Duke Power
Allen 4	Scrubber	2012	Duke Power
Allen 5	Scrubber	2012	Duke Power
Belews Creek 1	Scrubber	2008	Duke Power
Belews Creek 2	Scrubber	2008	Duke Power
Cliffside 5	Scrubber	2009	Duke Power
Marshall 1	Scrubber	2007	Duke Power
Marshall 2	Scrubber	2007	Duke Power
Marshall 3	Scrubber	2006	Duke Power
Marshall 4	Scrubber	2006	Duke Power

Source: Gregory Stella, VISTAS Technical Advisor for Emissions Inventories.

Table A10 Duke and Progress Energy NO_x Control Plan for North Carolina Clean Smokestacks Rule

Unit	Technology	Operation Date	Company
Asheville 1	SCR	2009	Progress Energy
Lee 2	ROFA	2007	Progress Energy
Lee 3	SCR	2010	Progress Energy
Sutton 2	ROFA	2006	Progress Energy
Allen 1	SNCR	2003	Duke Power
Allen 2	SNCR	2007	Duke Power
Allen 3	SNCR	2005	Duke Power
Allen 4	SNCR	2006	Duke Power
Allen 5	SNCR	2008	Duke Power
Belews Creek 1	SCR	2003	Duke Power
Belews Creek 2	SCR	2004	Duke Power
Buck 3	SNCR	2009	Duke Power
Buck 4	SNCR	2008	Duke Power
Buck 5	SNCR	2006	Duke Power
Buck 6	SNCR	2007	Duke Power
Cliffside 1	SNCR	2009	Duke Power
Cliffside 2	SNCR	2009	Duke Power
Cliffside 3	SNCR	2008	Duke Power
Cliffside 4	SNCR	2008	Duke Power
Cliffside 5	SCR	2002	Duke Power
Dan River 1	SNCR	2009	Duke Power
Dan River 2	SNCR	2009	Duke Power
Dan River 3	SNCR	2007	Duke Power
Marshall 1	SNCR	2007	Duke Power
Marshall 2	SNCR	2006	Duke Power
Marshall 3	SNCR	2005	Duke Power
Marshall 4	SNCR	2008	Duke Power
Riverbend 4	SNCR	2007	Duke Power
Riverbend 5	SNCR	2008	Duke Power
Riverbend 6	SNCR	2008	Duke Power
Riverbend 7	SNCR	2007	Duke Power

Source: Gregory Stella, VISTAS Technical Advisor for Emissions Inventories.

2. Emission Results

Tables A11, A12, A13 and A14 present the Base Case and the CAIR Case NO_x and SO_2 emissions by state and season in 2009 and 2018 run years.

Table A11 State Level Base Case NO_x Emissions by Season (Thousand Tons)

NO_x Emission (Base Case)	Winter		Summer	
	2009	2018	2009	2018
CAIR Affected States				
Alabama	97.93	100.12	34.06	34.89
Arkansas	23.92	24.68	19.73	19.96
District Of Columbia	0.00	0.03	0.00	0.05
Delaware	6.09	7.30	2.78	3.42
Florida	80.78	86.48	67.84	72.61
Georgia	92.95	94.65	38.95	34.29
Iowa	39.67	47.64	30.90	36.59
Illinois	101.87	119.29	27.74	37.91
Indiana	176.21	183.22	61.12	61.74
Kansas	46.35	50.19	36.58	39.32
Kentucky	131.21	132.43	47.76	49.80
Louisiana	27.55	28.46	22.92	23.26
Massachusetts	9.80	11.69	5.64	8.74
Maryland	48.93	50.40	9.07	9.88
Michigan	80.77	85.49	35.64	34.26
Minnesota	39.60	44.65	30.21	34.14
Missouri	84.20	86.01	33.32	30.67
Mississippi	20.98	21.97	17.68	18.21
North Carolina	40.99	39.94	25.74	24.73
New Jersey	10.93	13.57	4.76	5.79
New York	31.75	30.74	18.00	18.79
Ohio	221.12	234.60	50.99	47.99
Pennsylvania	139.63	144.99	58.57	54.52
South Carolina	33.44	35.53	17.06	19.70
Tennessee	88.26	88.30	18.75	24.15
Texas	91.74	91.77	92.76	102.30
Virginia	44.06	37.63	21.15	19.35
Wisconsin	44.08	44.81	35.52	35.59
West Virginia	146.12	147.16	27.86	23.37
Total	2,000.92	2,083.74	893.12	926.01
Non CAIR States				
Arizona	43.51	45.10	35.05	35.71
California	21.46	18.71	13.13	12.91
Colorado	38.20	39.43	30.04	30.90
Connecticut	3.56	4.49	2.63	2.81
Idaho	0.85	0.76	0.65	0.34
Maine	1.03	1.04	0.81	0.82
Montana	21.40	21.42	16.92	17.01
North Dakota	39.97	39.97	31.67	31.67
Nebraska	27.26	27.49	21.75	21.96
New Hampshire	1.33	1.65	0.74	1.18
New Mexico	40.80	40.90	32.70	32.97
Nevada	18.94	21.12	10.94	16.55
Oklahoma	41.56	41.86	36.02	38.41

NO_x Emission (Base Case)	Winter		Summer	
	2009	2018	2009	2018
Oregon	7.54	7.79	5.89	6.07
Rhode Island	0.29	0.32	0.23	0.30
South Dakota	8.10	8.11	6.44	6.44
Utah	33.87	33.83	26.88	26.43
Vermont	0.01	0.01	0.01	0.02
Washington	16.48	14.94	12.19	11.79
Wyoming	45.24	45.24	35.93	35.93
Total	411.39	414.19	320.62	330.23
National Total	2,412.31	2,497.93	1,213.74	1,256.23

Table A12 State Level Base Case SO_2 Emissions by Season (Thousand Tons)

SO_2 Emission (Base Case)	Winter		Summer	
	2009	2018	2009	2018
CAIR Affected States				
Alabama	279.95	209.76	185.64	165.55
Arkansas	45.95	45.95	36.49	36.49
District Of Columbia	0.00	0.00	0.00	0.00
Delaware	22.94	26.88	15.11	17.45
Florida	122.20	120.04	97.19	95.45
Georgia	328.97	310.23	253.11	243.79
Iowa	86.91	101.85	66.32	78.32
Illinois	215.50	242.21	130.41	177.13
Indiana	434.76	300.46	291.49	228.01
Kansas	45.06	47.83	36.59	37.99
Kentucky	279.82	241.21	203.42	188.21
Louisiana	55.29	55.29	43.92	43.92
Massachusetts	9.55	10.21	2.21	6.86
Maryland	179.99	187.19	129.98	143.59
Michigan	219.48	227.46	160.86	177.17
Minnesota	52.19	53.20	39.47	39.43
Missouri	153.41	158.24	110.96	119.58
Mississippi	47.72	47.72	37.90	37.90
North Carolina	109.66	80.15	72.83	53.68
New Jersey	31.74	19.49	22.99	14.08
New York	100.81	89.14	48.13	53.50
Ohio	860.12	647.74	584.09	460.62
Pennsylvania	525.90	503.94	359.82	361.58
South Carolina	93.19	99.82	70.44	79.21
Tennessee	274.69	184.91	161.76	138.75
Texas	221.74	231.04	184.26	188.83
Virginia	133.86	103.85	87.09	77.75
Wisconsin	87.01	85.93	69.31	67.53
West Virginia	349.02	274.96	249.54	208.00
Total	5,367.45	4,706.71	3,751.31	3,540.37
Non CAIR States				
Arizona	33.81	28.38	26.85	22.54
California	3.64	3.64	2.88	2.88
Colorado	51.13	51.13	40.59	40.61
Connecticut	3.62	3.62	2.85	2.85
Idaho	0.03	0.03	0.02	0.02
Maine	3.01	3.01	2.42	2.42
Montana	11.32	12.90	8.95	10.28
North Dakota	74.59	74.54	58.98	58.94
Nebraska	39.52	39.92	31.48	31.63
New Hampshire	5.20	4.62	2.26	2.98
New Mexico	29.49	29.49	23.42	23.42
Nevada	12.09	13.32	6.14	10.25
Oklahoma	65.56	65.56	52.08	52.08

SO_2 Emission (Base Case)	Winter		Summer	
	2009	**2018**	**2009**	**2018**
Oregon	5.67	5.67	4.50	4.50
Rhode Island	0.00	0.00	0.00	0.00
South Dakota	6.74	6.74	5.35	5.35
Utah	29.65	20.86	23.43	15.04
Vermont	0.02	0.02	0.01	0.01
Washington	6.63	6.65	5.15	5.17
Wyoming	41.73	28.93	33.14	22.98
Total	423.46	399.05	330.53	313.96
National Total	5,790.90	5,105.76	4,081.84	3,854.33

Table A13 State Level CAIR Case NO_x Emissions by Season (Thousand Tons)

NO_x Emission (CAIR Case)	Winter		Summer	
	2009	2018	2009	2018
CAIR Affected States				
Alabama	96.01	21.06	36.32	18.89
Arkansas	24.01	17.81	19.73	14.41
District Of Columbia	0.00	0.05	0.02	0.04
Delaware	4.92	3.86	0.92	3.01
Florida	80.05	30.71	67.84	28.83
Georgia	88.13	33.33	31.30	32.22
Iowa	39.36	23.69	30.64	16.83
Illinois	108.01	38.49	33.62	30.78
Indiana	174.47	49.88	64.17	37.28
Kansas	46.51	17.41	36.48	14.84
Kentucky	129.41	36.28	47.90	28.43
Louisiana	27.80	16.91	22.92	14.01
Massachusetts	10.03	8.38	6.43	6.23
Maryland	46.83	7.76	11.25	6.58
Michigan	80.25	39.64	35.94	30.88
Minnesota	40.35	21.80	30.79	17.02
Missouri	82.31	50.25	36.39	27.68
Mississippi	20.98	5.68	17.78	5.11
North Carolina	40.69	33.56	26.50	26.49
New Jersey	11.08	6.73	4.27	5.64
New York	25.18	22.18	19.25	17.99
Ohio	214.10	47.83	43.53	34.32
Pennsylvania	129.93	42.08	54.03	33.21
South Carolina	34.01	20.39	16.20	16.00
Tennessee	87.13	15.77	17.44	16.68
Texas	91.58	82.32	92.49	90.41
Virginia	39.54	23.15	23.53	17.15
Wisconsin	41.88	21.25	33.52	16.56
West Virginia	145.07	24.52	29.50	17.70
Total	1,959.60	762.79	890.73	625.24
Non CAIR States				
Arizona	43.50	45.11	35.04	35.68
California	20.40	18.52	13.00	12.91
Colorado	38.14	39.55	30.05	30.88
Connecticut	3.90	5.06	3.00	3.50
Idaho	0.85	0.78	0.65	0.34
Maine	1.03	1.08	0.76	0.85
Montana	21.40	21.42	16.98	17.01
North Dakota	38.73	39.97	29.27	31.76
Nebraska	27.43	27.52	21.83	22.08
New Hampshire	0.97	1.71	0.75	1.35
New Mexico	40.80	40.92	32.70	32.98
Nevada	19.96	22.36	11.06	17.60
Oklahoma	41.64	42.42	36.06	40.57

NO_x Emission (CAIR Case)	Winter		Summer	
	2009	2018	2009	2018
Oregon	7.54	7.79	5.89	6.07
Rhode Island	0.29	0.34	0.21	0.30
South Dakota	8.10	8.11	6.44	6.45
Utah	33.87	33.83	26.86	26.43
Vermont	0.01	0.02	0.01	0.02
Washington	16.48	14.94	12.19	11.78
Wyoming	45.24	45.24	35.93	35.93
Total	410.29	416.69	318.68	334.51
National Total	2,369.89	1,179.48	1,209.41	959.75

Table A14 State Level CAIR Case SO_2 Emissions by Season (Thousand Tons)

SO_2 Emission (CAIR Case)	Winter		Summer	
	2009	2018	2009	2018
CAIR Affected States				
Alabama	190.85	125.61	124.00	100.91
Arkansas	45.95	45.95	36.49	36.49
District Of Columbia	0.00	0.00	0.00	0.00
Delaware	16.78	9.84	5.14	7.09
Florida	110.87	70.51	89.28	56.09
Georgia	244.73	117.05	149.70	104.56
Iowa	89.51	97.92	68.86	71.77
Illinois	141.81	149.61	93.99	113.51
Indiana	200.81	182.52	140.39	139.08
Kansas	44.63	40.60	35.76	32.84
Kentucky	197.05	127.58	145.63	98.20
Louisiana	34.59	18.80	27.47	14.93
Massachusetts	10.70	9.48	2.93	6.73
Maryland	41.64	14.40	25.23	10.01
Michigan	216.30	221.63	157.75	174.22
Minnesota	45.46	47.48	35.48	35.41
Missouri	148.86	151.22	110.16	118.11
Mississippi	47.72	28.96	37.90	23.00
North Carolina	80.70	41.41	51.49	36.93
New Jersey	19.09	11.35	15.17	8.65
New York	57.16	26.70	37.60	20.71
Ohio	259.36	122.94	144.93	88.31
Pennsylvania	128.67	74.04	77.16	57.49
South Carolina	85.48	85.74	58.09	66.81
Tennessee	168.50	53.32	111.44	50.29
Texas	216.76	195.36	178.90	159.08
Virginia	89.83	66.57	51.09	49.68
Wisconsin	83.88	78.63	66.32	62.03
West Virginia	154.15	64.86	92.70	47.07
Total	3,171.82	2,280.08	2,171.02	1,789.98
Non CAIR States				
Arizona	33.81	28.38	26.85	22.54
California	3.64	3.64	2.88	2.88
Colorado	50.79	51.16	40.28	40.61
Connecticut	3.62	3.62	2.58	2.85
Idaho	0.03	0.03	0.02	0.02
Maine	3.01	3.01	2.10	2.42
Montana	11.32	13.00	9.01	10.33
North Dakota	71.08	74.54	54.63	59.20
Nebraska	39.82	39.92	31.63	31.70
New Hampshire	0.92	4.47	0.70	3.52
New Mexico	29.49	29.49	23.42	23.42
Nevada	12.90	14.33	6.23	11.09
Oklahoma	65.56	65.56	52.08	52.08

SO_2 Emission (CAIR Case)	Winter		Summer	
	2009	**2018**	**2009**	**2018**
Oregon	5.67	5.67	4.50	4.50
Rhode Island	0.00	0.00	0.00	0.00
South Dakota	6.74	6.74	5.35	5.35
Utah	29.65	20.86	23.35	15.04
Vermont	0.02	0.02	0.01	0.01
Washington	6.11	6.65	4.80	5.17
Wyoming	39.68	28.93	31.52	22.98
Total	413.87	400.02	321.96	315.72
National Total	3,585.68	2,680.10	2,492.97	2,105.71

3. Generation Results

Tables A15 and A16 present the generation in the Base Case and the CAIR Case by state and season in 2009 and 2018 run years.

Table A15 State Level Base Case Generation by Season (GWh)

Base Case Generation	Winter		Summer	
	2009	2018	2009	2018
CAIR Affected States				
Alabama	89,306	107,340	71,273	89,828
Arkansas	27,458	35,937	27,331	29,377
District Of Columbia	-	70	-	113
Delaware	3,688	4,873	2,754	4,030
Florida	103,348	140,092	91,525	117,000
Georgia	93,099	103,667	73,028	86,929
Iowa	26,718	32,128	20,016	23,757
Illinois	111,860	120,671	79,329	91,331
Indiana	78,544	86,210	57,036	65,667
Kansas	26,507	27,819	21,332	22,583
Kentucky	61,480	62,605	46,396	48,451
Louisiana	35,891	48,346	35,855	38,090
Massachusetts	31,527	37,098	22,173	27,421
Maryland	31,487	33,118	22,747	26,002
Michigan	61,566	75,353	45,410	54,723
Minnesota	27,529	31,431	21,104	23,976
Missouri	51,304	54,766	38,644	42,737
Mississippi	20,631	32,250	24,165	29,593
North Carolina	72,173	77,731	54,210	58,315
New Jersey	31,669	38,312	26,922	29,698
New York	86,175	90,403	66,311	69,245
Ohio	98,345	111,448	69,610	80,018
Pennsylvania	129,591	140,974	93,686	101,509
South Carolina	57,536	66,909	47,731	54,364
Tennessee	57,630	59,073	40,526	43,453
Texas	175,132	192,596	176,889	210,649
Virginia	44,517	55,805	34,038	42,987
Wisconsin	37,353	40,072	29,408	31,217
West Virginia	60,407	61,029	45,922	47,604
Total	1,732,468	1,968,124	1,385,371	1,590,666
Non CAIR States				
Arizona	68,796	84,020	58,556	66,427
California	153,862	193,482	115,891	148,755
Colorado	24,277	29,820	17,665	22,200
Connecticut	18,145	20,347	12,832	13,661
Idaho	6,535	6,859	5,123	4,814
Maine	4,510	4,554	3,259	3,284
Montana	14,651	15,017	11,972	12,277
North Dakota	15,999	15,999	12,683	12,688
Nebraska	17,523	17,985	14,926	15,717
New Hampshire	19,201	18,995	14,611	14,436
New Mexico	16,508	17,492	13,485	14,417
Nevada	21,432	24,996	15,590	20,097
Oklahoma	42,002	45,145	36,058	40,794

Base Case Generation	Winter		Summer	
	2009	2018	2009	2018
Oregon	34,193	37,710	25,959	28,498
Rhode Island	2,822	3,045	1,865	2,474
South Dakota	5,103	5,116	4,200	4,210
Utah	18,558	18,525	14,807	14,561
Vermont	3,328	3,284	2,102	1,985
Washington	61,086	64,342	43,874	47,400
Wyoming	24,650	24,627	19,574	19,555
Total	573,182	651,360	445,030	508,249
National Total	2,305,650	2,619,484	1,830,401	2,098,915

Table A16 State Level CAIR Case Generation by Season (GWh)

CAIR Case Generation	Winter		Summer	
	2009	2018	2009	2018
CAIR Affected States				
Alabama	94,570	114,813	74,254	91,185
Arkansas	28,520	38,336	27,342	30,538
District Of Columbia	-	164	27	140
Delaware	4,109	4,888	1,395	3,816
Florida	103,047	134,673	91,525	114,079
Georgia	90,975	106,074	68,713	87,944
Iowa	26,654	32,155	20,160	22,069
Illinois	113,576	118,442	83,009	91,406
Indiana	77,812	85,811	59,219	64,105
Kansas	26,553	25,090	21,262	21,729
Kentucky	60,623	61,425	45,949	47,837
Louisiana	39,178	47,708	35,792	37,296
Massachusetts	32,086	35,865	22,315	26,056
Maryland	30,432	33,919	22,226	26,140
Michigan	61,409	77,361	45,712	55,464
Minnesota	28,657	31,549	22,190	24,725
Missouri	50,909	54,005	38,878	43,636
Mississippi	20,654	38,386	26,053	31,804
North Carolina	72,011	76,972	54,051	59,626
New Jersey	32,728	37,732	26,430	30,620
New York	86,621	90,452	67,306	70,406
Ohio	94,457	109,773	66,893	80,432
Pennsylvania	125,813	135,339	93,940	100,257
South Carolina	59,092	67,948	47,929	54,154
Tennessee	57,255	55,011	40,017	42,531
Texas	174,956	188,405	176,614	205,557
Virginia	42,300	55,560	34,556	41,982
Wisconsin	37,205	41,005	28,850	31,286
West Virginia	59,826	59,948	43,305	46,823
Total	1,732,029	1,958,806	1,385,910	1,583,642
Non CAIR States				
Arizona	68,764	84,088	58,527	66,182
California	153,862	193,060	115,905	148,764
Colorado	23,897	29,789	17,750	22,086
Connecticut	17,851	20,146	12,783	13,817
Idaho	6,535	6,907	5,123	4,809
Maine	4,510	5,032	3,213	3,605
Montana	14,651	15,018	11,996	12,275
North Dakota	15,380	15,999	11,862	12,738
Nebraska	17,566	18,061	14,947	15,816
New Hampshire	18,921	19,856	14,663	15,201
New Mexico	16,514	17,636	13,485	14,519
Nevada	21,896	25,564	15,641	20,582
Oklahoma	42,459	50,227	36,383	45,539

CAIR Case Generation	Winter		Summer	
	2009	2018	2009	2018
Oregon	34,193	37,678	25,959	28,474
Rhode Island	2,822	3,032	1,651	2,410
South Dakota	5,103	5,116	4,200	4,220
Utah	18,558	18,525	14,796	14,561
Vermont	3,328	3,446	2,102	2,096
Washington	61,086	64,281	43,874	47,356
Wyoming	24,650	24,627	19,574	19,555
Total	572,547	658,087	444,434	514,605
National Total	2,304,577	2,616,893	1,830,343	2,098,247

4. Cost Results

Tables A17, A18, A19 and A20 present the fixed operation and maintenance cost (FOM), variable operation and maintenance cost (VOM), fuel cost and the capital cost in the Base Case and the CAIR Case by IPM model region and season in 2009 and 2018 run years respectively.

Table A17 FOM Cost by IPM Model Region (Million 1999$)

FOM Cost by Region	Base Case		CAIR Case	
	2009	2018	2009	2018
AZNM	999.8	1,173.9	999.8	1,173.9
CALI	1,399.3	1,767.7	1,397.1	1,767.6
DSNY	554.3	365.1	559.0	386.4
ECAO	3,163.2	3,282.9	3,310.1	3,583.2
ENTG	1,172.8	1,351.0	1,177.5	1,361.8
ERCT	1,905.2	2,084.9	1,905.2	2,097.9
FRCC	1,500.1	1,570.0	1,504.2	1,595.8
LILC	71.1	89.7	79.1	92.5
MACE	1,712.7	1,859.8	1,698.8	1,850.0
MACS	474.3	504.5	503.3	548.3
MACW	843.0	961.8	849.6	989.5
MANO	2,462.9	2,942.4	2,466.9	2,949.6
MAPP	1,282.3	1,352.2	1,276.4	1,347.3
MECS	525.5	625.8	525.5	631.5
NENG	1,230.3	1,246.7	1,233.3	1,247.1
NWPE	512.5	539.5	518.4	545.3
NYC	145.0	162.1	145.0	167.5
PNW	906.4	988.3	906.4	988.1
RMPA	295.2	305.0	295.5	305.3
SOU	1,490.9	1,674.5	1,510.6	1,777.1
SPPN	477.7	564.3	477.7	566.9
SPPS	651.9	715.0	656.3	722.2
TVA	1,380.2	1,469.9	1,384.2	1,508.4
UPNY	726.7	792.6	713.3	782.1
VACA	2,764.7	3,099.6	2,756.4	3,096.6
WUMS	461.8	494.1	461.8	495.5
National Total	29,109.7	31,983.2	29,311.5	32,577.6

Table A18 VOM Cost by IPM Model Region (Million 1999$)

VOM Cost by Region	Base Case		CAIR Case	
	2009	2018	2009	2018
AZNM	301.4	349.7	301.3	349.7
CALI	525.1	677.9	523.7	677.6
DSNY	41.0	34.1	41.4	51.4
ECAO	1,218.5	1,316.6	1,378.1	1,883.4
ENTG	158.6	195.1	170.2	228.0
ERCT	493.4	602.5	492.9	621.6
FRCC	303.2	404.1	307.8	466.1
LILC	24.9	39.5	24.4	33.6
MACE	140.5	166.4	137.6	174.4
MACS	70.6	83.1	97.8	141.1
MACW	188.1	203.1	226.7	300.4
MANO	313.9	359.5	335.8	408.4
MAPP	306.1	337.8	309.5	353.1
MECS	146.3	181.0	145.8	211.6
NENG	174.5	205.0	176.8	205.3
NWPE	235.2	249.6	236.7	252.7
NYC	12.1	25.5	12.1	30.0
PNW	93.3	126.3	93.3	126.0
RMPA	117.5	128.0	117.2	127.9
SOU	409.5	512.1	431.8	720.1
SPPN	147.0	158.1	147.4	161.5
SPPS	201.2	231.2	204.0	242.3
TVA	286.2	312.0	290.1	400.3
UPNY	81.8	90.4	85.0	91.1
VACA	570.6	679.9	602.2	720.4
WUMS	110.0	138.3	111.4	143.2
National Total	6,670.4	7,807.0	7,001.0	9,121.3

Table A19 Fuel Cost by IPM Model Region (Million 1999$)

Fuel Cost by Region	Base Case		CAIR Case	
	2009	2018	2009	2018
AZNM	2,231.5	2,884.8	2,296.0	2,912.2
CALI	3,804.4	5,249.7	3,883.0	5,266.9
DSNY	512.8	531.4	537.3	642.6
ECAO	5,452.7	6,207.7	5,346.3	5,844.2
ENTG	1,700.8	2,398.6	1,817.2	2,388.2
ERCT	4,950.1	5,835.0	5,121.9	5,812.3
FRCC	2,979.2	4,480.9	3,045.0	4,282.9
LILC	400.7	530.3	407.5	454.6
MACE	1,106.4	1,453.7	1,195.5	1,461.6
MACS	528.2	599.7	502.4	599.4
MACW	1,039.5	1,258.4	1,039.9	1,176.8
MANO	2,073.1	2,192.0	2,133.0	2,158.4
MAPP	1,560.0	1,666.6	1,561.8	1,676.2
MECS	1,070.6	1,322.5	1,075.2	1,434.1
NENG	1,868.1	2,291.3	1,915.8	2,297.8
NWPE	679.2	643.8	687.8	659.6
NYC	313.2	459.5	326.0	512.2
PNW	1,078.6	1,326.2	1,126.8	1,333.3
RMPA	429.3	596.2	426.8	595.4
SOU	3,933.6	5,195.6	4,146.3	5,399.1
SPPN	678.0	731.7	683.1	726.5
SPPS	1,908.5	2,197.0	1,952.0	2,287.2
TVA	1,633.0	1,868.4	1,675.8	1,972.9
UPNY	599.3	758.0	655.3	703.8
VACA	3,057.0	3,800.8	3,135.3	3,928.7
WUMS	625.4	748.5	632.9	732.9
National Total	46,213.0	57,228.2	47,325.9	57,259.8

Table A20 Capital Cost by IPM Model Region (Million 1999$)

Capital Cost by Region	Base Case		CAIR Case	
	2009	2018	2009	2018
AZNM	0.0	114.8	0.0	114.8
CALI	375.3	1287.1	454.1	1290.4
DSNY	0.0	0.7	0.0	73.3
ECAO	97.2	226.9	505.9	1164.9
ENTG	3.3	4.4	10.3	36.7
ERCT	0.9	978.4	0.6	1029.3
FRCC	13.3	455.4	25.2	540.3
LILC	54.0	167.9	62.4	143.9
MACE	4.2	22.1	4.2	33.8
MACS	18.2	134.0	94.7	261.9
MACW	0.0	0.3	80.9	162.8
MANO	2.7	21.6	35.4	71.3
MAPP	52.9	52.9	52.9	68.7
MECS	0.0	212.4	0.0	237.9
NENG	76.3	160.0	87.3	163.9
NWPE	0.0	23.0	0.0	23.0
NYC	0.0	103.9	0.0	137.1
PNW	5.5	183.8	5.5	182.2
RMPA	0.0	0.0	0.0	0.0
SOU	4.6	412.9	55.5	770.0
SPPN	5.3	28.0	5.3	51.0
SPPS	0.0	142.9	12.2	171.8
TVA	0.0	10.4	11.8	135.2
UPNY	0.0	4.1	11.6	23.2
VACA	232.6	647.5	221.1	667.1
WUMS	10.3	138.8	10.2	149.8
National Total	956.6	5,534.2	1,747.2	7,704.1

Department of Environmental Conservation
Division of Air Resources

NEW YORK STATE IMPLEMENTATION PLAN FOR OZONE (8-HOUR NAAQS)

ATTAINMENT DEMONSTRATION FOR NEW YORK METRO AREA

APPENDIX G

FINAL PROPOSED REVISION FEBRUARY 2008

New York State Department of Environmental Conservation
ELIOT SPITZER, GOVERNOR ALEXANDER GRANNIS, COMMISSIONER

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OZONE TRANSPORT COMMISSION

Identification and Evaluation of Candidate Control Measures

Final
Technical Support Document

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Acronyms and Abbreviations

Acronym	Description
BOTW	Beyond-on-the-Way – refers to additional emission controls that are being considered
CAIR	Clean Air Interstate Rule
EGAS 5.0	Economic Growth Analysis System Version 5.0
EGU	Electric Generating Unit
EPA	U.S. Environmental Protection Agency
IPM	Integrated Planning Model
MANE-VU	Mid-Atlantic/Northeast Visibility Union
MARAMA	Mid-Atlantic Regional Air Management Association
MOBILE6	U.S. EPA's emission model for onroad sources
NESCAUM	Northeast States for Coordinated Air Use Management
NH3	Ammonia
NIF3.0	National Emission Inventory Input Format Version 3.0
NONROAD	U.S. EPA's emission model for certain types of nonroad equipment
NOx	Oxides of nitrogen
OTB/W	On-the-Books/On-the-Way – refers to emission control programs already adopted and proposed emission controls that will result in post-2002 emission reductions
OTC	Ozone Transport Commission
OTC 2001 model rules	Model rules developed by the OTC in 2001
OTC 2006 model rules	Model rules developed by the OTC in 2006
PM10-PRI	Particulate matter less than or equal to 10 microns in diameter that includes both the filterable and condensable components of particulate matter
PM25-PRI	Particulate matter less than or equal to 2.5 microns in diameter that includes both the filterable and condensable components of particulate matter
SIC	Standard Industrial Classification code
SIP	State Implementation Plan
SCC	Source Classification Code
SO2	Sulfur dioxide
VOC	Volatile organic compounds

1.0 EXECUTIVE SUMMARY

The States of the Ozone Transport Region (OTR) are faced with the requirement to submit attainment demonstration plans for the 8-hour ozone National Ambient Air Quality Standards (NAAQS). To accomplish this, most of the states will need to implement additional measures to reduce emissions that either directly impact their nonattainment status, or contribute to the nonattainment status in other states. As such, the Ozone Transport Commission (OTC) undertook an exercise to identify a suite of additional control measures that could be used by the OTR states in attaining their goals.

The OTC staff and member states formed several workgroups to identify and evaluate candidate control measures. Initially, the Workgroups compiled and reviewed a list of approximately 1,000 candidate control measures. These control measures were identified through published sources such as the U.S. Environmental Protection Agency's (EPA's) Control Technique Guidelines, STAPPA/ALAPCO "Menu of Options" documents, the AirControlNET database, emission control initiatives in member states as well as other states including California, state/regional consultations, and stakeholder input. The Workgroups developed a preliminary list of 30 candidate control measures to be considered for more detailed analysis. These measures were selected to focus on the pollutants and source categories that are thought to be the most effective in reducing ozone air quality levels in the Northeastern and Mid-Atlantic States.

The Workgroups discussed the candidate control measures during a series of conference calls and workshops held periodically from the spring of 2004 through the autumn of 2006. The Workgroups collected and evaluated information regarding emission benefits, cost-effectiveness, and implementation issues. Each of the candidate control measures were summarized in a series of "Control Measure Summary Sheets". Stakeholders were provided multiple opportunities to review and comment on the Control Measure Summary Sheets.

Based on the analyses by the OTC Workgroups, the OTC Commissioners made several recommendations at the June 2006 Commissioners' meeting in Boston (OTC 2006a-d) and at the November 2006 Commissioners' meeting in Richmond (OTC 2006e-g). The Commissioners recommended that States consider emission reductions from the following source categories:

- Consumer Products
- Portable Fuel Containers
- Adhesives and Sealants Application
- Diesel Engine Chip Reflash
- Cutback and Emulsified Asphalt Paving

- Asphalt Production Plants
- Cement Kilns
- Glass Furnaces
- Industrial, Commercial, and Institutional (ICI) Boilers
- Regional Fuels

Additionally, the Commissioners directed the OTC to evaluate control measures for Electric Generating Units (EGUs) and high electric demand day units (these measures will be addressed in a separate OTC report) Finally, the Commissioners requested that EPA pursue federal regulations and programs designed to ensure national development and implementation of control measures for the following categories: architectural and maintenance coatings, consumer products, ICI boilers over 100 mmBtu/hour heat input, portable fuel containers, municipal waste combustors, regionally consistent and environmentally sound fuels, small offroad engine emission regulation, and gasoline vapor recovery (OTC 2006d).

See Appendix A for a full description of the process used by the OTC to identify and evaluate candidate control measures.

Table 1-1 summarizes information about the control measures identified by the OTC Commissioners at the June 2006 and November OTC meetings. Table 1-1 identifies the sector, the source category, and a brief description of the control measure. Next is a column that identifies the recommended approach for implementing the rule, such as an OTC model rule or updates to existing state-specific rules. The next two columns show the percent reduction from 2009 emission levels. The final column provides the cost effectiveness estimate in units of dollars per ton of pollutant removed.

Table 1-2 summarizes the expected emission reductions by pollutant, control measure and State. The emission reductions listed in Table 1-2 are for 2009, and take into account only the incremental reductions from the control measures listed in Table 1-1. Figures 1-1 and 1-2 show the anticipated emission reductions by state for VOC and NOx, respectively.

Table 1-1 Summary of OTC 2006 Control Measures

Sector	Source Category	Control Measure	Implementation Method	Percent Reduction from 2009 OTB/W Emission Levels		Cost Effectiveness ($/ton)
				NOx	VOC	
Area	Adhesives, Sealants, Adhesive Primers, and Sealant Primers (Industrial)	Enact VOC content limits similar to those contained in the CARB RACT/BARCT document for adhesives and sealants (Dec. 1998)	Model Rule	---	64	VOC: 2,500
Area	Cutback and Emulsified Asphalt Paving	Prohibits the use of cutback asphalt during the ozone season Limits the use of emulsified asphalt during the ozone season to that which contains not more than 0.5 mL of oil distillate from a 200 mL sample as determined using ASTM Method D244	State Rule Update	---	State specific depending on current rules	VOC: minimal
Area	Consumer Products	Adopt the CARB 7/20/05 Amendments which sets new or revises existing VOC limits on 12 consumer product categories (does not include reductions for Tier2 shaving gels and antistatic aerosols since they have a later compliance date).	Model Rule	---	2	VOC: 4,800
Area	Portable Fuel Containers	Adopt the CARB 2006 Amendments broadening the definition of PFCs to include kerosene and diesel containers and utility jugs used for fuel, and other changes to make OTC Model Rule consistent with CARB requirements.	Model Rule	---	State specific	VOC: 800 to 1,400
Area and Point	Asphalt Production Plants	Area/Point Sources Batch Natural Gas 0.02 lb/ton or equivalent ppm Batch Distillate 0.09 lb/ton or equivalent ppm Drum Natural Gas 0.02 lb/ton or equivalent ppm Drum Distillate 0.04 lb/ton or equivalent ppm or Low NOx Burners, Best Management Practices	State Rule Update	10 - 35	---	NOx: <500 to 1,250

Sector	Source Category	Control Measure	Implementation Method	Percent Reduction from 2009 OTB/W Emission Levels		Cost Effectiveness ($/ton)
				NOx	VOC	
Area and Point	Industrial/ Commercial/ Institutional (ICI) Boilers >250 mmBtu/hour	Option 1 – Purchase current year NOx allowances equal to reductions needed to achieve the required emission rates Option 2 – Phase I 2009 emission rate equal to EGUs of similar size; Phase II 2013 emission rate equal to EGUs of similar size	Model Rule	Boiler and State specific	---	NOx: 600 to 18,000
Area and Point	ICI Boilers 100-250 mmBtu/hour	NOx Strategy #1: Nat gas: 0.10 lb/mmBtu #2, #4, #6 Oil: 0.20 lb/mmBtu Coal: 0.08 to 0.22 lb/mmBtu, depending on boiler type NOx Strategy #2: Reductions achievable through LNB/SNCR, LNB/FGR, SCR or some combination of these controls NOx Strategy #3: 60% reduction from uncontrolled NOx Strategy #4: Purchase current year CAIR allowances	State Rule Update	Boiler and State specific	---	NOx: 600 to 18,000
Area and Point	ICI Boilers 25-100 mmBtu/hour	NOx Strategy #1: Nat gas: 0.05 lb/mmBtu #2 Oil: 0.08 lb/mmBtu #4, #6 Oil: 0.20 lb/mmBtu Coal: 0.30 lb/mmBtu NOx Strategy #2: 50% reduction from uncontrolled NOx Strategy #3: Purchase current year CAIR allowances	State Rule Update	Boiler and State specific	---	NOx: 600 to 18,000
Area and Point	ICI Boilers <25 mmBtu/hour	Annual boiler tune-up	State Rule Update	State specific	---	

Sector	Source Category	Control Measure	Implementation Method	Percent Reduction from 2009 OTB/W Emission Levels		Cost Effectiveness ($/ton)
				NOx	VOC	
Point	Glass Furnaces	Require furnace operators to meet the emission limits in the San Joaquin Valley rule by 2009. These limits are achievable through implementation of "oxyfiring" technology for each furnace at furnace rebuild. If the operator does not rebuild the furnace by 2009 or implement measures to meet the limits in the San Joaquin Valley rule, the operator would be required to purchase NOx allowances equal to the difference between actual emissions and the limits in the San Joaquin Valley rule. Compliance with Rule 4354 will allow manufacturers to use a mix of control options to meet the suggested limits. Manufacturers may propose alternative compliance methods to meet the specified limits, including emissions averaging.	State Rule or Permit	Source specific	---	NOx: 1,254 to 2,500
Point	Cement Plants	Require existing kilns to meet a NOx emission rate of 3.88 lbs/ton clinker for wet kiln 3.44 lbs/ton clinker for long dry kiln 2.36 lbs/ton clinker for pre-heater kiln 1.52 lbs/ton clinker for pre-calciner kiln	State Rule Update	Source specific	---	NOx: <2,500
Onroad Mobile	Diesel Truck Chip Reflash	Mandatory program to upgrade the version of software in engine electronic control module (ECM), (also known as "chip reflash) to reduce off-cycle NOx emissions.	Model Rule	10	---	NOx: 20-30
Onroad Mobile	Regional Fuel based on Reformulated Gasoline Options	Extend RFG requirements to counties in OTC that currently do not have RFG.	Memorandum of Understanding - OTC	State specific	State specific	VOC: 5,200 NOx: 3,700

Table 1-2 Estimated Emission Benefits in 2009 by State Resulting from the OTC 2006 Control Measures

	VOC Emission Reduction Benefit (summer tpd)							NOx Emission Reduction Benefit (summer tpd)							
State	Adhesives & Sealants	Cutback\Emulsified Asphalt Paving	Consumer Products	PFC (Area)[a]	PFCs (Nonroad)[a]	Regional Fuels	Total VOC Reduction	Diesel Engine Chip Reflash	Regional Fuels	Asphalt Production	Cement Kilns	Glass/Fiberglass[b]	ICI Boilers Area Sources	ICI Boilers Point Sources	Total NOx Reduction
CT	4.2	4.3	0.7	0.4	0.1	0.0	9.7	3.5	0.0	0.0	0.0	0.0	2.8	2.1	8.4
DE	1.0	0.0	0.1	0.1	<0.1	0.0	1.4	0.6	0.0	0.2	0.0	0.0	1.2	0.1	2.1
DC	0.1	0.0	0.1	0.1	<0.1	0.0	0.4	0.8	0.0	0.0	0.0	0.0	0.4	0.4	1.6
ME	2.5	10.6	0.2	0.1	<0.1	9.1	22.6	1.4	0.2	0.7	0.0	0.0	1.1	2.8	6.2
MD	5.8	0.0	1.0	1.4	0.4	3.2	11.8	5.6	0.0	0.1	13.1	0.3	1.2	2.4	22.7
MA[d]	8.9	8.1	10.2	1.7	0.5	0.0	29.3	6.7	0.0	0.6	0.0	1.5	6.6	6.8	22.2
NH	2.3	4.4	0.3	0.2	0.1	4.3	11.5	2.0	0.2	0.0	0.0	0.0	3.4	1.9	7.5
NJ	9.2	4.7	1.4	1.0	0.3	0.0	16.7	9.7	0.0	1.0	0.0	4.9	0.0	3.4	19.0
NY	21.5	16.4	3.7	2.6	0.8	56.9	101.9	16.1	2.1	0.0	15.3	5.8	33.8	7.0	80.1
PA	21.9	8.4	2.1	1.6	0.5	58.0	92.3	12.4	2.0	0.2	14.0	24.3	12.2	9.8	73.9
RI	1.5	1.1	0.2	0.2	<0.1	0.0	3.0	0.8	0.0	0.0	0.0	0.5	2.1	0.5	3.9
VT	2.2	1.8	0.1	0.1	<0.1	7.9	12.1	0.9	0.3	0.0	0.0	0.0	0.9	0.4	2.5
No. VA[c]	1.0	<0.1	0.5	0.4	0.1	0.0	1.9	2.5	0.0	0.1	0.0	0.0	3.9	0.1	6.6
OTR	**82.3**	**59.8**	**20.5**	**9.9**	**3.0**	**139.4**	**314.8**	**63.0**	**4.8**	**3.0**	**42.5**	**37.3**	**69.5**	**37.7**	**257.8**

a) The table shows the estimated emission reduction that will occur in 2009; additional reductions will occur in later years as new, less-emitting PFCs that comply with the OTC 2006 control measure penetrate the market.

b) The table show the maximum emission reduction from glass/fiberglass furnaces when the OTC 2206 control measure is fully implemented. No all of the reduction shown will be achieved by 2009.

c) The following jurisdictions in Virginia are part of the OTR: Arlington County, Alexandria, Fairfax County, Fairfax City, Fall Church, Loudon County, Manassas City, Manassas Park, and Prince William County.

d) MA proposed rule has a January 1, 2009 effective date and includes the VOC limits from the OTC 2001 model rule and those in the OTC 2006 model rule. The 2009 benefit MA shows the benefit from both sets of limits. For all other States, the 2009 benefit shows the change in emissions from the OTC 2006 model rule only.

Figure 1-1 VOC Emission Reduction Benefits from OTC 2006 Control Measures in 2009

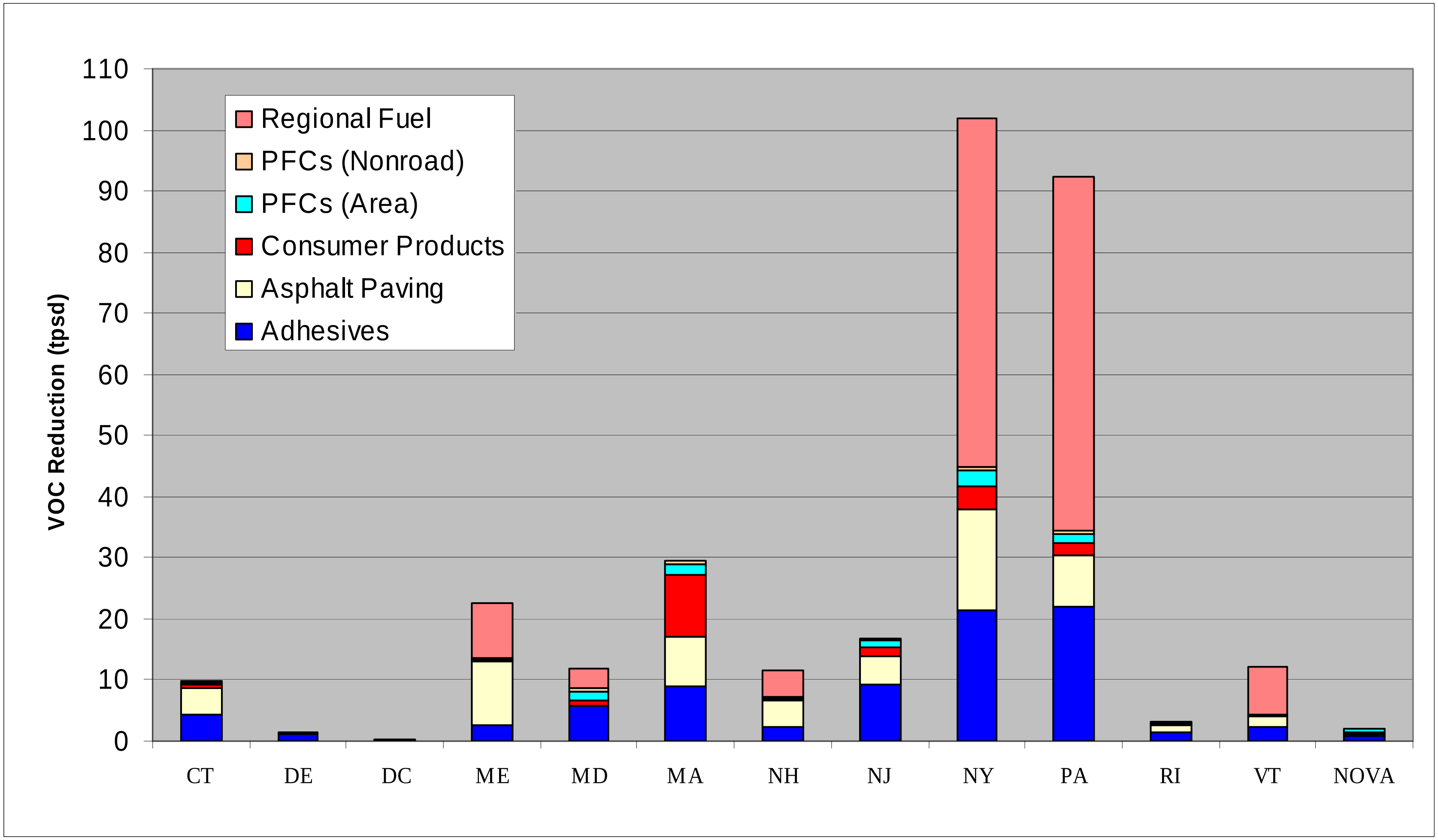
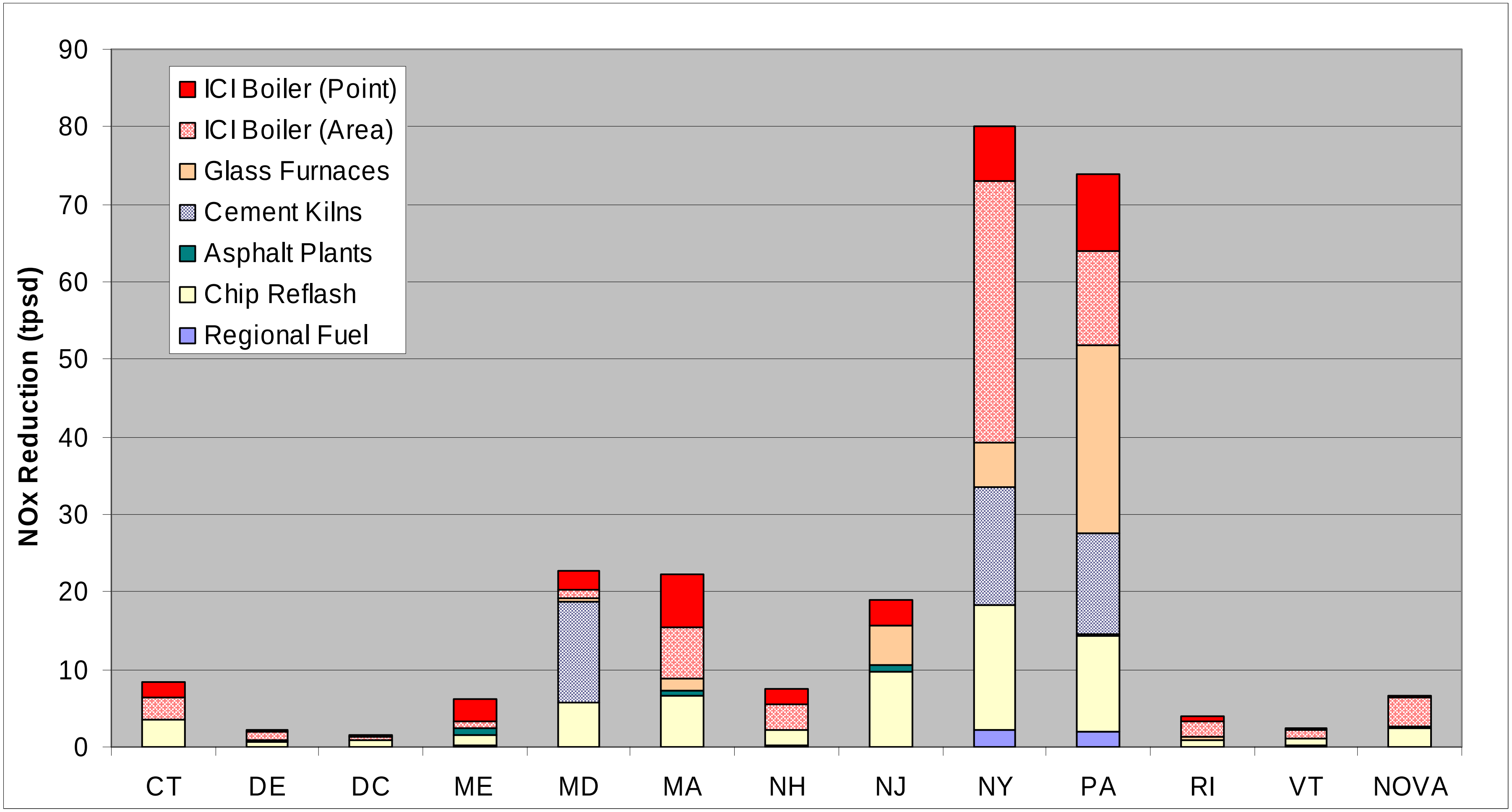


Figure 1-2 NOx Emission Reduction Benefits from OTC 2006 Control Measures in 2009



2.0 INTRODUCTION

The Ozone Transport Commission (OTC) is a multi-state organization created under the Clean Air Act (CAA). The OTC is responsible for advising EPA on transport issues and for developing and implementing regional solutions to the ground-level ozone problem in the Northeast and Mid-Atlantic regions. To supplement local and state-level efforts to reduce ozone precursor emissions, which may not alone be sufficient to attain federal standards, the OTC member states are considering control measures appropriate for adoption by all states in the region as part of their planning to attain and maintain the 8-hour ozone National Ambient Air Quality Standards (NAAQS).

The development of the control measures described in this document parallels a prior effort. The OTC developed a series of model rules in 2001 for the States to consider in adopting control measures to reduce volatile organic compound (VOC) emissions and oxide of nitrogen (NOx), which are ozone precursors, to (1) assist in the attainment of the one-hour ozone health standard, (2) address the VOC and NOx emission reduction shortfalls identified by EPA, and (3) implement the State Implementation Plans (SIP) commitments to EPA. These model rules, which have been adopted in many OTC states, will be referred to as the "OTC 2001 model rules" in this document.

The analysis in this report provides a description of the control measures identified by the OTC to help states attain the 8-hour ozone NAAQS. It also describes the associated incremental emission reductions and costs associated with each measure. The control measures analyzed in this report are those that were identified by the OTC Commissioners at the June 2006 OTC annual meeting in Boston (OTC 2006a, OTC 2006b, OTC 2006c) and at the November 2006 OTC fall meeting in Richmond (OTC 2006d, OTC 2006e, OTC 2006f). These control measures will be referred to as the "OTC 2006 control measures" in this document. For some source categories, the OTC has amended the OTC 2001 model rules or developed new model rules. These model rules will be referred to as the "OTC 2006 model rules" in this document.

The OTC 2006 model rules for volatile organic compounds (VOC) will reduce emissions from adhesives, sealants, adhesive primer, and sealant primer application; cutback and emulsified asphalt paving; consumer products; regional fuels; and portable fuel containers. The OTC 2006 control measures for oxides of nitrogen (NOx) will reduce emissions from asphalt production plants, cement kilns, diesel engine chip reflash, regional fuels, electric generating units (EGUs), glass and fiberglass furnaces, and industrial, commercial, institutional (ICI) boilers.

Section 3 describes the methods used to estimate the emission benefits of the VOC control measures. For each source category, there are subsections that describe the existing Federal and OTC State regulations that affect the VOC emissions, summarize the major elements of the control measures, discuss how the emission benefits were quantified, and present information on anticipated costs and cost-effectiveness. VOC emissions and reductions by State and source category in 2002 and 2009 are presented at the end of Section 3. Section 4 presents similar information for the NOx source categories. Section 5 presents similar information for the SO2 source categories. Section 6 provides a list of references used in developing this report.

Appendix A presents a brief description of the process that the OTC followed in identifying and evaluating candidate control measures. Appendix B lists the approximately 1,000 control measures that were initially analyzed. Appendix C contains the control measure summary sheets that were developed during this analysis. Appendices D, E, and F present the emission benefits by county for VOC, NOx, and SO2 respectively. Each appendix contains a tabulation of the 2002 base emissions, the projected 2009/2012/2018 emissions and expected emission reduction benefit from the additional control measures in 2009/2012/2018). Appendix G contains a listing of State ICI boiler regulations.

3.0 VOC ANALYSIS METHODS

This Section describes the analysis of the 2006 OTC control measures to reduce VOC emissions from five source categories: adhesives, sealants, adhesive primer, and sealant primer application; cutback and emulsified asphalt paving; consumer products; regional fuels; and portable fuel containers. For each of the five categories, there are separate subsections that discuss existing Federal/state rules, summarize the requirements of the 2006 OTC control measure, describe the methods used to quantify the emission benefit, and provide an estimate of the anticipated costs and cost-effectiveness of the control measure. At the end of Section 3, we provide the estimated emissions for 2002 and 2009 by source category and State. Appendix D provides county-by-county summaries of the emission reductions for each of the categories and projection years.

3.1 ADHESIVES, SEALANT, ADHESIVE PRIMER, AND SEALANT PRIMER APPLICATION

Adhesives, sealants, adhesive primer, and sealant primer are used in product manufacturing, packaging, construction, and installation of metal, wood, rubber, plastic, ceramics, or fiberglass materials. In general, an adhesive is any material used to bond two surfaces together. In general, a sealant is a material with adhesive properties that is used primarily to fill, seal, waterproof or weatherproof gaps or joints between two surfaces.

VOC emissions from this category result from evaporation of solvents during transfer, drying, surface preparation and cleanup operations. These solvents are the media used to solubilize the adhesive, sealant, or primer material so that it can be applied. The solvent is also used to completely wet the surface to provide a stronger bond. In plastic pipe bonding, the solvent dissolves the polyvinyl chloride pipe and reacts with the pipe to form a bond. Solvents used to clean the surface before bonding and to clean the application equipment after bonding also contribute to VOC emissions.

VOC emissions in this category are primarily from industrial and commercial operations such as wood product manufacturers, upholstery shops, adhesives retailers and architectural trades, such as building construction, floor covering installation and roof repair.

3.1.1 Existing Federal and State Rules

EPA published the consumer and commercial products rule on September 11, 1998 (40 CFR Part 59 Subpart D) under authority of Section 183(e) of the Clean Air Act. The Federal Part 59

Subpart C requirements for consumer products regulate five types of “household” adhesives (aerosols, contact, construction and panel, general purpose and structural waterproof). The VOC content limits for these products apply only to “household products”, defined as “any consumer product that is primarily designed to be used inside or outside of living quarters or residences, including the immediate surroundings, that are occupied or intended for occupation by individuals.” Thus, the Part 59 rule applies only to adhesives used in household settings and not to adhesives used in industrial or commercial applications.

The OTC developed a model rule for consumer and commercial products in 2001 (referred to as the “OTC 2001 model rule for consumer products” in this document) to regulate additional consumer product categories by requiring more stringent VOC content limits than the Federal rule. The OTC 2001 model rule for consumer products contains VOC limits for adhesives and sealants. However, with the exception of aerosol adhesives, the definitions of these products generally exempt products sold in larger containers. Specifically, the OTC 2001 model rule includes the following definitions (italics added for emphasis):

- Section 2(8) Adhesive. "Adhesive" means any product that is used to bond one surface to another by attachment. “Adhesive” does not include products used on humans and animals, adhesive tape, contact paper, wallpaper, shelf liners, or any other product with an adhesive incorporated onto or in an inert substrate. For “Contact Adhesive,” *adhesive does not include units of product, less packaging, which consist of more than one gallon*. For “Construction, Panel, and Floor Covering Adhesive,” and “General Purpose Adhesive”, *adhesive does not include units of product, less packaging, which weigh more than one pound and consist of more than 16 fluid ounces*. This limitation does not apply to aerosol adhesives.

- Section 2(148) Sealant and Caulking Compound. "Sealant and Caulking Compound" means any product with adhesive properties that is designed to fill, seal, waterproof, or weatherproof gaps or joints between two surfaces. “Sealant and Caulking Compound” does not include roof cements and roof sealants; insulating foams; removable caulking compounds; clear/paintable/water resistant caulking compounds; floor seam sealers; products designed exclusively for automotive uses; or sealers that are applied as continuous coatings. *“Sealant and Caulking Compound” also does not include units of product, less packaging, which weigh more than one pound and consist of more than 16 fluid ounces.* For the purposes of this definition only, “removable caulking compounds” means a compound which temporarily seals windows or doors for three to six month time intervals, and “clear/paintable/water resistant caulking compounds” means a compound which contains no appreciable level of opaque fillers or pigments; transmits most or all visible light through the caulk when cured; is paintable; and is immediately resistant to precipitation upon application.

Thus, the same products sold in containers larger than the above thresholds are not covered by the OTC 2001 model rule for consumer products.

3.1.2 Description of the OTC 2006 Model Rule

The OTC 2006 model rule for adhesives and sealants is based on the reasonably available control technology (RACT) and best available retrofit control technology (BARCT) determination by the California Air Resources Board (CARB) developed in 1998. The OTC 2006 model rule has the following requirements:

A. Regulates the application of adhesives, sealants, adhesive primers and sealant primers by providing options for appliers to either to use a product with a VOC content equal to or less than a specified limit or to use add-on controls;

B. Limits the VOC content of aerosol adhesives to 25 percent by weight;

C. Requirements for cleanup solvents;

D. A VOC limit for surface preparation solvents;

E. An alternative add-on control system requirement of at least 85 percent overall control efficiency (capture and destruction efficiency), by weight;

F. VOC containing materials must be stored or disposed of in closed containers;

G. Prohibits the sale of any adhesive, sealant, adhesive primer or sealant primer which exceeds the VOC content limits listed in the model rule;

H. Manufacturers must label containers with the maximum VOC content as supplied, as well as the maximum VOC content on an as-applied basis when used in accordance with the manufacturer's recommendations regarding thinning, reducing, or mixing with any other VOC containing material; and

I. Prohibits the specification of any adhesive, primer, or sealant that violates the provisions of the model rule.

Several adhesive and sealant applications and products are exempt from this model rule: tire repair, assembly and manufacturing of undersea-based weapon systems, testing and evaluation associated with research and development, solvent welding operations for medical devices, plaque laminating operations, products or processes subject to other state rules, low-VOC products (less than 20 g/l), and adhesives subject to the state rules based on the OTC 2001 consumer products model rule. Additionally, the model rule provides an exemption for adhesive application operations at stationary sources that use less than 55 gallons per calendar year of noncomplying adhesives and for stationary sources that emit not more than 200 pounds of VOCs per year from adhesives operations.

3.1.3 Emission Benefit Analysis Methods

Emissions from this category are classified as both point sources and area sources. About 96 percent of adhesive and sealant VOC emissions in the OTC states fall into the area source category. The remaining four percent of the VOC emissions are included in the point source inventory.

The emission reduction benefit estimation methodology for area sources is based on information developed and used by CARB for their RACT/BARCT determination in 1998. CARB estimates that the total industrial adhesive and sealant emissions in California to be about 45 tons per day (tpd). Solvent-based emissions are estimated to be about 35 tpd of VOC and water-based adhesive and sealant emissions are about 10 tpd of VOC. CARB indicated that the emission reductions would be achieved mainly due to the switch from high-VOC to low-VOC products rather than from the use of add-on control devices. CARB estimated that emission reductions achieved by statewide compliance with the VOC limits in the RACT/BARCT determination will range from approximately 29 to 35 tpd (CARB 1998, pg. 18). These emission reductions correspond to a 64.4 to 77.8 percent reduction from uncontrolled levels. For OTC modeling purposes, we used the lower end of this range (i.e., 64.4 percent reduction) to estimate the emission benefit for area sources due to the OTC 2006 model rule.

For point sources, we first identified those sources that were applying adhesives and sealants (using the source classification code of 4-02-007-xx, adhesives application). Next, we reviewed the MANEVU inventory to determine whether sources had existing capture and control systems. Several sources reported capture and destruction efficiencies in the 70 to 99 percent range. A few sources reported capture and destruction efficiencies of 99+ percent. Most of the controlled sources reported capture and destruction efficiencies in the 90-98 percent range. Sources with existing control systems that exceed an 85 percent overall capture and destruction efficiency would meet the OTC 2006 model rule provision for add-on air pollution control equipment; no additional reductions were calculated for these sources. For point sources without add-on control equipment, we used the 64.4 percent reduction discussed in the previous paragraph based on the CARB determination.

3.1.4 Cost Estimates

The cost of complying with the new requirements includes the cost of using alternative formulations of low-VOC or water-based adhesives, sealants, adhesive primers, and sealant primers and cleanup products. Based on information provided by the Ventura County Air Pollution Control District, CARB determined that the cost-effectiveness of their adhesives rule ranges from a savings of $1,060 per ton to a cost of $2,320 per ton of VOC reduced (CARB 1998, pg. 17). These costs are likely to be less in the OTR, because some of the one-time research and reformulation costs incurred for products sold in California will not have to be incurred again for products sold in the OTR. CARB also reports a cost-effectiveness of $9,000 to $110,000 per ton of VOC reduced for the use of add-on control equipment to comply with the requirements.

3.2 CUTBACK AND EMULSIFIED ASPHALT PAVING

Asphalt paving is used to pave, seal and repair surfaces such as roads, parking lots, drives, walkways and airport runways. Asphalt paving is grouped into three general categories: hot-mix, cutback, and emulsified. Hot-mix asphalt is the most commonly used paving asphalt. Hot-mix asphalt produces minimal VOC emissions because its organic components have high molecular weights and low vapor pressures. Cutback asphalt is used in tack and seal operations, in priming roadbeds for hot-mix application and for paving operations for pavements up to several inches thick. In preparing cutback asphalt, asphalt cement is blended or "cut back" with a diluent, typically from 25 to 45 percent by volume of petroleum distillates, depending on the desired viscosity. Emulsified asphalt is used in most of the same applications as cutback asphalt but is a lower emitting alternative to cutback asphalt. Instead of blending asphalt cement with petroleum distillates, emulsified asphalts use a blend of asphalt cement, water and an emulsifying agent, such as soap. Some emulsified asphalts contain virtually no VOC diluents; however, some emulsified asphalts may contain up to 12 percent VOC by volume.

3.2.1 Existing Federal and State Rules

The EPA published a Control Technique Guideline (CTG) for the use of cutback asphalt in December 1977. The CTG recommended replacing cutback asphalt binders with emulsified asphalt during the ozone season. In 1979, EPA added a specification for emulsified asphalt to the CTG recommendations to limit the content of oil distillate in emulsified asphalt to no higher than 7 percent oil distillate.

Table 3-1 summarizes the current asphalt paving rules for the 13 OTR states. Most of the states in the OTR have adopted the CTG banning cutback asphalt in the ozone season. Some states have exemptions to this rule, allowing the use of cutback asphalt with up to 5 percent VOC. For emulsified asphalt, the requirements vary greatly. The VOC content of emulsified asphalt is limited to 0-12 percent, depending on the State and the type of emulsified asphalt. Delaware completely bans the use of emulsified asphalt that contains any VOC.

Table 3-1 Summary of OTC State Rules for Cutback and Emulsified Asphalt

State	Cutback Asphalt	Emulsified Asphalt
CT	22a-174-20 (k): VOC content limited to 5% during June, July, August, and September	Nothing specified
DE	Reg. No. 24, Section 34: Ban during ozone season	Reg. No. 24, Section 34: Ban on use of emulsified asphalt that contains any VOC
DC	Chapter 7 Section 8-2:707(k): Ban during the months of April, May, June, July, August, and September	Nothing specified
ME	Chapter 131: Ban during the period May 1 through September 15, with some exceptions	Chapter 131: VOC content limited to 3-12%, depending on the type of use
MD	COMAR 26.11.11.02: Ban during the period April 16 through October 14	COMAR 26.11.11.02: Allowed upon approval of the Department; no VOC content limit specified
MA	310 CMR 7.18(9): Ozone season ban on cutback asphalt with VOC content greater than 5% by weight with exemptions including use as prime coat	Nothing Specified
NH	Env-A 1204.42: Ban during the months of June through September; cutback with up to 5% VOC allowed upon approval of Department	Env-A 1204.42: VOC content limited to 3-12%, depending on the type of use
NJ	7:27-16.19: Ban from April 16 through October 14, with some exemptions	7:27-16.19: VOC content limited to 8% by volume
NY	Part 211: Ban from May 2 through October 15	Part 211: VOC content limited to 2-12%, depending on the type of ASTM grade
PA	25 Pa. Code Section 129.64: Ban from May 1 to October 30	25 Pa. Code Section 129.64: VOC content limited to 0-12%, depending on type
RI	Reg. No. 25: Ban from April 1 to September 30, with some exemptions	Reg No. 25: VOC content limited to 3-12%, depending on application/use
VT	5-253.15: Ban on cutback asphalt with VOC content greater than 5% by weight, with some exemptions	5-253.15: Ban on emulsified asphalt with VOC content greater than 5% by weight
VA	Chapter 40, Article 39: Ban during April through October	Chapter 40, Article 39: VOC content limited to 6% by volume

3.2.2 Description of the OTC 2006 Model Rule

The OTC 2006 model rule for the asphalt paving control measure prohibits the use of cutback asphalt during the ozone season and limits the use of emulsified asphalt to that which contains not more than 0.5 mL of oil distillate from a 200 mL sample (as determined using American Society for Testing and Materials {ASTM} Method D244 - Test Methods for Emulsified Asphalts) regardless of application. This is equivalent to a VOC content of 0.25 percent. Exemptions may be granted under certain circumstances upon the approval of the State commissioner.

3.2.3 Emission Benefit Analysis Methods

The OTC 2006 control measure for asphalt paving calls for a complete ban on the use of cutback asphalt during the ozone season. As shown in Table 3-1, current state regulations generally ban the use of cutback asphalt during the ozone season. However, there are exemptions from the ban and as a result there are VOC emissions from the use of cutback asphalt during the ozone season. The OTC 2006 control measure eliminates any exemptions and totally eliminates any VOC emissions from the use of cutback asphalt during the ozone season.

The emission reductions resulting from OTC 2006 control measure for emulsified asphalt vary by State. The two percent VOC content limit on emulsified asphalt depend on the baseline VOC content of emulsified asphalt. The control measure limits emulsified asphalt to not more than 0.5 mL of oil distillate from a 200 mL sample as determined using ASTM Method D244. This is equivalent to a VOC content of 0.25 percent. The baseline VOC content may range from 0 to 12 percent. New Jersey used a VOC content of 8 percent in their baseline emission calculations (based on the 8 percent limit in their current rule). Reducing the VOC content to 0.25 percent in New Jersey will result in a 96.9 percent reduction. Delaware already bans the use of emulsified asphalt that contains any VOC, so there is no reduction in Delaware. Several other states used an average VOC content of 2.5 percent when developing their emission inventory. Thus, reducing the average VOC content from 2.5 percent to 0.25 percent results in a 90 percent reduction in VOC emissions. For States that did not supply a baseline VOC content for asphalt paving, we used the 90 percent reduction in VOC emissions from emulsified asphalt paving during the ozone season.

3.2.4 Cost Estimates

Low-VOC alternatives are currently available and no additional costs are expected from their use.

3.3 CONSUMER PRODUCTS

Consumer and commercial products are those items sold to retail customers for personal, household, or automotive use, along with the products marketed by wholesale distributors for use in commercial or institutional settings such as beauty shops, schools and hospitals. VOC emissions from these products are the result of the evaporation of propellant and organic solvents during use. Consumer and commercial products include hundreds of individual products, including personal care products, household products, automotive aftermarket products, adhesives and sealants, FIFRA-related insecticides, and other miscellaneous products.

3.3.1 Existing Federal and State Rules

EPA published the Federal consumer and commercial products rule on September 11, 1998 (40 CFR Part 59 Subpart D) under authority of Section 183(e) of the Clean Air Act. This rule limits the VOC content of 24 product categories representing 48 percent of the consumer and commercial products inventory nationwide. According to EPA, VOC emissions from those 24 product categories were reduced by 20 percent. But since over half of the inventory is unaffected by the rule, the Federal rule is estimated to yield VOC reductions of 9.95 percent of the total consumer products inventory (Pechan 2001, pg 7).

Since over half of the inventory is unregulated by the Federal Part 59 rule, the OTC developed a model rule for consumer and commercial products in 2001 (referred to as the "OTC 2001 model rule for consumer products" in this document) to be used by the OTC jurisdictions to develop regulations for additional consumer product categories and to specify more stringent VOC content limits than the Federal rule. The VOC content limits and products covered in the OTC 2001 model rule are similar to the rules developed by CARB in the late 1990s. The OTC 2001 model rule for consumer products provides background for OTC jurisdictions to develop programs to regulate approximately 80 consumer product categories and includes technologically feasible VOC content limits. The emission reductions for state programs based on the OTC 2001 model rule are estimated to be 14.2 percent of the total consumer product inventory beyond the national rule reduction (Pechan 2001, pg. 8).

Most, but not all, states in the OTR have adopted regulatory programs based on the OTC 2001 model rule for consumer products. Table 3-2 summarizes the adoption status for the 13 OTR jurisdictions.

Table 3-2 Status of OTC State's Promulgation of the OTC 2001 Model Rule for Consumer Products.

State	Effective Date of VOC Limits	Regulatory Citation
CT [a]	Initiated process to adopt in 2006	R.C.S.A. section 22a-174-40
DE	Effective January 1, 2005	Regulation Number 41
DC	Effective June 30, 2004	Regulation 719
ME	Effective May 1, 2005	Chapter 152
MD	Effective January 1, 2005	COMAR 26.11.32
MA [b]	In progress – proposed effective date is January, 2009	310 CMR 7.25(12)
NH	Effective January 1, 2007	Chapter Env-A 4100
NJ	Effective Janaury 1, 2005	Chapter 27, Subchapter 24
NY	Effective January 1, 2005	Chapter 3, Part 235
PA	Effective January 1, 2005	25 Pa. Code Chapter 130, Subchapter B
RI	Intend to develop in 2006	n/a
VT	Under Consideration	n/a
VA [c]	Effective July 1, 2005	Chapter 40, Article 50

a) Connecticut's proposed rule includes both the VOC limits from the OTC 2001 model rule and the new and revised VOC emissions limits and related provisions that were adopted by the California Air Resources Board on July 20, 2005. These new and revised VOC limits are identical to those in the OTC 2006 model rule.

b) Massachusett's proposed rule includes the VOC limits from the OTC 2001 model rule and those in the OTC 2006 model rule.

c) Virginia's rule applies only in Northern Virginia VOC Emission Control Area (10 northern Virginia jurisdictions in the OTR)

3.3.2 Description of the OTC 2006 Model Rule

The OTC 2001 model rule for consumer products closely mirrored a series of five CARB consumer products rules. CARB recently amended their consumer products rules in July 2005. As shown in Table 3-3, these amendments to the CARB rule affected 18 categories of consumer products (14 new categories, including subcategories, with new product category definitions and VOC limits; one previously regulated category with a more restrictive VOC limit; and two previously regulated categories with additional requirements).

Table 3-3 Consumer Products Affected by CARB's July 2005 Rule Amendments

New Categories with VOC Limits for Regulation	
Adhesive Remover	Footwear or Leather Care Product
– 4 subcategories	Hair Styling Product[a]
Anti-Static Product	Graffiti Remover
Electrical Cleaner	Shaving Gel
Electronic Cleaner	Toilet/Urinal Care Product
Fabric Refresher	Wood Cleaner
Previously Regulated Category with More Restrictive Limit	
Contact Adhesive[b]	
Previously Regulated Categories with Additional Requirements	
Air Fresheners	General Purpose Degreasers

a) This product category will incorporate Hair Styling Gel and include additional forms of hair styling products (i.e., liquid, semi-solid, and pump spray) but does not include Hair Spray Product or Hair Mousse.

b) This product category has been separated into 2 subcategories: General Purpose and Special Purpose

Most of these new CARB limits become effective in California by December 31, 2006. Two of the limits, anti-static products (aerosol) and shaving gels, have effective dates in either 2008 or 2009. For shaving gels, there is a VOC limit that becomes effective on December 31, 2006, with a more stringent second tier limit that becomes effective on December 31, 2009. The anti-static product (aerosol) limit becomes effective on December 31, 2008.

The OTC 2006 model rule will modify the OTC 2001 model rule based on the CARB July 20, 2005 amendments. The OTC is not including the anti-static aerosol products and the second tier shaving gel limit in its revisions to the OTC 2001 model rule because of industry concerns that meeting these limits may not be feasible. CARB acknowledged these concerns by requiring a technology review of these product categories in 2008 to determine whether the limits are achievable.

3.3.3 Emission Benefit Analysis Methods

The emission reduction benefit estimation methodology is based on information developed by CARB. CARB estimates 6.05 tons per day of VOC reduced in California from their July 2005 amendments (CARB 2004a, pg. 8), excluding the benefits from the two products (anti-static products and shaving gels) with compliance dates in 2008 or 2009. This equates to about 2,208 tons per year in California. The population of California as of July 1, 2005 is 36,132,147

(Census 2006). On a per capita basis, the emission reduction from the CARB July 2005 amendments equals 0.122 lbs/capita.

Since the OTC's 2006 control measure is very similar to the CARB July 2005 amendments (with the exclusion of the anti-static products and shaving gel 2008/2009 limits), the per capita emission reductions are expected to be the same in the OTR. The per capita factor after the implementation of the OTC 2001 model rule is 6.06 lbs/capita (Pechan 2001, pg. 8). The percentage reduction from the OTC's 2006 control measure was computed as shown below:

Current OTC Emission Factor	=	6.06 lbs/capita
Benefit from CARB 2005 amendments	=	0.122 lbs/capita
Percent Reduction	=	100%*(1 - (6.06 – 0.122)/6.06)
	=	2.0%

3.3.4 Cost Estimates

CARB estimates that the cost effectiveness of VOC limits with an effective date of December 31, 2006, to be about $4000 per ton of VOC reduced (CARB 2004, pg. 21). CARB further estimates that the average increase in cost per unit to the manufacturer to be about $0.16 per unit. Assuming CARB's estimates for the OTR provides a conservative estimate, because some of the one-time research and reformulation costs incurred for products sold in California will not have to be incurred again for products sold in the OTR.

3.4 PORTABLE FUEL CONTAINERS

Portable fuel containers (PFCs) are designed for transporting and storing fuel from a retail distribution point to a point of use and the eventual dispensing of the fuel into equipment. Commonly referred to as "gas cans," these products come in a variety of shapes and sizes with nominal capacities ranging in size from less than one gallon to over six gallons. Available in metal or plastic, these products are widely used to refuel residential and commercial equipment and vehicles when the situation or circumstances prohibits direct refueling at a service station. PFCs are used to refuel a broad range of small off-road engines and other equipment (e.g., lawnmowers, chainsaws, personal watercraft, motorcycles, etc.). VOC emissions from PFCs are classified by five different activities:

- **Transport-spillage** emissions from PFCs occur when fuel escapes from PFCs that are in transit.
- **Diurnal** emissions result when stored fuel vapors escape to the air through any possible openings while the container is subjected to the daily cycle of increasing and decreasing

ambient temperatures. Diurnal emissions depend on the closed- or open- storage condition of the PFC.

- **Permeation** emissions are produced after fuel has been stored long enough in a container for fuel molecules to infiltrate and saturate the container material, allowing vapors to escape through the walls of containers made from plastic.
- Equipment refueling **vapor displacement** and **spillage** emissions result when fuel vapor is displaced from nonroad equipment (e.g., lawnmowers, chainsaws, personal watercraft, motorcycles, etc.) and from gasoline spillage during refueling of the equipment with PFCs. These VOC emissions are already taken into account in the nonroad equipment emission inventory by the NONROAD model.

Diurnal evaporative emissions are the largest category.

3.4.1 Existing Federal and State Rules

The OTC developed a model rule for PFCs in 2001. The OTC 2001 model rule was very similar to a rule adopted by CARB in 2000. The OTC 2001 model rule provides background for OTC jurisdictions to develop regulatory programs that require spill-proof containers to meet performance standards that reduce VOC emissions. The performance standards include a requirement that all PFCs to have an automatic shut-off feature preventing overfilling and an automatic closing feature so the can will be sealed when it is not being used. The performance standards also eliminate secondary venting holes and require new plastics to reduce vapor permeation through container walls. There is no requirement for owners of conventional PFCs to modify their PFCs or to scrap them and buy new ones. Compliance will be accomplished primarily through attrition. As containers wear out, are lost, damaged, or destroyed, consumers will purchase new spill-proof containers to replace the conventional containers. CARB determined that the average useful life of a PFC is five years. The OTC chose to assume a more conservative ten-year turnover rate, with 100 percent rule penetration occurring 10 years after adoption of the rule.

CARB estimated that the performance standards would reduce VOC emissions by 75 percent. CARB's 2004 analysis (CARB 2004b) reevaluated the estimate reductions due to some unforeseen issues with the new cans and new survey information. Based on CARB's updated data, CARB estimated that VOC emissions would be reduced by 65 percent from the first set of amendments.

CARB has also adopted a second set of amendments in two phases. The first phase was filed on January 13, 2006, effective February 12, 2006. For Phase I, CARM amended their PFC regulation to address the use of utility jugs and kerosene containers that are sometimes used by consumers for gasoline. The second phase of the amendments was filed on September 11, 2006, effective October 11, 2006. These amendments (CARB 2006) will:

- Establish a mandatory certification program and accompanying test procedures;
- Amend the existing performance standards to eliminate the automatic shutoff performance standard effective July 1, 2007;
- Amend the existing performance standards to eliminate the fill height and flow rate performance standards;
- Amend the existing PFC pressure standard;
- Amend the current test methods;
- Change the permeability standard from 0.4 to 0.3 grams/gallon-day;
- Establish a voluntary consumer acceptance-labeling program that allows participating manufacturers to label their PFCs with an ARB "Star Rating" indicating how consumers rate their products' ease of use; and
- Combine the currently separate evaporation requirement and permeation standard and test method into a single diurnal standard and test method.

In February 2007, EPA finalized a national regulation to reduce hazardous air pollutant emissions from mobile sources. Included in the final rule are standards that would reduce PFC emissions from evaporation, permeation, and spillage. EPA included a performance-based standard of 0.3 grams per gallon per day of hydrocarbons, determined based on the emissions from the can over a diurnal test cycle specified in the rule. The standard applies to containers manufactured on or after January 1, 2009. The standards are based on the performance of best available control technologies, such as durable permeation barriers, automatically closing spouts, and cans that are well-sealed.

3.4.2 Description of the OTC 2006 Model Rule

As shown in Table 3-4, most states in the OTR have already adopted PFC regulations based on the OTC 2001 model rule. The OTC 2001 model rule for PFCs closely mirrors the 2000 version of CARB's PFC rule. CARB recently amended their gas can regulation as discussed above in Section 3.4.1. The OTC 2006 model rule closely mirrors these CARB amendments. The 2006 amendments are estimated to reduce VOC emissions by 18.4 tons per day in California at full implementation in the year 2015, in addition to the benefits from the existing regulation. The OTC 2006 model rule will modify the OTC 2001 model rule based on the recent CARB amendments.

Table 3-4 Status of OTC State's Promulgation of the OTC 2001 Model Rule for Portable Fuel Containers

State	Date When New Containers are Required	Regulatory Citation
CT	Effective May 1, 2004	Section 22a-174-43
DE	Effective January 1, 2004	Reg. No. 41, Section 3
DC	Effective November 15, 2003	Rule 720
ME	Effective January 1, 2004	Chapter 155
MD	Effective January 1, 2003	COMAR 26.11.13.07
MA[a]	In progress (effective date will be January 1, 2009)	n/a
NH	Effective March 1, 2006	Env-A 4000
NJ	Effective January 1, 2005	Subchapter 24 (7:27-24.8)
NY	Effective January 1, 2003	Part 239
PA	Effective January 1, 2003	25 Pa. Code Chapter 130, Subchapter A
RI	In progress (late 2006 target date for final rule)	n/a
VT	Under Consideration	n/a
VA[b]	Effective January 1, 2005	Chapter 40, Article 42

a) Massachusetts' proposed rule will be based only on the OTC 2006 model rule; Massachessetts will not adopt the OTC 2001 model rule.

b) Virginia's rule applies only in Northern Virginia VOC Emission Control Area (10 northern Virginia jurisdictions in the OTR)

3.4.3 Emission Benefit Analysis Methods

Emissions from PFCs are accounted for in both the area and nonroad source inventories. The NONROAD model accounts for equipment refueling vapor displacement and spillage emissions result when fuel vapor is displaced from nonroad equipment (e.g., lawnmowers, chainsaws, personal watercraft, motorcycles, etc.) and from gasoline spillage during refueling of the equipment with PFCs. The area source inventory accounts for diurnal and permeation emissions associated with the fuel present in stored PFCs and transport-spillage emissions associated with refueling of a gas can at the gasoline pump. Based on the OTC 2001 model rule (Pechan 2001, pg. 11) roughly 70 percent of the VOC emissions are accounted for in the area source inventory, while the remaining 30 percent is from equipment refueling vapor displacement and spillage that is accounted for in the nonroad inventory.

The emission benefits have been calculated for the emissions accounted for in both the area and nonroad source inventory. Emissions from the nonroad category were estimated to be 30 percent of the PFC emissions accounted for in the area source inventory.

Also note that the OTC baseline emissions (i.e., 2002 emissions) do not include changes to the emission estimation methodology made by CARB in 2004. CARB conducted a new survey of PFCs in 2004, which included kerosene containers and utility jugs. Using this survey data, CARB adjusted their baseline emissions; a similar adjustment to the OTC baseline inventory has not been made.

Estimated emission reductions were based on information compiled by CARB to support their recent amendments. CARB estimated that PFC emissions in 2015 will be 31.9 tpd in California with no additional controls or amendments to the 2000 PFC rules (CARB 2005a, pg. 10). CARB further estimates that the 2006 amendment will reduce emission from PFCs by 18.4 tpd in 2015 in California compared to the 2000 PFC regulations (CARB 2005a, pg. 23). Thus, at full implementation, the expected incremental reduction is approximately 58 percent, after an estimated 65 percent reduction from the original 2000 rule.

The OTC calculations assume that States will adopt the rule by July 2007 (except in Massachusetts) and provide manufacturers one year from the date of the rule to comply. Thus, new compliant PFCs will not be on the market until July 2008. Assuming a 10-year turnover to compliant cans, only 10 percent of the existing inventory of PFCs will comply with the new requirements in the summer of 2009. Therefore, only 10 percent of the full emission benefit estimated by CARB will occur by 2009 – the incremental reduction will be 5.8 percent in 2009.

3.4.4 Cost Estimates

CARB estimates that the cost-effectiveness of the 2005/2006 amendments will range from $0.40 to $0.70 per pound of VOC reduced, or $800 to $1,400 per ton of VOC reduced (CARB 2005a, pg. 27). Assuming CARBs costs for the OTR provides a conservative estimate, because some of the one-time research and reformulation costs incurred for products sold in California will not have to be incurred again for products sold in the OTR.

3.5 REGIONAL FUELS

The Clean Air Act Amendments of 1990 required significant changes to conventional fuels used by motor vehicles. Beginning in 1995, “reformulated” gasoline must be sold in certain non-attainment areas and other states with non-attainment areas are permitted to opt-in.

Reformulated gasoline results in lower VOC emissions than would occur from the use of normal "baseline" gasoline.

3.5.1 Existing Federal and State Rules

All but two states in the OTR are participating, in whole or in part, with the federal reformulated gasoline program. However, nearly one-third of the gasoline sold in the OTR is not reformulated gasoline. NESCAUM has estimated the following fraction of gasoline that is reformulated by State:

State	Current RFG Fraction	State	Current RFG Fraction
CT	100%	NJ	100%
DC	100%	NY	54%
DE	100%	PA	24%
MA	100%	RI	100%
MD	86%	NoVA	100%
ME	0%	VT	0%
NH	64%		

3.5.2 Description of the OTC 2006 Control Measure

The Energy Policy Act of 2005 provides the opportunity for the OTR to achieve a single clean-burning gasoline and is consistent with what OTR states have promoted through the long debate over MTBE/ethanol/RFG. Approximately one-third of the gasoline currently sold in the OTR is not reformulated. The new authority plus the potential for emission reductions from the amount of non-reformulated gasoline sold in the OTR provides an opportunity for additional emission reductions in the region as well as for a reduced number of fuels, and possibly a single fuel, to be utilized throughout the region. The OTC Commissioners recommended that the OTC member states pursue a region fuel program consistent with the Energy Act of 2005 (OTC 2006b).

3.5.3 Emission Benefit Analysis Methods

Emission benefits resulting from extending reformulated gasoline to all areas of the OTR have been calculated for 2006 by NESCAUM (NESCAUM 2006a).

3.5.4 Cost Estimates

According to USEPA's regulatory impact analysis for reformulated gasoline (USEPA 1993), the cost per ton of VOC reduced for Phase I RFG is $5,200 to $5,900. USEPA also estimated the cost of Phase II RFG was $600 per ton of VOC reduced – this reflects the incremental cost over the cost of implementing Phase I of the RFG program.

3.6 VOC EMISSION REDUCTION SUMMARY

The results of the emission benefit calculations for the OTC states are described in this subsection. The starting point for the quantification of the emission reduction benefits is the MANEVU emission inventory, Version 3 (Pechan 2006, MACTEC 2006a) and the VISTAS emission inventory, BaseG (MACTEC 2006b), for the northern Virginia counties that are part of the OTR. The MANEVU and VISTAS inventories include a 2002 base year inventory as well as projection inventories for 2009 and 2018 (MANEVU also has projections for 2012, but VISTAS does not). The projection inventories account for growth in emissions based on growth indicators such as population and economic activity. The projection inventories also account for "on-the-books/on-the-way" (OTB/W) emission control regulations that have (or will) become effective between 2003 and 2008 that will achieve post-2002 emission reductions. For example, many States have already adopted the 2001 OTC model rules for consumer products and portable fuel containers. The emission reduction benefit from the 2001 OTC model rules are already accounted for in the MANEVU and VISTAS projection inventories. Emission reductions from existing regulations are already accounted for to ensure no double counting of emission benefits occurs.

Note that the emission reductions contained in this Section are presented in terms of tons per summer day. The MANEVU base and projection emission inventories do not contain summer day emissions for all States and source categories; the VISTAS inventory only contains annual values. When States provided summer day emissions in the MANEVU inventory, these values were used directly to quantify the emission benefit from the 2006 OTC control measure. When summer day emissions were missing from the MANEVU or VISTAS inventories, the summer day emissions were calculated using the annual emissions and the seasonal throughput data from the NIF Emission Process table. If the seasonal throughput data was missing, the summer day emissions were calculated using the annual emissions and a summer season adjustment factor derived from the monthly activity profiles contained in the SMOKE emissions modeling system.

Tables 3-5 to 3-10 show State summaries of the emission benefits from the OTC 2006 VOC control measures described previously in this Section. For each of the source categories, the Tables show four columns: (1) the actual 2002 summer daily emissions; (2) the summer daily emissions for the 2009 OTB/W scenario that accounts for growth and for the emission control regulations that have (or will) become effective between 2003 and 2008 that will achieve post-2002 emission reductions; (3) the summer daily emissions for 2009 with the implementation of the OTC 2006 control measures identified in this Section, and (4) the emission benefit in 2009 resulting from the OTC 2006 control measure. Table 3-11 shows the same information for the total of all six source categories.

The largest estimated VOC emission reductions are in the most populous States – New York and Pennsylvania. The emission benefits listed for Virginia just include the Virginia counties in the northern Virginia area that are part of the OTR. Benefit estimates for all other States include the entire state. The emission benefits also assume that all OTC members will adopt the rules as described in the previous sections.

The requirement for a regional fuel throughout the OTR provides the largest emission benefit, about 139.4 tons per day across the OTR. The adhesives and sealants application model rule provides the second largest emission benefit in 2009 – 82.3 tons per day across the OTR. The incremental benefits accrued from the amendments to State's existing consumer products and portable fuel container model rules are not as large, since the States already have accrued substantial benefits from the adoption of these rules.

Appendix D provides county-by-county summaries of the VOC emission benefits from the OTC 2006 VOC model rules described previously in this Section. Appendix D also provides additional documentation regarding the data sources and emission benefit calculations that were performed. These tables can be used by the States to create additional summaries, for example, by nonattainment area.

Table 3-5 OTC 2006 VOC Model Rule Benefits by State for 2009 Adhesives and Sealants Application

State	Adhesives/Sealants Application Summer VOC Emissions (tpd)			
	2002 Actual	2009 Base	2009 Control	2009 Benefit
CT	4.8	6.6	2.4	4.2
DE	1.4	1.6	0.6	1.0
DC	0.2	0.2	0.1	0.1
ME	3.1	3.9	1.4	2.5
MD	6.9	9.1	3.3	5.8
MA	10.6	14.7	5.8	8.9
NH	2.5	3.6	1.3	2.3
NJ	14.9	15.2	6.0	9.2
NY	24.7	33.4	11.9	21.5
PA	25.5	34.0	12.2	21.8
RI	1.8	2.4	0.9	1.5
VT	2.4	3.4	1.2	2.2
NOVA	1.2	1.6	0.6	1.0
OTR	**99.8**	**129.8**	**47.5**	**82.3**

2002 Actual emissions based on the MANEVU 2002 Version 3 inventory and VISTAS 2002 Base G inventory (for the 10 northern Virginia jurisdictions that are part of the OTR).

2009 Base Inventory emissions are based on the emissions forecasted in the MANEVU 2009 OTB/W Version 3.1 inventory and the VISTAS 2009 Base G inventory, and account for growth and any emission reductions associated with on-the-books/on-the-way controls measures.

2009 Control Inventory emissions are the emissions remaining after implementation of the beyond-on-the-way control measures described in this Section.

2009 Emission Reduction Benefit is the incremental emission reduction from the control measures described in this section (i.e., the difference between the 2009 base emissions and the 2009 control emissions).

Table 3-6 OTC 2006 VOC Model Rule Benefits by State for 2009
Cutback and Emulsified Asphalt Paving

State	Cutback and Emulsified Asphalt Paving Summer VOC Emissions (tpd)			
	2002 Actual	2009 Base	2009 Control	2009 Benefit
CT*	4.5	4.5	0.3	4.3
DE	0.1	0.1	0.1	0.0
DC	0.0	0.0	0.0	0.0
ME	8.6	10.6	0.0	10.6
MD	0.0	0.0	0.0	0.0
MA*	8.4	8.6	0.5	8.1
NH	3.8	4.8	0.5	4.4
NJ	4.9	4.8	0.1	4.7
NY	15.4	18.3	1.8	16.4
PA	7.7	9.3	0.9	8.4
RI	1.0	1.2	0.1	1.1
VT	1.4	1.8	0.0	1.8
NOVA	<0.1	<0.1	<0.1	<0.1
OTR	**55.9**	**64.0**	**4.3**	**59.8**

2002 Actual emissions based on the MANEVU 2002 Version 3 inventory and VISTAS 2002 Base G inventory (for the 10 northern Virginia jurisdictions that are part of the OTR).

2009 Base Inventory emissions are based on the emissions forecasted in the MANEVU 2009 OTB/W Version 3.1 inventory and the VISTAS 2009 Base G inventory, and account for growth and any emission reductions associated with on-the-books/on-the-way controls measures.

2009 Control Inventory emissions are the emissions remaining after implementation of the beyond-on-the-way control measures described in this Section.

2009 Emission Reduction Benefit is the incremental emission reduction from the control measures described in this section (i.e., the difference between the 2009 base emissions and the 2009 control emissions).

* CT and MA provided revised emission estimates that differ from those in the MANEVU Version 3 inventories.

Table 3-7 OTC 2006 VOC Model Rule Benefits by State for 2009 Consumer Products

State	Consumer Products Summer VOC Emissions (tpd)			
	2002 Actual	2009 Base	2009 Control	2009 Benefit
CT	40.1	35.4	34.7	0.7
DE	7.3	6.7	6.5	0.1
DC	5.7	5.1	5.0	0.1
ME	10.9	9.7	9.5	0.2
MD	52.8	48.4	47.4	1.0
MA*	62.2	64.1	53.9	10.2
NH	13.7	12.6	12.4	0.3
NJ	82.9	71.9	70.5	1.4
NY	209.6	183.3	179.6	3.7
PA	119.6	104.4	102.4	2.1
RI	10.6	9.3	9.1	0.2
VT	6.1	5.6	5.5	0.1
NOVA	21.5	23.0	22.5	0.5
OTR	**642.9**	**579.5**	**559.0**	**20.5**

2002 Actual emissions based on the MANEVU 2002 Version 3 inventory and VISTAS 2002 Base G inventory (for the 10 northern Virginia jurisdictions that are part of the OTR).

2009 Base Inventory emissions are based on the emissions forecasted in the MANEVU 2009 OTB/W Version 3.1 inventory and the VISTAS 2009 Base G inventory, and account for growth and any emission reductions associated with on-the-books/on-the-way controls measures.

2009 Control Inventory emissions are the emissions remaining after implementation of the beyond-on-the-way control measures described in this Section.

2009 Emission Reduction Benefit is the incremental emission reduction from the control measures described in this section (i.e., the difference between the 2009 base emissions and the 2009 control emissions).

* MA proposed rule has a January 1, 2009 effective date and includes the VOC limits from the OTC 2001 model rule and those in the OTC 2006 model rule. The 2009 benefit for MA shows the benefit from both sets of limits. For all other States, the 2009 benefit shows the change in emissions from the OTC 2006 model rule only.

Table 3-8 OTC 2006 VOC Model Rule Benefits by State for 2009
Portable Fuel Containers – Area Sources

State	Portable Fuel Containers Summer VOC Emissions (tpd)			
	2002 Actual	2009 Base	2009 Control	2009 Benefit
CT	9.7	6.5	6.1	0.4
DE	3.0	2.1	1.9	0.1
DC	3.6	2.5	2.4	0.1
ME	3.6	2.4	2.3	0.1
MD	39.6	24.5	23.1	1.4
MA*	18.1	18.6	16.9	1.7
NH	3.6	3.0	2.8	0.2
NJ	24.4	17.7	16.7	1.0
NY	76.6	45.0	42.4	2.6
PA	47.0	27.6	26.0	1.6
RI	3.0	2.7	2.5	0.2
VT	1.7	1.5	1.5	0.1
NOVA	8.6	6.1	5.7	0.4
OTR	**242.5**	**160.1**	**150.3**	**9.9**

2002 Actual emissions based on the MANEVU 2002 Version 3 inventory and VISTAS 2002 Base G inventory (for the 10 northern Virginia jurisdictions that are part of the OTR).

2009 Base Inventory emissions are based on the emissions forecasted in the MANEVU 2009 OTB/W Version 3.1 inventory and the VISTAS 2009 Base G inventory, and account for growth and any emission reductions associated with on-the-books/on-the-way controls measures.

2009 Control Inventory emissions are the emissions remaining after implementation of the beyond-on-the-way control measures described in this Section.

2009 Emission Reduction Benefit is the incremental emission reduction from the control measures described in this section (i.e., the difference between the 2009 base emissions and the 2009 control emissions).

Note: The table shows the estimated emission reduction that will occur in 2009; additional reductions will occur in later years as new, less-emitting PFCs that comply with the OTC 2006 control measure penetrate the market.

* MA PFC regulation will be based on only the OTC 2006 model rule (which updates the provisions of the OTC 2001 model rule) and will have an effective date of January 1, 2009. The 2009 base emissions in MA are uncontrolled emissions. The 2009 emission benefits represent the total emission reductions from the MA rule.

Table 3-9 OTC 2006 VOC Model Rule Benefits by State for 2009
Portable Fuel Containers – Nonroad Sources

State	Portable Fuel Containers Summer VOC Emissions (tpd)			
	2002 Actual	2009 Base	2009 Control	2009 Benefit
CT	2.9	1.9	1.8	0.1
DE	0.9	0.6	0.6	0.0
DC	1.1	0.8	0.7	0.0
ME	1.1	0.7	0.7	0.0
MD	11.9	7.4	6.9	0.4
MA*	5.4	5.6	5.1	0.5
NH	1.1	0.9	0.8	0.1
NJ	7.3	5.3	5.0	0.3
NY	23.0	13.5	12.7	0.8
PA	14.1	8.3	7.8	0.5
RI	0.9	0.8	0.8	0.0
VT	0.5	0.5	0.4	0.0
NOVA	2.6	1.8	1.7	0.1
OTR	**72.8**	**48.0**	**45.1**	**3.0**

2002 Actual emissions estimated to be 30 percent of area source emissions (based on Pechan 2001, pg. 11)

2009 Base Inventory emissions estimated to be 30 percent of area source emissions, and account for growth and any emission reductions associated with on-the-books/on-the-way controls measures.

2009 Control Inventory emissions are the emissions remaining after implementation of the beyond-on-the-way control measures described in this Section.

2009 Emission Reduction Benefit is the incremental emission reduction from the control measures described in this section (i.e., the difference between the 2009 base emissions and the 2009 control emissions).

Note: The table shows the estimated emission reduction that will occur in 2009; additional reductions will occur in later years as new, less-emitting PFCs that comply with the OTC 2006 control measure penetrate the market.

* MA PFC regulation will be based on only the OTC 2006 model rule (which updates the provisions of the OTC 2001 model rule) and will have an effective date of January 1, 2009. The 2009 base emissions in MA are uncontrolled emissions. The 2009 emission benefits represent the total emission reductions from the MA rule.

Table 3-10 OTC 2006 VOC Model Rule Benefits by State for 2009 Regional Fuels

State	Regional Fuels Summer VOC Emissions (tpd)			
	2006 Actual	**2006 Base**	**2006 Control**	**2006 Benefit**
CT	87.9	87.9	87.9	0.0
DE	26.6	26.6	26.6	0.0
DC	9.1	9.1	9.1	0.0
ME	56.2	56.2	47.1	9.1
MD	158.7	158.7	155.6	3.2
MA	148.6	148.6	148.6	0.0
NH	45.3	45.3	41.0	4.3
NJ	219.6	219.6	219.6	0.0
NY	465.0	465.0	408.1	56.9
PA	363.0	363.0	305.0	58.0
RI	22.2	22.2	22.2	0.0
VT	35.9	35.9	27.9	7.9
NOVA	54.9	54.9	54.9	0.0
OTR	**1693.1**	**1693.1**	**1553.7**	**139.4**

Note: NESCAUM analysis was only completed for 2006. Data for 2002 and 2009 are not currently available

Table 3-11 OTC 2006 VOC Model Rule Benefits by State for 2009
All Six VOC Categories

State	All Six Categories Summer VOC Emissions (tpd)			
	2002 Actual	2009 Base	2009 Control	2009 Benefit
CT	149.9	142.9	133.2	9.7
DE	39.3	37.7	36.3	1.4
DC	19.6	17.6	17.2	0.4
ME	83.5	83.6	60.9	22.6
MD	270.0	248.1	236.3	11.8
MA	253.3	260.1	230.8	29.3
NH	70.0	70.3	58.8	11.5
NJ	354.1	334.6	317.9	16.7
NY	814.2	758.4	656.5	101.9
PA	576.8	546.7	454.3	92.3
RI	39.5	38.6	35.6	3.0
VT	48.0	48.7	36.5	12.1
NOVA	88.8	87.4	85.4	1.9
OTR	**2,807.0**	**2,674.6**	**2,359.8**	**314.8**

2002 Actual emissions based on the MANEVU 2002 Version 3 inventory and VISTAS 2002 Base G inventory (for the 10 northern Virginia jurisdictions that are part of the OTR).

2009 Base Inventory emissions based on the emissions forecasted in the MANEVU 2009 OTB/W Version 3.1 inventory and the VISTAS 2009 Base G inventory, and account for growth and any emission reductions associated with on-the-books/on-the-way controls measures.

2009 Control Inventory emissions are the emissions remaining after implementation of the beyond-on-the-way control measures described in this Section. Assumes that 2009 reductions from RFG are the same as those calculated for 2006.

2009 Emission Reduction Benefit is the incremental emission reduction from the control measures described in this section (i.e., the difference between the 2009 base emissions and the 2009 control emissions). Assumes that 2009 reductions from RFG are the same as those calculated for 2006.

4.0 NOx ANALYSIS METHODS

This Section describes the analysis of the 2006 OTC control measures to reduce NOx emissions from six source categories: diesel engine chip reflash, regional fuels, asphalt production plants, cement kilns, glass/fiberglass furnaces, ICI boilers. For each of the categories, there are separate subsections that discuss existing Federal/state rules, summarize the requirements of the 2006 OTC control measure, describe the methods used to quantify the emission benefit, and provide an estimate of the anticipated costs and cost-effectiveness of the control measure. At the end of Section 4, we provide the estimated emissions for 2002 and 2009 by source category and State. Appendix E provides county-by-county summaries of the emission reductions for each of the categories.

4.1 HEAVY-DUTY TRUCK DIESEL ENGINE CHIP REFLASH

In the mid-1990s, the U.S. Department of Justice (DOJ), EPA, and CARB determined that seven major engine manufacturers had designed their 1993 through 1998 model heavy-duty diesel engines to operate with advanced electronic engine controls that resulted in excessive NOx emissions. when these engines were operated in the vehicle under “real world” conditions, the electronic calibration would change, altering the fuel delivery characteristics and resulting in elevated NOx levels. DOJ, EPA and ARB developed Consent Decrees that required the manufacturers to provide software (the “Low-NOx Rebuild Kit” or “chip reflash”) that modifies the injection timing adjustment that caused the excess NOx emissions. The kits are to be installed at the time the vehicle is brought in for a major engine rebuild/overhaul. The rate of rebuild has been considerably lower than what was envisioned under the Consent Decrees; the primary reasons being that engine rebuilds occur at considerably higher elapsed vehicle mileage than what was contemplated when the Consent Decrees were negotiated, and there is no federal oversight program to ensure that individual rebuilds are occurring at the time of rebuild. In response to this low rebuild rate, CARB has adopted a mandatory program, not tied to the time of rebuild, but rather to a prescribed period of time, within which owners must bring their vehicles into the dealer to have the reflash operation performed, with all costs borne by the engine manufacturers. (NESCAUM 2006b).

4.1.1 Existing Federal and State Rules

California entered into Settlement Agreements, separate from the federal Consent Decrees, but with analogous requirements for low-NOx rebuilds. The slow rate of progress in

California mirrored the progress nationally. Accordingly, California embarked upon its own program, by rule, to accelerate and ultimately complete the rebuilds for trucks registered in California and for out-of-state registered trucks traveling on roadways within the state. The ARB rule, effective March 21, 2005, mandates that rebuilds occur over a prescribed time period, with a final rebuild compliance date of December 31, 2006. The CARB mandatory program faced two separate legal challenges, alleging that CARB has breached its settlement agreement and alleging that CARB is illegally establishing different emissions standards on “new engines”. The Sacramento County Superior Court ruled that the Low NOx Software Upgrade Regulation is invalid. CARB indicates that it will not appeal that ruling and is suspending further enforcement of this regulation.

4.1.2 Description of the OTC 2006 Control Measure

NESCAUM developed a model rule for consideration by its member states to implement a low-NOx rebuild program, similar California’s program. The regulation applies to the engine manufacturers and to owners, lessees, and operators of heavy-duty vehicles powered by the engines that are required to have the low-NOx rebuild. Consistent with the Consent Decrees, the engine manufacturers are required to provide the rebuild kits at no cost to dealers, distributors, repair facilities, rebuild facilities, owners, lessees, and operators, upon their request and to reimburse their authorized dealers, distributors, repair facilities and rebuild facilities for their labor costs.

4.1.3 Emission Benefit Analysis Methods

NESCUAM estimated potential NOx emissions reductions (tons per day) if the Northeast States were to adopt a rebuild program similar to the California program. These estimates are based on the ratio of Northeast to California in-state heavy-duty vehicle registrations, and ARB-estimated California NOx reductions of 35 TPD (NESCAUM 2006b, pg. 5). NESCAUM also estimated potential NOx emissions reductions for the Mid-Atlantic States by scaling the NESCAUM projections based on population. For the Mid-Atlantic States, the NOx benefit was calculated based on the per capita factors of a one ton per day reduction for each one million people (NESCAUM 2005).

4.1.4 Cost Estimates

The cost associated with the reflash has been estimated at $20-$30 per vehicle, which is borne by the engine manufacturer. There may be costs associated with potential downtime to the trucking firms, and record-keeping requirements on the dealer performing the reflash and the vehicle owner. The MRPO estimated cost effectiveness to be $1,800 to $2,500 (depending on vehicle size) due to incremental "fuel penalty" of 2 percent increase in fuel consumption (ENVIRON 2006).

4.2 REGIONAL FUELS

The Clean Air Act Amendments of 1990 required significant changes to conventional fuels used by motor vehicles. Beginning in 1995, "reformulated" gasoline (RFG) must be sold in certain non-attainment areas and other states with non-attainment areas are permitted to opt-in. Reformulated gasoline results in lower VOC emissions than would occur from the use of normal "baseline" gasoline. Phase II of the RFG program began in 2000.

4.2.1 Existing Federal and State Rules

All but two states in the OTR are participating, in whole or in part, with the federal RFG program. However, nearly one-third of the gasoline sold in the OTR is not RFG. NESCAUM has estimated the following fraction of gasoline that is reformulated by State:

State	Current RFG Fraction	State	Current RFG Fraction
CT	100%	NJ	100%
DC	100%	NY	54%
DE	100%	PA	24%
MA	100%	RI	100%
MD	86%	NoVA	100%
ME	0%	VT	0%
NH	64%		

4.2.2 Description of the OTC 2006 Control Measure

The Energy Policy Act of 2005 provides the opportunity for the OTR to achieve a single clean-burning gasoline and is consistent with what OTR states have promoted through the long debate over MTBE/ethanol/RFG. Approximately one-third of the gasoline currently sold in the OTR is not reformulated. The new authority plus the potential for emission reductions from the amount of non-reformulated gasoline sold in the OTR provides an opportunity for additional emission reductions in the region as well as for a reduced number of fuels, and possibly a single fuel, to be utilized throughout the region. The OTC Commissioners recommended that the OTC member states pursue a region fuel program consistent with the Energy Act of 2005 (OTC 2006b).

4.2.3 Emission Benefit Analysis Methods

Emission benefits resulting from extending reformulated gasoline to all areas of the OTR have been calculated for 2006 by NESCAUM (NESCAUM 2006a).

4.2.4 Cost Estimates

According to USEPA's regulatory impact analysis for reformulated gasoline (USEPA 1993), the cost per ton of NOx reduced for Phase II RFG is $5,200 to $3,700.

4.3 ASPHALT PAVEMENT PRODUCTION PLANTS

Hot mix asphalt (HMA) is created by mixing and heating size-graded, high quality aggregate (which can include reclaimed asphalt pavement) with liquid asphalt cement. HMA can be manufactured by batch mix, continuous mix, parallel flow drum mix, or counterflow drum mix plants. The dryer operation is the main source of pollution at hot mix asphalt manufacturing plants. Dryer burner capacities are usually less than 100 mmBtu/hr, but may be as large as 200 mmBtu/hr. Natural gas is the preferred source of heat used by the industry, although oil, electricity and combinations of fuel and electricity are used. The reaction of nitrogen and oxygen in the dryer creates nitrogen oxide (NOx) emissions in the combustion zone,

4.3.1 Existing Federal and State Rules

Only two of the OTR states have regulations that specifically address NOx emissions from asphalt pavement manufacturing plants. New Hampshire limits NOx emissions to 0.12 pound per ton of asphalt produced, or 0.429 lb per mmBtu {Chapter Env-A 1211.08 (c)} for units greater than 26 mmBTU/hour in size. New Jersey limits NOx emissions to 200 ppmvd at seven percent oxygen {7:27-19.9(a)}. Asphalt plants in other OTR states are subject to more general fuel combustion requirements or case-by-case RACT determinations.

4.3.2 Description of the OTC 2006 Control Measure

NOx emissions from asphalt plants can be reduced through installation of low-NOx burners and flue gas recirculation (FGR). The OTC Commissioners recommended that OTC member states pursue as necessary and appropriate state-specific rulemakings or other implementation methods to establish emission reduction percentages, emission rates or technologies that are consistent with the guidelines shown in Table 4.1 (OTC 2006b).

Table 4.1 Addendum to OTC Resolution 06-02 Emission Guidelines for Asphalt Plants

Plant Type	Emission Rate (lbs NOx/ton asphalt produced)	% Reduction
Area/Point Sources		
Batch Mix Plant – Natural Gas	0.02	35
Batch Mix Plant – Distillate/Waste Oil	0.09	35
Drum Mix Plant – Natural Gas	0.02	35
Drum Mix Plant – Distillate/Waste Oil	0.04	35
or Best Management Practices		

Industry leaders have identified a number of Best Management Practices that allow for substantial reduction in plant fuel consumption and the corresponding products of combustion including NOx. Best management practices include:

- **Burner tune-ups**: A burner tune-up may reduce NOx emissions by up to 10 percent and may also help reduce fuel consumption. In other words, there can be a direct pay-back to the business from regular burner tune-ups.

- **Effective stockpile management to reduce aggregate moisture content**: Current information indicates that effective stockpile management can reduce aggregate moisture content by about 25 percent, corresponding to a reduction in fuel consumption by approximately 10 - 15 percent. There are a number of ways to reduce aggregate moisture: covering stockpiles, paving under stockpiles, and sloping stockpiles are all ways that prevent aggregate from retaining moisture. Best Practices are plant- and geographic locale-specific.

- **Lowering mix temperature**: A Technical Working Group of FHWA is currently investigating a number of newer formulation technologies, to understand the practicality and performance of lowering mix temperatures. Substantial reductions in mix temperatures, on the order of 20 percent or more, appear to be plausible. Lowering mix temperatures, by this amount, may reduce fuel consumption, as less heat is needed to produce the mix.

- **Other maintenance and operational best practices**: Additional practices can be employed throughout the plant to help optimize production and operations. For example, regular inspection of drum mixing flites and other measures can be taken – all in the effort to make a plant operate more efficiently, thereby using less fuel.

4.3.3 Emission Benefit Analysis Methods

The emission rates and percent reductions estimates shown above for major sources were developed the state of New York based on the use of low-NOx burners and FGR. For minor sources, the requirement is the use of low-NOx burner technology. NOx emissions can be reduced by 35 to 50 percent with low-NOx burners and FGR, and by 25 to 40 percent with low-NOx burners alone. For modeling purposes, a 35 percent reduction was assumed to apply all types of asphalt plants.

The reductions estimated for this category only include emissions included in the MANEVU point source emission inventory. Only emissions from major point sources are typically included in the MANEVU point source database. Emissions from non-major sources are not explicitly contained in the area source inventory. The emissions from non-major asphalt plants are likely lumped together in the general area source industrial and commercial fuel use category. Reductions from area source emissions at asphalt production plants are included in the ICI boiler source category. Therefore, there is some uncertainty regarding the actual reductions that will occur as no accurate baseline exists for both major and minor facilities.

4.3.4 Cost Estimates

The anticipate costs for control are similar to those of small to midsize boilers or process heaters. Low NOx burners range from $500 to $1,250 per ton and low-NOx burners in combination with FGR range from $1,000 to $2,000 per ton. These cost-effectiveness data were provided by NYSDEC. These control efficiencies and cost-effectiveness estimates for low-NOx burners plus FGR are generally consistent EPA's published data for small natural gas-fired and oil-fired process heaters and boilers (Pechan 2005).

4.4 CEMENT KILNS

Portland cement manufacturing is an energy intensive process in which cement is made by grinding and heating a mixture of raw materials such as limestone, clay, sand and iron ore in a rotary kiln. Nationwide, about 82 percent of the industry's energy requirement is provided by coal. Waste-derived fuels (such as scrap tires, used motor oils, surplus printing inks, etc.) provide about 14 percent of the energy. NOx emissions are generated during fuel combustion by oxidation of chemically-bound nitrogen in the fuel and by thermal fixation of nitrogen in the combustion air.

There are four main types of kilns used to manufacture portlant cement: long wet kilns, long dry kilns, dry kilns with preheaters, dry kilns with precalciners. Wet kilns tend to be older units and are often located where the moisture content of feed materials from quarries tends to be high.

Cement kilns are located in Maine, Maryland, New York, and Pennsylvania. There are no cement kilns in the other OTR states. According to the MANEVU 2002 inventory (Pechan 2006), the number of cement kilns operating in 2002 by size and type was:

State	**Number of Facilities**	**Number of Long Wet Kilns**	**Number of Long Dry Kilns**	**Number of Preheater or Precalciner Kilns**
Maine	1	1	0	0
Maryland	3	2	2	0
New York	3	2	1	0
Pennsylvania	10	5	11	5

4.4.1 Existing Federal and State Rules

The NOx SIP Call required states to submit revisions to their SIPs to reduce the contribution of NOx from cement kilns. All kilns in the OTR, except for the one kiln in Maine, are subject to the NOx SIP Call. Based on its SIP Call analysis, EPA determined 30 percent reduction of baseline uncontrolled emission levels was highly cost-effective for cement kilns emitting greater than 1 ton/day of NOx. Some states elected to include cement kilns in their NOx Budget Trading Programs. For example, requirements in Pennsylvania's regulations in 25 Pa. Code Chapter 145 set a kiln allowable limit of 6 pounds per ton of clinker produced, and require sources to purchase NOx allowances for each ton of NOx actual emissions that exceed the allowable limits. Maryland did not include kilns in the trading program but instead provided two options for reducing NOx emissions:

- Option 1 – for long wet kilns, meet NOx emission limit of 6.0 pounds per ton of clinker produced; for long dry kilns, meet limit of 5.1 pounds per ton of clinker produced; and for pre-heater/pre-calciner or pre-calciner kilns, meet limit of 2.8 pounds per ton of clinker produced;
- Option 2 – install low NOx burners on each kiln or modify each kiln to implement mid-kiln firing.

The one kiln in Maine is a wet process cement kiln and has been licensed to modernize by converting to the more efficient dry cement manufacturing process. The new kiln is subject to BACT requirements.

4.4.2 Description of the OTC 2006 Control Measure

There is a wide variety of proven control technologies for reducing NOx emissions from cement kilns. Automated process control has been shown to lower NOx emissions by moderate amounts. Low-NOx burners have been successfully used, especially in the precalciner kilns. CemStarSM is a process that involves adding steel slag to the kiln, offering moderate levels of NOx reduction by reducing the required burn zone heat input. Mid-kiln firing of tires provides moderate reductions of NOx emissions while reducing fuel costs and providing an additional revenue stream from receipt of tire tipping fees. SNCR technology has the potential to offer significant reductions on some precalciner kilns. SNCR is being used in numerous cement kilns in Europe. A recent study (EC 2001a) indicates that there are 18 full-scale SNCR installations in Europe. Most SNCR installations are designed and/or operated for NOx reduction rates of 10-50% which is sufficient to comply with current legislation in some countries. Two Swedish plants installed SNCR in 1996/97 and have achieved a reduction of 80-85%. A second recent study (ERG 2005) of cement kilns in Texas has identified a variety of NOx controls for both wet and dry cement kilns, with reductions in the 40 to 85% range.

The OTC Commissioners recommended that OTC member states pursue, as necessary and appropriate, state-specific rulemakings or other implementation methods to establish emission reduction percentages, emission rates or technologies that are consistent with the guidelines shown in Table 4.2 (OTC 2006b). The guidelines were presented in terms of both an emission rate (lbs/ton of clinker by kiln type) as well as a percent reduction from uncontrolled levels.

Table 4.2 OTC Resolution 06-02 Emission Guidelines for Cement Kilns

Kiln Type	Emission Rate (lbs NOx/ton of clinker produced)	% Reduction from Uncontrolled
Wet Kiln	3.88	60
Long Dry Kiln	3.44	60
Pre-heater Kiln	2.36	60
Pre-calciner Kiln	1.52	60

4.4.3 Emission Benefit Analysis Methods

To calculate the additional reductions from the OTC 2006 Control Measure, MACTEC calculated the 2002 emission rate (lbs NOx per ton of clinker produced) for each kiln. The 2002 emission rate was compared to the OTC 2006 control measure emission rate list above to calculate a kiln-specific percent reduction. The kiln-specific percent reduction was then applied to the 2002 actual emissions to calculate the emissions remaining after implementation of the control measure.

4.4.4 Cost Estimates

The TCEQ study (ERG 2005) estimated a cost-effectiveness of $1,400-1,600 per ton of NOx removed for an SNCR system achieving a 50 percent reduction on modern dry preheat precalcination kilns. The study also estimate a cost-effectiveness of $2,200 per ton of NOx removed for SNCR systems achieving a 35 percent reduction on wet kilns. The most recent EPA report (EC/R 2000) shows data for two SNCR technologies, biosolids injection and NOXOUT®. These technologies showed average emission reductions of 50 and 40 percent, respectively. The cost effectiveness was estimated to be $1,000-2,500/ton depending on the size of the kiln. Costs and the cost effectiveness for a specific unit will vary depending on the kiln type, characteristics of the raw material and fuel, uncontrolled emission rate, and other source-specific factors.

4.5 GLASS/FIBERGLASS FURNACES

The manufacturing process requires raw materials, such as sand, limestone, soda ash, and cullet (scrap and recycled glass), be fed into a furnace where a temperature is maintained in the 2,700°F to 3,100°F range. The raw materials then chemically react creating a molten material, glass. The reaction of nitrogen and oxygen in the furnace creates NOx emissions.

The main product types are flat glass, container glass, pressed and blown glass, and fiberglass. In the OTR, the preponderance of glass manufacturing plants is in Pennsylvania. New York and New Jersey also have several plants. Massachusetts, Maryland, and Rhode Island each have one glass manufacturing plant.

4.5.1 Existing Federal and State Rules

Only Massachusetts and New Jersey have specific regulatory limits for NOx emissions from glass melting furnaces. Massachusetts has a 5.3 pound per ton of glass removed limit for container glass melting furnaces having a maximum production of 15 tons of glass per day or greater. New Jersey has a 5.5 pound per ton of glass limit for commercial container glass manufacturing furnaces and an 11 pound per ton of glass for specialty container glass manufacturing furnaces. New Jersey also required borosilicate recipe glass manufacturing furnaces to achieve at least a 30 percent reduction from 1990 baseline levels by 1994. The regulations for other states with glass furnaces (Maryland, New York, Pennsylvania, and Rhode Island) do not contain specific emission limitation requirements, but rather require RACT emission controls as determined on a case-by-case basis.

4.5.2 Description of the OTC 2006 Control Measure

Several alternative control technologies are available to glass manufacturing facilities to limit NOx emissions (MACTEC 2005). These options include combustion modifications (low NOx burners, oxy-fuel firing, oxygen-enriched air staging), process modifications (fuel switching, batch preheat, electric boost), and post combustion modifications (fuel reburn, SNCR, SCR). Oxyfiring is the most effective NOx emission reduction technique and is best implemented with a complete furnace rebuild. This strategy not only reduces NOx emissions by as much as 85 percent, but reduces energy consumption, increases production rates by 10-15 percent, and improves glass quality by reducing defects. Oxyfiring is demonstrated technology and has penetrated into all segments of the glass industry.

The OTC Commissioners recommended that OTC member states pursue, as necessary and appropriate, state-specific rulemakings or other implementation methods to establish emission reduction percentages, emission rates or technologies that are consistent with the guidelines shown in Table 4.3 (OTC 2006g). The guidelines were presented in terms of both an emission rate (lbs/ton of glass produced) as well as a percent reduction from uncontrolled levels for the different types of glass manufactured.

Table 4.3 Addendum to OTC Resolution 06-02 Guidelines for Glass Furnaces

Type of Glass	Emission Rate (lbs NOx/ton of glass pulled) Block 24-hr Ave.	Emission Rate (lbs NOx/ton of glass pulled) Rolling 30-day Ave.
Container Glass	4.0	n/a
Flat Glass	9.2	7.0
Pressed/blown Glass	4.0	n/a
Fiberglass	4.0	n/a

Note: Compliance date is 2009. NOx allowances may be surrendered in lieu of meeting the emission rate based on a percentage of the excess emissions at the facility, at the discretion of the State.

4.5.3 Emission Benefit Analysis Methods

The NOx emission reduction benefit calculation varied by State depending upon the availability of data:

- New Jersey DEP evaluated the existing controls at each facility. NJDEP identified furnaces that have closed, indicated whether the facility requested banking of emissions, and specified whether the emissions from the closed furnace should remain in the projection year inventory. NJDEP also identified furnace-specific projected emission rates based on the use of oxyfuel technology.
- Pennsylvania DEP provided 2002 throughput (tons of glass pulled) and emission rate data (lbs NOx/ton of glass pulled). The 2002 emission rate was compared to the OTC 2006 control measure emission rate list above to calculate a furnace-specific percent reduction. The furnace-specific percent reduction was then applied to the 2002 actual emissions to calculate the emissions remaining after implementation of the control measure. If a furnace had an emission rate below the OTCC 2006 control measure emission rate, then no incremental reduction was calculated. PADEP also identified several furnaces that have shut down – emissions from these furnaces were set to zero in the projection year inventory.
- For all other States with glass furnaces (MA, MD, NY, and RI), furnace specific data were not available. The NOx emission reduction benefit was calculated by applying an 85 percent reduction for oxyfiring technology to the projected 2009 base inventory. This approach does not take into account existing controls at the facilities.

4.5.4 Cost Estimates

A recent study by the European Commission (EC 2001b) reports a 75 to 85 percent reduction in NOx based on oxyfiring technology, resulting in emission rates of 1.25 to 4.1 pounds of NOx per ton of glass produced. The cost effectiveness was determined to be $1,254 to $2,542 depending on the size of the furnace. EPA's Alternative Control Techniques Document (USEPA 1994) estimated an 85 percent reduction in NOx emissions for oxyfiring with a cost-effectiveness of $2,150 to $5,300.

Other technologies may be used to meet the limits in Table 4.3. The costs associated with meeting those limits are source-specific and depend on the existing controls in place and the emission rates being achieved. Site-specific factors greatly influence the actual achievable performance level and control costs at a particular facility.

4.6 ICI BOILERS

Industrial/commercial/institutional (ICI) boilers combust fuel to produce heat and process steam for a variety of applications. Industrial boilers are routinely found in applications the chemical, metals, paper, petroleum, food production and other industries. Commercial and institutional boilers are normally used to produce steam and heat water for space heating in office buildings, hotels, apartment buildings, hospitals, universities, and similar facilities. Industrial boilers are generally smaller than boilers in the electric power industry, and typically have a heat input in the 10-250 mmBtu/hr range; however, industrial boilers can be as large as 1,000 mmBtu/hr or as small as 0.5 mmBtu/hour. Most commercial and institutional boilers generally have a heat input less than 100 mmBtu/hour. It is estimated that 80 percent of the commercial/institutional population is smaller than 15 mmBtu/hour. The ICI boiler population is highly diverse – encompassing a variety of fuel types, boiler designs, capacity utilizations and pollution control systems – that result in variability in emission rates and control options.

For emission inventory purposes, emissions from ICI boilers are included in both the point and area source emission inventories. Generally, the point source emission inventory includes all ICI boilers at major facilities. The point source inventory lists individual boilers, along with their size and associated emissions. The area source inventory generally includes emissions for ICI boilers located at non-major facilities. It does not provide emissions by the size of boiler, as is done in the point source inventory. Area sources emissions are calculated based on the fuel use not accounted for in the point source inventory. This is done by taking the total fuel consumption for the state (by fuel type and category), as published by the U.S. Department of Energy, and subtracting out the fuel usage reported in the point source inventory. Emissions are then calculated on a county-by-county basis using the amount of fuel not accounted for in the point source inventory and average emission factors for each fuel type.

4.6.1 Existing Federal and State Rules

ICI boilers are subject to a variety of Clean Air Act programs. Emission limits for a specific source may have been derived from NSPS, NSR, NOx SIP Call, State RACT rules, case-by-case RACT determinations, or MACT requirements. Thus, the specific emission limits and control requirements for a given ICI boiler vary and depend on fuel type, boiler age, boiler size, boiler design, and geographic location.

The OTC developed a draft model rule in 2001 with the following thresholds and limits:

OTC 2001 Model Rule ICI Boiler Thresholds and Limits		
Applicability Threshhold	**Emission Rate Limit**	**Percent NOx Reduction**
5-50 mmBtu/hr	None	Tune-up Only
50-100 mmBtu/hr	Gas-fired: 0.10 lbs/mmBtu Oil-fired: 0.30 lbs/mmBtu Coal-fired: 0.30 lbs/mmBtu	50%
100-250 mmBtu/hr	Gas-fired: 0.10 lbs/mmBtu Oil-fired: 0.20 lbs/mmBtu Coal-fired: 0.20 lbs/mmBtu	50%
>250 mmBtu/hr*	Gas-fired: 0.17 lbs/mmBtu Oil-fired: 0.17 lbs/mmBtu Coal-fired: 0.17 lbs/mmBtu	50%

* Only for boilers not subject to USEPA's NOx SIP Call

Implementation of the OTC 2001 model rule limits varied by State – some OTC states adopted these limits while others did not. MACTEC researched current State regulations affecting ICI boilers and summarized the rules in Appendix F. The specific requirements for each state were organized into a common format to efficiently include the State-by-State differences by fuel type and boiler size. This organization oversimplifies the source categories and size limitations that differ from State-to-State. This simplification was necessary to match the rules to the organization of the emission data bases (i.e., Source Classification Codes) being used in the analysis.

4.6.2 Description of the OTC 2006 Control Measure

The OTC Commissioners recommended that OTC member states pursue as necessary and appropriate state-specific rulemakings or other implementation methods to establish emission reduction percentages, emission rates or technologies for ICI boilers (OTC 2006b). These guidelines have undergone revision based on a more refined analyses. Table 4.4 provides the current OTC proposal for ICI boilers.

4.6.3 Emission Benefit Analysis Methods

The emission reduction benefits resulting from the OTC ICI boiler control measure were calculated differently for point and area sources. For point sources, the emission reductions were estimated by comparing the emission limits in the existing (2006) state regulations with the limits contained in the OTC ICI boiler proposal.

Table 4.4 Addendum to OTC Resolution 06-02 Guidelines for ICI Boilers

ICI Boiler Size (mmBtu/hr)	Control Strategy/ Compliance Option	NOx Control Measure
5-25		Annual Boiler Tune-Up
25-100	Option #1	Natural Gas: 0.05 lb NOx/mmBtu #2 Fuel Oil: 0.08 lb NOx/mmBtu #4 or #6 Fuel Oil: 0.20 lb NOx/mmBtu Coal: 0.30 lb NOx/mmBtu**
	Option #2	50% reduction in NOx emissions from uncontrolled baseline
	Option #3	Purchase current year CAIR NOx allowances equal to reducted needed to acheiv the required emission rates
100-250	Option #1	Natural Gas: 0.10 lb NOx/mmBtu #2 Fuel Oil: 0.20 lb NOx/mmBtu #4 or #6 Fuel Oil: 0.20 lb NOx/mmBtu Coal: Wall-fired 0.14 lb NOx/mm Btu Tangential 0.12 lb NOx/mm Btu Stoker 0.22 lb NOx/mm Btu Fluidized Bed 0.08 lb NOx/mm Btu
	Option #2	LNB/SNCR, LNB/FGR, SCR, or some combination of these controls in conjunction with Low NOx Burner technology
	Option #3	60% reduction in NOx emissions from uncontrolled baseline
	Option #4	Purchase current year CAIR NOx allowances equal to reducted needed to acheiv the required emission rates
>250	Option #1	Purchase current year CAIR NOx allowances equal to reducted needed to acheiv the required emission rates
	Option #2	Phase I – 2009 Emission rate equal to EGUs of similar size Phase II – 2012 Emission rate equal to EGUs of similar size

Tables 4-5 through 4-10 shows the current state emission limits by size range and fuel type, and the percentage reduction from the OTC proposed limits to the current state requirement. In cases where a state did not have a specific limit for a given size range, then the more general percent reduction from uncontrolled values in Table 4-4 was used. The fuel types/boiler types shown in Tables 4-5 through 4-10 were matched to SCCs in the point source inventory. MACTEC used the SCC and design capacity (mmBtu/hour) from the MANEVU and VISTAS emission inventories to apply the appropriate state specific reduction factor to estimate the emission reduction benefit.

The emission limits shown in Tables 4-5 through 4-10 generally apply only to ICI boilers located at major sources (i.e. point sources). ICI boilers located at minor sources (i.e., area sources) are generally not subject to the emissions limits. In general, emissions from area source ICI boilers are uncontrolled (except possibly for an annual tune-up requirement). The one exception is New Jersey: beginning on March 7, 2007, N.J.A.C. 27.27-19.2 requires any ICI boiler of at least 5 mmBtu/hr heat input to comply with applicable NOx emission limits whether or not it is located at a major NOx facility.

To calculate the reductions from area source ICI boilers, MACTEC applied the general percent reduction from uncontrolled values in Table 4-4 to the area source inventory (i.e., 10 percent reduction for annual tune-ups for boilers < 25 mmBtu/hr, and a 50 percent reduction for boilers between 25 and 100 mmBtu/hr).

The area source inventory does not provide information on the boiler size. To estimate the boiler size distribution in the area source inventory, we first assumed that there were no boilers > 100 mmBtu/hr in the area source inventory. Next, we used boiler capacity data from the USDOE's Oak Ridge National Laboratory (EEA 2005) to estimate the percentage of boiler capacity in the < 25 mm Btu/hr and 25-100 mm Btu/hr categories. Third, we assumed that emissions were proportional to boiler capacity. Finally, we calculated the weighted average percent reduction for area source ICI boilers based on the capacity in each size range and the percent reduction by size range discussed in the previous paragraph. For industrial boilers, the weighted average reduction was 34.5 percent; for commercial/institutional boilers, the weighted average reduction was 28.1 percent.

Table 4.5 Current State Emission Limits and Percent Reduction Estimated from Adoption of OTC ICI Boiler Proposal

Point Source Natural Gas-Fired Boilers

State	Current 2006 NOx RACT Limit (lbs/mmBtu) (from State regulations) Applicability Threshold mmBtu/hour Heat Input						OTC 2006 Percent Reduction (Current State reg compared to OTC Limit) Applicability Threshold mmBtu/hour Heat Input				
	> 250*	100 to 250	50 to 100	25 to 50	5 to 25		> 250*	100 to 250	50 to 100	25 to 50	<25
						OTC Limits (lbs/mmBtu):	0.12	0.10	0.05	0.05	NL
CT	0.20	0.20	0.20	0.20	0.20		40.0	50.0	75.0	75.0	10.0
DE	0.10	0.10	LNB	NL	NL		0.0	0.0	0.0	0.0	0.0
DC	0.20	0.20	NL	NL	NL		40.0	50.0	50.0	50.0	10.0
ME	0.20	NL	NL	NL	NL		40.0	60.0	50.0	50.0	10.0
MD	0.20	0.20	0.20	0.20	0.20		40.0	50.0	75.0	75.0	10.0
MA	0.20	0.20	0.10	NL	NL		40.0	50.0	50.0	50.0	10.0
NH	0.10	0.10	0.10	NL	NL		0.0	0.0	50.0	50.0	10.0
NJ	0.10	0.10	0.10	NL	NL		0.0	0.0	50.0	50.0	10.0
NY	0.20	0.20	0.10	NL	NL		40.0	50.0	50.0	50.0	10.0
PA	Source Specific NOx RACT						29.4	50.0	50.0	50.0	10.0
SE PA	0.17	0.10	Source Specific RACT				29.4	0.0	50.0	50.0	10.0
RI	0.10	0.10	0.10	NL	NL		0.0	0.0	50.0	50.0	10.0
VT	0.20	NL	NL	NL	NL		40.0	60.0	50.0	50.0	10.0
NOVA	0.2	0.2	0.2	0.2	0.2		40.0	50.0	75.0	75.0	10.0

NL indicates no limit specified in a state rule; in those cases, the more general percent reduction from Table 4-4 was used.

Source Specific NOx RACT indicates that there are no specific limits in the States' rule (i.e., limits were determined on a case-by-case basis); in those cases, the more general percent reduction from Table 4-4 was used.

SE PA refers to the five southeastern Pennsylvania counties (Bucks, Chester, Delaware, Montgomery, and Philadelphia) affected by Pennsylvania's Addition NOx Requirements (129.201)

NOVA refers to the following jurisdictions in Virginia are part of the OTR: Arlington County, Alexandria, Fairfax County, Fairfax City, Fall Church, Loudon County, Manassas City, Manassas Park, and Prince William County.

Table 4.6 Current State Emission Limits and Percent Reduction Estimated from Adoption of OTC ICI Boiler Proposal

Point Source Distillate Oil-Fired Boilers

	Current 2006 NOx RACT Limit (lbs/mmBtu) (from State regulations) Applicability Threshold mmBtu/hour Heat Input						**OTC 2006 Percent Reduction (Current State reg compared to OTC Limit) Applicability Threshold mmBtu/hour Heat Input**				
State	**> 250***	**100 to 250**	**50 to 100**	**25 to 50**	**5 to 25**		**> 250***	**100 to 250**	**50 to 100**	**25 to 50**	**<25**
						OTC Limits (lbs/mmBtu):	**0.12**	**0.20**	**0.08**	**0.08**	**NL**
CT	0.20	0.20	0.20	0.20	0.20		40.0	0.0	60.0	60.0	10.0
DE	0.10	0.10	LNB	NL	NL		0.0	0.0	0.0	0.0	0.0
DC	0.30	0.30	0.30	NL	NL		60.0	33.3	73.3	50.0	10.0
ME	0.20	0.30	0.30	NL	NL		40.0	33.3	73.3	50.0	10.0
MD	0.25	0.25	0.25	0.25	0.25		52.0	20.0	68.0	68.0	10.0
MA	0.25	0.30	0.12	NL	NL		52.0	33.3	33.3	50.0	10.0
NH	0.30	0.30	0.12	NL	NL		60.0	33.3	33.3	50.0	10.0
NJ	0.20	0.20	0.12	NL	NL		40.0	0.0	33.3	50.0	10.0
NY	0.25	0.30	0.12	NL	NL		52.0	33.3	33.3	50.0	10.0
PA	Source Specific NOx RACT						29.4	33.3	33.3	50.0	10.0
SE PA	0.17	0.20	Source Specific RACT				29.4	0.0	33.3	50.0	10.0
RI	0.12	0.12	0.12	NL	NL		0.0	0.0	33.3	50.0	10.0
VT	0.30	NL	NL	NL	NL		60.0	60.0	50.0	50.0	10.0
NOVA	0.25	0.25	0.25	0.25	0.25		52.0	20.0	68.0	68.0	10.0

NL indicates no limit specified in a state rule; in those cases, the more general percent reduction from Table 4-4 was used.

Source Specific NOx RACT indicates that there are no specific limits in the States' rule (i.e., limits were determined on a case-by-case basis); in those cases, the more general percent reduction from Table 4-4 was used.

SE PA refers to the five southeastern Pennsylvania counties (Bucks, Chester, Delaware, Montgomery, and Philadelphia) affected by Pennsylvania's Addition NOx Requirements (129.201)

NOVA refers to the following jurisdictions in Virginia are part of the OTR: Arlington County, Alexandria, Fairfax County, Fairfax City, Fall Church, Loudon County, Manassas City, Manassas Park, and Prince William County.

Table 4.7 Current State Emission Limits and Percent Reduction Estimated from Adoption of OTC ICI Boiler Proposal

Point Source Residual Oil-Fired Boilers

	Current 2006 NOx RACT Limit (lbs/mmBtu) (from State regulations) Applicability Threshold mmBtu/hour Heat Input						OTC 2006 Percent Reduction (Current State reg compared to OTC Limit) Applicability Threshold mmBtu/hour Heat Input				
State	**> 250***	**100 to 250**	**50 to 100**	**25 to 50**	**5 to 25**		**> 250***	**100 to 250**	**50 to 100**	**25 to 50**	**<25**
						OTC Limits (lbs/mmBtu):	**0.12**	**0.20**	**0.20**	**0.20**	**NL**
CT	0.25	0.25	0.25	0.25	0.25		52.0	20.0	20.0	20.0	10.0
DE	0.10	0.10	LNB	NL	NL		0.0	0.0	0.0	0.0	0.0
DC	0.30	0.30	0.30	NL	NL		60.0	33.3	33.3	50.0	10.0
ME	0.20	0.30	0.30	NL	NL		40.0	33.3	33.3	50.0	10.0
MD	0.25	0.25	0.25	0.25	0.25		52.0	20.0	20.0	20.0	10.0
MA	0.25	0.30	0.30	NL	NL		52.0	33.3	33.3	50.0	10.0
NH	0.30	0.30	0.30	NL	NL		60.0	33.3	33.3	50.0	10.0
NJ	0.20	0.20	0.30	NL	NL		40.0	0.0	33.3	50.0	10.0
NY	0.25	0.30	0.30	NL	NL		52.0	33.3	33.3	50.0	10.0
PA	Source Specific NOx RACT						29.4	33.3	33.3	50.0	10.0
SE PA	0.17	0.20	Source Specific RACT				29.4	0.0	50.0	50.0	10.0
RI	LNB/FGR	LNB/FGR	LNB/FGR	NL	NL		0.0	0.0	0.0	50.0	10.0
VT	0.30	NL	NL	NL	NL		60.0	60.0	50.0	50.0	10.0
NOVA	0.25	0.25	0.25	0.25	0.25		52.0	20.0	20.0	20.0	10.0

NL indicates no limit specified in a state rule; in those cases, the more general percent reduction from Table 4-4 was used.

Source Specific NOx RACT indicates that there are no specific limits in the States' rule (i.e., limits were determined on a case-by-case basis); in those cases, the more general percent reduction from Table 4-4 was used.

SE PA refers to the five southeastern Pennsylvania counties (Bucks, Chester, Delaware, Montgomery, and Philadelphia) affected by Pennsylvania's Addition NOx Requirements (129.201)

NOVA refers to the following jurisdictions in Virginia are part of the OTR: Arlington County, Alexandria, Fairfax County, Fairfax City, Fall Church, Loudon County, Manassas City, Manassas Park, and Prince William County.

Table 4.8 Current State Emission Limits and Percent Reduction Estimated from Adoption of OTC ICI Boiler Proposal

Point Source Coal Wall-Fired Boilers

State	Current 2006 NOx RACT Limit (lbs/mmBtu) (from State regulations) Applicability Threshold mmBtu/hour Heat Input						OTC 2006 Percent Reduction (Current State reg compared to OTC Limit) Applicability Threshold mmBtu/hour Heat Input				
	> 250*	100 to 250	50 to 100	25 to 50	5 to 25		> 250*	100 to 250	50 to 100	25 to 50	<25
						OTC Limits (lbs/mmBtu):	0.12	0.14	0.30	0.30	NL
CT	0.38	0.38	0.38	0.38	0.38		68.4	63.2	21.1	21.1	10.0
DE	n/a	n/a	n/a	n/a	n/a		0.0	0.0	0.0	0.0	0.0
DC	0.43	0.43	NL	NL	NL		72.1	67.4	50.0	50.0	10.0
ME	n/a	n/a	n/a	n/a	n/a		0.0	0.0	0.0	0.0	0.0
MD	0.38	0.65	0.38	0.38	0.38		68.4	78.5	21.1	21.1	10.0
MA	0.45	0.45	NL	NL	NL		73.3	68.9	50.0	50.0	10.0
NH	n/a	n/a	n/a	n/a	n/a		0.0	0.0	0.0	0.0	0.0
NJ	n/a	n/a	n/a	n/a	n/a		0.0	0.0	0.0	0.0	0.0
NY	0.45	0.5	NL	NL	NL		73.3	72.0	50.0	50.0	10.0
PA	Source Specific NOx RACT						29.4	72.0	50.0	50.0	10.0
SE PA	0.17	0.20	Source Specific RACT				29.4	30.0	50.0	50.0	10.0
RI	n/a	n/a	n/a	n/a	n/a		0.0	0.0	0.0	0.0	0.0
VT	n/a	n/a	n/a	n/a	n/a		0.0	0.0	0.0	0.0	0.0
NOVA	0.38	0.38	0.38	0.38	0.38		68.4	63.2	21.1	21.1	10.0

n/a indicates that there are no coal-fired ICI boilers in the state.

NL indicates no limit specified in a state rule; in those cases, the more general percent reduction from Table 4-4 was used.

Source Specific NOx RACT indicates that there are no specific limits in the States' rule (i.e., limits were determined on a case-by-case basis); in those cases, the more general percent reduction from Table 4-4 was used.

SE PA refers to the five southeastern Pennsylvania counties (Bucks, Chester, Delaware, Montgomery, and Philadelphia) affected by Pennsylvania's Addition NOx Requirements (129.201)

NOVA refers to the following jurisdictions in Virginia are part of the OTR: Arlington County, Alexandria, Fairfax County, Fairfax City, Fall Church, Loudon County, Manassas City, Manassas Park, and Prince William County.

Table 4.9 Current State Emission Limits and Percent Reduction Estimated from Adoption of OTC ICI Boiler Proposal

Point Source Coal Tangential-Fired Boilers

State	Current 2006 NOx RACT Limit (lbs/mmBtu) (from State regulations) Applicability Threshold mmBtu/hour Heat Input						OTC 2006 Percent Reduction (Current State reg compared to OTC Limit) Applicability Threshold mmBtu/hour Heat Input				
	> 250*	100 to 250	50 to 100	25 to 50	5 to 25		> 250*	100 to 250	50 to 100	25 to 50	<25
						OTC Limits (lbs/mmBtu):	0.12	0.12	0.30	0.30	NL
CT	0.20	0.20	0.20	0.20	0.20		40.0	40.0	0.0	0.0	10.0
DE	n/a	n/a	n/a	n/a	n/a		0.0	0.0	0.0	0.0	0.0
DC	0.43	0.43	NL	NL	NL		72.1	72.1	50.0	50.0	10.0
ME	n/a	n/a	n/a	n/a	n/a		0.0	0.0	0.0	0.0	0.0
MD	0.38	0.65	0.38	0.38	0.38		68.4	81.5	21.1	21.1	10.0
MA	0.38	0.38	NL	NL	NL		68.4	68.4	50.0	50.0	10.0
NH	n/a	n/a	n/a	n/a	n/a		0.0	0.0	0.0	0.0	0.0
NJ	n/a	n/a	n/a	n/a	n/a		0.0	0.0	0.0	0.0	0.0
NY	0.42	0.5	NL	NL	NL		71.4	76.0	50.0	50.0	10.0
PA	Source Specific NOx RACT						29.4	76.0	50.0	50.0	10.0
SE PA	0.17	0.20	Source Specific RACT				29.4	40.0	50.0	50.0	10.0
RI	n/a	n/a	n/a	n/a	n/a		0.0	0.0	0.0	0.0	0.0
VT	n/a	n/a	n/a	n/a	n/a		0.0	0.0	0.0	0.0	0.0
NOVA	0.38	0.38	0.38	0.38	0.38		68.4	68.4	21.1	21.1	10.0

n/a indicates that there are no coal-fired boilers in the state.

NL indicates no limit specified in a state rule; in those cases, the more general percent reduction from Table 4-4 was used.

Source Specific NOx RACT indicates that there are no specific limits in the States' rule (i.e., limits were determined on a case-by-case basis); in those cases, the more general percent reduction from Table 4-4 was used.

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NOVA refers to the following jurisdictions in Virginia are part of the OTR: Arlington County, Alexandria, Fairfax County, Fairfax City, Fall Church, Loudon County, Manassas City, Manassas Park, and Prince William County.

Table 4.10 Current State Emission Limits and Percent Reduction Estimated from Adoption of OTC ICI Boiler Proposal

Point Source Coal-Fired Stoker Boilers

	Current 2006 NOx RACT Limit (lbs/mmBtu) **(from State regulations)** **Applicability Threshold** **mmBtu/hour Heat Input**						**OTC 2006 Percent Reduction** **(Current State reg compared to OTC Limit)** **Applicability Threshold** **mmBtu/hour Heat Input**				
State	**> 250***	**100 to 250**	**50 to 100**	**25 to 50**	**5 to 25**		**> 250***	**100 to 250**	**50 to 100**	**25 to 50**	**<25**
						OTC Limits (lbs/mmBtu):	**0.12**	**0.22**	**0.30**	**0.30**	**NL**
CT	0.20	0.20	0.20	0.20	0.20		40.0	0.0	0.0	0.0	10.0
DE	n/a	n/a	n/a	n/a	n/a		0.0	0.0	0.0	0.0	0.0
DC	0.43	0.43	NL	NL	NL		72.1	48.8	50.0	50.0	10.0
ME	n/a	n/a	n/a	n/a	n/a		0.0	0.0	0.0	0.0	0.0
MD	0.38	0.65	0.38	0.38	0.38		68.4	66.2	21.1	21.1	10.0
MA	0.33	0.33	NL	NL	NL		63.6	33.3	50.0	50.0	10.0
NH	n/a	n/a	n/a	n/a	n/a		0.0	0.0	0.0	0.0	0.0
NJ	n/a	n/a	n/a	n/a	n/a		0.0	0.0	0.0	0.0	0.0
NY	0.3	0.3	NL	NL	NL		60.0	26.7	50.0	50.0	10.0
PA	Source Specific NOx RACT						29.4	26.7	50.0	50.0	10.0
SE PA	0.17	0.20	Source Specific RACT				29.4	0.0	50.0	50.0	10.0
RI	n/a	n/a	n/a	n/a	n/a		0.0	0.0	0.0	0.0	0.0
VT	n/a	n/a	n/a	n/a	n/a		0.0	0.0	0.0	0.0	0.0
NOVA	0.4	0.4	0.4	0.4	0.4		70.0	45.0	25.0	25.0	10.0

n/a indicates that there are no coal-fired boilers in the state.

NL indicates no limit specified in a state rule; in those cases, the more general percent reduction from Table 4-4 was used.

Source Specific NOx RACT indicates that there are no specific limits in the States' rule (i.e., limits were determined on a case-by-case basis); in those cases, the more general percent reduction from Table 4-4 was used.

SE PA refers to the five southeastern Pennsylvania counties (Bucks, Chester, Delaware, Montgomery, and Philadelphia) affected by Pennsylvania's Addition NOx Requirements (129.201)

NOVA refers to the following jurisdictions in Virginia are part of the OTR: Arlington County, Alexandria, Fairfax County, Fairfax City, Fall Church, Loudon County, Manassas City, Manassas Park, and Prince William County.

4.6.4 Cost Estimates

The OTC recently completed an analysis of ICI boiler NOx control cost estimates (Bodnarik 2006) using detailed information on direct capital equipment costs, direct installation costs, indirect capital costs, and direct and indirect operating costs. The analysis examined five types of NOx control technologies – low-NOx burners (LNB), ultra low-NOx burners (ULNB), LNB plus flue gas recirculation (LNB+FGR), LNB plus selective non-catalytic reduction (LNB+SNCR), and selective catalytic reduction (SCR). The analysis also considered various fuel types – coal, residual oil, distillate oil, and natural gas. The cost effectiveness varies by fuel type, boiler size, current regulatory requirements, current control technology, and boiler firing type. The annual cost-effectiveness was found as low as $600 per ton and as high as $18,000 per ton. In general, for most scenarios the cost effectiveness was estimated to be less than $5,000 per ton of NOx removed.

4.7 NOx EMISSION REDUCTION SUMMARY

The results of the emission benefit calculations for the OTC states are described in this subsection. The starting point for the quantification of the emission reduction benefits is the MANEVU emission inventory, Version 3 (Pechan 2006, MACTEC 2006a) and the VISTAS emission inventory, BaseG (MACTEC 2006b), for the northern Virginia counties that are part of the OTR. The MANEVU and VISTAS inventories include a 2002 base year inventory as well as projection inventories for 2009 and 2018 (MANEVU also has projections for 2012, but VISTAS does not). The projection inventories account for growth in emissions based on growth indicators such as population and economic activity. The projection inventories also account for “on-the-books/on-the-way” (OTB/W) emission control regulations that have (or will) become effective between 2003 and 2008 that will achieve post-2002 emission reductions. Emission reductions from existing regulations are already accounted for to ensure no double counting of emission benefits occurs.

Note that the emission reductions contained in this Section are presented in terms of tons per summer day. The MANEVU base and projection emission inventories do not contain summer day emissions for all States and source categories; the VISTAS inventory only contains annual values. When States provided summer day emissions in the MANEVU inventory, these values were used directly to quantify the emission benefit from the 2006 OTC control measure. When summer day emissions were missing from the MANEVU or VISTAS inventories, the summer day emissions were calculated using the annual emissions and the seasonal throughput data from the NIF Emission Process table. If the seasonal throughput data was missing, the summer day emissions were calculated using the annual emissions and a summer season adjustment factor derived from the monthly activity profiles contained in the SMOKE emissions modeling system.

Tables 4-11 to 4-17 show State summaries of the emission benefits from the OTC 2006 NOx control measures described previously in this Section. For each of the seven source categories, the Tables show four emission numbers: (1) the actual 2002 summer daily emissions; (2) the summer daily emissions for the 2009 OTB/W scenario that accounts for growth and for the emission control regulations that have (or will) become effective between 2003 and 2008 that will achieve post-2002 emission reductions; (3) the summer daily emissions for 2009 with the implementation of the OTC 2006 control measures identified in this Section, and (4) the emission benefit in 2009 resulting from the OTC 2006 control measure. Table 4-18 shows the same information for the total of all seven source categories.

The largest estimated NOx emission reductions are in the more industrialized States – New York and Pennsylvania – which have most of the cement kilns and glass furnaces in the OTR. These two states also have a large population of ICI boilers. The emission benefits listed for Virginia just include the Virginia counties in the northern Virginia area that are part of the OTR. Benefit estimates for all other States include the entire state. The emission benefits also assume that all OTC members will adopt the rules as described in the previous sections.

Appendix E provides county-by-county summaries of the NOx emission benefits from the OTC 2006 NOx control measures described previously in this Section. Appendix E also provides additional documentation regarding the data sources and emission benefit calculations that were performed. These tables can be used by the States to create additional summaries, for example, by nonattainment area.

Table 4-11 OTC 2006 NOx Model Rule Benefits by State for 2009 Heavy-Duty Truck Diesel Engine Chip Reflash

State	Heavy-Duty Truck Diesel Engine Chip Reflash Summer NOx Emissions (tpd)			
	2002 Actual	2009 Base	2009 Control	2009 Benefit
CT	66.7	n/a	n/a	3.5
DE	21.8	n/a	n/a	0.6
DC	8.1	n/a	n/a	0.8
ME	82.8	n/a	n/a	1.4
MD	105.0	n/a	n/a	5.6
MA	152.7	n/a	n/a	6.7
NH	30.5	n/a	n/a	2.0
NJ	133.5	n/a	n/a	9.7
NY	177.6	n/a	n/a	16.1
PA	437.1	n/a	n/a	12.4
RI	8.3	n/a	n/a	0.8
VT	13.7	n/a	n/a	0.9
NOVA	16.6	n/a	n/a	2.5
OTR	**1254.5**	**0.0**	**0.0**	**63.0**

n/a – not available due to lack of 2009 emissions data for on-road vehicles in NIF format.

Table 4-12 OTC 2006 NOx Model Rule Benefits by State for 2009 Regional Fuels

State	Regional Fuels Summer NOx Emissions (tpd)			
	2006 Actual	**2006 Base**	**2006 Control**	**2006 Benefit**
CT	81.3	81.3	81.3	0.0
DE	24.8	24.8	24.8	0.0
DC	8.4	8.4	8.4	0.0
ME	44.1	44.1	43.8	0.2
MD	144.0	144.0	144.0	0.0
MA	137.4	137.4	137.4	0.0
NH	38.4	38.4	38.2	0.2
NJ	204.2	204.2	204.2	0.0
NY	381.3	381.3	379.1	2.1
PA	284.8	284.8	282.9	2.0
RI	20.5	20.5	20.5	0.0
VT	26.3	26.3	26.0	0.3
NOVA	50.8	50.8	50.8	0.0
OTR	**1446.2**	**1446.2**	**1441.4**	**4.8**

NESCAUM analysis was only completed for 2006. Data for 2002 and 2009 are not currently available

Table 4-13 OTC 2006 NOx Model Rule Benefits by State for 2009 Asphalt Pavement Production Plants

State	Asphalt Pavement Production Plants Summer NOx Emissions (tpd)			
	2002 Actual	**2009 Base**	**2009 Control**	**2009 Benefit**
CT	0.0	0.0	0.0	0.0
DE	0.6	0.6	0.4	0.2
DC	0.0	0.0	0.0	0.0
ME	1.7	2.0	1.3	0.7
MD	0.2	0.2	0.1	0.1
MA	1.1	1.8	1.2	0.6
NH	0.0	0.0	0.0	0.0
NJ	1.3	2.8	1.8	1.0
NY	0.0	0.1	0.0	0.0
PA	0.6	0.7	0.5	0.2
RI	0.1	0.1	0.1	0.0
VT	0.0	0.0	0.0	0.0
NOVA	0.3	0.3	0.2	0.1
OTR	**5.9**	**8.6**	**5.6**	**3.0**

2002 Actual emissions come from the MANEVU 2002 Version 3 inventory and VISTAS 2002 Base G inventory (for the 10 northern Virginia jurisdictions that are part of the OTR).

2009 Base Inventory emissions are the emissions forecasted in the MANEVU 2009 OTB/W Version 3.1 inventory and the VISTAS 2009 Base G inventory, and account for growth and any emission reductions associated with on-the-books/on-the-way controls measures.

2009 Control Inventory emissions are the emissions remaining after implementation of the beyond-on-the-way control measures described in this Section.

2009 Emission Reduction Benefit is the incremental emission reduction from the control measures described in this section (i.e., the difference between the 2009 base emissions and the 2009 control emissions).

Table 4-14 OTC 2006 NOx Model Rule Benefits by State for 2009 Cement Kilns

State	Cement Kilns Summer NOx Emissions (tpd)			
	2002 Actual	2009 Base	2009 Control	2009 Benefit
CT	0.0	0.0	0.0	0.0
DE	0.0	0.0	0.0	0.0
DC	0.0	0.0	0.0	0.0
ME	4.7	4.7	4.7	0.0
MD	17.2	17.2	4.1	13.1
MA	0.0	0.0	0.0	0.0
NH	0.0	0.0	0.0	0.0
NJ	0.0	0.0	0.0	0.0
NY	35.1	35.1	19.8	15.3
PA	44.7	44.7	30.7	14.0
RI	0.0	0.0	0.0	0.0
VT	0.0	0.0	0.0	0.0
NOVA	0.0	0.0	0.0	0.0
OTR	**101.9**	**101.9**	**59.4**	**42.5**

2002 Actual emissions come from the MANEVU 2002 Version 3 inventory and VISTAS 2002 Base G inventory (for the 10 northern Virginia jurisdictions that are part of the OTR).

2009 Base Inventory emissions are the emissions forecasted to be the same as in 2002 (i.e., no growth was assumed).

2009 Control Inventory emissions are the emissions remaining after implementation of the beyond-on-the-way control measures described in this Section.

2009 Emission Reduction Benefit is the incremental emission reduction from the control measures described in this section (i.e., the difference between the 2009 base emissions and the 2009 control emissions).

Table 4-15 OTC 2006 NOx Model Rule Benefits by State for 2009 Glass/Fiberglass Furnaces

State	Glass/Fiberglass Furnace Summer NOx Emissions (tpd)			
	2002 Actual	2009 Base	Maximum Control	Maximum Benefit
CT	0.0	0.0	0.0	0.0
DE	0.0	0.0	0.0	0.0
DC	0.0	0.0	0.0	0.0
ME	0.0	0.0	0.0	0.0
MD	0.3	0.3	0.1	0.3
MA	1.4	1.8	0.3	1.5
NH	0.0	0.0	0.0	0.0
NJ	7.7	7.1	2.2	4.9
NY	6.1	6.8	1.0	5.8
PA	36.3	44.3	20.0	24.3
RI	0.7	0.5	0.1	0.5
VT	0.0	0.0	0.0	0.0
NOVA	0.0	0.0	0.0	0.0
OTR	**52.5**	**60.9**	**23.6**	**37.3**

2002 Actual emissions come from the MANEVU 2002 Version 3 inventory and VISTAS 2002 Base G inventory (for the 10 northern Virginia jurisdictions that are part of the OTR).

2009 Base Inventory emissions are the emissions forecasted in the MANEVU 2009 OTB/W Version 3.1 inventory and the VISTAS 2009 Base G inventory, and account for growth and any emission reductions associated with on-the-books/on-the-way controls measures.

Maximum Control Inventory emissions are the emissions remaining after full implementation of the beyond-on-the-way control measures described in this Section. Not all of the anticipated reductions from the glass/fiberglass OTC 2006 control measure will be achieved by 2009. This column shows the emissions remaining after full implementation of the measure, which may not occur until 2012 or 2018.

Maximum Emission Reduction Benefit is the incremental emission reduction from the control measures described in this section (i.e., the difference between the base emissions and the maximum control emissions).

Note: The table shows the maximum emission reduction from glass/fiberglass furnaces when the OTC 2006 control measure is fully implemented. Not all of the reduction shown will be achieved by 2009.

Table 4-16 OTC 2006 NOx Model Rule Benefits by State for 2009
ICI Boilers – Area (Minor) Source

State	ICI Boilers – Area (Minor) Sources Summer NOx Emissions (tpd)			
	2002 Actual	2009 Base	2009 Control	2009 Benefit
CT	8.9	9.4	6.5	2.8
DE	3.4	3.5	2.3	1.2
DC	1.3	1.6	1.1	0.4
ME	5.0	5.3	4.2	1.1
MD	3.5	4.0	2.9	1.2
MA	24.4	25.8	19.1	6.6
NH	21.3	24.2	20.8	3.4
NJ	20.5	15.6	15.6	0.0
NY	105.2	112.2	78.4	33.8
PA	38.0	39.8	27.6	12.2
RI	6.6	7.3	5.3	2.1
VT	2.3	2.9	1.9	0.9
NOVA	11.8	11.9	8.1	3.9
OTR	**252.0**	**263.4**	**193.9**	**69.5**

2002 Actual emissions come from the MANEVU 2002 Version 3 inventory and VISTAS 2002 Base G inventory (for the 10 northern Virginia jurisdictions that are part of the OTR).

2009 Base Inventory emissions are the emissions forecasted in the MANEVU 2009 OTB/W Version 3.1 inventory and the VISTAS 2009 Base G inventory, and account for growth and any emission reductions associated with on-the-books/on-the-way controls measures.

2009 Control Inventory emissions are the emissions remaining after implementation of the beyond-on-the-way control measures described in this Section.

2009 Emission Reduction Benefit is the incremental emission reduction from the control measures described in this section (i.e., the difference between the 2009 base emissions and the 2009 control emissions).

Table 4-17 OTC 2006 NOx Model Rule Benefits by State for 2009
ICI Boilers – Point (Major) Source

State	ICI Boilers – Point (Major) Sources Summer NOx Emissions (tpd)			
	2002 Actual	2009 Base	2009 Control	2009 Benefit
CT	5.8	5.6	3.5	2.1
DE	7.7	7.3	7.3	0.0
DC	1.0	1.1	0.8	0.4
ME	10.2	12.8	10.1	2.8
MD	14.2	11.2	8.8	2.4
MA	13.8	15.4	8.7	6.8
NH	3.9	4.8	2.9	1.9
NJ	12.9	10.8	7.4	3.4
NY	31.4	30.8	23.8	7.0
PA	33.4	36.5	26.7	9.8
RI	4.2	4.9	4.3	0.5
VT	0.7	0.9	0.5	0.4
NOVA	0.2	0.2	0.0	0.1
OTR	**139.3**	**142.3**	**104.6**	**37.7**

2002 Actual emissions come from the MANEVU 2002 Version 3 inventory and VISTAS 2002 Base G inventory (for the 10 northern Virginia jurisdictions that are part of the OTR).

2009 Base Inventory emissions are the emissions forecasted in the MANEVU 2009 OTB/W Version 3.1 inventory and the VISTAS 2009 Base G inventory, and account for growth and any emission reductions associated with on-the-books/on-the-way controls measures.

2009 Control Inventory emissions are the emissions remaining after implementation of the beyond-on-the-way control measures described in this Section.

2009 Emission Reduction Benefit is the incremental emission reduction from the control measures described in this section (i.e., the difference between the 2009 base emissions and the 2009 control emissions).

Table 4-18 OTC 2006 NOx Model Rule Benefits by State for 2009
All Seven NOx Categories

State	All Seven NOx Categories Summer NOx Emissions (tpd)			
	2002 Actual	2009 Base	2009 Control	2009 Benefit
CT	162.7	n/a	n/a	8.4
DE	58.2	n/a	n/a	2.1
DC	18.8	n/a	n/a	1.6
ME	148.5	n/a	n/a	6.2
MD	284.4	n/a	n/a	22.7
MA	330.8	n/a	n/a	22.2
NH	94.1	n/a	n/a	7.5
NJ	380.0	n/a	n/a	19.0
NY	736.8	n/a	n/a	80.1
PA	874.9	n/a	n/a	74.9
RI	40.5	n/a	n/a	3.9
VT	42.9	n/a	n/a	2.5
NOVA	79.6	n/a	n/a	6.6
OTR	**3252.3**	**n/a**	**n/a**	**257.8**

n/a – not available due to lack of 2009 emissions data for on-road vehicles in NIF format.

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OTC 2006c: Ozone Transport Commission, "Statement of the Ozone Transport Commission Concerning Multi-Pollutant Emission Control of Electric Generating Units", June 7, 2006.

OTC 2006d: Ozone Transport Commission, "Resolution 06-03 of the Ozone Transport Commission Concerning Federal Guidance and Rulemaking for Nationally-Relevant Ozone Control Measures", June 7, 2006.

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Appendix A – Process for Identifying and Evaluating Control Measures

Background

The States of the Ozone Transport Region (OTR) are faced with the requirement to demonstrate attainment with the 8-hour ozone NAAQS 8-hour ozone National Ambient Air Quality Standards (NAAQS) by June 15, 2008. To accomplish this, most of the states will need to implement additional measures to reduce emissions that either directly impact their nonattainment status, or contribute to the nonattainment status in other states. In addition, the States are conducting attainment planning work to support development of PM2.5 and regional haze State Implementation Plans (SIPs). As such, the Ozone Transport Commission (OTC) undertook an exercise to identify a suite of additional control measures that could be used by the OTR states in attaining their goals.

In March 2005, the Ozone Transport Commission (OTC) established the Control Strategies Committee as an ad-hoc committee to assist with coordination of the attainment planning work. The Control Strategies Committee works with three other OTC committees. The Stationary and Area Source (SAS) Committee evaluates control measures for specific stationary source sectors or issues. The Mobile Source Committee examines control measures for on-road and non-road mobile sources. And the Modeling Committee develops and implements a strategic plan for SIP-quality modeling runs to support attainments demonstrations.

The SAS Committee is comprised of various workgroups that evaluate control measures for specific sectors or issues. These workgroups included:

- Control Measures Workgroup focuses on stationary area sources;
- Reasonably Available Control Technology (RACT) workgroup focuses on major point sources;
- Multi-Pollutant Workgroup focuses on electric generating units (EGUs);
- High Electric Demand Day (HEDD) examines EGU peaking units; and
- Industrial, Commercial, and Institutional (ICI) Boiler Workgroup focuses on control technologies for different fuels and boiler size ranges.

The OTC also issued a contract to MACTEC to help the SAS Committee identify and evaluate candidate control measures as well as to quantify expected emission reductions for each control measure.

Workgroup Activities

Initially, the Workgroups compiled and reviewed a list of approximately 1,000 candidate control measures. These control measures were identified through published sources such as the U.S. Environmental Protection Agency's (EPA's) Control Technique Guidelines, STAPPA/ALAPCO "Menu of Options" documents, the AirControlNET database, emission control initiatives in member states as well as other states including California, state/regional consultations, and stakeholder input. Appendix B provides the initial list of control measures that were evaluated.

Based on the review of the 1,000 candidate control measures, the Workgroups developed a short list of measures to be considered for more detailed analysis. These measures were selected to focus on the pollutants and source categories that are thought to be the most effective in reducing ozone air quality levels in the Northeastern and Mid-Atlantic States. The Workgroups reviewed information on current emission levels, controls already in place, expected emission reductions from the control measures, when the emission reductions would occur, preliminary cost and cost-effectiveness data, and other implementation issues. Each of the candidate control measures on the short list were summarized in a series of "Control Measure Summary Sheets". The Control Measure Summary Sheets are contained in Appendix C. The Workgroups discussed the candidate control measures during a series of conference calls and workshops to further refine the emission reduction estimates, the cost data, and any implementation issues. The Workgroups also discussed comments from stakeholders. The Workgroups prioritized the control measures and made preliminary recommendations regarding which measures to move forward on.

OTC Commissioners' Recommendations

Based on the analyses by the OTC Workgroups, the OTC Commissioners made several recommendations at the Commissioner's meeting in Boston June 2006 and November 2006. The Commissioners recommended that States consider emission reductions from the following source categories:

- Consumer Products
- Portable Fuel Containers
- Adhesives and Sealants Application
- Diesel Engine Chip Reflash
- Cutback and Emulsified Asphalt Paving
- Asphalt Production Plants

- Cement Kilns
- Glass Furnaces
- Industrial, Commercial, and Institutional (ICI) Boilers
- Regional Fuels
- Electric Generating Units (EGUs)

Additionally, the Commissioners requested that EPA pursue federal regulations and programs designed to ensure national development and implementation of control measures for the following categories: architectural and maintenance coatings, consumer products, ICI boilers over 100 mmBtu/hour heat input, portable fuel containers, municipal waste combustors, regionally consistent and environmentally sound fuels, small offroad engine emission regulation, and gasoline vapor recovery. The various recommendations by the OTC Commissioners made from 2004 to 2006 are summarized in Table A-1.

Stakeholder Input

Stakeholders were provided multiple opportunities to review and comment on the Control Measure Summary Sheets. Table A-2 lists the public meetings that were held as an opportunity for stakeholders to review and respond to the Control Measure Summary Sheets and Commissioner’s recommendations. Stakeholders provided written comments, as listed in Table A-3. In addition to submitting written comments, the Workgroups conducted teleconferences with specific stakeholder groups to allow stakeholders to vocalize their concerns directly to state staff and to discuss the control options. These stakeholder conference calls and meeting are listed in Table A-4. The OTC staff and state Workgroups carefully considered the verbal and written comments received during this process.

Table A-1: OTC Formal Actions, 2004-2006

Date	Action/Synopsis
Nov. 10, 2004	*Charge to Stationary and Area Sources Committee* Directs SAS Committee to continue to seek out innovative programs to address emissions from all stationary and area sources.
Nov. 10, 2004	*Charge to Stationary and Area Sources Committee Regarding Multi-Pollutant Emission Control for Electrical Generating Units and Large Industrial Sources* Directs the SAS Committee to develop an implementation strategy for to implement the OTC's multi—pollutant position, recommend methods for allocating NOx and SO2 caps, assess methods to advance the OTC's Multi0Pollutant position beyond the OTR, develop a program implementation structure, and present a Memorandum of Understanding for consideration by the Commission.
Nov. 10, 2004	*Charge to the Mobile Source Committee* Directs the Mobile Source Committee to identify selected scenarios to be modeled and evaluate strategies including anti-idling programs, voluntary and regulatory retrofit programs, VMT growth strategies, port and marine engine programs, national mobile source programs, California Low Emission Vehicle programs, and model incentive programs.
Nov. 10, 2004	*Statement on OTC Modeling* Directs the Modeling Committee to coordinate inventories and modeling needed for ozone, regional haze, and PM; seek input for air directors and OTC committees on regional strategies for modeling; continue to use CALGRID as a screening tool; and continue to explore application of emerging tools.
June 8, 2005	*Resolution of the States of the Ozone Transport Commission Regarding Development of a Regional Strategy for the Integrated Control of Ozone Precursors and Other Pollutants of Concern from Electrical Generating Units (EGUs) and Other Large Sources* Resolves that member States: develop a regional Multi-Pollutant program to assist in attaining and maintaining the 8-hour ozone NAAQS; seek to gain support from other states for a broader inter-regional strategy; develop an emissions budget and region-wide trading program; explore all feasible options to utilize the CAIR framework; and develop implementation mechanisms including a Memorandum of Understanding among the states.
Nov. 3, 2005	*Statement of the Ozone Transport Commission With Regard to Advancement of Potential Regional Control Measures for Emission Reduction from Appropriate Sources and State Attain Planning Purposes* Directs the staff of the OTC to continue investigation and modeling work associated with all potential regional control measures.
Feb. 23, 2006	*Action Items* Directs OTC staff to continue efforts on the following issues: Letter to EPA on Small Engines, Consumer Products, Architectural/Industrial Maintenance Coatings (AIM), Chip Reflash, Diesel Emissions Reductions, Modeling Efforts.
June 7, 2006	*Memorandum of Understanding Among the States of the Ozone Transport Commission on a Regional Strategy Concerning the Integrated Control of Ozone Precursors from Various Sources* Commits OTC States to continue to

Date	Action/Synopsis
	work with interested stakeholders and pursue state-specific rulemakings as needed and appropriate regarding the following sectors to reduce emission of ozone precursors: Consumer Products, Portable Fuel Containers, Adhesives and Sealants, and Diesel Engine Chip Reflash.
June 7, 2006	*Statement of the Ozone Transport Commission Concerning Multi-Pollutant Emission Control of Electric Generating Units* Directs OTC staff and its workgroups to continue to formulate a program beyond CAIR to address emissions from this sector and to evaluate and recommend options to address emissions associated with high electrical demand days during the ozone season.
June 7 2006	*Resolution 06-02 of the Ozone Transport Commission Concerning Coordination and Implementation of Regional Ozone Control Strategies for Certain Source Categories* Resolves that OTC States continue to work with interested stakeholders and pursue state-specific rulemakings as needed to establish emission reduction percentages, emission rates or technologies as appropriate for the following source categories: asphalt paving (cutback and emulsified), asphalt plants, cement kilns, regional fuels, glass furnaces, and ICI boilers.
June 7, 2006	*Resolution 06-03 of the Ozone Transport Commission Concerning Federal Guidance and Rulemaking for Nationally-Relevant Ozone Control Measures* Resolves that OTC States request that EPA pursue federal regulations and programs for national implementation of control measures comparable to the levels the OTC has adopted; these areas include AIM Coatings, Consumer Products, ICI Boilers over 100 MMBTU, Portable Fuel Containers, Municipal Waste Combustors, Regional Fuels, Small Engine Emission Regulation, and Gasoline Vapor Recovery.
Nov. 15, 2006	*Modified Charge of the Ozone Transport Commission to the Stationary Area Source Committee Regarding Electric Generating Units* Directs the SAS Committee and workgroups to continue work on EGU emission reduction strategies to incorporate “CAIR Plus” and High Energy Demand Day (HEDD) emission reduction strategies.
Nov. 15, 2006	*Statement of the Ozone Transport Commission Concerning Regional and State Measures to Address Emissions from Mobile Sources* Supports the aggressive implementation of a suite of controls through the OTC Clean Corridor Initiative including: diesel retrofits, the Smartways program, California Low Emission Vehicle programs, anti-idling programs, low-NOx diesel alternatives, transportation demand management to reduce the growth in VMT, and voluntary action and outreach programs.
Nov. 15, 2006	*Addendum to Resolution 06-02 of the Ozone Transport Commission Concerning Coordination and Implementation of Regional Ozone Control Strategies for Various Sources* Resolves that OTC States continue to pursue state-specific rulemakings as needed to establish emission reduction percentages, emission rates or technologies as appropriate for the following source categories: asphalt plants, glass furnaces, and ICI boilers.

OTC formal actions can be found on the OTC website at the following address:

http://www.otcair.org/document.asp?fview=Formal

Table A-2: OTC Control Measures Public Meetings, 2004-2006

Date	Meeting	Location
June 8-9, 2004	OTC/MANE-VU Annual Meeting	Red Bank, NJ
Nov. 9-10, 2004	OTC Fall Meeting	Annapolis, MD
Apr. 21-22, 2005	OTC Stationary and Area Source/Mobile Source Committee Meeting	Linthicum, MD
June 7-8, 2005	OTC Annual Meeting	Burlington, VT
Oct. 5, 2005	OTC Control Strategy Committee Meeting	Linthicum, MD
Nov. 2-3, 2005	OTC Fall Meeting	Newark, DE
Jan. 24, 2006	OTC Control Strategy Committee Meeting	Linthicum, MD
Feb. 22-23, 2006	OTC Special Meeting	Washington, DC
Apr. 5-6, 2006	OTC Control Strategy Committee Meeting	Linthicum, MD
June 6-7, 2006	OTC Annual Meeting	Boston, MA
July 28, 2006	OTC/RTO/ISO Meeting	Herndon, VA
Sep. 18, 2006	OTC High Energy Demand Day Workgroup Meeting	Herndon, VA
Sep. 19, 2006	OTC Stationary and Area Source Committee Meeting	Herndon, VA
Nov. 2, 2006	OTC Control Strategies and Stationary and Area Source Committee Meeting	Linthicum, MD
Nov. 15, 2006	OTC Fall Meeting	Richmond, VA
Dec. 5-6, 2006	OTC High Energy Demand Day Workgroup Meeting	Hartford, CT

Meeting agendas and presentations can be found on the OTC website at the following address:

http://www.otcair.org/document.asp?fview=meeting

Table A-4: Stakeholder Comments on OTC Control Strategies

Stakeholder	Source Category
Adhesive and Sealant Council	Adhesives and Sealants
National Paint & Coatings Association (NPCA)	Adhesives and Sealants
Ameron International	AIM Coatings
McCormick Paints	AIM Coatings
National Paint and Coatings Association (NPCA)	AIM Coatings
Painting and Decorating Contractors of America (PDCA)	AIM Coatings
PROSOCO, Inc.	AIM Coatings
RUDD Company Inc.	AIM Coatings
TEX COTE	AIM Coatings
The Master Painters Institute (MPI)	AIM Coatings
The Society for Protective Coatings (SSPC)	AIM Coatings
Wank Adams Slavin and Associates, LLC (WASA)	AIM Coatings
NAPA Asphalt Production	Asphalt Production
MATRIX Systems Auto Refinishing	Auto Refinishing
Portland Cement Association (PCA)	Cement Kilns
St Lawrence Cement	Cement Kilns
Consumer Specialty Products Association (CSPA)	Consumer Products
Cosmetic, Toiletry and Fragrance Association (CTFA)	Consumer Products
National Paint & Coatings Association (NPCA)	Consumer Products
Clean Air Task Force	Diesel Retrofits
Center for Energy and Economic Development, Inc. (CEED)	EGUs
Chesapeake Bay Foundation	EGUs
Clean Air Task Force	EGUs
Conectiv Energy	EGUs
Dominion	EGUs
Exelon	EGUs
International Brotherhood of Electrical Workers , United Mine Workers of America, Center for Energy & Economic Development, Inc., Pennsylvania Coal Association	EGUs
NRG	EGUs
PPL Services	EGUs
The Clean Energy Group	EGUs
National Lime Association (NLA)	Lime Kilns
Debra Jacobson, Prof. Lecturer in Energy Law	NOx Sources
Flexible Packaging Association (FPA)s	Printing/Graphic Arts
Graphic Arts Coalition Flexography Air Regulations	Printing – Flexography
Graphic Arts Coalition Printing & Graphic Arts	Printing/Graphic Arts
Graphic Arts Coalition Screen Litho Air Regulations	Printing – Lithography

Stakeholder comments can be found on the OTC website at the following address: http://www.otcair.org/projects_details.asp?FID=95&fview=stationary

Table A-4: OTC Conference Calls and Meetings with Stakeholders, 2006

Source Category	Date(s)	Industry Lead
Adhesives and Sealants	Aug. 30, 2006	Adhesives Council
Asphalt Paving	Mar. 30, 2006 Sep. 21, 2006 Sep. 28, 2006 Oct. 13, 2006	National Asphalt Paving Association (meeting) National Asphalt Paving Association Asphalt Emulation Manufacturers Association Asphalt Emulation Manufacturers Association
Asphalt Production	Oct. 25, 2006	National Asphalt Paving Association (meeting)
Consumer Products	Mar. 24, 2006 June 22, 2006 June 22, 2006 Aug. 29, 2006	Consumer Specialty Products Association American Solvents Council (meeting) Consumer Specialty Products Association Consumer Specialty Products Association
Glass Manufacturers	July 5, 2006 Aug. 16, 2006 Sep. 14, 2006 Oct. 19, 2006	North American Insulation Manufacturers Assoc. North American Insulation Manufacturers Assoc. Glass Association of North America Glass Association of North America
ICI Boilers	Mar. 14, 2006 Mar. 24, 2006 July 18, 2006 Aug. 1, 2006	Council of Industrial Boiler Owners Institute of Clean Air Companies Council of Industrial Boiler Owners (meeting) Council of Industrial Boiler Owners (conference)

Appendix B – Initial List of Control Measures

The comprehensive list of control measures can be found at:

http://www.otcair.org

Appendix C – Control Measure Worksheets

This Appendix contains the Control Measure Summary Worksheets for the following source categories:

Manufacture and Use of Adhesives and Sealants
Architectural and Industrial Maintenance Coatings
Asphalt Paving (Emulsified and Cutback)
Asphalt Production Plants
Automotive Refinish Coatings
Cement Kilns
Chip Reflash (Heavy Duty Diesel Engines)
Consumer Products
Glass and Fiberglass Furnaces
Industrial, Commercial, Institutional Boilers
Industrial Surface Coatings – Fabric Printing, Coating, and Dyeing
Industrial Surface Coatings – Large Appliances
Industrial Surface Coatings – Metal Cans
Industrial Surface Coatings – Metal Coils
Industrial Surface Coatings – Metal Furniture
Industrial Surface Coatings – Miscellaneous Metal Parts
Industrial Surface Coatings – Paper and Web Coating
Industrial Surface Coatings – Plastics Parts
Industrial Surface Coatings – Wood Building Products
Industrial Surface Coatings – All Categories
Lime Kilns
Municipal Waste Combustors
Printing and Graphic Arts
Portable Fuel Containers
Reformulated Gasoline

CONTROL MEASURE SUMMARY
Manufacture and Use of Adhesives and Sealants
(SCC- 2440020000)

Control Measure Summary

The provisions of this model rule limit emissions of volatile organic compounds (VOCs) from adhesives, sealants and primers. The model rule achieves VOC reductions through two basic components: sale and manufacture restrictions that limit the VOC content of specified adhesives, sealants and primers sold in the state; and use restrictions that apply primarily to commercial/industrial applications. By reducing the availability of higher VOC content adhesives and sealants within the state, the sales prohibition is also intended to address adhesive and sealant usage at area sources. Emissions from residential use of regulated products are addressed through the sales restrictions and simple use provisions.

A reasonably available control technology determination prepared by the California Air Resources Board (CARB) in 1998 forms the basis of this model rule. In the years 1998-2001, the provisions of the CARB determination were adopted in regulatory form in various air pollution control districts in California including the Bay Area, South Coast, Ventura County, Sacramento Metropolitan and San Joaquin Valley.

Costs and Emissions Reductions

2002 existing measure: No existing limitations for this category

Candidate measure: Approximately 75% of VOC emissions originate from solvent-based adhesives and sealants, the remaining 25% of VOC in this category are due to water-based materials. VOC content limits have been enacted by various APCD in California from 1998 to 2001.

Emissions reductions**:** VOC content limits for the solvent-based materials can result in 64.4% reduction in total emissions from this category. (CARB RACT/BARCT for Adhesives/ Sealants, Dec 1998)

Control costs**:** Costs for control by reformulation are estimated by the CARB at less than $2500 / ton (1999$). Many manufacturers have either reformulated solvent-based products to reduce the VOC content or have developed low-VOC water-based latex and acrylic products, or polyurethane or silicone products in response to the adoption of similar regulations in California. Thus, the actual costs in the OTC region are anticipated to be lower.

Estimated costs for add-on controls carbon and thermal oxidizers ranged from $10,000 to $100,000 per ton.

Timing of implementation**:** 01/01/09

Implementation area**:** Region-wide

Annual VOC

2002 Emissions: 35,489 tpy
2009 Emissions: 46,241 tpy
2009 Reduction: 29,438 tpy
2009 Remaining: 16,803 tpy

Summer VOC

2002 Emissions: 99.8 tpd
2009 Emissions: 129.8 tpd
2009 Reduction: 82.3 tpd
2009 Remaining: 47.5 tpd

Interaction with other OTC Model Rules

The products regulated in this model rule do not overlap with the products regulated by either the architectural and industrial maintenance (AIM) or consumer product rules. A "coating," as contemplated in the AIM rule, is a "material applied onto or impregnated into a substrate for protective, decorative or functional purposes." Because the coating is applied only to one substrate, it is clearly distinguished from adhesives and sealants, which are defined in both the consumer product and adhesive rules by application to two surfaces; in the case of adhesives, the two surfaces are directly bonded while in the case of sealants, a gap between two surfaces is filled.

The overlap between the consumer product and adhesive rules is addressed mainly by an exemption in the adhesive rule for adhesives and sealers subject to the state's consumer products regulation.

Reference:

California Air Resources Board. *Determination of Reasonably Available Control Technology and Best Available Retrofit Technology for Adhesives and Sealants*. December 1998. Page 18 provides the emission reduction estimates for California: the ARB emission inventory estimates 45 tons per day pre-rule; reductions will range from approximately 29 to 35 tons per day. We used the low end of this range to calculate the percent reduction of 64.4% (i.e. 29 tpd/45 tpd). Page 17 provides the cost-effectiveness information: the cost of complying with the determination reflects the cost of using alternative formulations of low-VOC or water-based adhesives, sealants, and cleanup products. Ventura County APCD staff determined that the cost-effectiveness of their adhesives rule ranges from a savings of $0.53 per pound to a cost of $1.16 per pound of VOC reduced ($1,060 to 2,320). The use of add-on control equipment to comply was $4.50 to $55.00 per pound ($9,000 to $110,000).

CONTROL MEASURE SUMMARY FOR *AIM Coatings*

Control Measure Summary: VOC emission reductions can be obtained through modifying the current formulation of the coating to obtain a lower VOC content. The regulatory approach for reducing emissions is to establish VOC content limits for specific coatings that manufacturers are required to meet either through reformulating products or substituting products with compliant coatings.	**Emissions (tons/year)**
2001 existing measure: Federal AIM rules 40CFR Part 59 *Emission Reductions*: 20% reduction from uncontrolled levels *Control Cost*: $228 per ton *Timing of Implementation*: Compliance required by September 1999 *Implementation Area*: Nationwide	**VOC (with Part 59 limits)** 2002 OTR total: 124,173
2009 On-the-Way Measure: OTC Model Rule based on a model rule adopted by the California Air Resources Board (CARB) in June, 2000 for 33 air control districts. *Emission Reductions*: 31% beyond Federal AIM rule *Control Cost*: $6,400 per ton	**VOC (After OTC Model Rule)** 2009 Reduction: -25,150 2009 Remaining: 99,023
Candidate measure: Follow CARB 2007 Rulemaking. Modify rule as appropriate when complete (in time for 2009) Participate actively in CARB process. Conduct survey in 2006 for 2005 sales data. *Emission Reductions* : 6% emissions reduction For modeling purposes we split the difference between SCAQMD and OTC model rule. But we go 75% of the way toward SCAQMD on the top four sales products, and set a 250 g/l VOC limit for Industrial Maintenance coatings. The reductions are calculated using the "reg neg" spreadsheet. *Control Cost*: Cost of OTC Survey (revise with cost data from the future CARB SCM when available in 2007) SCAQMD estimated the overall cost-effectiveness for their 1999 Amendments to $13,317 per ton. For Dec. 5 2003 amendments to Rule 1113, SCAQMD estimated the cost-effectiveness to be in the range of $4,229 to $11,405 per ton *Timing of Implementation:* 01/01/09 *Implementation Area*: Throughout OTR and MRPO	**VOC (After CARB 2007 Rule)** 2009 Reduction: -5,941 2009 Remaining: 93,082

REFERENCES:

2002 Existing Measure (Federal Part 59 Rules):

E.H. Pechan & Associates, Inc., *AirControlNET Version 4.1: Documentation Report*, September 2005. Pages III-1347 and III-1348 shows the 20% reduction for the Federal Part 59 rule at a cost of $228 per ton (1990$).

2009 On-the-Books Measure (OTC Model Rule):

E.H. Pechan & Associates, Inc., *Control Measure Development Support Analysis of Ozone Transport Commission Model Rules*, March 31, 2001. Table II-6 shows 31% reduction (OTC Model Rule beyond Federal rule). Page 15 presents cost of $6,400 per ton based on CARB's 2000 Staff Report for the Suggested Control Measure for Architectural Coatings.

Candidate Measure (CARB 2007 Suggested Control Measure):

CARB is in the process of updating the 2000 Suggested Control Measure (SCM) for Architectural Coatings this year. They will be using 2004 survey data as an important resource to update the SCM, but will not begin the formal SCM update process until the survey is completed. They anticipate bringing the SCM update to our Board in mid to late 2007.

CARB is developing an analysis of costs for implementing an updated it's Suggested Control Measure. Results of the analysis will not be available until 2007.

Cost information for the South Coast Phase rules were obtained from:

South Coast Air Quality Management District. *Final Staff Report for Proposed Amended Rule 1113 – Architectural Coatings*. December 5, 2003. "estimated the cost-effectiveness to be in the range of $4,229 to $11,405 per ton of VOC reduced. The low end of the range was determined based on the retail cost of compliant coatings reported by coating manufacturers surveyed by staff. The upper end of the range was derived by estimating the increased cost at the retail level due to the increase in cost of raw materials, reformulation, testing and packaging a new product prior to commercialization." The Dec. 2003 amendments lowered the VOC limit for the following specialty coating categories: clear wood finishes including varnishes and sanding sealers, roof coatings, stains, and waterproofing sealers including concrete and masonry sealers.

South Coast Air Quality Management District. *Appendix F Addendum to Staff Report, Final Socioeconomic Impact Assessment, Proposed Amendments to Rule 1113*. May 1999. The May 1999 amendments to Rule 1113 lower VOC limits for the coating categories of industrial maintenance; non-flats; primers, sealers, and undercoaters; quick-dry enamels; quick-dry primers, sealers, and undercoaters; roof coatings; floor coatings, rust preventative coatings, stains, and waterproofing wood sealers. The overall cost-effectiveness of the proposed amendments, (total costs/total emission reductions) over the years 2002-2015, is estimated to be $13,317 per ton.

CONTROL MEASURE SUMMARY FOR EMULSIFIED AND CUTBACK ASPHALT PAVING

Control Measure Summary: OTC Regional Ban on Cutback Asphalt in Ozone Season, with lower VOC/Solvent Contents for Emulsified Asphalt.	**VOC Emissions in Ozone Transport Region**
2002 existing measures: *1. Cutback asphalt: The OTC states typically ban the use of cutback asphalt during the ozone season. States do provide various exemptions to the ban, most notably allowances may be made for cutbacks which contain less than 5% VOC.* *2. Emulsified asphalt: Ten of the OTC states regulate emulsified asphalt by providing allowable VOC content limits for the various applications. Three of the states do not address emulsified asphalts in their regulation.* *Control Cost*: According to the 1977 CTG (EPA-450/2-77-037), which formed the basis for the existing regulations, the use of emulsified asphalts (no VOC) presented a cost savings. *Timing of Implementation*: All regulations implemented in 1990s or earlier under the 1-hour ozone standard. *Implementation Area*: OTC 1-hour ozone non-attainment areas.	**Annual VOC** 2002 cutback: 9,154 tpy 2002 emulsified: 10,379 tpy 2002 total: 19,533 tpy **Summer VOC** 2002 cutback: 17.5 tpd 2002 emulsified: 38.5 tpd 2002 total: 56.0 tpd
Candidate measure: For cutback asphalt paving *Measure ID:* **BOTW09-AP-Cutback** Place a complete prohibition on the use of cutback asphalt during the ozone season. *Emission Reductions*: to be achieved from using lower VOC content emulsified asphalt products or working outside the ozone season. ***Control Cost*:** Negligible. ***Timing of Implementation*:** 01/01/09 ***Implementation Area*:** All OTC 8-hour ozone non-attainment counties or individual state-wide.	**Summer VOC** 2009 OTB: 19.9 tpd 2009 Reduction: 19.9 tpd 2009 Remaining: 0.0 tpd
Candidate measure: For emulsified asphalt paving *Measure ID:* **BOTW09-AP-Emulsified** Proposes to limit ozone season use of emulsified asphalt to that which contains not more than 0.5 ml of oil distillate from the 200 mL sample using the ASTM D244 test method regardless of application (which is 0.25% VOC by volume) *Emission Reductions*: to be achieved from using lower VOC content emulsified asphalt products or working outside the ozone season. *Control Cost*: Negligible ***Timing of Implementation***: 01/01/09 ***Implementation Area*:** All OTC 8-hour ozone non-attainment counties or individual state-wide.	**Summer VOC** 2009 OTB: 44.2 tpd 2009 Reduction: 39.9 tpd 2009 Remaining: 4.3 tpd

Control Measure Recommendation:
States implement most stringent measure possible to achieve VOC reductions by 2009 from OTB projections in OTC states, with out disrupting state and county paving operations.

Brief Rationale for Recommended Strategy:
(1) Delaware already implements and complies with the most stringent proposed control strategy.
(2) The control strategy is supported by the 1977 Control Techniques Document EPA-450/2-77-037.

CONTROL MEASURE SUMMARY FOR
Asphalt Production Plants

Control Measure Summary: NOx emission reductions can be obtained through installation of low NOx burners and flue gas recirculation. SO2 can be reduced by reducing the sulfur in fuel limits for distillate oil to 500 ppm.	**Emissions (tons/year) in Ozone Transport Region**	
2002 existing measure: No existing limitations for this specific category have been identified.	2002 NOx Base: 2002 SO2 Base:	827 847
Candidate Measure: ***Emission Reductions*:** NOx can be reduced between 35% to 50% with low NOx burners and flue gas recirculation (FGR). SO2 can be reduced 25% to 75% by reducing the sulfur in fuel limits for distillate oil to 500 ppm. The MANEVU data for this category is incomplete. Only major point sources are typically included in the point source database. Non-major source emissions are likely lumped into the area source inventory with other industrial/commercial boilers/heaters. The point source data projects only 800+ tons per year (TPY) of both NOx and SO2 actual emissions in 2002 for the entire region. New York actual emissions are over 600 TPY of NOx and 400 TPY of SO2. Therefore, it is unknown what the actual reductions will produce as no accurate baseline exists for both major and minor facilities. ***Control Cost*:** Costs for control are similar to those of small to midsize boilers or process heaters. Low NOx burners range from $500 to $1250 per ton. While Low NOx burners in combination with FGR range from $1000 to $2000 per ton. Projected cost increase from lowing sulfur in distillate oil is approximately 2 to 3 cents per gallon. ***Timing of Implementation*:** Similar to the NOx RACT procedures of 1994. Require a NOx compliance plan by the spring of 2008 with full implementation and compliance within one year (01/01/09). Unknown for sulfur-in-fuel reductions. ***Implementation Area*:** Region-wide	**NOx** 2009 Base: 2009 Reduction: 2009 Remaining: **SO2** 2009 Base: 2009 Reduction: 2009 Remaining:	 1,276 -549 727 1,266 -950 316
Recommended Strategy: States should support rules that encourage a combination of Best Management Practices, Low NOx Burners and FGR in asphalt production plants to achieve a 20-35% reduction in NOx emissions form a 2002 base, and encourage the use of low-sulfur oil. Area source emissions from asphalt plants are not included in this summary.		

REFERENCES:

Note: The reductions estimated for this category only include emissions from point sources. Area source emissions from fuel combustion at asphalt production plants are not explicitly contained in the area source emissions. These emissions are likely lumped together in the general area source industrial and commercial fuel use category. Reductions from area source emissions at asphalt production plants are included in the ICI boiler source category.

Candidate Measure (Low NOx Burners plus FGR; low sulfur fuel oil):

The emission reduction estimates and cost-effectiveness data were provided by NYSDEC. These control efficiencies and cost-effectiveness estimates for Low NOx Burners plus FGR are generally consisten with the data presented in E.H. Pechan & Associates, Inc., *AirControlNET Version 4.1: Documentation Report*, September 2005. Information in this report for small oil-fired process heaters and ICI boilers provide similar levels of control and cost-effectiveness.

Candidate Measure (Best Management Practices)

Best Practices to Reduce Fuel Consumption and/or Lower Air Emissions: HMA industry leaders have identified a number of Best Practices that, if implemented, allow for substantial reduction in plant fuel consumption and the corresponding products of combustion including NOx. In today's business environment, there is significant incentive to reduce fuel usage. For this reason, implementing best practices to reduce fuel consumption and NOx emissions, forms the basis of a sustainable strategy.

Effective stockpile management to reduce aggregate moisture content: Current information indicates that effective stockpile management can reduce aggregate moisture content by about 25 percent, corresponding to a reduction in fuel consumption by approximately 10 - 15 percent. There are a number of ways to reduce aggregate moisture: covering stockpiles, paving under stockpiles, and sloping stockpiles are all ways that prevent aggregate from retaining moisture. Best Practices are plant- and geographic locale-specific.

Burner tune-ups: As identified in OTC Resolution 06-02 and companion control measures summaries, a burner tune-up may reduce NOx emissions by up to 10 percent. From a contractor's perspective, this also is helpful in reducing fuel consumption. In other words, there can be a direct pay-back to the business from regular burner tune-ups.

Lowering mix temperature: A Technical Working Group of FHWA is currently investigating a number of newer formulation technologies, to understand the practicality and performance of lowering mix temperatures. Substantial reductions in mix temperatures, on the order of 20 percent or more, appear to be plausible. Lowering mix temperatures, by this amount, may reduce fuel consumption, as less heat is needed to produce the mix.

Other maintenance and operational best practices: Additional practices can be employed throughout the plant to help optimize production and operations. For example, regular inspection of drum mixing flites and other measures can be taken – all in the effort to make a plant operate more efficiently, thereby using less fuel.

Plant Type	**Emission Rate (lbs NOx/ton asphalt produced)**	**% Reduction**
Area/Point Sources (State emissions option)		
Batch Mix Plant – Natural Gas	0.02	35
Batch Mix Plant – Distillate/Waste Oil	0.09	35
Drum Mix Plant – Natural Gas	0.02	35
Drum Mix Plant – Distillate/Waste Oil	0.04	35
Area/Point Sources (State technology option)		
Batch/Drum Mix Plant – Natural Gas	Low-NOx Burner Technology and/or Best Management Practices	
Batch/Drum Mix Plant – Distillate/Waste Oil	Low-NOx Burner Technology and/or Best Management Practices	

CONTROL MEASURE SUMMARY FOR
Auto Refinish Coatings – Area Source

<table>
<tr><td>Control Measure Summary: Limiting the concentration of solvents in Auto Refinishing Coatings in order to reduce VOC emissions. Encourage the use of high transfer-efficiency painting methods (e.g., high volume low pressure spray guns), and controls on emissions from equipment (e.g., spray gun) cleaning, housekeeping activities (e.g., use of sealed containers for clean-up rags), and operator training.</td><td colspan="2">Emissions (tons/year) in Ozone Transport Region</td></tr>
<tr><td>2002 existing measure: Federal Auto Body Refinishing rules 40CFR Part 59 Subpart B
Emission Reductions: 37% reduction from Part 59 (from Pechan OTC Model Rule Report) due to Part 59 VOC content limits
Control Cost: $118 per ton for Part 59 rules
Timing of Implementation: Part 59 compliance required by January 1999
Implementation Area: Part 59 – Nationwide;</td><td>VOC
Uncontrolled:
2002 Reduction:
2002 Base:</td><td>
50,759
-18,781
31,978</td></tr>
<tr><td>OTB Control Measure: OTC Model Rule for Mobile Equipment Repair and Refinishing
Emission Reductions: 38% reduction from 2002 Levels in those States that adopted OTC model Rule (per Pechan March 31, 2001 OTC Model Rule Report)
Control Cost: $1,534 per ton of VOC
Timing of Implementation: Assuming 2007 effective date of rule, emission reductions are achieved 01/01/09.
Implementation Area: All counties in the OTR.</td><td>VOC:
2009 Reduction:
2009 Remaining:</td><td>
-10,468
21,510</td></tr>
<tr><td>Candidate measure: CARB October 20, 2005 SCM Staff Report – Lowers VOC limits, combines coatings categories, simplifies recording.
Emission Reductions: CARB estimates a 65% reduction in VOC emissions from a 2002 baseline; the OTC model rule is very similar to the CARB 2002 baseline, so a similar reduction would be expected in the OTR.
Control Cost: $2,860 per ton
Timing of Implementation: Assuming 2007 effective date of rule, emission reductions are achieved in beginning 01/01/09.
Implementation Area: All counties in the OTR.</td><td>VOC:
2009 Reduction:
2009 Remaining:</td><td>
-13,981
7,529</td></tr>
<tr><td colspan="3">REFERENCES:

2002 Existing Measure (Federal Part 59 Rules):
E.H. Pechan & Associates, Inc., AirControlNET Version 4.1: Documentation Report, September 2005. Pages III-1364 shows the Federal Part 59 rule at a cost of $118 per ton (1990$) and a reduction of 37 percent from uncontrolled levels.
2009 On-the-Books Measure (OTC Model Rule):
E.H. Pechan & Associates, Inc., Control Measure Development Support Analysis of Ozone Transport Commission Model Rules, March 31, 2001. Table II-6 shows 37% reduction for Federal Part 59 rule and 38% (OTC Model Rule beyond Federal rule). Page 17 presents cost of $1,534 per ton based on estimates used for PA Rule 129.75.</td></tr>
</table>

Candidate Measure (CARB 2005 Suggested Control Measure):

California Air Resources Board. *Staff Report for the Proposed Suggested Control Measure for Automotive Coatings.* October 2005. Table V-3 shows the estimated 65% reduction from 2002 baseline emissions for new automotive coatings limits. A similar reduction is expected for the OTR. Page VII-6 indicates that the cost-effectiveness of the SCM is estimated to be $1.43 per pound of VOC reduced ($2,860 per ton). The CARB SCM coating categories and VOC limits are:

Table ES-1 - Proposed Coating Categories and VOC Limits

Coating Category	VOC regulatory limit as applied Effective January 1, 2009	
	grams/liter	**(pounds per gallon*)**
Adhesion Promoter	540	4.5
Clear Coating	250	2.1
Color Coating	420	3.5
Multi-Color Coating	680	5.7
Pretreatment Coating	660	5.5
Primer	250	2.1
Single-Stage Coating	340	2.8
Temporary Protective Coating	60	0.5
Truck Bed Liner Coating	310	2.6
Underbody Coating	430	(3.6
Uniform Finish Coating	540	4.5
Any other coating type	250	2.1

The OTC Model Rule coating categories and VOC limits are:

OTC Model Rule		*Limit*
Coating Type	*Grams per Liter*	*Pounds per gallon*
Automotive pretreatment primer	780	6.5
Automotive primer-surfacer	575	4.8
Automotive primer-sealer	550	4.6
Automotive topcoat:		
single stage-topcoat	600	5.0
2 stage basecoat/clearcoat	600	5.0
3 or 4-stage basecoat/clearcoat	625	5.2
Automotive Multi-colored Topcoat	680	5.7
Automotive specialty	840	7.0

CONTROL MEASURE SUMMARY FOR *Cement Kilns*

<table>
<tr><td>Control Measure Summary:</td><td colspan="2">Emissions (tons/year) in Ozone Transport Region</td></tr>
<tr><td>2002 existing measure: NSR; PSD; State RACT.</td><td>NOx
2002 Base:</td><td>
31,960</td></tr>
<tr><td>On the Books: NOx SIP Call
Measure ID: NOx SIP Call
Emission Reductions: The SIP Call requirements were estimated by EPA to result in NOx reductions of approximately 25 percent from the cement industry.
Control Cost: $2,000 per ton
Timing of Implementation: 2004
Implementation Area: OTR</td><td>NOx

2009 Base:
2009 Reduction:
2009 Remaining:</td><td>

31,960
<u>-7,990</u>
23,970</td></tr>
<tr><td>Candidate measure: Use of proven control technologies (such as SNCR) or other methods to meet recommended emission limits.
Emission Reductions: source specific, varies from 0-63% based upon 2002 base rates.
Control Cost: less than 2,500 per ton
Timing of Implementation: 01/01/09
Implementation Area: OTR</td><td>NOx

2009 Base:
Candidate Reduction:
2009 Remaining:</td><td>

31,960
<u>-13,231</u>
18,279</td></tr>
<tr><td colspan="3">Policy Recommendation: It is recommended that a program be developed reduces NOx emissions from existing cement kilns by requiring existing kilns to meet a NOx emission rate of
3.88 lbs/ton clinker for wet kiln
3.44 lbs/ton clinker for long dry kiln
2.36 lbs/ton clinker for pre-heater kiln
1.52 lbs/ton clinker for pre-calciner kiln.
Trading between facilities would not be permitted, but averaging at a facility would be permissible.</td></tr>
<tr><td colspan="3">Brief Rationale for Recommended Strategy: This limit is consistent with the emission reduction capabilities of SNCR. There are 18 full-scale SNCR installations in Europe.</td></tr>
<tr><td colspan="3">REFERENCES
EC/R Incorporated. NOx Control Technologies for the Cement Industry – Final Report. September 19, 2000. This report for EPA shows data for two SNCR technologies, biosolids injection and NOXOUT®. These technologies showed average emission reductions of 50 and 40 percent, respectively. For biosolids injection, “Cost effectiveness for this kiln is based on the annualized costs of ($320,000/year), the emission reduction achieved at that facility (emissions decreased from 2.4 lb/ton of clinker to 1.2 lb/ton of clinker), a kiln capacity of 215 tons/hr, and an annual operation of 8,000 hr/yr. Cost effectiveness is a credit of ($310/ton) for installing biosolids injection on this kiln” due to tipping fee for using biosolids (dewatered sewage sludge) For NOXOUT®, “40 percent NOX reduction based on the available test data. Cost effectiveness for the two kilns, using urea as the reagent, is based on an uncontrolled emission rate of 3.8 lb NOX/ton of clinker, kiln capacities of 92 and 130 tons/hr respectively, annual operation of 8,000 hr/yr, and a NOX control efficiency of 40%. Cost effectiveness is $1,000/ton for the smaller kiln and $2,500/ton for the larger kiln.”

European Commission. Integrated Pollution Prevention and Control (IPPC) Reference Document on Best Available Techniques in the Cement and Lime Manufacturing Industries. December 2001. These report indicates that there are 18 full-scale SNCR installation in Europe. Most SNCR installations are designed and/or operated for NOx reduction rates of 10-50% which is sufficient to comply with current legislation in some countries. Two Swedish plants installed SNCR in 1996/97 and have achieved a reduction of 80-85% at both kilns.</td></tr>
</table>

Emission Rates:

Table 4-5 of the EPA's *NOx Control Technologies for the Cement Industry, September 19, 2000* provides the following uncontrolled emission rates for the four types of cement kilns:

Kiln Type	Heat Input Requirement (mmBtu/ton of clinker)	Average NOx Uncontrolled Emission Rate (lb/ton of clinker)	Range of NOx Uncontrolled Emission Rate (lb/ton of clinker)
Wet	6.0	9.7	3.6 to 19.5
Long Dry	4.5	8.6	6.1 to 10.5
Preheater	3.8	5.9	2.5 to 11.7
Precalciner	3.8	3.8	0.9 to 7.0

The OTC Control Measure Summary Sheet calls for a 60% reduction from uncontrolled emissions. Using this percent reduction figure and the uncontrolled emission rates above, the following controlled emission rates were calculated:

Kiln Type	Percent Reduction from Uncontrolled	Low-End NOx Controlled Emission Rate (lb/ton of clinker)	Average NOx Controlled Emission Rate (lb/ton of clinker)	High-End NOx Controlled Emission Rate (lb/ton of clinker)
Wet	60	1.44	3.88	7.80
Long Dry	60	2.44	3.44	4.20
Preheater	60	1.00	2.36	4.68
Precalciner	60	0.36	1.52	2.80

The State/workgroup lead recommended the use of the the average NOx Controlled emission rates in the above table (expressed as lb/ton of clinker).

CONTROL MEASURE SUMMARY FOR
Chip Reflash

<table>
<tr><td>Control Measure Summary: Upgrade the version of software in engine electronic control module (ECM) aka “Chip Reflash”. Software reprograms the vehicle's computer and reduces off-cycle NOx emissions. The installation process typically takes between one-half to one hour.</td><td colspan="2">Emissions Reductions (tons/day)</td></tr>
<tr><td>2002 existing measure:
No existing measure in the OTR other than the EPA program resulting from the consent decrees on 7 heavy duty engine manufacturers. The results of the EPA program thus far are significantly lower than the level originally projected by the Agency (less than 10% implementation). CARB implemented a voluntary program that did not achieve its expected results, so the Board’s backstop mandatory program was triggered. The CARB mandatory program is facing two separate legal challenges, alleging that CARB has breached its settlement agreement and alleging that CARB is illegally establishing different emissions standards on “new engines”.</td><td></td><td></td></tr>
<tr><td>Candidate measure:
Measure ID: Model rule for Mandatory Chip Reflash Program in the OTR

Emission Reductions: NOx reduction (TPD) from in-state registered vehicles
Control Cost: Moderate – manufacturers must provide the rebuild kits free to any truck operator who requests it. The cost associated with the reflash has been estimated at $20-$30 per vehicle, which is borne by the engine manufacturer. There may be costs associated with potential downtime to the trucking firms, and record-keeping requirements on the dealer performing the reflash and the vehicle owner. For the MRPO, ENVIRON estimated cost effectiveness to be “$1,800 to $2,500 (depending on vehicle size) due to incremental “fuel penalty” of 2% increase in fuel consumption). However, in reality, no fuel penalty has been documented on vehicles that have already been reflashed.

Timing of Implementation: The kits are currently available, so once the states adopt the rule, retrofits can begin according to the schedule.

Implementation Area: All OTR and MRPO states (NOx reductions 109 TPD)</td><td>LADCO

Northeast states

Mid-Atlantic States

Total OTR</td><td>46 TPD

41 TPD

22 TPD

63 TPD</td></tr>
<tr><td>Policy Recommendation of State/Workgroup Lead: Expand scope of the model rule for the Northeast states to the entire OTR and MWRPO</td><td></td><td></td></tr>
<tr><td>Brief Rationale for Recommended Strategy: While the EPA program provides a good platform for chip reflash retrofits, the federal program is not even achieving 10% of its estimated emission reductions. The kits are available and must be given to the truckers for free; yet without additional motivation, it is unlikely that the implementation rate will improve due to fuel consumption and/or performance perceptions and the ability to extend the time to next major rebuild/overhaul. The states in the OTR do not face the prospect of breach-of-settlement allegations that CARB did in adopting a mandatory program, since they did not participate in the negotiation of the CD settlements. And there are significant emission reductions that can be achieved through a mandatory program, even though installing the kits will not result in the engines operating at the same emission levels required for the EPA engine certification test. Nevertheless, this is a relatively simple fix for a problem that our states will face if they rely on the federal program alone to produce emission reductions from these sources.</td><td></td><td></td></tr>
</table>

CONTROL MEASURE SUMMARY FOR
Consumer Products

Control Measure Summary: Consumer Products This control measure establishes limits on the VOC content of consumer products. It is based on the California Air Resources Board (CARB) consumer products rules, with some region specific modifications. It regulates categories such as hairspray, air fresheners, glass and general purpose cleaners, adhesives, anti-perspirants and deodorants, insecticides and automotive aftermarket products.	**VOC Emissions in Ozone Transport Region**	
2002 Existing Measure: The Federal Consumer Products Rule Part 59 *Emission Reductions*: 20 % reduction of the categories being regulated or 9.95 % reduction of the entire consumer products inventory (about 40 % of products were included in rule). *Control Cost*: $237 per ton of VOC reduced *Timing of Implementation*: 12/98 *Implementation Area*: Nationwide	**2002 Annual** Uncontrolled: Reduction: Remaining: **2002 Summer** Uncontrolled: Reduction: Remaining:	 258,537 tpy 25,724 tpy 232,813 tpy 713.9 tpd 71.0 tpd 642.9 tpd
2009 On-the-Books Measure: Adopt the 2001 OTC Model Rule for Consumer Products in all OTC states (this model rule was based on a series of five CARB consumer products rules). *Emission Reductions*: 14.2 % beyond federal rule or a total of 21 % from the uncontrolled state. *Control Cost*: $800 per ton VOC reduced *Timing of Implementation*: 1/1/05 effective date of VOC limits (though some states were later and some have yet to adopt) *Implementation Area*: OTR	**2009 Annual** Reduction: Remaining: **2009 Summer** Reduction: Remaining:	 22,916 tpy 209,897 tpy 63.4 tpd 579.5 tpd
Candidate Measure #1: Adopt the CARB amendments to their consumer products rule, adopted 7/20/05, with the exception of the 12/31/09 shaving gel, and 12/31/08 anti-static aerosol VOC limits. This rule sets new VOC limits for 11 categories, revises the existing VOC limit for 1 category and includes some additional requirements. See more detailed limits below. *Emission Reductions*: CARB estimates their rule will achieve a 6.3 ton/day reduction of VOC in California, which is equivalent to about 11.3 tons per day in the OTR or a 2% reduction beyond the on-the-books measure. *Control Cost*: $4,800 per ton of VOC reduced *Timing of Implementation*: 01/01/09 *Implementation Area* OTR	**2009 Annual** Reduction: Remaining: **2009 Summer** Reduction: Remaining:	 7,453 tpy 202,444 tpy 20.6 tpd 558.9 tpd
Candidate Measure #2: Follow and adopt as appropriate CARB 's next round of amendments to their consumer products rule, to be developed and proposed by approximately late 2006/early 2007 with limits effective in 2010. *Emission Reductions*: The CONS-2 amendments are estimated by CARB to achieve VOC reductions of about 20-35 tpd in California by 2010 which is equivalent to about 36-63 tpd in the OTR (The mid-point of this range was used in the calculations, 49.5 tpd). *Control Cost*: Unknown at present; *Timing of Implementation*: 01/01/10 *Implementation Area OTR*	***VOC not modeled:*** **2009 Annual** Reduction: Remaining: **2009 Summer** Reduction: Remaining:	Not Available

Summary of Candidate Measure #1: The proposed VOC limits based on CARB's 7/20/05 amendments are as follows:

Summary of Candidate Measure #1: The proposed VOC limits based on CARB's 7/20/05 amendments are as follows:

PRODUCT CATEGORY	CARB VOC CONTENT LIMIT %	OTC PROPOSED CONTENT LIMIT%	CARB EFFECTIVE DATE	OTC PROPOSED EFFECTIVE DATE
Adhesive, Contact – General purpose *	55	55	12/31/2006	1/1/2009
Special Purpose*	80	80	12/31/2006	1/1/2009
Adhesive Remover - Floor or Wall covering	5	5	12/31/2006	1/1/2009
Gasket or Thread Locking	50	50	12/31/2006	1/1/2009
General Purpose	20	20	12/31/2006	1/1/2009
Specialty	70	70	12/31/2006	1/1/2009
Anti-static - non-aerosol	11	11	12/31/2006	1/1/2009
Electrical Cleaner	45	45	12/31/2006	1/1/2009
Electronic Cleaner	75	75	12/31/2006	1/1/2009
Fabric refresher – aerosol	15	15	12/31/2006	1/1/2009
non-aerosol	6	6	12/31/2006	1/1/2009
Footware or Leather Care - aerosol	75	75	12/31/2006	1/1/2009
Solid	55	55	12/31/2006	1/1/2009
all other forms	15	15	12/31/2006	1/1/2009
Graffiti Remover –aerosol	50	50	12/31/2006	1/1/2009
non-aerosol	30	30	12/31/2006	1/1/2009
Hair Styling Products – aerosol & pump sprays	6	6	12/31/2006	1/1/2009
all other forms	2	2	12/31/2006	1/1/2009
Shaving Gel	7	7	12/31/2006	1/1/2009
Toilet/Urinal Care – aerosol	10	10	12/31/2006	1/1/2009
non-aerosol	3	3	12/31/2006	1/1/2009
Wood Cleaner – aerosol	17	17	12/31/2006	1/1/2009
non-aerosol	4	4	12/31/2006	1/1/2009
* Change to an existing category				

References:
2002 Existing Measure (Federal Part 59 Rules):

E.H. Pechan & Associates, Inc., *Control Measure Development Support Analysis of Ozone Transport Commission Model Rules*, March 31, 2001.

E.H. Pechan & Associates, Inc., *AirControlNET Version 4.1: Documentation Report*, September 2005. Pages III-1377 shows the Federal Part 59 rule at a cost of $237 per ton (1990$).

2009 On-the-Books Measure (OTC Model Rule):

E.H. Pechan & Associates, Inc., *Control Measure Development Support Analysis of Ozone Transport Commission Model Rules*, March 31, 2001. Table II-6 shows 14.2% reduction (OTC Model Rule beyond Federal rule). Page 8 presents cost of $800 per ton based on CARB's Sept. 1999 Initial Statement of Reasons for Proposed Amendments to the California Consumer Products Regulation.

Candidate Measure #1 (CARB 2005 and 2006/2007 Amendments):

California Air Resources Board. *Initial Statement of Reasons for Proposed Amendments, Volume 1: Executive Summary*. June 24, 2004. Table 2 of the Executive Summary shows that the CONS-1 amendments will achieve reductions of about 6.8 tons per day state wide (6.3 tons per day without the 12/31/09 Shaving gel, and 12/31/08 anti-static aerosol regs.. Page 21 states the cost of CONS-1 will be $2.40 per pound ($4,800 per ton). Since OTC's model rule is very similar to the CARB's rule, and emissions are proportional to population, CARB's 6.3 ton per day reduction was prorated to the OTC region based on the ratio of OTR 2002 population (63 million) to CA 2002 population (35 million) yielding approximately 11.3 tons per day in the OTR (4,139 tons per year).

Page 4 states that the estimated reductions from CONS-2 (not yet proposed) will achieve 20-35 tons per day statewide by 2010. Since OTC's model rule is very similar to the CARB's rule, and emissions are proportional to population, the mid-point of CARB's 20-35 ton per day reduction (i.e., 27.5 tons per day) was prorated to the OTC region based on the ratio of OTR 2002 population (63 million) to CA 2002 population (35 million) yielding approximately 49.5 tons per day in the OTR (18,068 tons per year).

CONTROL MEASURE SUMMARY FOR
Glass/Fiberglass Furnaces

Control Measure Summary:	**Emissions (tons/year) in Ozone Transport Region**	
2002 existing measure: NSR; PSD; State RACT.	**NOx** 2002 Base:	 18,840
Candidate measure: Use of oxyfiring or other methods to meet recommended emission limits. *Emission Reductions*: source specific, varies from 0-85% depending upon 2002 base rates. *Control Cost*: $ 924 to 2,232 per ton *Timing of Implementation*: 01/01/09 *Implementation Area*: OTR	**NOx** 2009 projected: Reduction at full implementation: Remaining after full implementation:	 21,893 -13,474 8,419

Control Measure Recommendation: Develop a control strategy that requires implementation of an "oxyfiring" program for each furnace at the next furnace rebuild. Alternatively, states may allow manufacturers to propose compliance methods based on California's San Joaquin Valley Rule 4354 which allows a mix of control options to meet specified emission limits. Prior to furnace rebuild, owners/operators may be allowed, by the state, to meet emissions limits by purchasing a state specified number of NOx allowances. Continuous emission monitoring systems would be used to determine emissions. This Measure should be modeled at 85% reduction.

Brief Rationale for Recommended Strategy: Oxyfiring is best implemented, and provides the most effective NOx emission reductions, with a complete furnace rebuild. This strategy not only reduces NOx emissions by as much as 85 percent, but reduces energy consumption, increases production rates by 10-15%, and improves glass quality by reducing defects. Oxyfiring is demonstrated technology and has penetrated into all segments of the glass industry.

REFERENCES

European Commission, Integrated Pollution Prevention and Control (IPPC) Bureau. *Reference Document on Best Available Techniques in the Glass Manufacturing Industry*. December 2001. This document reports 75 to 85% reduction in NOx and emission rates of 1.25 to 4.1 lbs NOx/ton. The cost effectiveness was determined to be $1,254 to $2,542 depending on the size of the furnace.

U.S. EPA *Alternative Control Techniques Document – NOx Emissions from Glass Manufacturing*, EPA-453/R-94-037, June 1994. Oxyfiring reduction of 85%, cost-effectiveness of $2,150 to $5,300.

Emission rates based on San Joaquin Valley Rule 4354

Type of Furnace	Block 24-hour Average	Rolling 30-day average
Container Glass	4.0 pounds of NOx per ton of glass pulled	4.0 pounds of NOx per ton of glass pulled
Fiberglass	4.0 pounds of NOx per ton of glass pulled	4.0 pounds of NOx per ton of glass pulled
Flat Glass	9.2 pounds of NOx per ton of glass pulled	7.0 pounds of NOx per ton of glass pulled

CONTROL MEASURE SUMMARY FOR

Industrial, Commercial, Institutional (ICI) Boilers – Jointly processed with MANE-VU

Addendum to OTC Resolution 06-02 Guidelines for ICI Boilers

ICI Boiler Size (mmBtu/hr)	Control Strategy/ Compliance Option	NOx Control Measure
5-25		Annual Boiler Tune-Up
25-100	Option #1	Natural Gas: 0.05 lb NOx/mmBtu #2 Fuel Oil: 0.08 lb NOx/mmBtu #4 or #6 Fuel Oil: 0.20 lb NOx/mmBtu Coal: 0.30 lb NOx/mmBtu**
	Option #2	50% reduction in NOx emissions from uncontrolled baseline
	Option #3	Purchase current year CAIR NOx allowances equal to reducted needed to acheiv the required emission rates
100-250	Option #1	Natural Gas: 0.10 lb NOx/mmBtu #2 Fuel Oil: 0.20 lb NOx/mmBtu #4 or #6 Fuel Oil: 0.20 lb NOx/mmBtu Coal: Wall-fired 0.14 lb NOx/mm Btu Tangential 0.12 lb NOx/mm Btu Stoker 0.22 lb NOx/mm Btu Fluidized Bed 0.08 lb NOx/mm Btu
	Option #2	LNB/SNCR, LNB/FGR, SCR, or some combination of these controls in conjunction with Low NOx Burner technology
	Option #3	60% reduction in NOx emissions from uncontrolled baseline
	Option #4	Purchase current year CAIR NOx allowances equal to reducted needed to acheiv the required emission rates
>250	Option #1	Purchase current year CAIR NOx allowances equal to reducted needed to acheiv the required emission rates
	Option #2	Phase I – 2009 Emission rate equal to EGUs of similar size Phase II – 2012 Emission rate equal to EGUs of similar size

CONTROL MEASURE SUMMARY FOR
Industrial Surface Coatings Fabric Printing

Control Measure Summary: This category includes several source types: Fabric, Printing, Coating and Dyeing; Large Appliances; Metal Can coating, Metal Coil coating; Metal Furniture coating; Misc. Metal Parts coating; Paper and Other Web coating; Plastic Parts coating; & Wood Building Products coating	**Emissions (tons/year) in Ozone Transport Region**	
Fabric Printing, Coating and Dyeing - 2002 existing measures: NSPS; PSD/NSR; State RACT rules in 1-hour non-attainment counties EPA CTG RACT limit: 2.9 lbs VOC/gal coating [0.35 kg/liter] (minus H_2O & exempt solvents) Applicability: Sources 3 lbs/hour, 15 lb/day or 10 tons/year uncontrolled emissions OTC state RACT limits: MD, NJ, NH = 2.9 lbs/gal coating MA = 4.8 lbs VOC/gal of solids applied (equivalent to 2.9 lbs/gal coating)	**VOC** Actual 2002:	(not available)
Fabric Printing, Coating and Dyeing - 2009 On-the-Books measures: MACT Std. - Subpart OOOO (68 FR 32172, 5/29/03) EPA MACT limits existing sources: Coating and printing operations - 0.12 kg HAP/liter solids Dyeing and finishing operations - 0.016 kg HAP/liter solids Dyeing operations only - 0.016 kg HAP/liter solids Finishing operations only - 0.0003 kg HAP/liter solids *Emission Reductions*: *Nationwide – 60% HAP reduction from 1997 baseline* *MACT Organic HAP control efficiency option: 97% for existing sources* *MACT Estimated VOC reduction 60% (Pechan Table)* *Control Cost*: *Nationwide –$14.5 million/yr for 4,100 tons/yr = $3,537/ton* *Timing of Implementation*: Compliance Date (existing) May 29, 2006 *Implementation Area*: Nationwide	**VOC** Actual 2002: OTB 2009: Reduction from OTB:	(not available)
Fabric Printing, Coating and Dyeing Candidate measure 1: Adopt More Stringent RACT regulations; lower applicability thresholds, extend geographic coverage *Measure ID: Permanent Total Enclosure* *Emission Reductions*: *Estimated VOC reduction 95-97% (Air Control Net 3.0 Table)* *Control Cost*: *$1,459-$1,565/ton* *Timing of Implementation*: Assuming 2007 or 2008 effective date of rule, emission reductions in 2009 or 2010 *Implementation Area*: (1) 8-hr ozone nonattainment areas, (2) 8-hr ozone nonattainment areas plus adjacent counties, or (3) all counties	**VOC** OTB 2009: BOTW 2009: Reduction from BOTW:	(not available)
Policy Recommendation: Final recommendation not made as of June, 2006.		
Brief Rationale for Recommended Strategy: See additional discussion in briefing paper		

CONTROL MEASURE SUMMARY FOR
Industrial Surface Coatings Large Appliances

Control Measure Summary: This category includes several source types: Fabric, Printing, Coating and Dyeing; Large Appliances; Metal Can coating, Metal Coil coating; Metal Furniture coating; Misc. Metal Parts coating; Paper and Other Web coating; Plastic Parts coating; & Wood Building Products coating	**Emissions (tons/year) in Ozone Transport Region**	
Large Appliances - 2002 existing measures: NSPS; PSD/NSR; State RACT rules in 1-hour non-attainment counties; EPA CTG RACT limit: 2.8 lbs VOC/gal coating [0.34 kg/liter] (minus H_2O & exempt solvents)	**VOC** Actual 2002:	(not available)
Large Appliances - 2009 On-the-Books measures: MACT Std. – Subpart NNNN (67 FR 48254, 7/23/02) EPA MACT limits <u>existing sources</u>: 0.13 kg HAP/liter solids *Emission Reductions*: *Nationwide – 45% HAP reduction from 1995 baseline* *MACT Organic HAP control efficiency option: xx% for existing sources* *Estimated VOC reduction: 0% (Pechan Table) - 60%??* *Control Cost*: *Nationwide – $1.63 million/yr for 1,190 tons/yr = $1,370/ton* *Timing of Implementation*: Compliance Date (existing) July 23, 2005 *Implementation Area*: Nationwide	**VOC** Actual 2002: OTB 2009: Reduction from OTB:	(not available)
Large Appliances Candidate measure 1: Adopt More Stringent RACT regulations (e.g., ICAC letter 2/16/2001); lower applicability thresholds, extend geographic coverage *Measure ID:* *ICAC Option 1 - Nationwide – 80% HAP reduction from 1995 baseline (Additional 250 tons/per HAP)* *ICAC Option 2 - Nationwide – 98% HAP reduction from 1995 baseline (Additional 1,190 tons/per HAP)* *Emission Reductions*: *Control Cost*: *Timing of Implementation*: Assuming 2007 or 2008 effective date of rule, emission reductions in 2009 or 2010 *Implementation Area*: (1) 8-hr ozone nonattainment areas, (2) 8-hr ozone nonattainment areas plus adjacent counties, or (3) all counties	**VOC** OTB 2009: BOTW 2009: Reduction from BOTW:	(not available)
Policy Recommendation of: Final recommendation not made as of June, 2006.		
Brief Rationale for Recommended Strategy: See additional discussion in briefing paper		

CONTROL MEASURE SUMMARY FOR
Industrial Surface Coatings Metal Cans

Control Measure Summary: This category includes several source types: Fabric, Printing, Coating and Dyeing; Large Appliances; Metal Can coating, Metal Coil coating; Metal Furniture coating; Misc. Metal Parts coating; Paper and Other Web coating; Plastic Parts coating; & Wood Building Products coating	**Emissions (tons/year) in Ozone Transport Region**	
Metal Can - 2002 existing measures: NSPS; PSD/NSR; State RACT rules in 1-hour non-attainment counties; EPA CTG RACT limit: <u>lbs VOC/gal coating (minus H_2O&exempt solvents)</u> Sheet basecoat & over varnish 2.8 [0.34 kg/l] 2 and 3-piece can interior & 2-piece can 4.2 [0.50 kg/l] 3-piece can side-seam spray 5.5 [0.66 kg/l] End sealing compound 3.7 [0.44 kg/l] Applicability: 10 tons/year uncontrolled emissions OTC state RACT limits: MD, NJ, NH same limits as CTG; MA (4.5, 9.8, 21.8, 7.7 lbs/gallon of solids applied)	**VOC** Actual 2002:	(not available)
Metal Can - 2009 On-the-Books measures: MACT Std. – Subpart KKKK (68 FR 64432 , 11/13/03) EPA MACT limits <u>existing sources</u>: Sheet coating 0.03 kg HAP/l solids Body Coating 2-piece beverage cans 0.07 kg HAP/l solids 2-piece food cans 0.06 kg HAP/l solids 1-piece aerosol cans 0.12 kg HAP/l solids 3-piece can assembly Inside Spray 0.29 kg HAP/l solids Aseptic side seam strips on food cans 1.94 kg HAP/l solids Nonaseptic side seam strips on food cans 0.79 kg HAP/l solids Side seam strips on non-food cans 1.18 kg HAP/l solids Side seam strips on aerosol cans 1.46 kg HAP/l solids End sealing compound Aseptic end seal compounds 1.94 kg HAP/l solids Nonaseptic end seal compounds 0.00 kg HAP/l solids Repair spray coatings 2.06 kg HAP/l solids *Emission Reductions*: *Nationwide – 70% HAP reduction from 1997 baseline* *MACT Organic HAP control efficiency option: xx% for existing sources* *Estimated VOC reduction 70% (Pechan Table)* *Control Cost*: *Nationwide – $58.7 million/yr for 6,800 tons/yr = $8,632/ton* *Timing of Implementation*: Compliance Date (existing) Nov. 13, 2006 *Implementation Area*: Nationwide	**VOC** Actual 2002: OTB 2009: Reduction from OTB:	(not available)

<table>
<tr><td>Metal Can (Continued)
Candidate measure 1: Adopt More Stringent RACT regulations; lower applicability thresholds, extend geographic coverage
Measure ID: Permanent Total Enclosure

Emission Reductions: Estimated VOC reduction 95% (Air Control Net 3.0 Table)
Control Cost: $7,947/ton
Timing of Implementation: Assuming 2007 or 2008 effective date of rule, emission reductions in 2009 or 2010

Implementation Area: (1) 8-hr ozone nonattainment areas, (2) 8-hr ozone nonattainment areas plus adjacent counties, or (3) all counties.</td><td>VOC
OTB 2009:
BOTW 2009:
Reduction from BOTW:</td><td>(not available)</td></tr>
<tr><td colspan="3">Policy Recommendation: Final recommendation not made as of June, 2006.</td></tr>
<tr><td colspan="3">Brief Rationale for Recommended Strategy: See additional discussion in briefing paper</td></tr>
</table>

CONTROL MEASURE SUMMARY FOR
Industrial Surface Coatings Metal Coils

<table>
<tr><td>Control Measure Summary: This category includes several source types: Fabric, Printing, Coating and Dyeing; Large Appliances; Metal Can coating, Metal Coil coating; Metal Furniture coating; Misc. Metal Parts coating; Paper and Other Web coating; Plastic Parts coating; & Wood Building Products coating</td><td colspan="2">Emissions (tons/year) in Ozone Transport Region</td></tr>
<tr><td>Metal Coil - 2002 existing measures:
NSPS; PSD/NSR; State RACT rules in 1-hour non-attainment counties;
EPA CTG RACT limit: 2.6 lbs VOC/gal coating [0.31 kg/liter] (minus H_2O & exempt solvents)
Applicability: Sources 10 tons/year uncontrolled emissions
OTC state RACT limits: NH - same limits as CTG</td><td>VOC
Actual 2002:</td><td>(not available)</td></tr>
<tr><td>Metal Coil – 2009 On-the-Books measures:
MACT Std. – Subpart SSSS (67 FR 39794 , 6/10/02)
EPA MACT limits <u>existing sources</u>: 0.046 kg HAP/liter solids
Emission Reductions:
Nationwide – 53% HAP reduction from current levels?
MACT Organic HAP control efficiency option: xx% for existing sources
Estimated VOC reduction 53% (Pechan Table)
Control Cost:
Nationwide – $7.6 million/yr for 1,316 tons/yr = $5,775/ton
Timing of Implementation: Compliance Date (existing) June 10, 2005

Implementation Area: Nationwide</td><td>VOC
Actual 2002:
OTB 2009:
Reduction from OTB:</td><td>(not available)</td></tr>
<tr><td>Metal Coil
Candidate measure 1: Adopt More Stringent RACT regulations; lower applicability thresholds, extend geographic coverage
Measure ID:

Emission Reductions:

Control Cost:

Timing of Implementation: Assuming 2007 or 2008 effective date of rule, emission reductions in 2009 or 2010

Implementation Area: (1) 8-hr ozone nonattainment areas, (2) 8-hr ozone nonattainment areas plus adjacent counties, or (3) all counties.</td><td>VOC
OTB 2009:
BOTW 2009:
Reduction from BOTW:</td><td>(not available)</td></tr>
<tr><td colspan="3">Policy Recommendation: Final recommendation not made as of June, 2006.</td></tr>
<tr><td colspan="3">Brief Rationale for Recommended Strategy: See additional discussion in briefing paper</td></tr>
</table>

CONTROL MEASURE SUMMARY FOR
Industrial Surface Coatings Metal Furniture

Control Measure Summary: This category includes several source types: Fabric, Printing, Coating and Dyeing; Large Appliances; Metal Can coating, Metal Coil coating; Metal Furniture coating; Misc. Metal Parts coating; Paper and Other Web coating; Plastic Parts coating; & Wood Building Products coating	**Emissions (tons/year) in Ozone Transport Region**	
Metal Furniture - 2002 existing measures: NSPS; PSD/NSR; State RACT rules in 1-hour non-attainment counties EPA CTG RACT limit: 3.0 lbs VOC/gal coating [0.36 kg/liter] (minus H_2O & exempt solvents) Applicability: Sources 10 tons/year uncontrolled emissions OTC state RACT limits: NH - same limits as CTG	**VOC** Actual 2002:	(not available)
Metal Furniture – 2009 On-the-Books measures: MACT Std. – Subpart RRRR (67 FR 28606 , 5/23/03) EPA MACT limits existing sources: 0.10 kg HAP/liter solids *Emission Reductions*: *Nationwide – 73% HAP reduction from 1997/1998 baseline* *MACT Organic HAP control efficiency option: xx% for existing sources* *Estimated VOC reduction 0% (Pechan Table)* *Control Cost*: *Nationwide – $14.8 million/yr for 16,300 tons/yr = $908/ton* *Timing of Implementation*: Compliance Date (existing) May 23, 2006 *Implementation Area*: Nationwide	**VOC** Actual 2002: OTB 2009: Reduction from OTB:	(not available)
Metal Furniture Candidate measure 1: Adopt More Stringent RACT regulations; lower applicability thresholds, extend geographic coverage *Measure ID: Permanent Total Enclosure* *Emission Reductions*: *Estimated VOC reduction 95% (Air Control Net 3.0 Table)* *Control Cost*: *$20,115/ton* *Timing of Implementation*: Assuming 2007 or 2008 effective date of rule, emission reductions in 2009 or 2010 *Implementation Area*: (1) 8-hr ozone nonattainment areas, (2) 8-hr ozone nonattainment areas plus adjacent counties, or (3) all counties.	**VOC** OTB 2009: BOTW 2009: Reduction from BOTW:	(not available)
Policy Recommendation: Final recommendation not made as of June, 2006.		
Brief Rationale for Recommended Strategy: See additional discussion in briefing paper		

CONTROL MEASURE SUMMARY FOR
Industrial Surface Coatings Miscellaneous Metal Parts

Control Measure Summary: This category includes several source types: Fabric, Printing, Coating and Dyeing; Large Appliances; Metal Can coating, Metal Coil coating; Metal Furniture coating; Misc. Metal Parts coating; Paper and Other Web coating; Plastic Parts coating; & Wood Building Products coating	**Emissions (tons/year) in Ozone Transport Region**	
Miscellaneous Metal Parts - 2002 existing measures: NSPS; PSD/NSR; State RACT rules in 1-hour non-attainment counties EPA CTG RACT limit: lbs VOC/gal coating (minus H_2O&exempt solvents) Clear or transparent top coat 4.3 [0.52 kg/l] Air dries Coatings 3.5 [0.42 kg/l] Coating used in extreme environmental conditions 3.5 [0.42 kg/l] All other coatings 3.0 [0.35 kg/l] Applicability: 10 tons/year uncontrolled emissions OTC state RACT limits: NH same limits as CTG	**VOC** Actual 2002:	(not available)
Miscellaneous Metal Parts – 2009 On-the Books measures: MACT Std. – Subpart MMMM (69 FR 130 , 1/2/04) EPA MACT limits existing sources: General use Coating 0.31 kg HAP/l solids High Performance Coating 3.30 kg HAP/l solids Rubber-to-Metal Coating 4.50 kg HAP/l solids Extreme Performance Fluoropolymer 1.5 kg HAP/l solids *Emission Reductions*: *Nationwide – 48% HAP reduction from 1997 baseline* *MACT Organic HAP control efficiency option: xx% for existing sources* *Estimated VOC reduction 0% (Pechan Table)* *Control Cost*: *Nationwide – $57.3 million/yr for 26,000 tons/yr = $2204/ton* *Timing of Implementation*: Compliance Date (existing) Jan. 2, 2007 *Implementation Area*: Nationwide	**VOC** Actual 2002: OTB 2009: Reduction from OTB:	(not available)
Miscellaneous Metal Parts Candidate measure 1: Adopt More Stringent RACT regulations; lower applicability thresholds, extend geographic coverage *Measure ID:* *Emission Reductions*: *Control Cost*: *Timing of Implementation*: Assuming 2007 or 2008 effective date of rule, emission reductions in 2009 or 2010 *Implementation Area*:	**VOC** OTB 2009: BOTW 2009: Reduction from BOTW:	(not available)
Policy Recommendation: Final recommendation not made as of June, 2006.		
Brief Rationale for Recommended Strategy: See additional discussion in briefing paper		

CONTROL MEASURE SUMMARY FOR
Industrial Surface Coatings Paper and Other Web

<table>
<tr><td>Control Measure Summary: This category includes several source types: Fabric, Printing, Coating and Dyeing; Large Appliances; Metal Can coating, Metal Coil coating; Metal Furniture coating; Misc. Metal Parts coating; Paper and Other Web coating; Plastic Parts coating; & Wood Building Products coating</td><td colspan="2">Emissions (tons/year) in Ozone Transport Region</td></tr>
<tr><td>Paper & Other Web - 2002 existing measures:
NSPS; PSD/NSR; State RACT rules in 1-hour non-attainment counties
EPA CTG RACT limit: 2.9 lbs VOC/gal coating [0.35 kg/liter] (minus H_2O & exempt solvents)
Applicability: Sources 3 lbs/hour, 15 lb/day or 10 tons/year uncontrolled emissions
OTC state RACT limits: MD, NJ, NH = 2.9 lbs/gal coating
MA = 4.8 lbs VOC/gal of solids (equivalent to 2.9 lbs/gal coating)</td><td>VOC
Actual 2002:</td><td></td></tr>
<tr><td>Paper & Other Web – 2009 On-the-Books measures:
MACT Std. – Subpart JJJJ (67 FR 72330 , 12/4/02)
EPA MACT limits <u>existing sources</u>: 0.2 kg organic HAP/kg coating solids
Emission Reductions:
Nationwide – 80% HAP reduction from current levels??
MACT Organic HAP control efficiency option: 95% for existing sources
Estimated VOC reduction 80% (Pechan Table)
Control Cost:
Nationwide – $64 million/yr for 34,500 tons/yr = $1,855/ton
Timing of Implementation: Compliance Date (existing) Dec. 5, 2005

Implementation Area: Nationwide</td><td>VOC
Actual 2002:
OTB 2009:
Reduction from OTB:</td><td>(not available)</td></tr>
<tr><td>Paper & Other Web
Candidate measure 1: Adopt More Stringent RACT regulations; lower applicability thresholds, extend geographic coverage
Measure ID:

Emission Reductions:

Control Cost:

Timing of Implementation: Assuming 2007 or 2008 effective date of rule, emission reductions in 2009 or 2010

Implementation Area:</td><td>VOC
OTB 2009:
BOTW 2009:
Reduction from BOTW:</td><td>(not available)</td></tr>
<tr><td colspan="3">Policy Recommendation: Final recommendation not made as of June, 2006.</td></tr>
<tr><td colspan="3">Brief Rationale for Recommended Strategy: See additional discussion in briefing paper</td></tr>
</table>

CONTROL MEASURE SUMMARY FOR
Industrial Surface Coatings Plastic Parts

Control Measure Summary: This category includes several source types: Fabric, Printing, Coating and Dyeing; Large Appliances; Metal Can coating, Metal Coil coating; Metal Furniture coating; Misc. Metal Parts coating; Paper and Other Web coating; Plastic Parts coating; & Wood Building Products coating	**Emissions (tons/year) in Ozone Transport Region**	
Plastic Parts - 2002 existing measures: NSPS; PSD/NSR; State RACT rules in 1-hour non-attainment counties EPA CTG RACT limit: lbs VOC/gal coating (minus H_2O&exempt solvents) Auto Interior / Auto Exterior High Bake Prime: 3.8 [0.46 kg/l] / -- High Bake Prime - Flexible: -- / 5.0 [0.60 kg/l] High Bake Prime – Nonflexible: -- / 4.5 [0.54 kg/l] High Bake Color: 4.1 [0.49 kg/l] / 4.6 [0.55 kg/l] Low Bake Prime: 3.5 [0.42 kg/l] / 5.5 [0.66 kg/l] Low Bake Color: 3.5 [0.42 kg/l] / 5.6 red or black Low Bake Color: -- / 4.5 all others Applicability: NH - 50 tons/year uncontrolled emissions OTC state RACT limits: NH - same limits as CTG	**VOC** Actual 2002:	(not available)
Plastic Parts - 2009 On-the Books measures: MACT Std. – Subpart PPPP (69 FR 20968 , 4/19/04) EPA MACT limits existing sources: General Use Coating - 0.16 kg HAP/kg coating solids Automotive Lamp Coating - 0.45 kg HAP/kg coating solids Thermoplastic Olefins - 0.26 kg HAP/kg coating solids New Assembled On-Road Vehicles - 1.34 kg HAP/kg coating solids *Emission Reductions*: *Nationwide – 80% HAP reduction from 1997 baseline* *Estimated VOC reduction 0% (Pechan Table)* *Control Cost*: *Nationwide – $10.9 million/yr for 7,560 tons/yr = $1,442/ton* *Timing of Implementation*: Compliance Date (existing) April 19, 2007 *Implementation Area*: Nationwide	**VOC** Actual 2002: OTB 2009: Reduction from OTB:	(not available)
Plastic Parts Candidate measure 1: Adopt More Stringent RACT regulations; lower applicability thresholds, extend geographic coverage *Measure ID:* *Emission Reductions*: *Control Cost*: *Timing of Implementation*: Assuming 2007 or 2008 effective date of rule, emission reductions in 2009 or 2010 *Implementation Area*:	**VOC** OTB 2009: BOTW 2009: Reduction from BOTW:	(not available)
Policy Recommendation: Final recommendation not made as of June, 2006.		
Brief Rationale for Recommended Strategy: See additional discussion in briefing paper		

CONTROL MEASURE SUMMARY FOR
Industrial Surface Coatings Wood Building Products

<table>
<tr><td>Control Measure Summary: This category includes several source types: Fabric, Printing, Coating and Dyeing; Large Appliances; Metal Can coating, Metal Coil coating; Metal Furniture coating; Misc. Metal Parts coating; Paper and Other Web coating; Plastic Parts coating; & Wood Building Products coating</td><td colspan="2">Emissions (tons/year) in Ozone Transport Region</td></tr>
<tr><td>Wood Building Products - 2002 existing measures:
NSPS; PSD/NSR; State RACT rules in 1-hour non-attainment counties
EPA CTG RACT limit: <u>lbs VOC/gal coating (minus H_2O&exempt solvents)</u></td><td>VOC
Actual 2002:</td><td>(not available)</td></tr>
<tr><td>Wood Building Products - 2009 On-the-Books measures:
MACT Std. – Subpart QQQQ (68 FR 31746 , 5/28/03)
EPA MACT limits <u>existing sources</u>:
- <u>kg HAP/liter of solids (lb HAP/gal solids)</u>
Doors, Windows & Misc. 0.231 (1.93)
Flooring 0.093 (0.78)
Interior Wall Paneling & Tileboard 0.183 (1.53)
Other Interior Panels 0.020 (0.17)
Exterior Siding & Primed Door Skins 0.007 (0.06)
Emission Reductions:
Nationwide – 63% HAP reduction from 1997 baseline
MACT Organic HAP control efficiency option: xx% for existing sources
Estimated VOC reduction 63% (Pechan Table)
Control Cost:
Nationwide –$22.5 million/yr for 4,900 tons/yr = $4,592/ton
Timing of Implementation: Compliance Date (existing) May 28, 2006

Implementation Area: Nationwide</td><td>VOC
Actual 2002:
OTB 2009:
Reduction from OTB:</td><td>(not available)</td></tr>
<tr><td>Wood Building Products
Candidate measure 1: Adopt More Stringent RACT regulations; lower applicability thresholds, extend geographic coverage
Measure ID:
Emission Reductions:
Control Cost:
Timing of Implementation: Assuming 2007 or 2008 effective date of rule, emission reductions in 2009 or 2010
Implementation Area:</td><td>VOC
OTB 2009:
BOTW 2009:
Reduction from BOTW:</td><td>(not available)</td></tr>
<tr><td colspan="3">Policy Recommendation of State/Workgroup Lead: Final recommendation not made as of June, 2006.</td></tr>
<tr><td colspan="3">Brief Rationale for Recommended Strategy: See additional discussion in briefing paper</td></tr>
</table>

CONTROL MEASURE SUMMARY FOR
Industrial Surface Coatings All Categories

Control Measure Summary: This category includes several source types: Fabric, Printing, Coating and Dyeing; Large Appliances; Metal Can coating, Metal Coil coating; Metal Furniture coating; Misc. Metal Parts coating; Paper and Other Web coating; Plastic Parts coating; & Wood Building Products coating	**Emissions (tons/year) in Ozone Transport Region**	
Industrial Surface Coatings Category Total - 2002 existing measures: NSPS: PSD/NSR; State RACT rules in 1-hour non-attainment counties	**Total VOC** **Point &Area** Actual 2002:	164,445
Industrial Surface Coatings Category Total - 2009 On-the-Books measures: MACT Stds. – Subpart OOOO (68 FR 32172, 5/29/03) Subpart NNNN (67 FR 48254, 7/23/02) Subpart KKKK (68 FR 64432 , 11/13/03) Subpart SSSS (67 FR 39794 , 6/10/02) Subpart RRRR (67 FR 28606 , 5/23/03) Subpart MMMM (69 FR 130 , 1/2/04) Subpart JJJJ (67 FR 72330 , 12/4/02) Subpart PPPP (69 FR 20968 , 4/19/04) Subpart QQQQ (68 FR 31746 , 5/28/03) *Emission Reductions*: *OTC Regional – x,xxx from 2002 baseline* *Control Cost*: *OTC Regional –$ xx.x million/yr for x,xxx tons/yr = $4,592/ton* *Timing of Implementation*: Compliance Dates (existing) 5/29/06; (existing) 7/23/05; (existing) 11/13/06; (existing) 6/10/05; (existing) 5/23/06; (existing) 1/2/07; (existing) 12/5/05; (existing) 4/19/07; (existing) 5/28/06 *Implementation Area*: Ozone Transport Region	**Total VOC** **Point & Area** Actual 2002: OTB 2009: Reduction from OTB: **MANE-VU 2002 Point*** **MANE-VU 2002 Area*** **(Ed Sabo's e-mail 01/06/06)**	164,445 <u>-175,983</u> **-11,448** **24,931** **139,512** **From 10/04/05 draft emission inventory**
Industrial Surface Coatings Category Total Candidate measure 1: Adopt More Stringent RACT regulations; lower applicability thresholds, extend geographic coverage *Measure ID:* *Emission Reductions*: *Control Cost*: *Timing of Implementation*: Assuming 2007 or 2008 effective date of rule, emission reductions in 2009 or 2010 *Implementation Area*:	**VOC** OTB 2009: BOTW 2009: Reduction from BOTW:	(not available)

Policy Recommendation: Final recommendation not made as of June, 2006.

Brief Rationale for Recommended Strategy: See additional discussion in briefing paper

Background Information

Industrial surface coatings are used during the manufacture of a wide variety of products including: fabrics, paper, large appliances, metal cans, metal coils, metal furniture, metal parts, plastic parts, and wood building materials. Surface coating is the process by which paints, inks, varnishes, adhesives or other decorative or functional coatings are applied to a substrate (e.g., fabric, metal, wood, or plastic) to protect or decorate the substrate. Industrial surface coatings can be applied by brushing, rolling, spraying, dipping, flow coating, electro-coating, or combinations and variations of these methods. The process used to coat a particular product is dependent on the composition of the coating, the substrate to which the coating is applied and the intended end use of the final product. After a coating is applied, it is dried or cured either by conventional curing through the use of thermal drying ovens, or through the use of radiation. During conventional curing, heat from thermal ovens is used to evaporate the solvents and/or water trapped in the coating and release them into the atmosphere. Two types of radiation curing processes currently in use are ultraviolet (UV) curing and electron beam (EB) curing.

Emissions are released by the evaporation of the solvents used in the coatings and the evaporation of any additional solvents used to dilute (thin) the coating prior to application and for cleaning the coating equipment after use. Emissions from surface preparation and coating applications are a function of the VOC content of product used. Emissions are also a function of the type of coating process used (rolling, dipping, spraying, etc.) and the transfer efficiency of the process. Transfer efficiency is the percentage of the coating solids that are applied (e.g., sprayed) which actually adhere to the surface being coated. Emissions from cleaning vary with the type of cleanup and the housekeeping practices used.

Industrial surface coating is estimated to account for approximately 164,000 tons per year of VOC emissions in the Mid-Atlantic/Northeast Visibility Union (MANE-VU) region in 2002 from both point and area sources. It is important to consider two aspects regarding the accuracy of this emissions estimate when assessing this category for additional controls:

1) The MANE-VU VOC emissions inventory for the industrial surface coating category includes emissions from both point and area sources. While the 2002 VOC emissions inventory for the MANE-VU region indicates that VOC emission from area sources in this category are substantial, the area source part of the emissions inventory is highly uncertain and may be substantially overestimated. The method used to estimate area source VOC emissions relies heavily on employee emission factors and employment data. These emission factors are based on data collected by EPA in the 1980s and may not accurately portray the types of coatings, the type of coating equipment, or the type of control technology currently in use.

2) At least nine types of industrial surface coating point sources are already controlled due to state specific VOC RACT regulations or will soon be controlled prior to 2009 as a result of the recently promulgated Maximum Achievable Control Technology (MACT) standards. Since the MACT standards were designed to control air toxic emissions and not necessarily VOC emissions the effectiveness of the MACT standards for controlling VOC emissions will vary with the industrial surface coating subcategory (e.g., metal cans, wood building products, etc.) and the type of coating equipment and the type of solvents used in that subcategory.

Regulatory History

Industrial surface coating processes are currently subject to multiple state and federal regulations pursuant to Titles I and III of the Clean Air Act. Title I imposes Standards of Performance for New Stationary Sources (NSPS) on new and modified large stationary sources. In the early 1990s, EPA promulgated NSPSs for various types of industrial surface coating operations. These regulations applied to surface coating operations that were constructed or modified after effective dates specified in each NSPS. In general, surface coating operations constructed or modified after 1980 are subject to NSPS requirements. The NSPS generally established VOC emission rate limits that could be complied with using either compliant coatings or add-on capture and control equipment. For certain source categories the NSPS also set transfer efficiency requirements.

New and modified large stationary sources that increase their emissions can also be subject to the New Source Review (NSR) requirements of Title I. NSR requires a control technology review for large new plants and for modifications at existing plants that result in a significant increase in emissions, subjecting these sources to Best Available Control Technology (BACT) in attainment areas and Lowest Achievable Emission Rate (LAER) in nonattainment areas. BACT and LAER control requirements are updated over time to reflect improvements in control equipment and are reviewed on a case-by-case basis during state permitting process.

Criteria pollutants, which include VOCs, nitrogen oxides (NOx), sulfur dioxide (SO_2), fine particulate matter (PM_{fine}), carbon monoxide (CO) and lead (Pb), are also regulated by the State Implementation Plans (SIPs) required by Title I. SIPs set forth the states' strategies for achieving reductions of criteria pollutants for which the state is currently out of attainment. SIPs must include requirements that all major stationary sources located in nonattainment areas must install reasonably available control technology (RACT). RACT levels must be basedon the level of emissions reduction that can be reasonably achieved at a reasonable cost. The U.S. EPA has issued a series of Control Technology Guidelines (CTGs) and Alternative Control Technologies (ACT) documents to assist states in defining RACT for a number of industrial surface coating categories. For categories not covered by a CTG or ACT document, state regulations require that a case-by-case RACT determination be made. Most of the EPA's CTGs and ACT documents for the industrial surface coating category were developed prior to 1990. While specific RACT requirements will vary from state to state, some OTC states have already adopted RACT regulations that are more stringent than the CTG/ACT requirements.

Policy Recommendation

As can be noted from the background information, the regulatory history, and the information contained in summary tables, the industrial surface coatings category includes at least nine different major source types and multiple processes for each source type with regulations and emissions limits that vary not only by major source type, but also by individual process and individual product. In addition, the industrial surface coatings category is already subject to a variety of regulations (NSPS; PSD/NSR, state RACT, MACT, state specific rules on hazardous air pollutants) that were adopted to achieve different goals. Some regulations (e.g., RACT) were designed to reduce VOC emissions. Other regulations (e.g., MACT) were designed to reduce emissions of hazardous air pollutants but have the side benefit of reducing VOC emissions as well.

Analysis of the potential benefits and costs of adopting additional VOC control measures, Beyond On-The-Way (BOTW) measures) is further complicated by the following:

1) Uncertainty as to the accuracy of the current (2002) MANE-VU VOC emissions inventory for the industrial surface coatings category;
2) Difference in current VOC RACT limits among the OTC states;
3) Difference in the estimates of the potential VOC reductions from MACT standards; and
4) Difference in the source size and geographic area covered by a specific regulation.

The most recent version of the (2002) MANE-VU VOC emissions inventory for the MANE-VU region estimates total VOC emissions from the industrial surface coatings category to be 164, 445 tons (24,931 tons of VOC from point sources and 139,512 tons from area sources). Further investigation into the amount of VOC emissions from area sources will most likely reveal that these VOC emissions are substantially overestimated due in part to the emission factors and employment data used and in part to the cutpoints used by various states for distinguishing a point source from an area source.

A quick sampling of the current VOC RACT limits in the OTC states reveals differences not only in the limits for existing sources (lbs. VOC per gallon of coating minus water and exempt solvents), but also in the size of source to which these limits apply.

Several complications arise when trying to calculate the potential VOC reductions from a particular MACT standard including the following:

1) Not all toxics regulated under the MACT are VOCs;
2) MACT standards are expressed as kg HAP/liter of solids or lbs. HAP/gallon of solids not lbs. VOC/gallon of coating minus water and exempt solvent so the MACT limit applies to all HAPs not just VOCs; and
3) The specific types of processes and coatings regulated under the MACT standards are different than the types of processes and coatings regulated under the RACT standards.

These complications have lead to widely varying estimates of the potential additional VOC reductions from the application of a particular MACT requirement (from 0% to as much as 80% VOC reduction nationwide).

RACT standards and MACT standards apply to sources located in different geographic areas throughout the Ozone Transport Region. For some OTC states RACT standards apply only to sources located in 1-hour ozone nonattainment counties while in other OTC states RACT standards apply statewide. MACT standards are applicable nationwide and only to major HAP sources (10 tons/year of individual HAP or 25 tons/year of combined HAPs).

Given all of these uncertainties the following options are available:

1) OTC states that currently have higher VOC RACT limits than the EPA CTG/ACT VOC RACT limits can adopt more stringent RACT regulations;
2) OTC states can extend the geographic coverage for RACT limits to statewide;
3) OTC states can lower the RACT applicability thresholds
4) OTC states can adopt more stringent control requirements for specific industrial surface coating categories (e.g., permanent total enclosures for metal can coating processes).

Policy recommendations:

1) Due to uncertainty in current MANE-VU VOC emissions inventory for this category, develop an improved, state specific VOC emissions inventory for point and area sources for each subcategory of industrial surface coatings before requiring additional controls beyond MACT.

CONTROL MEASURE SUMMARY FOR *Lime Kilns*

Control Measure Summary: Good combustion practices and kiln operation for Lime Kilns. These kilns are used for the calcination of limestone. Lime kilns are also often associated with paper mills.	**Emissions (tons/year) in Ozone Transport Region**	
2002 existing measure: NSR; PSD; State RACT. *Emission Reductions*: *Control Cost*: *Timing of Implementation*: *Implementation Area*: OTR	**NOx** Uncontrolled: 2002 Reduction: 2002 Base:	 4,649 0 4,649
Candidate measure: Good combustion practices and kiln operation *Emission Reductions*: Under Evaluation *Control Cost*: less than $2,000 per ton *Timing of Implementation*: 01/01/09 *Implementation Area:* OTR	**NOx** 2009 Base including growth: 2009 Reduction: 2009 Remaining:	 5,228 TBD
Policy Recommendation: Final recommendation not made as of June, 2006.		
Recommended Strategy: See additional discussion in briefing paper		

REFERENCES:

European Commission, Integrated Pollution Prevention and Control (IPPC) Bureau. *Reference Document on Best Available Techniques in the Cement and Lime Manufacturing Industries*. December 2001. "The direct transfer of low-NOx burner technology from cement kilns to lime kilns is not straightforward. In cement kilns, flame temperatures are higher and low-NOx burners have been developed for reducing high initial levels of 'thermal NOx'. In most lime kilns the levels of NOx are lower and the 'thermal NOx' is probably less important."

Northeast States for Coordinated Air Use Management. *Assessment of Control Technology Options for BART-Eligible Sources: Steam Electric Boilers, Industrial Boilers, Cement Plants, and Paper and Pulp Facilities*. March 2005. "Due to the design of the lime kiln, SNCRs and SCRs are not viable NOx reduction techniques. Installing low-NOx burners is also not a practical NOx reduction technique according to a BACT analysis conducted on a new lime kiln in 1997…combustion modification such as decreasing excess air is the best way to reduce NOx emissions".

CONTROL MEASURE SUMMARY FOR
Municipal Waste Combustiors
(Only NOx reductions are evaluated under this strategy)

Control Measure Summary	**Emissions (tons/year) in Ozone Transport Region**	
2002 existing measure: Federal performance standards and emissions guidelines for large MWCs (40 CFR 60 Subparts Cb and Eb). No control technology is mandated to meet the emissions limitations. EPA approved state trading programs for NOx compliance are allowed as is facility-wide averaging for NOx compliance. *Emission Reductions*: 19,000 Mg NOx/yr nationally (increment over 1991 40 CFR 60 Subpart Ca standards). *Control Cost*: $7.2 per Mg municipal solid waste combusted. *Timing of Implementation*: Compliance required December 19, 2000. *Implementation Area*: Nationwide.	**NOx** 2002 Base:	26,139
	SO2: **2002 Base**	3,865
	VOC: **2002 Base**	473
Implement Federal Rules: *Measure ID:* *Emission Reductions*: Varies per state depending on the number of MWC units, incinerator technology and chosen emissions limitations. In Connecticut, this measure resulted in NOx emissions reductions of 1.6 tons/summer day and 592 tons/year. *Control Cost*: $0 to approximately $1,500/MMBtu/hr depending on whether SNCR was installed in response to the federal emissions guidelines and whether SNCR is feasible. *Timing of Implementation*: Assuming timely adoption of state rule amendments, compliance with emissions limitations could be required by May 1, 2009. *Implementation Area*: Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York and Pennsylvania report operating MWC units (assuming state NOx emissions limitations are at the level of the federal emissions guidelines).	**NOx** 2009 Reduction: 2009 Remaining:	 -3,610 22,529
	SO2	***
	VOC	***

Policy Recommendation of State/Workgroup Lead:
Individual states with operating MWCs should evaluate the possible reduction of state NOx emissions limitations to produce creditable emissions reductions. At the regional level, this strategy should not be emphasized as it is state-specific in nature (depending on the MWC population, current control level and current state standards); does not require regional implementation to maximize its effectiveness; emissions from MWCs are a minor portion of the regional inventory given MACT-based standards required under Section 129 of the Clean Air Act; and EPA has proposed more stringent NOx emission limits for MWCs that states will be required to adopt and implement as of April 2009.

Recommended Strategy:
MWCs are subject to stringent MACT emissions standards, including standards for NOx, under Section 129 of the Clean Air Act. To comply with these MACT standards, many MWC owners and operators installed control technologies, including SNCR, to comply with the federal deadline of December 19, 2000. Many MWCs may be operated to reduce emissions to a level below the current federal standards. For example, Connecticut includes a state NOx emission reduction credit (ERC) trading program in its MWC rule. Recognizing that the "excess emissions" produced in Connecticut's MWC NOx ERC trading program could yield creditable emissions reductions if the required NOx emissions limits were reduced, in October 2000, the Department amended the state MWC rule to require the MWC owners and operators to meet more stringent NOx emissions limits as of May 1, 2003. The resulting emissions reductions of 1.62 tons of NOx per summer day (248 tons per ozone season) were used for compliance with the "shortfall" emission reduction obligation

needed for EPA approval of the attainment demonstration for the 1-hour ozone national ambient air quality standard.

Other states in the OTC region have operating MWC units that now comply with MACT-based state emissions limitations. Many MWC units now operate with SNCR to control NOx emissions. For MWC units that do not now have SNCR, SNCR is likely a feasible RACT measure capable of reducing NOx emissions below the state limits. Thus, the reduction of the state MWC NOx limits may produce creditable NOx emissions reductions. Furthermore, since MWCs are not subject to the Clean Air Interstate Rule (CAIR) and may not participate in a CAIR NOx trading program, reduction of state MWC NOx emissions limitations could be considered an equity measure that places MWC owners in a position similar to the owners of large electric generating units subject to CAIR. However, the amount of creditable emissions reductions a state may obtain from this strategy is limited given EPA's December 19, 2005 proposal of reduced emissions limitations for MWCs.

BACKGROUND INFORMATION

In December 1995, EPA adopted new source performance standards (NSPS) (40 CFR 60 subpart Eb) and emission guidelines (subpart Cb) for MWC units with a combustion capacity greater than 250 tons per day. Both the NSPS and emission guidelines require compliance with emission limitations for nine pollutants including NOx that reflect the performance of maximum achievable control technology (MACT). The emission guidelines required compliance by December 2000 for all existing MWCs, while the NSPS apply to new MWCs. On December 19, 2005, EPA proposed revisions to the emissions guidelines to reflect the levels of performance achieved due to the installation of control equipment (70 FR 75348). This proposal includes reduced NOx emissions limitations that states will be required to adopt and implement by April 2009, if the proposal is finalized. Selective non-catalytic reduction (SNCR) is considered MACT for NOx under both the 1995 guidelines and the 2005 proposal.

Connecticut's MWC regulation, section 22a-174-38 of the Regulations of Connecticut State Agencies (R.C.S.A.) (Attachment A), was adopted in June 1999 with NOx emissions limits equivalent to the federal emissions guidelines (Phase I NOx limits). Owners and operators of the state's 15 MWC units were required to comply with the emissions limits no later than December 19, 2000. R.C.S.A. section 22a-174-38 was amended in October 2000 to include more stringent NOx emissions limits (Phase II NOx limits), for which compliance was required no later than May 1, 2003. The following NOx emissions reductions, relative to emissions levels under the Phase I NOx limits, are attributed to the Phase II NOx limits in Connecticut:

- 592 tons per year;
- 248 tons per ozone season; and
- 1.62 tons per day during the ozone season.[1]

EPA's December 19, 2005 proposal to update the 1995 emissions standards will substantially reduce the ability of other states to achieve the same level of emissions reductions that Connecticut achieved by implementing this measure in 2003.

Add-on NOx Control

The number of NOx-reduction technologies for MWCs are limited as these units use a heterogeneous, wet fuel; are less thermally efficient than fossil fuel-fired boilers of comparable heat input; and require larger amounts of excess air and less densely-packed heat recovery systems. Low-NOx burners, fuel switching and load curtailment are not possible control options.

[1] Assumes 100% rule effectiveness, which is reasonable given that the MWCs are operated with continuous emissions monitoring.

The only generally applicable and feasible add-on control technology for reducing NOx emissions from MWCs is SNCR.[2] SNCR is a chemical process for removing NOx from flue gas. In the SNCR process, a reagent, typically liquid urea or anhydrous gaseous ammonia is injected within a boiler or in ducts in a region where the temperature is between 900 and 1100 degrees Celsius. The reaction converts NOx to nitrogen gas and water vapor. SNCR performance depends on factors specific to each type of combustion equipment, including flue gas temperature, residence time for the reagent and flue gas, amount of reagent injected, reagent distribution, uncontrolled NOx level and carbon monoxide and oxygen concentrations.

Some disadvantages arise from the use of SNCR including: the high operating temperatures required; ineffectiveness at high temperatures with low concentrations of NOx; the need to accommodate enough residence time to complete the chemical reaction at high temperatures; and undesirable excess ammonia and urea emissions ("ammonia slip") that arise from an incomplete chemical reaction (Thermal Energy International, 2000).

All of Connecticut's large MWC units are equipped with SNCR, including nine mass burn/waterwall units and three refuse-derived fuel units. Two tire-fired units subject to the state MWC rule also operate with SNCR.[3] Similarly, all of New Jersey's large MWC units are equipped with SCR to meet NOx emissions limitations based on the federal emissions guidelines.

<u>Cost</u>
The capital cost of installing SNCR on a MWC unit is approximately $1,500 MMBtu/hr (see, e.g., Institute of Clean Air Companies, 2000).[4] Most of the cost of using SNCR is in operating expenses (Institute of Clean Air Companies, 2000), which EPA estimates as falling between 680 and 1,200 $/MMBtu (1993 dollars). Thus, SNCR is well suited for seasonal control in that it may provide significant reductions in NOx emissions but incurs little cost when the system is not in use. EPA has assigned an ozone season cost effectiveness to SNCR operated on MWC units of $2,140 per ton of NOx reduced (1990 dollars)(EPA, 1999, Table 16).

<u>Emissions reductions</u>
In Connecticut, MWC facility owners report emissions reductions of 25 to 50% from the operation of SNCR; a typical reduction of 35-40% could be assumed from the installation and operation of SNCR/ammonia injection to MWC units of similar size and type. Other combustors of varying technologies and capacities but with similar baseline NOx emissions have reported reductions ranging from 35 - 75% from the operation of urea-based SNCR (Appendix 1, Institute of Clean Air Companies, 2000). EPA assigns a typical 45% emission reduction to the effectiveness of SNCR at MWCs (EPA, 1999, Table 16).

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2 The use of SCR to control NOx emissions from MWCs in North American is limited to very few units (see, e.g., http://www.region.peel.on.ca/pw/waste/facilities/algonquin-power.htm) because the nature of municipal solid waste requires huge SCR reactor sizes and significant actions to prevent catalyst poisoning. These factors, combined with the relatively small size of most MWCs, makes the use of SCR prohibitively expensive (EPA 2005, comment by IWSA).

3 Connecticut also has three mass burn refractory units that are classified as small MWCs and do not use SNCR.

4 For comparison, EPA places the capital cost of SNCR between 1,600 and 3,300 $/MMBtu (1993 dollars). In 2002, the 3-unit facility (140 MMBTU/hr per unit) owned by the Connecticut Resources Recovery Authority in Bridgeport, Connecticut installed SNCR on all three units at a capital cost of $2.1 million.

REFERENCES

Institute of Clean Air Companies. May 2000. *Selective Non-Catalytic Reduction (SNCR) for Controlling NOx Emissions*. http://www.fueltechnv.com/pdf/TPP-534.pdf

Thermal Energy International Inc. 2000. *Thermal THERMALONOx Competitive Advantages.* http://www.thermalenergy.com/solutions/solutions.html

U.S. Environmental Protection Agency. November 1999. Nitrogen Oxides (NOx), *Why and How They are Controlled*. Clean Air Technology Center: EPA 456/F-99-006R.

U.S. Environmental Protection Agency. April 2005. *Corrected Response to Significant Public Comments on the Proposed Clean Air Interstate Rule*. Comment of IWSA.

U.S. Environmental Protection Agency. December 19, 2005. *Standards of Performance for New Stationary Sources and Emission Guidelines for Existing Sources: Large Municipal Waste Combustors; Proposed Rule*. 70 FR 75348.

CONTROL MEASURE SUMMARY FOR
Printing and Graphic Arts

Control Measure Summary: This category includes categories of both heat set and non-heat set operations. It includes lithographic, gravure, flexographic and screen printing. It includes both point sources and area sources.	**Emissions (tons/year) in Ozone Transport Region**	
2002 existing measures: RACT, BACT, NSPS	**VOC Point** Actual 2002 **VOC Area** Actual 2002:	 5,501 31,738
2009 On-the-Books measures: MACT Std. - Subpart KK Publication rotogravure – limit organic HAP emissions to no more than 8% of volatile matter used each month. Either reformulation or 92% capture and control efficiency. Product and packaging rotogravure and wide-web flexo – limit organic HAP emissions to no more than 5% of volatile matter used each month. Either reformulation or 95% capture and control efficiency. *Emission Reductions*: *Control Cost*: *Timing of Implementation*: Compliance Date (existing) December 5, 2005 *Implementation Area*: Nationwide	**VOC Point** Actual 2002: 2009 Reduction: 2009 Remaining: **VOC Point** Actual 2002: 2009 Reduction: 2009 Remaining:	 5,501 -121 5,380 31,738 -0 31,738
Candidate measure: Adopt the requirements of SCAQMD rule 1130 and 1130.1 *Emission Reductions*: Under evaluation *Control Cost*: Under evaluation *Timing of Implementation*: Assuming 2007 or 2008 effective date of rule, emission reductions in 2009 or 2010 *Implementation Area*: OTR	**VOC** OTB 2009: BOTW 2009: Reduction from BOTW:	Under review
Candidate measure: Same option as CM1, except potentially require that publication, packaging and product rotogravure and wide web flexo printers that are equipped with capture and control equipment, meet the capture and control efficiency requirement in the MACT standard for VOC reductions (this would apply to facilities not major for HAPs). *Implementation Area:* OTR	**VOC** OTB 2009: BOTW 2009: Reduction from BOTW:	Under review
Candidate measure: Adopt September 2006 CTGs. In September 2006, EPA determined that control technique guideline (CTG) documents will be substantially as effective as national regulations in reducing VOC emissions in ozone nonattainment areas from the following Group II product categories: lithographic printing materials, letterpress printing materials, and flexible packaging printing materials *Implementation Area:* OTR		Under Review
Policy Recommendation: Final recommendation not made as of June, 2006.		
Brief Rationale for Recommended Strategy:		

CONTROL MEASURE SUMMARY FOR
Portable Fuel Containers

Control Measure Summary: Portable Fuel Containers This control measure establishes design and manufacturing specifications for portable fuel containers (PFCs) based on the California Air Resources Board (CARB) rules. PFCs are used to refuel residential and commercial equipment and vehicles. PFCs are used to refuel a broad range of small off-road engines and other equipment (e.g., lawnmowers, chainsaws, personal watercraft, motorcycles, etc.).	**VOC Emissions in Ozone Transport Region**	
2002 Existing Measure: None	2002 Annual: 2002 Summer:	99,919 tpy 315.3 tpd
2009 On-the-Books Measure: Adopt the OTC Model Rule for PFCs, which is based on the 2000 CARB rule for PFCs. *Emission Reductions*: Based on a CE=65%, RE=100%, RP=based on the number of years the rule has been in place based on the assumed 10-yr turnover of the sale of the cans, and Total control = 65% when fully implemented after 10 years. *Control Cost*: $581 per ton *Timing of Implementation*: State specific with a 10% per year turnover, full reductions are achieved after 10 years. CARB, and the EPA, have estimated a 5 year turnover for the cans, but the OTC used a more conservative 10 year turnover in calculating emission reductions. *Implementation Area*: OTR	**Annual:** 2009 Reduction: 2009 Remaining: **Summer:** 2009 Reduction: 2009 Remaining:	 33,055 tpy 66,864 tpy 107.1 tpd 208.2 tpd
2009 On-the-Way Measure: Proposed Federal HAP Mobile Source Reg (Feb 28, 2006) Rule – This rule proposes to regulate PFCs similar to CARBs 2006 rule amendments and will regulate permeability to 0.3 grams of HC per gallon per day (2001 OTC Model Rule has 0.4 grams per gallon per day). It does not contain CARBs amendments regarding kerosene containers and utility jugs. *Emission Reductions*: EPA estimates about a 9% reduction nationwide in 2009 and a 61% reduction when fully implemented after 5 years. *Control Cost*: $180 per ton without fuel savings; over the long term, fuel savings outweigh costs. *Timing of Implementation*: Jan.1, 2009 effective date of rule and 20% per year turnover, full reductions are achieved after 5 years, in 2014. *Implementation Area*: Nationwide	**Annual:** 2009 Reduction: 2009 Remaining: **Summer:** 2009 Reduction: 2009 Remaining:	 negligible 66,864 tpy negligible 208.2 tpd
Candidate measure: Adopt the CARB 2006 amendments broadening PFC definition to include kerosene containers and utility jugs, increasing the permeability requirement from 0.3 grams of hydrocarbons per gallon per day to 0.4 grams of hydrocarbons per gallon per day, and other changes needed to make the OTC Model Rule consistent with CARB *Emission Reductions*: CARB estimates their amendments are expected to reduce ROG emissions by 58% after full penetration into the marketplace, assumed to be 5 years. *Control Cost*: CARB estimate is $800 to $1,400 per ton reduced *Timing of Implementation*: State specific with a 10% per year turnover, full reductions are achieved after 10 years *Implementation Area:* OTR	**Annual:** 2009 Base: 2009 Reduction: 2009 Remaining: **Summer:** 2009 Base: 2009 Reduction: 2009 Remaining:	 66,864 tpy 4,152 tpy 62,712 tpy 208.2 tpd 12.8 tpd 195.4 tpd

Summary of Candidate Measure:
The California Air Resources Board (CARB) 2000 PFC regulation establishes design and manufacturing specifications for PFCs. PFC emissions are calculated by accounting for emissions from five different components related to gas container use: permeation, diurnal, transport-spillage, refueling spillage and refueling vapor displacement emissions. The permeation, diurnal emissions (associated with storage) and transport-spillage emissions are included in the area source inventory. The equipment refueling spillage and refueling vapor displacement emissions are calculated from the non-road model and are included in the non-road inventory. After four years of implementation and a comprehensive assessment of the program, CARB staff identified some problems with the rule related to consumer acceptance and reducing anticipated emission reductions. Their 2006 amendments address these issues, as well as expanding on the regulation to increase emission reductions. The amendments include the following:

1. Eliminate the requirement for an auto shutoff.
2. Eliminate fuel flow rate and fill level standards.
3. Eliminate one opening standard.
4. Reduce pressure standard from 10 psig to 5 psig.
5. Establish a certification program for PFCs.
6. Expand the definition of a PFC to include utility jugs and kerosene containers. CARB staff determined that consumers were using these containers for gasoline.
7. Change permeability standard from 0.4 grams ROG /gallon-day to 0.3 grams/gallon-day.
8. Combine the evaporation and permeation standards into a new diurnal standard to simplify certification and compliance testing.
9. Adopt new PFC test procedures.
10. Include a voluntary Consumer Acceptance Program to support and encourage user-friendly PFC designs (i.e., allowing the use of the ARB Star Rating system to clearly identify superior designs as determined by users).

While ARB staff does not expect these changes to affect the cost of gasoline cans, the price of kerosene cans could rise to as much as $8.50 per container once the regulations are implemented. CARB also estimates the cost-effectiveness to be between $0.40 to $0.70 per pound.

Recommended Strategy: CARB, through their comprehensive history of research and multiple product surveys, have the best technical data available to create rules to regulate portable fuel containers. Most portable fuel container manufacturers market their products nationally, therefore many will be selling the new products nationally after they have produced cans than conform with the CARB rules. The CARB rule contains some revisions to their original rule to ease consumer acceptance of the cans, for states that have adopted the original OTC model rule. In addition the CARB rule amendments regulate kerosene cans and utility jugs, which the Federal rule proposal does not.

References:

2009 On-the-Books Measure (OTC Model Rule):

E.H. Pechan & Associates, Inc., *Control Measure Development Support Analysis of Ozone Transport Commission Model Rules*, March 31, 2001. Much of the analysis in this report was based on CARB's analysis for CARB's original 1999 PFC rule , which estimated a 75% reduction that would be fully achieved after 5 years (CARB's assumed life cycle for PFCs). The OTC used a more conservative 10-year turnover rate in its analysis. Table II-5 of the Pechan report shows the cost of compliance to be $581/ton.

2009 On-the-Way Measure (Proposed 2/28/06 Federal Rule):

U.S. EPA Office of Transportation and Air Quality. *Estimating Emissions Associated with Portable Fuel Containers (PFCs), Draft Report*, EPA420-D-06-003, February 2006.

U.S. EPA Office of Transportation and Air Quality. *Draft Regulatory Impact Analysis: Control of Hazardous Air Pollutants from Mobile Sources*, EPA420-D-06-004, February 2006.

Candidate Measure (CARB 2006 Amendments):

California Air Resources Board. *Final Statement of Reasons for Rulemaking, Including Summary of Comments and Agency Response: PUBLIC HEARING TO CONSIDER AMENDMENTS TO THE PORTABLE FUEL CONTAINER REGULATIONS.* September 15, 2005.

California Air Resources Board. *Initial Statement of Reasons for Proposed Amendments to the Portable Fuel Container Regulations.* July 29, 2005. Table 5.1 shows the cost-effectiveness of the proposed amendments to be $0.40 to $0.70 per pound ($800 to $1,400 per ton)

CONTROL MEASURE SUMMARY FOR
Regional Fuel

Control Measure Summary: The OTR proposes a common fuel standard for the OTR states that does not require MTBE or Ethanol, but exhibits Environmentally Beneficial Combustion Properties.	**NOx Emissions (tons/summer day) in OTR**	
2002 existing measure: Federal program in the CAA requiring RFG in certain non-attainment areas and allowing other states with non-attainment areas to opt-in. All but two states in the OTR are participating, in whole or in part, with the federal program, however nearly 1/3 of the gasoline sold in the OTR is not RFG.		
Candidate measure: *Measure ID:* OTR-wide Regional Fuel *Emission Reductions*: *Control Cost*: unknown at this time *Timing of Implementation*: *Implementation Area*: All states in the OTR	NOx VOC	~ 4.8 tpsd ~ 139.4 tpsd
Policy Recommendation: Continue to examine the potential for a regional fuel, keeping in mind that some states like PA may have statutory/legislative constraints.		
Brief Rationale for Recommended Strategy: The Energy Policy Act of 2005 provides the opportunity for the OTR to achieve a single clean-burning gasoline without MTBE, as it also eliminates the oxygen content requirement for RFG. The authority provided in Energy Act is consistent with what states promoted through the long debate over MTBE/ethanol/RFG. Approximately one-third of the gasoline currently sold in the OTR is not RFG; most is conventional gasoline. The new authority plus the potential for emission reductions from the amount of non-RFG sold in the OTR provides an opportunity for additional emission reductions in the region as well as for a reduced number of fuels, and possibly a single fuel, to be utilized throughout the region.		

Appendix D – VOC Emissions by County for 2002 and 2009

Table D-1 Adhesives and Sealants VOC Area Source Emission Summary for 2002 and 2009 by County

Table D-2 Adhesives and Sealants VOC Point Source Emission Summary for 2002 and 2009 by County

Table D-3 Cutback and Emulsified Asphalt Paving VOC Area Source Emission Summary for 2002 and 2009 by County

Table D-4 Consumer Products VOC Area Source Emission Summary for 2002 and 2009 by County

Table D-5 Portable Fuel Containers VOC Area Source Emission Summary for 2002 and 2009 by County

Table D-6 Portable Fuel Containers VOC Nonroad Source Emission Summary for 2002 and 2009 by State

Table D-7 Reformulated Gasoline Emission Summary by State

Due to their large size, these tables are being transmitted electronically in the spreadsheet named Appendix_D_VOC_2009.xls. There are separate tabs for each of the tables listed above.

Appendix E – NOx Emissions by County for 2002 and 2009

Table E-1 Reformulated Gasoline Emission Summary by State

Table E-2 Chip Reflash Emission Summary by State

Table E-3 Asphalt Production Plant NOx Emission Summary for 2002 and 2009 by County

Table E-4 Cement Kiln NOx Emission Summary for 2002 and 2009 by County

Table E-5 Glass and Fiberglass Furnace NOx Emission Summary for 2002 and 2009 by County

Table E-6 ICI Boiler NOx Area Source Emission Summary for 2002 and 2009 by State

Table E-7 ICI Boiler NOx Point Source Emission Summary for 2002 and 2009 by State

Due to their large size, these tables are being transmitted electronically in the spreadsheet named Appendix_E_NOx_2009.xls. There are separate tabs for each of the tables listed above.

Appendix F – State ICI Boiler Regulations

Due to their large size, these tables are being transmitted electronically in the spreadsheet named Appendix F State ICI Regs.xls. There are separate tabs for each state. In the final report, these tables will be provided in electronic format

Department of Environmental Conservation
Division of Air Resources

NEW YORK STATE IMPLEMENTATION PLAN FOR OZONE (8-HOUR NAAQS)

ATTAINMENT DEMONSTRATION FOR NEW YORK METRO AREA

APPENDIX H

FINAL PROPOSED REVISION FEBRUARY 2008

New York State Department of Environmental Conservation
ELIOT SPITZER, GOVERNOR ***ALEXANDER GRANNIS, COMMISSIONER***

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NOx SUBSTITUTION GUIDANCE

December, 1993

Office of Air Quality Planning and Standards
U.S. Environmental Protection Agency
Research Triangle Park, North Carolina 27711

Section 1: Background

Title I of the Clean Air Act Amendments (CAAA) mandates a 15% reduction of volatile organic compound (VOC) emissions from the 1990 base inventory by November, 1996 in all ozone nonattainment areas classified moderate and above. Areas classified serious and above must achieve the 3% per year VOC reductions past November, 1996 as part of the reasonable further progress (RFP) provisions (§ 182 [c][2][B]). However, Section 182 (c)(2)(C) allows the post-1996 RFP plan to accommodate a less than 3% per year VOC reduction if it can be demonstrated that substitution of NOx emission reductions (for VOC reductions) yields equivalent ozone reductions. Underlying this substitution provision is the recognition that NOx controls may effectively reduce ozone in many areas, and that the design of strategies is more efficient when the characteristic properties responsible for ozone formation and control are evaluated for each area.

The purpose of this document is to provide a procedure that can be applied to meet the post-1996 Section 182(c)(2)(B) RFP requirement as well as the Section 182 (c)(2)(C) equivalency demonstration requirements. The intent of this guidance is to facilitate implementation of the most effective ozone precursor control strategies, while meeting the intent of the CAA RFP provisions.

The guidance consists of two basic steps that are established in Sections 2 and 3 of this document. First, an equivalency demonstration requires that cumulative RFP emission reductions must be consistent with the NOx and VOC emission reductions determined in the ozone attainment modeling demonstration. Second, specified reductions in NOx and VOC emissions should be accomplished in the interim period between 1996 and the attainment date, consistent with the continuous RFP emission reduction requirement. Section 4 provides the legal rationale underlying this guidance and the guidance is summarized in Section 5.

Section 2: Test for Equivalency - Use of Strategies Aimed at the Mandated Attainment Year

[The condition for demonstrating equivalency is that State-proposed emission control strategies must be consistent with emission reductions required to demonstrate attainment of the ozone NAAQS for the designated year of attainment.]

The provision for NOx substitution recognizes that a VOC-only control pathway may not be the most effective approach for effecting attainment in all areas. Consequently, NOx reductions are placed on a near equal footing with VOC through substitution. This document establishes two conditions pursuant to both the substitution and RFP provisions in the Act. The first condition requires that control strategies incorporating NOx emission reduction measures must demonstrate that the ozone NAAQS will be attained within time periods mandated by the Act. This condition reflects the Title I provision for gridded photochemical model demonstrations (Section 182(c)).

The second condition, addressed below in Section 3, maintains the requirement for periodic emission reductions in order to realize progress toward attainment. Flexibility is introduced by allowing VOC and NOx reductions rather than VOC reductions alone. A third condition exists in which the periodic emission reductions must be consistent with the model attainment demonstration.

The basis for equivalency is the ability of a given control strategy (i.e., any particular mix of NOx and VOC emission reductions) to effect attainment of the ozone NAAQS by the designated attainment year. Section 182(c) of the CAA requires that State implementation plans (SIPs) for serious and above nonattainment areas include a demonstration of attainment of the ozone National Ambient Air Quality Ambient Standard (NAAQS) with gridded photochemical modeling. These SIP revisions are due by November 15, 1994 and provide the framework for demonstrating equivalent ozone reductions through the substitution of NOx emission reductions for VOCs. Model application procedures for demonstrating attainment are provided in EPA's <u>Guideline for Regulatory Application of the Urban Airshed Model</u>, (EPA-450/4-91-013).

This modeling requirement already exists as a Title I provision for areas classified serious and above. Due to the flexibility described below in Section 3.0 which permits virtually any set of NOx and VOC RFP reductions in years prior to the attainment date, a linkage to the attainment year control strategy is required. This linkage provides assurance that the

RFP reductions are consistent with the SIP attainment demonstration. States are required to justify substitution by illustrating "consistency" between the cumulative emission changes emerging from the RFP/substitution proposal and the emission reductions in the model attainment demonstration (or comparable modeling analysis). The EPA will approve substitution proposals on a case-by-case basis. Generally speaking, any reasonable substitution proposal will be approved. Linkage to the modeling demonstration provides a screen to remove unrealistic (and inefficient) substitution proposals.

Section 3: Reasonable Further Progress (RFP) Requirements

[The condition for meeting the RFP emissions reduction provision is that the sum of all creditable VOC and NOx emission reductions must equal 3% per year averaged every three years.]

The RFP provisions require periodic emissions reductions until attainment is reached. In the absence of the NOx substitution provision, an area classified serious or above would be required to reduce VOC emissions after 1996 an average of 3% per year every three year period until attainment. This guidance maintains the 3% per year emissions reduction requirement. However, no specified set of VOC or NOx controls is mandated. Reasons for not requiring specific "exchange" rates among VOC and NOx emissions include:

1. The strong likelihood that optimum "exchange" rates vary from year to year and across a geographic area as an area's emissions distribution and atmospheric chemistry change over time;

2. Uncertainty in modeling analyses, particularly when attempting to ascertain responses from small percentage perturbations in emissions; and

3. Resource limitations associated with modeling specific control measures during interim years before attainment dates.

Any combination of VOC and NOx emission reductions which totals 3% per year, and meet other SIP consistency requirements described in this document are allowed. These requirements ensure that the cumulative RFP reductions are consistent with the emission reduction measures identified in the model attainment demonstration. A percentage basis rather than a mass basis is used for calculating the RFP emission reductions. A percentage basis is applied to avoid "absurd" calculations. For example, substitution of NOx reductions for VOC on a ton for ton basis could yield calculated NOx reduction requirements which exceed the available NOx inventory in cases where the base VOC inventory greatly exceeds the NOx inventory. To illustrate, a 50% VOC reduction is analogous to a 100% NOx reduction assuming the VOC inventory is twice the NOx inventory and substitution is based on mass rather than percentage equivalency. The percentage basis also is consistent with the RFP "percent" reduction requirement, therefore buoying the legal justification underlying this guidance.

The calculation to determine yearly VOC and NOx emission reduction totals must be based on typical summer day inventories (same basis used for RFP and modeling inventories). Specific details regarding calculation procedures and emission inventory definitions are found in separate documents, including EPA's forthcoming Guidance on the Post-1996 Rate-of-Progress Plan and the Attainment Demonstration. The following equation generally describes the method to calculate the total 3% per year emission reductions:

$$R_V/VOCBASE + R_N/NOxBASE >= 0.03$$

where; R_V = typical summer day VOC reductions in mass units

R_N = typical summer day NOx reductions in mass units

VOCBASE = the mass of anthropogenic VOC emissions in the 1990 adjusted base inventory, and

NOxBASE = the mass of anthropogenic NOx emissions in the 1990 adjusted base inventory

[note, the cumulative mass reductions are not constrained to 3% per year so that RFP reductions greater than 3% per year are not discouraged.]

The values of R_V and R_N include only the creditable emission reductions from the nonattainment area of concern. For instance, VOC or NOx reductions from the pre-enactment Federal Motor Vehicle Control Program (FMVCP), which are not creditable toward the 3% per year requirement are not included. Potential "creditable" NOx emission reductions which are available for substitution purposes are described in EPA's forthcoming Guidance on the Post-1996 Rate-of-Progress Plan and the Attainment Demonstration.

The attainment strategy requirements must be met in addition to the RFP condition. Total emission reductions are determined by the attainment demonstration, implying that reductions averaging greater than 3% per year averaged from 1996 to the specified attainment year are required if shown to be necessary by the model demonstration. The 3% per year RFP requirement is thus a minimum requirement. Further, the NOx emission reductions credited toward RFP may be capped by the cumulative reductions dictated by the model demonstration. For example, an approved control strategy emerging from a model demonstration for a serious area might show reductions of 6% NOx and 80% VOC, relative to 1990 emissions, are needed by 1999. Assuming zero creditable NOx emission reductions from 1990 through 1996, NOx reductions averaging 2% per year over the 3 years from 1996 to 1999 represent a cap on the NOx RFP reductions. The reason for linking the RFP reductions to the attainment strategy is to avoid RFP reductions which are not consistent with the model demonstration. Note that the sum of emissions totalling 3% per year are required to meet the basic RFP provisions -- they are not capped by the attainment demonstration. Thus, cases might exist where VOC reductions from the RFP provisions might exceed the cumulative VOC emission reductions in the attainment strategy. Such cases do not conflict with the attainment demonstration since additional VOC reductions will not increase peak ozone. On the other hand, the NOx cap is necessary because NOx reductions have the potential for increasing peak ozone.

Section 4: Discussion of Equivalency

[The following discussion provides the legal rationale underlying the interpretation of "equivalency" and the linkage between the RFP and NOx substitution provisions within the Act.]

"Equivalency" is not defined strictly in the context of, "What specified level of NOx reductions, compared to VOC, results in equivalent ozone reduction?" Instead, any combination of VOC and NOx reductions is "equivalent" so long as the reductions are consistent with those identified as necessary to attain the NAAQS in the modeling demonstration and provide for steady progress in leading to the emission reductions identified as necessary to attain the NAAQS by the specified attainment year.

In allowing a combination of NOx and VOC controls or the substitution of NOx emissions reductions for VOC emissions reductions, Section 182(c)(2)(C) of the statute states that the resulting reductions "in ozone concentrations" must be "at least equivalent" to that which would result from the 3% VOC reductions required as a demonstration of reasonable further progress (RFP) under Section 182(c)(2)(B). This provision could be interpreted to mean that the amount of NOx reductions appropriate for substitution purposes is an amount which, when compared to predicted VOC reductions, results in the same reductions in ozone concentrations that the VOC reductions would achieve in that area. However, such an interpretation could result in a demonstration showing that very small NOx reductions provide an adequate substitute for large VOC reductions. This is because under some conditions substantial VOC reductions produce only small - even insignificant - reductions in ozone concentrations, while minimal NOx reductions under the same conditions may produce the same degree of ozone reductions. EPA believes Congress would not have intended States to meet the Act's progress requirements with emissions reductions that would produce only minimal improvement in ozone concentrations.

The second sentence of Section 182(c)(2)(C) requires EPA to issue guidance "concerning the conditions under which NOx control may be substituted for [or combined with] VOC control." In particular, the Agency is authorized to address in the guidance the appropriate amounts of VOC control and NOx control needed, in combination, "in order to maximize the reduction in ozone air pollution." Further, the Act explicitly provides that the guidance may permit RFP demonstrations which allow a lower percentage of VOC emission reductions. The implicit assumption under that language is that such lesser levels of VOC reductions would be allowed only because of the correspondingly higher percentage of NOx emission reductions to be authorized as a full or partial substitution for the otherwise required VOC reductions. In light of the entire set of language and Congress's evident intent under this subsection to maximize the opportunity for ozone reductions, EPA believes that Section 182(c)(2)(C) confers on the Agency the discretion to select, for purposes of determining equivalent reductions, a percentage of NOx emission reductions which is reasonably calculated to achieve both the ozone reduction and attainment progress goals intended by Congress. Nothing in the Act or in the legislative history directly addresses the case where NOx reductions that are substituted for VOC reductions, and which meet the plain grammatical meaning of "equivalency," nonetheless result in insignificant ozone reductions. To avoid such a result and give meaningful effect to what Congress likely intended regarding the substitution provision, EPA has decided to rely in its NOx-substitution guidance on the only point of reference provided by Congress concerning what may constitute an appropriate quantitative reduction target for RFP purposes, namely the 3 percent per year required under Section 182(c)(2)(B). Under that approach, EPA would approve substitutions of NOx for VOC that would ensure that the sum of the respective creditable percent reductions of each of these pollutants areawide, averaged over 3 years, would be no less than 3 percent from the baseline.

As additional evidence that Congress was concerned with getting more than minimal reductions in ozone concentrations through substitution, EPA notes that the RFP demonstration described in Section 182(c)(2)(B) focuses on reductions of a specified quantity of VOC emissions per year. (Similarly, the 15 percent RFP reductions required for Moderate ozone nonattainment areas focuses on reductions of that specific quantity of VOC emissions per year.) By contrast, the alternative RFP demonstration in Section 182(c)(2)(C) allows flexible VOC/NOx emission reduction strategies, but only so long as the overall quantitative reduction in ozone concentrations is equivalent to the amount which, for Serious ozone nonattainment areas, Congress initially determined must be met (i.e., the ozone concentrations achieved by VOC reductions of 3 percent per year) in order to ensure expeditious progress towards attainment. In this regard the House Committee Report states: "NOx reductions may not be substituted for VOC reductions in a manner that delays attainment of the ozone standard or that results in lesser annual reductions in ozone concentration than provided for in the attainment demonstration." H.R. Resp NO. 490, 101st Cong., 2d Sess. 239 (1990).

Section 5: Summary

The RFP requirements under Section 182(c)(2)(B) of the CAA are intended to insure that the SIP "provide for such specific annual reductions in emissions of VOC and NOx as necessary to attain the NAAQS for ozone by the applicable attainment date." This language is interpreted to mean that, to meet the RFP requirement, it is necessary to show that steady progress is being made toward implementing measures called for in an area's attainment strategy. Further, the Act also specifies minimal annual percentage reductions in creditable emissions which must be realized in an RFP program. Section 182(c)(2)(C) increases the flexibility in which the annual emission reductions can be derived by allowing NOx emission reductions substitution for VOC after 1996. The recommended procedure responds to these concerns by imposing two requirements.

1. Establish a strategy incorporating reductions in VOC and/or NOx sufficient to meet the NAAQS within timeframes specified by the Act. This is to be done using approved photochemical grid models in a manner consistent with published Agency guidance on the use of such models in attainment demonstrations. In the context of the NOx substitution guidance, the purpose of this first step is to establish an ultimate target toward which the RFP program is aimed.

2. For interim years, any mix of annual reductions in VOC and NOx is permissible so long as it reflects

   (a) a logical step toward implementing the attainment strategy identified in (1), and

   (b) results in a combined annual VOC and NOx reduction of 3% per year.

The requirement for continuous VOC emission reductions amounting to 3% per year has been modified to allow flexibility in the mix of VOC and NOx emission reductions, while maintaining a 3% per year reduction in the <u>sum</u> of NOx and VOC emissions. A principal assumption underlying this guidance is that optimum control strategy designs may differ among various nonattainment areas.

The NOx substitution provision permits greater flexibility for States in designing effective emissions control strategies. Furthermore, because the test for equivalency is identical to the NAAQS attainment test for serious and above areas, the demonstration imposes negligible additional resource burdens for those areas already required to perform gridded photochemical modeling.

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Department of Environmental Conservation
Division of Air Resources

NEW YORK
STATE IMPLEMENTATION PLAN
FOR
OZONE
(8-HOUR NAAQS)

ATTAINMENT DEMONSTRATION
FOR
NEW YORK METRO AREA

APPENDIX I

FINAL PROPOSED REVISION FEBRUARY 2008

New York State Department of Environmental Conservation
ELIOT SPITZER, GOVERNOR ***ALEXANDER GRANNIS, COMMISSIONER***

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New York State Department of Environmental Conservation
Assistant Commissioner
Office of Air Resources, Climate Change & Energy, 14th Floor
625 Broadway, Albany, New York 12233-1010
Phone: (518) 402-8543 • **FAX:** (518) 402-9016
Website: www.dec.ny.gov

Alexander B. Grannis
Commissioner

DEC 13 2007

Mr. Alan J. Steinberg
Regional Administrator
United States Environmental Protection Agency, Region 2
290 Broadway, 26" Floor
New York, New York 10007-1866

Dear Regional Administrator Steinberg:

Pursuant to Clean Air Act (CAA) sections 110(a)(1) and (2), states are required to address basic State Implementation Plan (SIP) requirements related to the attainment of new or revised National Ambient Air Quality Standards (NAAQS), including emission inventories, monitoring and modeling to assure attainment, maintenance and enforcement of the standards. SIPs meeting the requirements of CAA sections 110(a)(1) and (2) must be submitted within three years after promulgation of a new or revised standard.

As a result of a Consent Decree resulting from an EarthJustice lawsuit against EPA for failure to take action against States that had not made SIP submissions that met the requirements of CAA sections 110(a)(1) and (2), EPA was obligated to make official findings whether States have made SIP submissions required to meet CAA section 110(a)(2)(D)(I) relating to interstate transport by no later than March 15, 2005. Additionally, the Consent Decree obligates EPA to make a determination whether States have made submissions necessary to meet the remaining 110(a)(1) and (2) requirements for the 8-hour ozone NAAQS by December 15, 2007.

Section 110(a)(1) contains the general requirements for submitting a SIP to address new or revised primary NAAQS within three years of their promulgation. Section 110(a)(2) contains specific elements to be included in these plans. Pursuant to EPA guidance dated October 2, 2007, this submission addresses each of the required elements of CAA section 110(a)(2), and affirms that New York State's SIPs meet the requirements of CAA sections 110(a)(1) and (2).

Should you have any questions regarding this submission, please do not hesitate to contact me at (518) 402-8537. Should your staff have questions, please have them contact David J. Shaw, Director of the Department's Division of Air Resources at (518) 402-8452.

Sincerely,

J. Jared Snyder
Assistant Commissioner
Office of Air Resources, Climate Change and Energy

Enclosure

cc: Richard Ruvo, EPA Region 2

CAA Section 110 Requirements

On March 10, 2005, EPA entered into a Consent Decree with EarthJustice that obligates EPA to make official findings whether States have made required SIP submissions by dates certain. The Consent Decree obligates EPA to determine whether States have made SIP submissions required to meet CAA section 110(a)(2)(D)(I) relating to interstate transport by no later than March 15, 2005. The Consent Decree also obligates EPA to make a determination whether States have made submissions necessary to meet the remaining 110(a)(1) and (2) requirements by December 15, 2007 for the 8-hour ozone NAAQS.

Pursuant to EPA guidance issued on October 2, 2007, SIPs must include the following elements of CAA section 110(a)(2):

- Enforceable Emission Limitations and Other Control Measures (110(a)(2)(A))
- Ambient Air Quality Monitoring, Compilation, Analysis and Reporting (110(a)(2)(B)
- Enforcement and Stationary Source Permitting (110(a)(2)(C)
- Interstate Transport (110(a)(2)(D))
- Assurance of Adequate Resources (110(a)(2)(E))
- Stationary Source Monitoring System and Reporting (110(a)(2)(F))
- Emergency Powers and Contingency Plans (110(a)(2)(G))
- Authority for SIP Revisions for Revised NAAQS (110(a)(2)(H))
- Authority for SIP Revisions for New Nonattainment Areas (110(a)(2)(I))
- Consultation, Public Notification and Prevention of Significant Deterioration (PSD)/Visibility (110(a)(2)(J))
- Air Quality Monitoring and Reporting (110(a)(2)(K))
- Permitting Fees (110(a)(2)(L))
- Consultation/Participation with Affected Local Entities (110(a)(2)(M))

<u>Enforceable Emission Limitations and Other Control Measures (110(a)(2)(A))</u>

CAA section 110(a)(2)(A) requires SIPs to include enforceable emission limits and other control measures, means or techniques, schedules for compliance and other related matter.

Enforceable emission limitations and other control measures for ozone in New York are included in the New York Ozone SIP: 1-Hour Ozone Attainment Demonstration State Implementation Plan and 2007 Transportation Conformity Budgets, which was approved by EPA and effective on March 2, 2002. Proposed revisions to the ozone SIP to address the 8-hour NAAQS for the New York State portion of the New York - N. New Jersey - Long Island, NY-NJ-CT, and Poughkeepsie, NY, nonattainment areas were submitted to EPA on August 9, 2007. Proposed revisions to the New York ozone SIP to address the remaining ozone nonattainment areas classified under CAA subpart 2 in the State (Buffalo-Niagara Falls, NY; Rochester, NY; Albany-Schenectady-Troy, NY; Jamestown, NY; Jefferson County, NY; and Essex Co. (Whiteface Mtn.), NY) are being developed.

Ambient Air Quality Monitoring, Compilation, Analysis and Reporting (110(a)(2)(B))

CAA section 110(a)(2)(B) requires SIPs to include provisions to provide for the establishment and operation of ambient air quality monitors, collecting and analyzing ambient air quality data, and making these data available to EPA upon request. This information is included in the various SIPs that have been submitted to EPA.

The New York State Department of Environmental Conservation (Department) measures air pollutants at more than 80 sites across the state, using continuous and/or manual instrumentation. These sites are part of the federally-mandated National Air Monitoring Stations Network (NAMS) and the State and Local Air Monitoring Stations (SLAMS) Network. Real time direct reading measurements include gaseous criteria pollutants (ozone, sulfur dioxide, oxides of nitrogen, carbon monoxide), $PM_{2.5}$ (fine particulate with a diameter less than 2.5 microns), and meteorological data. Filter based $PM_{2.5}$, lead, and acid deposition samples are collected manually and shipped to the laboratory for analysis. The information obtained is compared to the NAAQS and is used to determine the attainment status of areas where these pollutants are monitored.

The near real-time data for gaseous pollutants and $PM_{2.5}$ are used for Air Quality Index (AQI) projection, and can be accessed by interested public on the DEC web site. The Department also provides real-time data to EPA for AIR*Now* live national ozone mapping. All ambient measurements undergo data validation and are subsequently submitted to EPA's Air Quality System (AQS) for public access.

The Department commits to continue to operate an air quality monitoring network that complies with EPA requirements and to submit this data to EPA's Air Quality System.

Enforcement and Stationary Source Permitting (110(a)(2)(C)

CAA section 110(a)(2)(C) requires States to include a program providing for enforcement of all SIP measures and the regulation of construction of new or modified stationary sources to meet PSD and nonattainment new source review (NNSR) requirements. New York's SIP currently includes NNSR requirements. In addition, there is a federal implementation plan in effect for PSD requirements, which EPA currently implements in New York State.

Environmental Conservation Law (ECL) section 19-0305 and Article 71 sections 71-2103 and 71-2105 authorizes the commissioner of the Department to enforce the codes, rules and regulations of the Department established in accordance with Article 19. The SIP is a compilation of rules and regulations that have been duly promulgated by the Department in accordance with its statutory authority and consistent with the State Administrative Procedures Act. Therefore, the Department has the authority to enforce all SIP measures.

New York is currently in the rule-making process for 6 NYCRR Part 231, "New Source Review of New and Modified Facilities," which will be submitted to EPA as expeditiously as practicable for approval and inclusion in the SIP. Part 231 will include 8-hour ozone and $PM_{2.5}$ PSD and NNSR permitting requirements for major stationary sources in the state. In the interim, New section 7428, and (iii) necessary assurances that, where the State has relied on a local or regional government, agency, or instrumentality for the implementation of any plan provision, the State has responsibility for ensuring adequate implementation of such plan provision.

The Division of Air Resources (DAR), with a staff of 274, receives both operating and capital funding. Operating funds are allocated to the Division annually and are used for daily administrative expenses. These expenses include salaries, fringe benefits, indirect and non-personnel services such as travel, supply and equipment costs. Indirect costs are, in turn, allocated to other Departments or divisions that support DAR activities. DAR is allocated operating funds from five sources: General Fund, Utility Environmental Regulatory Account, Co-operative Agreements (i.e., EPA section 103 and 105 grants) and the Clean Air Fund, which is comprised of the Title V and Mobile Source accounts.

Capital funds are allocated to the Division at the discretion of the State legislature and are used for the financing or acquisition of capital facilities such as the construction of an air monitoring site. The Division is allocated Capital funds from three sources: General Fund, Mobile Source Account and Rehabilitation and Improvement.

Section 110(a)(2)(E)(ii) requires that the state comply with the requirements respecting state boards under CAA section 7428. New York's Public Officer's Law, POL, satisfies these requirements. Specifically, POL section 74(2) states "No officer or employee of a state agency, member of the legislature or legislative employee should have any interest, financial or otherwise, direct or indirect, or engage in any business or transaction or professional activity or incur any obligation of any nature, which is in substantial conflict with the proper discharge of his duties in the public interest." POL 74(3)(e) states "No officer or employee of a state agency, member of the legislature or legislative employee should engage in any transaction as representative or agent of the state with any business entity in which he has a direct or indirect financial interest that might reasonably tend to conflict with the proper discharge of his official duties."

Finally, the Department confirms that where the State has relied on a local or regional government, agency, or instrumentality for the implementation of any plan provision, the State has responsibility for ensuring adequate implementation of such plan provision.

Stationary Source Monitoring System and Reporting (110(a)(2)(F))

CAA section 110(a)(2)(F) requires States to establish a system to monitor emissions from stationary sources and to submit periodic emissions reports.

Authority for this provision is provided under article 19 of the ECL. In particular, ECL section 19-0311 [Operating Permit Program] states in section 3 that operating permits issued pursuant to this section shall include, among other things, "provisions for detailed monitoring, record-keeping and reporting, including requirements that records be kept for five years, and that monitoring records be submitted to the department at least every six months ..."

Emergency Powers and Contingency Plans (110(a)(2)(G))

CAA section 110(a)(2)(G) requires States to provide for authority to address activities causing imminent and substantial endangerment to public health, including contingency plans to implement the emergency episodes in their SIPs. Articles 3 and 19 of the ECL provide this authority to the Department and are included in the SIP.

Among other provisions, ECL section 3-0301 entitled "General functions, powers and duties of the department and the commissioner" authorizes the Department to prevent and control air pollution emergencies, as defined in subdivision 1 of ECL section 3. In exercising such prevention and control the department and the commissioner may limit the consumption of fuels and use of vehicles, curtail or require the cessation of industrial processes and limit or require the cessation of incineration and open burning, and take any other action he may deem necessary to prevent and/or control air pollution emergencies. The Department adopted 6 NYCRR Part 207, Control Measures for an Air Pollution Episode, and EPA approved this regulation as part of the New York SIP (46 FR 55690).

Authority for SIP Revisions for Revised NAAQS (110(a)(2)(H))

CAA section 110(a)(2)(H) requires States to have the authority to revise their SIPs in response to changes in the NAAQS, availability of improved methods for attaining the NAAQS, or in response to an EPA finding that the SIP is substantially inadequate.

Revisions to the SIP are authorized by Article 19 and sections 3-0301, 19-0103, 19-0301, 19-0303 and 19-0305 of the ECL. Article 19 of the ECL was adopted to protect New York's air resources from pollution and to effectuate the policy of the State to maintain a reasonable degree of purity of the air resources, consistent with the public health and welfare and the industrial development of the State. To this end, the Legislature gave the Department specific powers and duties, including the power to promulgate regulations for preventing, controlling, or prohibiting air pollution. The Department also has the specific authority to regulate motor vehicle exhaust and approve air contaminant control systems as well as regulate fuels. Section 71-2103 provides general enforcement authority for the air regulations. Section 71-2105 provides criminal enforcement authority.

This general statement of authority is included in the SIP.

Authority for SIP Revisions for New Nonattainment Areas (110(a)(2)(I))

CAA section 110(a)(2)(I) requires States to have the authority to revise their SIPs in response to changes in nonattainment areas.

Revisions to the SIP are authorized by Article 19 and sections 3-0301, 19-0103, 19-0301, 19-0303 and 19-0305 of the ECL. Article 19 of the ECL was adopted to protect New York's air resources from pollution and to effectuate the policy of the State to maintain a reasonable degree of purity of the air resources, consistent with the public health and welfare and the industrial development of the State. To this end, the Legislature gave the Department specific powers and duties, including the power to promulgate regulations for preventing, controlling, or prohibiting air pollution. The Department also has the specific authority to regulate motor vehicle exhaust and approve air contaminant control systems as well as regulate fuels. Section 71-2103 provides general enforcement authority for the air regulations. Section 71-2105 provides criminal enforcement authority.

This general statement of authority is included in the SIP.

Consultation, Public Notification and PSD/Visibility (110(a)(2)(J))

CAA section 110(a)(2)(J) requires States to meet the applicable requirements of CAA section 121 relating to consultation, CAA section 127 relating to public information and Part C relating to PSD and visibility protection.

CAA section 121 requires States to provide a satisfactory process of consultation with general purpose local governments, designated organizations of elected officials of local governments and any Federal land manager having authority over Federal land to which the State plan applies. On December 22, 2005, the Department reestablished a SIP Coordinating Council consisting of senior policy representatives from 19 state agencies and authorities, and a SIP Task Force consisting of officials from thirty-seven local governments and designated organizations of elected officials. Periodic meetings of both groups have been held during the ozone SIP development period. Though there are no Federal lands within New York State to which the State plan applies, the Department has participated in the consultation process of the Regional Haze SIP (40 CFR 51.308) with the Federal Land Managers, States and Tribes of the Mid-Atlantic Northeast Visibility Union (MANE-VU), and other regional planning organizations where emissions from New York are reasonably anticipated to contribute to visibility impairment to Class I areas.

CAA section 127 requires State plans to contain measures which will be effective to notify the public during any calendar year, on a regular basis, of instances or areas in which any national primary ambient air quality standard is exceeded or was exceeded during any portion of the preceding calendar year to advise the public of the health hazards associated with such pollution, and to enhance public awareness of the measures which can be taken to prevent such standards from being exceeded and the ways in which the public can participate on regulatory and other efforts to improve air quality.

The Department's website, at http://www.dec.ny.gov/chemical/34985.html, contains an Air Quality Index (AQI) for reporting daily air quality to the public. It describes how clean or polluted the air is, and what associated health effects might be a concern. It was created as a way to correlate levels of different pollutants to one scale; the higher the AQI value, the greater the health concern. When levels of ozone and/or fine particles are expected to exceed an AQI value of 100, an Air Quality Health Advisory is issued alerting sensitive groups to take the necessary precautions. The Department, in cooperation with the New York State Department of Health, posts warnings on the above-referenced website if dangerous conditions are expected to occur.

These warnings are also aired through the media, and are available on the toll-free Ozone Hotline at 1-800-535-1345. The Air Quality Forecast displays the predicted AQI value for eight regions in New York State. It also displays the observed values for the previous day. Air quality measurements from New York's statewide continuous monitoring network are updated hourly where available. Parameters monitored include ozone, fine particulate, carbon monoxide, sulfur dioxide, nitrogen oxides, methane/nonmethane hydrocarbons, and meteorological data. Additional ozone information to enhance public awareness is located at http://www.dec.ny.gov/chemical/8400.html.

In accordance with EPA guidance issued on August 15, 2006, states may continue to rely on their existing NNSR and PSD permitting programs to prevent significant deterioration of air quality within their own boundaries and in adjacent states. New York confirms that the current state NNSR permitting program remains in effect and continues to apply for the State's major stationary sources. EPA has been implementing the PSD program in New York State since 2004.

New York commits to the continued enforcement of all SIP measures and the regulation of construction of new or modified stationary sources to meet NNSR requirements. In addition, New York will ensure that federal PSD requirements which are included in EPA-issued PSD permits are incorporated into Title V operating permits.

In addition, New York is currently in the rule-making process for 6 NYCRR Part 231, "New Source Review of New and Modified Facilities," which will be submitted to EPA as expeditiously as practicable for approval and inclusion in the SIP. Part 231 will include 8-hour ozone and $PM_{2.5}$ PSD and NNSR permitting requirements for major sources in the state.

With respect to visibility protection, and consistent with EPA's August 15, 2006, guidance, it is impossible at this time for New York to accurately determine whether there is interference with measures in another state's SIP designed to protect visibility because the affected Class I states have not submitted their regional haze SIPs to EPA, nor have they provided the Department with the pertinent information needed to identify the control measures necessary to reach the haze program's reasonable progress goals. New York will address the visibility protection requirements when the regional haze SIP is completed and submitted to EPA.

Air Quality Modeling / Data (110(a)(2)(K))

CAA section 110(a)(2)(K) requires States to provide for the performance of such air quality modeling as the Administrator may prescribe for the purpose of predicting the effect on ambient air quality of any emissions of any air pollutant for which the Administrator has established a NAAQS. It also requires States to submit, upon request, data related to such air quality modeling to the Administrator.

The Department certifies that the air quality modeling and analysis used in SIPs complies with EPA's guidance* on the use of models in attainment demonstrations, and commits to continue to use air quality models in accordance with EPA's approved modeling guidance and to submit data to the Administrator if requested.

* US EPA 200. "Guidance on the use of models and other analyses for demonstrating attainment of air quality goals for ozone, $PM_{2.5}$ and regional haze." EPA-454/B-07-002.

Permitting Fees (110(a)(2)(L))

CAA section 110(a)(2)(L) requires States to require each major stationary source to pay permitting fees sufficient to cover the reasonable costs of reviewing, planning, approving, implementing and enforcing permits.

The ECL satisfies this requirement. ECL section 19-0311(c) requires the Department to promulgate regulations that, among other things, require applications to identify and describe facility emissions in sufficient detail to establish the basis for the fees and applicability of requirements of the Act. ECL section 72-0303 requires major stationary sources to pay operating permit program fees in an amount sufficient to cover the costs of the operating permit program.

In addition, paragraph 201-6.5(a)(7) of Subpart 201-6, the Department's approved Title V program, specifically states that "The owner and/or operator of a stationary source shall pay fees to the department consistent with the fee schedule authorized by Subpart 482-2 of this Title."

New York commits to continue to implement major stationary source permit fee regulations.

Consultation / Participation by Affected Local Entities (110(a)(2)(M))

CAA section 110(a)(2)(M) requires States to provide for consultation and participation by local political subdivisions affected by the plan.

The Department established an Inter-agency Consultation Group (ICG) pursuant to 6 NYCRR Part 240, "Conformity to State or Federal Implementation Plans of Transportation Plans, Programs, and Projects Developed, Funded or Approved under Title 23 U.S.C. or the Federal Transit Laws." Members of this group include the Federal Transit Administration, Federal Highway Administration, the New York State Department of Transportation, the United States Environmental Protection Agency, the New York State Department of Environmental Conservation, and several Metropolitan Planning Organizations statewide. The ICG is central to the entire transportation conformity process, and serves as the underpinning for conformity determinations and as the primary mechanism for ensuring early coordination and negotiation among all parties affected by transportation conformity, including the general public, the business community, and other interested parties.

Additional consultation and participation by local political subdivisions are provided through the SIP Task Force established on December 22, 2005, which consists of officials from thirty-seven local governments and designated organizations of elected officials.

The Department commits to continue to provide for consultation and participation by local political subdivisions.

York confirms that the current state NNSR permitting program remains in effect and continues to apply to the State's major stationary sources. EPA has been implementing the PSD program in New York State since 2004.

New York commits to the continued enforcement of all SIP measures and the regulation of construction of new or modified stationary sources to meet NNSR requirements. In addition, New York will ensure that federal PSD requirements which are included in EPA-issued PSD permits are incorporated into Title V operating permits.

Interstate Transport (110(a)(2)(D))

CAA section 110(a)(2)(D) requires SIPs to include provisions prohibiting any source or other type of emissions activity in one State from contributing significantly to nonattainment, or interfering with maintenance, of the NAAQS in another State, or from interfering with measures required to prevent significant deterioration of air quality or to protect visibility in another State.

On September 17, 2007, the Department submitted a SIP revision that satisfies New York's 110(a)(2)(D) obligations to submit a SIP revision that contains adequate provisions to prohibit air emissions from adversely affecting another state's air quality through interstate transport. EPA proposed approval (72 FR 55723) of this SIP revision on October 1, 2007.

In accordance with EPA guidance issued on August 15, 2006, states may continue to rely on their existing NNSR and PSD permitting programs to prevent significant deterioration of air quality within their own boundaries and in adjacent states. New York confirms that the current state NNSR permitting program remains in effect and continues to apply to the State's major stationary sources. EPA has been implementing the PSD program in New York State since 2004.

New York commits to the continued enforcement of all SIP measures and the regulation of construction of new or modified stationary sources to meet NNSR requirements. In addition, New York will ensure that federal PSD requirements which are included in EPA-issued PSD permits are incorporated into Title V operating permits.

With respect to visibility protection, and consistent with EPA's August 15, 2006 guidance, it is impossible at this time for New York to accurately determine whether there is interference with measures in another state's SIP designed to protect visibility because the affected Class I states have not submitted their regional haze SIPs to EPA, nor have they provided the Department with the pertinent information needed to identify the control measures necessary to reach the haze program's reasonable progress goals. New York will address the visibility protection requirements when the regional haze SIP is completed and submitted to EPA.

Assurance of Adequate Resources (110(a)(2)(E))

CAA section 110(a)(2)(E) requires States to provide (i) necessary assurances that the State will have adequate personnel, funding and authority under State law to carry out its SIP, (ii) requirements that the state comply with the requirements respecting state boards under CAA

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Department of Environmental Conservation
Division of Air Resources

NEW YORK STATE IMPLEMENTATION PLAN FOR OZONE (8-HOUR NAAQS)

ATTAINMENT DEMONSTRATION FOR NEW YORK METRO AREA

APPENDIX J

FINAL PROPOSED REVISION FEBRUARY 2008

New York State Department of Environmental Conservation
ELIOT SPITZER, GOVERNOR ALEXANDER GRANNIS, COMMISSIONER

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Appendix J
Sample Calculations

Section J-1 – Point Source OSD sample calculation

Base line ozone season day emission calculation – This sample is an actual combustion turbine with a low NOx burner and an SCR

Ozone Season Day Emissions (OSD_{init}) = (fuel thruput/osd) x (emission factor) x (1 – (removal efficiency/100))

The projected reductions are calculated as follows:

OSD $Emissions_{future}$ = OSD $Emissions_{init}$ x Growth Factor x (1 – (CF/100))

Where Growth Factor = SCC specific growth factor for the “new” year.
And CF = Control Factor = % additional control to be applied at this unit on or before the “new” year. For point sources, this is usually done on a case by case basis since some point sources already have the proposed control level installed. For example, the proposed control factor for process XYZ is 75 % removal – Facility A already has a control device that removes 75% (or more). At Facility A, the CF for this unit is 0. At Facility B, there is no control device. For Facility B, the CF is 75%.

Units	OSD emissions	– pounds per ozone season day (sometimes expressed in tons per ozone season day)
	Fuel thruput	– gallons of oil / ozone season day - could also be in cubic feet of natural gas or pounds of coal
	Emission factor	– pounds of emissions per unit of fuel – in this example, we are using pounds of emissions per gallon of oil burned
	Removal Efficiency	– this term is expressed as percent removal
	Growth Factor	– unitless this is a growth factor so units are pounds / pounds – hence unitless
	CE	– this term is expressed as percent additional removal from the base year

CF is calculated as follows

CF = CE x RP x RE

Where

CE is the control efficiency that is required for the emission category (e.g. cement kilns)

RP is the Rule Penetration – the degree a given rule penetrates the universe of emission processes coming under the purview of the rule (taking into account rule applicability, exemptions, etc.)

RE is the Rule Efficiency – the correction factor to adjust for "real-world" operating conditions (i.e. equipment breakdowns, operator variance, compliance rate, etc.)

Section J2 – Area Source Growth and Control calculations

Annual and Ozone Season Day emissions for the 2002 baseline inventory were calculated according to the procedures contained in *The New York State Area Source Methodologies Manual* – See Appendix D.

The projected reductions are calculated as follows:

$$\text{OSD Emissions}_{future} = \text{OSD Emissions}_{init} \times \text{Growth Factor} \times (1 - (CF/100))$$

Where Growth Factor = SCC specific growth factor for the "new" year.
And CF = Control Factor = % additional control to be applied at this unit on or before the "new" year.

Units	OSD emissions	– pounds per ozone season day (sometimes expressed in tons per ozone season day)
	Growth Factor	– unitless this is a growth factor so units are pounds / pounds – hence unitless
	CF	– this term is expressed as percent additional removal from the base year

CF is calculated as follows

$$CF = CE \times RP \times RE$$

Where

CE is the control efficiency that is required for the emission category (e.g. Consumer Products)
RP is the Rule Penetration – the degree a given rule penetrates the universe of emission processes coming under the purview of the rule (taking into account rule applicability, exemptions, etc.)
RE is the Rule Efficiency – the correction factor to adjust for "real-world" operating conditions (i.e. equipment breakdowns, operator variance, compliance rate, etc.)

For each Area Source category, the equations above can be used with the data contained in Tables J-1 and J-2 below.

Note: The rows in the tables that contain 8 digit SCC codes are point source emissions and as noted in Section J-1, the reductions from 2002 to 2012 might not be consistent with the control factor because some facilities in the non-attainment area might already have controls.

Table J-1
Proposed Rules

Area Source Category	SCC	RE	RP	2012 CE	2002 act	2012 GF	2012 CF	2012 emiss	2002 OSD	2012 OSD
Adhesives and Sealants	2440020000	80	100	80.5	4601.22	1.499983	64.4	2457.02	12.64	6.75
	40200701	80	100	80.5	15715	1.559264	64.4	8723.36	0.04	0.06
	40200706	80	100	80.5	4259	1.559264	64.4	2364.16	0.02	0.03
	40200710	80	100	80.5	2664	1.559264	64.4	1478.78	0.01	0.01
Consumer Products (2)	2460000000	80	80	3.125	47498.5	1.040603	2	41560.29	130.49	114.18
Asphalt Paving	2461022000	80	80	31.25	1520.77	1.259831	20	1532.73	8.77	6.45
Portable Fuel Containers	2501011011	80	80	36.25	1043.52	1.040342	23.2	239.29	2.87	0.66
	2501011012	80	80	36.25	9011.19	1.040341	23.2	2066.34	24.76	5.68
	2501011016	80	80	36.25	494.55	1.040342	23.2	113.40	1.36	0.31
	2501012011	80	80	36.25	96.88	1.031107	23.2	22.02	0.27	0.06
	2501012012	80	80	36.25	793.01	1.031107	23.2	180.23	2.18	0.50
	2501012016	80	80	36.25	2052.83	1.031107	23.2	466.55	5.64	1.28
Portland Cement Plants	30501202	80	100	87.5	0	1.005944	70	0.00	0	0
	30501204	80	100	87.5	0	1.005944	70	0.00	0	0
	30501206	80	100	87.5	0	1.005944	70	0.00	0	0
	30500706	80	100	25	0	1.215827	20	0.00	0	0
	30500606	80	100	25	0	1.322385	20	0.00	0	0
Glass Manufacturing	30501416	80	100	87.5	0	1.185111	70	0.00	0	0
	30501401	80	100	87.5	0	1.185111	70	0.00	0	0
	30501403	80	100	87.5	0	1.185111	70	0.00	0	0
	30501402	80	100	87.5	0	1.185111	70	0.00	0	0
	39000689	80	100	87.5	0	1.081855	70	0.00	0	0
	39001399	80	100	25	0	1.176538	20	0.00	0	0
Asphalt Production	30500251	80	100	43.75	22200.9	1.346187	35	19426.27	0.02	0.03
	30500205	80	100	43.75	6786	1.346187	35	5937.90	0.002	0.003

Table J-2
Adopted Rules

Area Source Category	SCC	RE	RP	2012 CE	2002 act	2012 GF	2012 CF	2012 emiss	2002 OSD	2012 OSD
AIM Coatings	2401001000	80	80	48.4375	19672.49	1.277053	31	17334.74	70.26	61.91
	2401008000	80	80	48.4375	1314.15	0.984357	31	892.58	0.02	0.01
Consumer Products (1)	2460000000	80	80	22.1875	47498.5	1.040603	14.2	42408.45	130.49	114.18
Mobile Equipment Repair	2401005000	80	80	59.375	8784.76	1.212972	38	6606.51	33.79	25.41
Portable Fuel Containers	2501011011	80	100	89.125	1043.52	1.040342	71.3	311.57	2.87	0.66
	2501011012	80	100	89.125	9011.19	1.040341	71.3	2690.54	24.76	5.68
	2501011016	80	100	89.125	494.55	1.040342	71.3	147.66	1.36	0.31
	2501012011	80	100	89.125	96.88	1.031107	71.3	28.67	0.27	0.06
	2501012012	80	100	89.125	793.01	1.031107	71.3	234.67	2.18	0.50
	2501012016	80	100	89.125	2052.83	1.031107	71.3	607.49	5.64	1.28
Solvent Metal Cleaning	2415020000	80	100	82.5	87.22	1.339559	66	39.72	0.24	0.11
	2415025000	80	100	82.5	108.23	2.398751	66	88.27	0.30	0.24
	2415035000	80	100	82.5	44.32	1.342683	66	20.23	0.12	0.06
	2415045000	80	100	82.5	244.82	1.634302	66	136.04	0.67	0.37
	2415055000	80	100	82.5	1462.81	1.171966	66	582.88	4.02	1.60
	2415060000	80	100	82.5	776.13	1.240841	66	327.44	2.13	0.90

Department of Environmental Conservation
Division of Air Resources

NEW YORK STATE IMPLEMENTATION PLAN FOR OZONE (8-HOUR NAAQS)

ATTAINMENT DEMONSTRATION FOR NEW YORK METRO AREA

APPENDIX K

FINAL PROPOSED REVISION FEBRUARY 2008

New York State Department of Environmental Conservation
ELIOT SPITZER, GOVERNOR *ALEXANDER GRANNIS, COMMISSIONER*

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Appendix K
Point Source Summary

Facility Name	County	SCC	Pollutant	2002	2002 OSD	2008	2008 OSD	2009	2009 OSD	2011	2011 OSD	2012	2012 OSD
KONICA FILM PAPER & PHOTOCHEM MFG PLANT	NASSAU	10200602	VOC	374	0.772	391	0.809	394	0.815	401	0.829	405	0.836
71 CHARLES ST		10200602	NOx	6800	14.043	7118	14.701	7171	14.810	7295	15.065	7357	15.193
GLEN COVE, NY 11542		10200602	CO	5712	11.797	5979	12.348	6024	12.440	6128	12.655	6180	12.762
		39000689	NOx	81	0.044	85	0.046	86	0.046	87	0.047	88	0.048
		39000689	CO	68	0.037	71	0.039	72	0.039	73	0.040	74	0.040
		39999994	VOC	367	1.020	526	1.461	552	1.535	584	1.623	600	1.667
AWARD PACKAGING CORP	NASSAU	10500106	NOx	314	3.140	329	3.287	331	3.311	337	3.368	340	3.397
625 SOUTH ST		10500106	CO	264	2.638	276	2.761	278	2.782	283	2.830	285	2.854
GARDEN CITY, NY 11530		39000689	VOC	28	0.108	29	0.113	30	0.114	30	0.116	30	0.116
		39000689	NOx	509	1.958	533	2.049	537	2.065	546	2.100	551	2.118
		39000689	CO	428	1.644	448	1.721	451	1.734	459	1.764	463	1.779
		40500301	VOC	1260	4.844	1182	4.545	1169	4.496	1185	4.559	1194	4.591
		40500301	VOC	1255	4.828	1178	4.530	1165	4.480	1181	4.544	1190	4.575
ALCAN PACKAGING FOOD AND TOBACCO INC	NASSAU	39000689	NOx	3180	12.231	3329	12.803	3354	12.898	3411	13.121	3440	13.232
1403 4TH AVE		39000689	CO	2671	10.274	2796	10.755	2817	10.835	2866	11.021	2890	11.115
NEW HYDE PARK, NY 11040		40500311	VOC	574336	1560.696	538901	1464.404	532995	1448.355	540511	1468.781	544270	1478.993
FREEPORT POWER PLANT #1	NASSAU	10300503	NOx	29	0.292	31	0.310	31	0.313	32	0.316	32	0.318
220 W SUNRISE HWY		10300503	CO	7	0.073	8	0.078	8	0.078	8	0.079	8	0.079
FREEPORT, NY 11520		10300603	VOC	37	0.348	37	0.351	37	0.351	38	0.357	38	0.360
		10300603	NOx	669	6.318	675	6.375	676	6.385	687	6.490	693	6.542
		10300603	CO	562	5.307	567	5.355	568	5.363	577	5.452	582	5.496
		20100102	VOC	8092	300.629	16104	598.273	17439	647.880	13069	485.511	10883	404.326
		20100102	VOC	8135	302.203	16188	601.405	17531	651.272	13137	488.053	10940	406.443
		20100102	NOx	60535	2332.828	120469	4642.491	130458	5027.434	97763	3767.479	81416	3137.500
		20100102	CO	21450	796.885	42687	1585.856	46226	1717.351	34641	1286.956	28849	1071.757
		40701613	VOC	8	0.022	8	0.021	8	0.021	8	0.021	8	0.022

FREEPORT POWER PLANT #2	NASSAU	10300503	NOx	101	1.006	107	1.069	108	1.080	109	1.089	109	1.094
289 BUFFALO AVE		10300503	CO	25	0.252	27	0.267	27	0.270	27	0.272	27	0.274
FREEPORT, NY 11520		10300603	VOC	78	0.353	79	0.356	79	0.356	80	0.362	81	0.365
		10300603	NOx	1417	6.410	1430	6.468	1432	6.478	1455	6.584	1467	6.638
		10300603	CO	1190	5.385	1201	5.433	1203	5.441	1223	5.531	1232	5.576
		20100101	VOC	3	0.533	6	1.060	6	1.148	5	0.860	4	0.716
		20100101	NOx	6235	1143.087	12408	2274.823	13437	2463.445	10069	1846.067	8386	1537.377
		20100101	CO	23	4.287	47	8.531	50	9.238	38	6.923	31	5.765
		20100102	VOC	1316	114.604	2620	228.070	2837	246.981	2126	185.084	1770	154.135
		20100102	VOC	1323	115.204	2633	229.264	2852	248.274	2137	186.053	1780	154.942
		20100102	NOx	10512	913.950	20920	1818.824	22654	1969.636	16977	1476.014	14138	1229.202
		20100102	CO	3489	303.784	6944	604.551	7520	654.679	5635	490.606	4693	408.569
		40301097	VOC	10	0.309	11	0.346	11	0.352	12	0.365	12	0.371
OCEANSIDE SOLID WASTE MANAGEMENT FAC	NASSAU	10500205	VOC	5	0.000	5	0.000	5	0.000	5	0.000	5	0.000
3737 LONG BEACH RD		10500205	NOx	117	0.000	124	0.000	125	0.000	126	0.000	127	0.000
OCEANSIDE, NY 11572		10500205	CO	32	0.000	34	0.000	35	0.000	35	0.000	35	0.000
		40301007	VOC	168	0.807	188	0.905	192	0.921	198	0.953	202	0.970
		50100403	VOC	27252	74.054	28791	78.235	29047	78.932	29983	81.475	30450	82.746
HOFSTRA UNIVERSITY	NASSAU	10300501	VOC	17	0.000	18	0.000	19	0.000	19	0.000	19	0.000
1000 FULTON AVE, NY 11550		10300501	NOx	1026	0.000	1091	0.000	1101	0.000	1111	0.000	1116	0.000
		10300501	CO	255	0.000	271	0.000	274	0.000	277	0.000	278	0.000
		10300602	VOC	815	1.863	823	1.880	824	1.883	838	1.914	844	1.929
		10300602	NOx	14826	33.871	14960	34.177	14982	34.228	15228	34.791	15352	35.072
		10300602	CO	12454	28.452	12566	28.709	12585	28.752	12792	29.224	12895	29.461
		10300603	VOC	271	1.086	274	1.096	274	1.097	279	1.115	281	1.124
		10300603	NOx	4935	19.742	4980	19.920	4987	19.950	5069	20.278	5110	20.442
		10300603	CO	4146	16.583	4183	16.733	4189	16.758	4258	17.033	4293	17.171
		10500110	NOx	63	0.262	60	0.247	59	0.244	59	0.246	59	0.246
		10500110	CO	11	0.044	10	0.042	10	0.041	10	0.041	10	0.041
		10500206	NOx	1280	2.366	1292	2.387	1294	2.391	1315	2.430	1326	2.449
		10500206	CO	256	0.473	258	0.477	259	0.478	263	0.486	265	0.490
		20200104	VOC	56	0.162	56	0.164	56	0.164	55	0.162	55	0.161
		20200104	NOx	525	1.702	530	1.718	531	1.720	524	1.699	521	1.689

		20200104	CO	63	0.205	64	0.207	64	0.207	63	0.204	63	0.203
		20200402	VOC	1332	4.195	1332	4.195	1332	4.195	1332	4.195	1332	4.195
		20200402	VOC	1801	5.657	1801	5.657	1801	5.657	1801	5.657	1801	5.657
		20200402	NOx	256776	798.309	256776	798.309	256776	798.309	256776	798.309	256776	798.309
		20200402	CO	185126	577.515	185126	577.515	185126	577.515	185126	577.515	185126	577.515
		20300101	VOC	139	2.902	147	3.083	149	3.114	150	3.142	151	3.156
		20300101	VOC	139	2.902	147	3.084	149	3.114	150	3.142	151	3.156
		20300101	NOx	1661	34.777	1765	36.955	1782	37.318	1798	37.654	1806	37.822
		20300101	CO	366	7.658	389	8.137	392	8.217	396	8.291	398	8.328
		20300201	VOC	10	0.190	10	0.191	10	0.192	10	0.195	10	0.196
		20300201	NOx	241	4.642	244	4.684	244	4.691	248	4.768	250	4.807
		20300201	CO	34	0.652	34	0.658	34	0.659	35	0.670	35	0.675
		40400408	VOC	318	0.864	356	0.968	363	0.986	376	1.021	382	1.038
		40400408	NOx	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		40400408	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		40400413	NOx	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		40400413	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		40400414	VOC	5	0.014	5	0.014	6	0.014	5	0.014	5	0.014
		40400414	NOx	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		40400414	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		40781605	NOx	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		40781605	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
EF BARRETT POWER STATION	NASSAU	10100404	VOC	8655	282.870	12901	421.644	13608	444.773	13436	439.144	13350	436.329
1 MCCARTHY RD		10100404	NOx	207649	6578.754	309520	9806.248	326499	10344.163	322366	10213.233	320300	10147.768
ISLAND PARK, NY 11558		10100404	CO	56938	1860.988	84872	2773.976	89528	2926.141	88394	2889.104	87828	2870.585
		10100604	VOC	82528	357.166	90338	390.968	91640	396.601	101244	438.165	106046	458.947
		10100604	NOx	1718324	7340.373	1880943	8035.051	1908046	8150.831	2108009	9005.039	2207991	9432.144
		10100604	CO	360123	1558.544	394204	1706.042	399884	1730.625	441792	1911.994	462746	2002.679
		10101302	NOx	517	29.592	832	47.640	885	50.648	810	46.382	773	44.248
		10101302	CO	188	10.738	303	17.287	322	18.379	295	16.830	281	16.056
		20100101	VOC	24	9.203	48	18.315	52	19.834	39	14.863	32	12.378
		20100101	NOx	43592	16936.379	86751	33704.573	93944	36499.269	70400	27351.974	58628	22778.312
		20100101	CO	192	74.074	383	147.413	415	159.636	311	119.629	259	99.625

		20100201	VOC	5018	224.639	5493	245.899	5572	249.442	6156	275.584	6448	288.654
		20100201	NOx	1045806	44721.624	1144779	48953.990	1161275	49659.383	1282977	54863.693	1343828	57465.856
		20100201	CO	195936	8771.633	214479	9601.763	217569	9740.118	240370	10760.883	251771	11271.268
		20200102	VOC	44	25.773	45	26.005	45	26.044	44	25.732	44	25.576
		20200102	VOC	45	26.049	45	26.284	45	26.323	45	26.008	44	25.850
		20200102	NOx	549	319.105	554	321.979	555	322.458	548	318.596	545	316.666
		20200102	CO	118	68.741	119	69.360	119	69.464	118	68.632	117	68.216
NASSAU COUNTY SD #2 BAY PARK STP	NASSAU	10200502	NOx	1228	0.000	1239	0.000	1241	0.000	1226	0.000	1219	0.000
FOURTH AVE		10200502	CO	11	0.000	12	0.000	12	0.000	11	0.000	11	0.000
EAST ROCKAWAY, NY 11518		10200602	VOC	121	1.449	127	1.517	128	1.529	130	1.555	131	1.568
		10200602	NOx	2202	26.353	2305	27.586	2323	27.791	2363	28.270	2383	28.510
		10200602	CO	20	0.282	21	0.295	21	0.298	22	0.303	22	0.305
		10300701	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		10300701	NOx	1	0.000	1	0.000	1	0.000	1	0.000	1	0.000
		10300701	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		10500206	NOx	13	0.009	13	0.009	13	0.009	13	0.009	13	0.009
		10500206	CO	3	0.002	3	0.002	3	0.002	3	0.002	3	0.002
		20100102	VOC	117	15.757	233	31.358	252	33.958	189	25.448	157	21.192
		20100102	VOC	151	21.836	300	43.455	325	47.058	243	35.265	203	29.368
		20100102	NOx	43448	7599.620	86465	15123.773	93635	16377.797	70168	12273.262	58435	10220.988
		20100102	CO	632	83.850	1258	166.868	1362	180.704	1021	135.417	850	112.773
		20100202	VOC	21727	235.490	23783	257.776	24126	261.491	26654	288.895	27918	302.597
		20100202	NOx	91828	887.293	100518	971.265	101967	985.260	112653	1088.516	117996	1140.143
		20100202	CO	78712	1057.333	86162	1157.397	87403	1174.074	96563	1297.118	101143	1358.639
		20200202	VOC	9922	52.076	10386	54.512	10463	54.918	10644	55.865	10734	56.338
		20200202	NOx	49972	262.284	52310	274.556	52700	276.602	53608	281.369	54062	283.753
		20200202	CO	4597	24.126	4812	25.255	4848	25.444	4931	25.882	4973	26.101
		20300702	VOC	4308	40.172	4289	39.987	4285	39.956	4285	39.956	4285	39.956
		20300702	VOC	4309	40.177	4289	39.992	4286	39.962	4286	39.962	4286	39.962
		20300702	NOx	21017	195.886	20921	194.987	20905	194.837	20905	194.837	20905	194.837
		20300702	CO	113420	1057.529	112899	1052.672	112812	1051.862	112812	1051.862	112812	1051.862
CEDAR CREEK WPCP	NASSAU	10200602	VOC	440	3.149	461	3.296	464	3.320	472	3.378	476	3.406
3340 MERRICK RD & CEDAR CR PK		10200602	NOx	31	0.223	32	0.233	33	0.235	33	0.239	34	0.241

WANTAGH, NY 11793		10200602	CO	4	0.032	4	0.034	4	0.034	4	0.034	4	0.035
		20100102	VOC	296	68.747	589	136.811	638	148.155	478	111.025	398	92.460
		20100102	NOx	20805	4827.035	41403	9606.136	44836	10402.652	33600	7795.583	27981	6492.044
		20100102	CO	174	40.457	346	80.512	375	87.188	281	65.337	234	54.412
		20100202	NOx	194656	1206.848	213078	1321.061	216148	1340.097	238801	1480.539	250127	1550.761
		20100202	CO	38690	239.887	42352	262.589	42962	266.373	47464	294.289	49715	308.247
		20300702	VOC	6631	45.028	6601	44.822	6596	44.787	6596	44.787	6596	44.787
		20300702	VOC	6632	45.034	6602	44.827	6596	44.793	6596	44.793	6596	44.793
		20300702	NOx	40230	273.171	40045	271.917	40014	271.707	40014	271.707	40014	271.707
		20300702	CO	179930	1221.748	179104	1216.137	178966	1215.202	178966	1215.202	178966	1215.202
ROCKVILLE CENTRE POWER PLANT	NASSAU	10100501	VOC	7	0.017	13	0.033	14	0.036	11	0.027	9	0.022
110 MAPLE AVE		10100501	NOx	800	2.000	1592	3.980	1724	4.310	1292	3.230	1076	2.690
ROCKVILLE CTR, NY 11571		10100501	CO	167	0.417	332	0.829	359	0.898	269	0.673	224	0.560
		10100602	VOC	5	0.002	5	0.002	6	0.002	6	0.002	6	0.002
		10100602	NOx	91	0.030	99	0.032	100	0.033	111	0.036	116	0.038
		10100602	CO	76	0.025	83	0.027	84	0.028	93	0.030	98	0.032
		20200401	NOx	100745	3374.958	101652	3405.352	101804	3410.418	100584	3369.579	99975	3349.159
		20200401	CO	3970	132.995	4006	134.193	4012	134.392	3964	132.783	3940	131.978
		20200402	VOC	61	0.751	61	0.751	61	0.751	61	0.751	61	0.751
		20200402	VOC	63	0.770	63	0.770	63	0.770	63	0.770	63	0.770
		20200402	NOx	43581	532.657	43581	532.657	43581	532.657	43581	532.657	43581	532.657
		20200402	CO	72059	880.721	72059	880.721	72059	880.721	72059	880.721	72059	880.721
GLOBAL COMPANIES LLC - INWOOD TERMINAL	NASSAU	10300501	VOC	4	0.010	4	0.010	4	0.010	4	0.011	4	0.011
464 DOUGHTY BLVD		10300501	NOx	210	0.571	223	0.606	225	0.612	227	0.618	228	0.621
INWOOD, NY 11096		10300501	CO	53	0.143	56	0.152	56	0.153	57	0.154	57	0.155
		40301019	VOC	1754	4.766	1966	5.343	2002	5.440	2073	5.632	2108	5.729
		40400151	VOC	393	1.068	441	1.197	449	1.219	464	1.262	472	1.284
		40400154	VOC	12829	34.861	14382	39.082	14641	39.786	15160	41.196	15420	41.901
		40400160	VOC	51132	138.946	57323	155.768	58355	158.572	60423	164.193	61457	167.004
		40400179	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		40400250	VOC	3205	8.709	3593	9.764	3658	9.939	3787	10.292	3852	10.468
		40400250	VOC	402	1.092	451	1.225	459	1.247	475	1.291	483	1.313
TRIGEN CENTRL UTILITY PLT - MITCHL FIELD	NASSAU	10100501	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000

185 CHARLES LINDBERGH BLVD		10100501	NOx	2	0.000	4	0.000	4	0.000	3	0.000	2	0.000
GARDEN CITY, NY 11530		10100501	CO	0	0.000	1	0.000	1	0.000	1	0.000	0	0.000
		10300601	VOC	362	3.902	365	3.937	366	3.943	372	4.008	375	4.040
		10300601	NOx	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		10300601	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		10300602	VOC	311	3.244	314	3.273	314	3.278	319	3.332	322	3.359
		10300602	NOx	5650	58.985	5701	59.518	5710	59.607	5804	60.587	5851	61.077
		10300602	CO	4746	49.547	4789	49.995	4796	50.070	4875	50.893	4915	51.304
		20300102	VOC	0	0.022	0	0.024	0	0.024	0	0.024	0	0.024
		20300102	NOx	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		20300102	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		20300202	VOC	9456	25.387	9541	25.617	9556	25.655	9713	26.077	9791	26.288
		20300202	NOx	440039	1181.409	444018	1192.092	444681	1193.873	451991	1213.498	455646	1223.310
		20300202	CO	48047	128.996	48481	130.162	48554	130.357	49352	132.499	49751	133.571
CARBO-CONCORD OIL	NASSAU	30600508	VOC	1734	4.712	1944	5.282	1979	5.378	2049	5.568	2084	5.663
1 BAY BLVD		40400114	VOC	11955	32.486	13402	36.420	13644	37.075	14127	38.390	14369	39.047
LAWRENCE, NY 11559		40400117	VOC	171	0.465	192	0.521	195	0.530	202	0.549	206	0.559
		40600141	VOC	24586	66.810	24493	66.557	24477	66.515	24293	66.015	24201	65.765
SPRAGUE ENERGY CORP - OCEANSIDE MARINE TERMINAL	NASSAU	10200501	VOC	1	0.002	1	0.002	1	0.002	1	0.002	1	0.002
7 HAMPTON RD		10200501	VOC	1	0.003	1	0.003	1	0.003	1	0.003	1	0.003
OCEANSIDE, NY 11572		10200501	NOx	116	0.315	117	0.318	117	0.319	116	0.315	115	0.313
		10200501	CO	29	0.079	29	0.080	29	0.080	29	0.079	29	0.078
		10500205	VOC	4	0.011	4	0.012	4	0.012	4	0.012	4	0.012
		10500205	NOx	104	0.284	111	0.301	112	0.304	113	0.307	114	0.309
		10500205	CO	29	0.079	31	0.084	31	0.085	31	0.085	32	0.086
		40300302	VOC	14135	38.410	15846	43.061	16132	43.836	16703	45.390	16989	46.167
		40300302	VOC	17297	47.003	19391	52.694	19740	53.642	20440	55.544	20790	56.494
		40301019	VOC	88	0.096	99	0.107	100	0.109	104	0.113	106	0.115
		40301020	VOC	33	0.075	37	0.084	38	0.086	39	0.089	40	0.091
		40301021	VOC	343	0.480	384	0.538	391	0.548	405	0.567	412	0.577
		40301098	VOC	79	0.326	89	0.366	90	0.372	93	0.386	95	0.392
		40301151	VOC	3964	14.431	4444	16.178	4524	16.470	4685	17.053	4765	17.345
		40400114	VOC	7623	27.579	8546	30.918	8700	31.475	9008	32.591	9162	33.148

		40400117	VOC	195	0.706	219	0.791	223	0.805	231	0.834	235	0.848
		40700810	VOC	2	0.000	2	0.000	2	0.000	2	0.000	2	0.000
MOTIVA ENTERPRISES LLC PROPERTY	NASSAU	10300501	VOC	8	0.000	8	0.000	8	0.000	8	0.000	8	0.000
74 EAST AVE		10300501	NOx	445	0.000	473	0.000	478	0.000	482	0.000	484	0.000
LAWRENCE, NY 11559		10300501	CO	111	0.000	118	0.000	119	0.000	121	0.000	121	0.000
		40400117	VOC	58899	160.051	66030	179.430	67219	182.659	69601	189.134	70793	192.372
		40400250	VOC	71595	194.552	80263	218.107	81708	222.033	84605	229.904	86053	233.839
		40400251	VOC	1690	4.592	1895	5.148	1929	5.241	1997	5.427	2031	5.520
		40701613	VOC	1817	4.936	1774	4.820	1767	4.801	1796	4.881	1811	4.921
		40799997	VOC	9	0.024	9	0.024	9	0.024	9	0.024	9	0.024
HEMPSTEAD RESOURCE RECOVERY FACILITY	NASSAU	10200501	VOC	55	15.064	55	15.200	55	15.222	54	15.040	54	14.949
600 MERCHANTS CONCOURSE		10200501	VOC	41	11.449	42	11.552	42	11.569	41	11.430	41	11.361
WESTBURY, NY 11590		10200501	NOx	6550	1807.690	6609	1823.970	6618	1826.683	6539	1804.809	6500	1793.872
		10200501	CO	1365	376.602	1377	379.994	1379	380.559	1362	376.002	1354	373.723
		10200902	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		10200902	NOx	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		10200902	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		20200102	VOC	79	19.656	79	19.833	79	19.863	78	19.625	78	19.506
		20200102	NOx	963	240.786	972	242.955	973	243.316	962	240.402	956	238.945
		20200102	CO	207	51.870	209	52.337	210	52.415	207	51.787	206	51.474
		50100102	VOC	2113	6.220	2232	6.571	2252	6.630	2325	6.844	2361	6.950
		50100102	NOx	2894560	8521.064	3057982	9002.149	3085219	9082.330	3184593	9374.869	3234280	9521.139
		50100102	CO	526994	1551.376	556747	1638.964	561706	1653.562	579798	1706.822	588845	1733.453
OCEANSIDE LANDFILL GAS RECOVERY FAC	NASSAU	20300802	VOC	4628	10.284	4607	10.237	4603	10.229	4603	10.229	4603	10.229
LONG BEACH RD & MOTT AVE		20300802	NOx	28479	63.287	28348	62.996	28326	62.948	28326	62.948	28326	62.948
OCEANSIDE, NY 11572		20300802	CO	28479	63.287	28348	62.996	28326	62.948	28326	62.948	28326	62.948
NORTH SHORE UNIVERSITY HOSPITAL	NASSAU	10100501	VOC	33	0.655	65	1.303	71	1.411	53	1.057	44	0.881
300 COMMUNITY DR		10100501	NOx	3929	78.576	7819	156.372	8467	169.338	6345	126.899	5284	105.680
MANHASSET, NY 11030		10100501	CO	819	16.370	1629	32.577	1764	35.279	1322	26.437	1101	22.017
		10100505	NOx	1232	0.000	2452	0.000	2655	0.000	1990	0.000	1657	0.000
		10100505	CO	193	0.000	383	0.000	415	0.000	311	0.000	259	0.000
		10100602	VOC	2305	25.049	2523	27.419	2559	27.815	2827	30.730	2961	32.187

		10100602	NOx	41900	455.435	45865	498.536	46526	505.720	51402	558.719	53840	585.219
		10100602	CO	35196	382.565	38527	418.770	39082	424.805	43178	469.324	45226	491.584
		20200102	VOC	430	107.586	434	108.555	435	108.716	430	107.415	427	106.764
		20200102	NOx	5272	1317.929	5319	1329.798	5327	1331.776	5263	1315.828	5231	1307.854
		20200102	CO	1136	283.908	1146	286.464	1148	286.891	1134	283.455	1127	281.737
UNIFLEX HOLDINGS INC	NASSAU	39000689	NOx	2000	4.000	2094	4.187	2109	4.218	2146	4.291	2164	4.327
474 GRAND BLVD		39000689	CO	1680	3.360	1759	3.517	1772	3.543	1802	3.604	1818	3.635
WESTBURY, NY 11590		40188898	VOC	31	0.084	40	0.108	41	0.111	43	0.118	44	0.121
		40500311	VOC	36596	140.754	34338	132.070	33962	130.622	34441	132.464	34680	133.385
		40500311	VOC	36261	139.465	34024	130.861	33651	129.427	34125	131.252	34363	132.164
		40500511	VOC	142141	546.696	133371	512.966	131910	507.344	133770	514.499	134700	518.077
GLENWOOD MAIN POWER STATION	NASSAU	10100604	VOC	51326	207.151	56184	226.755	56994	230.022	62966	254.129	65953	266.182
SHORE ROAD		10100604	NOx	708117	2862.753	775132	3133.679	786301	3178.833	868705	3511.975	909908	3678.547
GLENWOOD LANDING, NY 11547		10100604	CO	223970	903.930	245166	989.476	248699	1003.734	274763	1108.925	287794	1161.521
		10101302	NOx	33	4.600	53	7.406	56	7.874	52	7.210	49	6.879
		10101302	CO	18	2.474	29	3.984	30	4.235	28	3.878	27	3.700
		10200602	VOC	23	0.005	24	0.005	24	0.005	24	0.005	25	0.005
		10200602	VOC	17	0.003	18	0.004	18	0.004	19	0.004	19	0.004
		10200602	NOx	413	0.083	432	0.086	436	0.087	443	0.089	447	0.089
		10200602	CO	347	0.069	363	0.073	366	0.073	372	0.074	375	0.075
		20100901	VOC	214	15.594	345	25.106	367	26.691	336	24.443	320	23.318
		20100901	NOx	226698	16507.393	364966	26575.635	388011	28253.674	355325	25873.607	338982	24683.570
		20100901	CO	1725	125.576	2776	202.167	2952	214.932	2703	196.827	2579	187.774
		20200202	VOC	2	0.048	2	0.051	2	0.051	2	0.052	3	0.052
		20200202	NOx	57	1.183	59	1.239	60	1.248	61	1.269	61	1.280
		20200202	CO	8	0.166	8	0.174	8	0.175	9	0.178	9	0.180
GRUMMAN AEROSPACE MFG PLANT	NASSAU	10200401	VOC	51	0.134	60	0.158	62	0.162	62	0.163	62	0.163
600 GRUMMAN RD WEST		10200401	VOC	40	0.105	47	0.124	48	0.127	48	0.128	48	0.128
BETHPAGE, NY 11714		10200401	NOx	8526	22.486	10074	26.568	10332	27.249	10344	27.280	10349	27.295
		10200401	CO	907	2.392	1072	2.826	1099	2.899	1100	2.902	1101	2.904
		10200402	NOx	3124	3.735	3691	4.413	3786	4.526	3790	4.532	3792	4.534
		10200402	CO	284	0.340	336	0.401	344	0.411	345	0.412	345	0.412
		10200503	NOx	1240	2.862	1251	2.887	1253	2.892	1238	2.857	1231	2.840

		10200503	CO	310	0.715	313	0.722	313	0.723	310	0.714	308	0.710
		10200602	VOC	2	0.005	2	0.005	2	0.006	2	0.006	2	0.006
		10200602	NOx	35	0.095	36	0.100	37	0.101	37	0.102	38	0.103
		10200602	CO	29	0.080	31	0.084	31	0.084	31	0.086	32	0.087
		10200603	VOC	1	0.001	1	0.001	1	0.001	1	0.001	1	0.001
		10200603	NOx	14	0.015	15	0.016	15	0.016	15	0.017	15	0.017
		10200603	CO	12	0.013	12	0.014	12	0.014	13	0.014	13	0.014
		10500105	NOx	86	0.103	87	0.104	87	0.104	86	0.103	85	0.102
		10500105	CO	22	0.026	22	0.026	22	0.026	21	0.026	21	0.026
		30622401	VOC	407	1.106	456	1.240	464	1.262	481	1.307	489	1.329
PHOENIX LABORATORIES	NASSAU	10500105	NOx	252	0.000	254	0.000	255	0.000	251	0.000	250	0.000
175 LAUMAN LN		10500105	CO	63	0.000	64	0.000	64	0.000	63	0.000	62	0.000
BETHPAGE, NY 11714		10500106	NOx	97	0.109	102	0.114	102	0.115	104	0.117	105	0.118
		10500106	CO	81	0.091	85	0.096	86	0.096	87	0.098	88	0.099
		30106009	VOC	31513	123.098	43440	169.687	45428	177.451	48649	190.034	50259	196.325
		30106011	VOC	6900	26.953	9511	37.154	9947	38.854	10652	41.609	11005	42.987
		30106099	VOC	47705	186.348	65760	256.875	68769	268.629	73645	287.676	76083	297.200
		39000689	VOC	9	0.037	10	0.039	10	0.039	10	0.040	10	0.040
		39000689	NOx	172	0.672	180	0.703	181	0.709	185	0.721	186	0.727
		39000689	CO	144	0.564	151	0.591	152	0.595	155	0.605	156	0.611
GLOBAL COMPANIES LLC - GLENWOOD TERMINAL	NASSAU	10300501	VOC	1	0.002	1	0.002	1	0.002	1	0.002	1	0.002
SHORE & GLENWOOD RDS		10300501	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
GLENWOOD LANDING, NY 11547		10300501	NOx	48	0.130	51	0.139	52	0.140	52	0.141	52	0.142
		10300501	CO	10	0.027	11	0.029	11	0.029	11	0.029	11	0.030
		40301019	VOC	303	0.823	340	0.923	346	0.940	358	0.973	364	0.990
		40400151	VOC	314	0.853	352	0.957	358	0.974	371	1.008	377	1.026
		40400154	VOC	9806	26.647	10993	29.873	11191	30.411	11588	31.489	11786	32.028
		40400160	VOC	16873	45.851	18916	51.402	19256	52.327	19939	54.182	20280	55.110
		40400250	VOC	1267	3.443	1420	3.860	1446	3.929	1497	4.069	1523	4.138
COMMANDER TERMINAL	NASSAU	10200501	VOC	4	0.012	5	0.012	5	0.012	4	0.012	4	0.012
1 COMMANDER SQ|FOOT OF SOUTH ST		10200501	NOx	536	1.457	541	1.470	542	1.472	535	1.455	532	1.446
OYSTER BAY, NY 11771		10200501	CO	112	0.304	113	0.306	113	0.307	112	0.303	111	0.301
		40301019	VOC	286	0.777	321	0.871	326	0.887	338	0.918	344	0.934

		40301021	VOC	823	2.236	923	2.507	939	2.552	973	2.643	989	2.688
		40400114	VOC	19674	53.462	22056	59.935	22453	61.014	23249	63.177	23647	64.258
		40400117	VOC	173	0.470	194	0.527	197	0.537	204	0.556	208	0.565
		40400150	VOC	15739	42.769	17645	47.947	17962	48.810	18599	50.541	18917	51.406
		40400251	VOC	2346	6.375	2630	7.147	2677	7.275	2772	7.533	2820	7.662
GLENWOOD BLACK START GT FACILITY	NASSAU	20100101	VOC	14	1.732	27	3.447	30	3.732	22	2.797	18	2.329
SHORE RD		20100101	NOx	15991	2018.978	31823	4017.907	34462	4351.061	25825	3260.616	21507	2715.392
GLENWOOD LANDING, NY 11547		20100101	CO	110	13.939	220	27.740	238	30.040	178	22.512	148	18.747
		20100102	VOC	8	4.383	16	8.722	17	9.445	13	7.078	11	5.894
		20100102	NOx	97	53.693	192	106.853	208	115.713	156	86.714	130	72.214
		20100102	CO	21	11.556	41	22.998	45	24.905	34	18.664	28	15.543
TBG COGEN FACILITY	NASSAU	20100201	VOC	1745	13.900	1910	15.216	1937	15.435	2140	17.052	2242	17.861
939 SOUTH BROADWAY		20100201	NOx	4800	38.240	5254	41.859	5330	42.462	5889	46.912	6168	49.137
HICKSVILLE, NY 11801		20100201	CO	1245	9.919	1363	10.857	1382	11.014	1527	12.168	1600	12.745
		20200102	VOC	33	1.447	33	1.460	33	1.463	33	1.445	32	1.436
		20200102	NOx	401	17.730	404	17.890	405	17.916	400	17.702	398	17.594
		20200102	CO	86	3.819	87	3.854	87	3.859	86	3.813	86	3.790
		20300102	VOC	1	0.012	2	0.012	2	0.012	2	0.013	2	0.013
		20300102	VOC	25	0.197	26	0.210	26	0.212	27	0.214	27	0.215
		20300102	NOx	12726	101.808	13523	108.184	13656	109.247	13779	110.230	13840	110.721
		20300102	CO	399	3.192	424	3.392	428	3.425	432	3.456	434	3.471
		20300203	VOC	8337	21.296	8413	21.489	8425	21.521	8564	21.874	8633	22.051
		20300203	NOx	538105	1374.507	542971	1386.937	543782	1389.008	552721	1411.841	557190	1423.257
		20300203	CO	26090	66.643	26326	67.246	26365	67.346	26799	68.453	27015	69.007
		40301019	VOC	46	0.125	52	0.140	52	0.143	54	0.148	55	0.150
PHOTOCIRCUITS CORPORATION	NASSAU	10200602	VOC	1173	0.638	1228	0.667	1237	0.672	1259	0.684	1269	0.690
31 SEA CLIFF AVE		10200602	NOx	21330	11.592	22328	12.135	22494	12.225	22882	12.436	23076	12.541
GLEN COVE, NY 11542		10200602	CO	17917	9.738	18756	10.193	18895	10.269	19221	10.446	19384	10.535
		10300501	VOC	1	0.000	1	0.000	1	0.000	1	0.000	1	0.000
		10300501	NOx	96	0.000	102	0.000	103	0.000	104	0.000	104	0.000
		10300501	CO	20	0.000	21	0.000	21	0.000	22	0.000	22	0.000
		31303001	VOC	13062	35.495	19460	52.880	20526	55.777	22723	61.746	23821	64.731
		31303502	VOC	7595	20.639	10775	29.279	11305	30.719	12390	33.669	12933	35.144

		40299995	VOC	98530	267.745	132155	359.118	137760	374.347	148343	403.105	153634	417.484
		40799997	VOC	143	0.389	140	0.379	139	0.378	141	0.384	143	0.387
GERSHOW RECYCLING OF LINDENHURST	SUFFOLK	20200102	VOC	44	3.707	45	3.741	45	3.746	44	3.701	44	3.679
635 MUNCY AVE		20200102	NOx	709	59.090	715	59.622	717	59.711	708	58.996	704	58.638
LINDENHURST, NY 11704		20200102	CO	132	10.991	133	11.090	133	11.106	132	10.973	131	10.907
THE LONG ISLAND HOME	SUFFOLK	10300501	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
400 SUNRISE HWY		10300501	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
AMITYVILLE, NY 11701		10300501	NOx	7	0.023	7	0.024	7	0.024	8	0.025	8	0.025
		10300501	CO	1	0.005	2	0.005	2	0.005	2	0.005	2	0.005
		10300602	VOC	205	0.670	207	0.676	207	0.677	211	0.688	213	0.693
		10300602	NOx	3733	12.173	3767	12.283	3772	12.302	3834	12.504	3866	12.605
		10300602	CO	3136	10.225	3164	10.318	3169	10.333	3221	10.503	3247	10.588
		10500205	NOx	730	0.794	776	0.843	783	0.852	790	0.859	794	0.863
		10500205	CO	203	0.220	215	0.234	218	0.237	220	0.239	221	0.240
		20100101	VOC	7	0.018	13	0.035	14	0.038	11	0.029	9	0.024
		20100101	VOC	5	0.013	10	0.026	10	0.028	8	0.021	6	0.018
		20100101	NOx	13955	37.922	27772	75.467	30075	81.725	22538	61.243	18769	51.003
		20100101	CO	52	0.142	104	0.283	113	0.306	85	0.230	70	0.191
		20100202	NOx	232786	632.571	254817	692.437	258488	702.414	285578	776.027	299123	812.834
		20100202	CO	32705	88.872	35800	97.282	36316	98.684	40122	109.026	42025	114.197
BERGEN POINT STP & BERGEN AVE DOCK	SUFFOLK	10200501	VOC	17	0.046	17	0.047	17	0.047	17	0.046	17	0.046
600 BERGEN AVE		10200501	NOx	2045	5.557	2063	5.607	2066	5.615	2042	5.548	2029	5.514
W BABYLON, NY 11704		10200501	CO	426	1.158	430	1.168	430	1.170	425	1.156	423	1.149
		10200602	VOC	273	0.743	286	0.778	288	0.783	293	0.797	296	0.804
		10200602	NOx	4970	13.505	5203	14.137	5241	14.243	5332	14.488	5377	14.611
		10200602	CO	4175	11.345	4370	11.875	4403	11.964	4479	12.170	4517	12.273
		20300101	VOC	475	190.152	505	202.061	510	204.045	515	205.881	517	206.799
		20300101	NOx	5738	2295.200	6097	2438.942	6157	2462.899	6213	2485.060	6240	2496.140
		20300101	CO	1254	501.790	1333	533.216	1346	538.453	1358	543.298	1364	545.721
		39000589	VOC	18	0.000	18	0.000	18	0.000	18	0.000	18	0.000
		39000589	NOx	1812	0.000	1828	0.000	1831	0.000	1809	0.000	1798	0.000
		39000589	CO	453	0.000	457	0.000	458	0.000	452	0.000	450	0.000

		40100299	VOC	60	15.000	77	19.146	79	19.837	84	20.928	86	21.473
		40301019	VOC	40	0.109	45	0.122	46	0.124	47	0.128	48	0.131
		50100799	VOC	8440	32.826	8917	34.679	8996	34.988	9286	36.115	9431	36.679
		50200515	VOC	5063	0.000	5881	0.000	6018	0.000	6258	0.000	6378	0.000
		50200515	NOx	15822	0.000	18379	0.000	18806	0.000	19557	0.000	19933	0.000
		50200515	CO	98094	0.000	113952	0.000	116595	0.000	121253	0.000	123582	0.000
STEIN & GIANNOTT MED WASTE INCINERATOR	SUFFOLK	50200504	VOC	4	0.011	4	0.011	4	0.011	4	0.011	4	0.011
91 EADS ST		50200504	NOx	25900	70.380	26727	72.627	26864	73.001	26834	72.918	26819	72.877
WEST BABYLON, NY 11704		50200504	CO	77	0.208	79	0.215	79	0.216	79	0.215	79	0.215
BABYLON RESOURCE RECOVERY FACILITY	SUFFOLK	39000589	VOC	9	1.100	9	1.110	9	1.112	9	1.098	9	1.092
125 GLEAM ST		39000589	NOx	880	110.000	888	110.991	889	111.156	879	109.825	873	109.159
WEST BABYLON, NY 11704		39000589	CO	220	27.500	222	27.748	222	27.789	220	27.456	218	27.290
		50100102	VOC	21249	69.632	22449	73.564	22649	74.219	23378	76.609	23743	77.805
		50100102	NOx	490890	1608.434	518605	1699.244	523224	1714.379	540077	1769.598	548503	1797.208
		50100102	CO	53641	175.795	56669	185.720	57174	187.374	59016	193.409	59937	196.427
WEST BABYLON GT FACILITY	SUFFOLK	20100101	VOC	35	4.502	70	8.959	76	9.702	57	7.270	47	6.055
RAILROAD AVE		20100101	NOx	44913	5731.540	89380	11406.164	96791	12351.934	72534	9256.343	60405	7708.544
WEST BABYLON, NY 11704		20100101	CO	284	36.234	565	72.109	612	78.088	459	58.518	382	48.733
WALNUT PACKAGING PROPERTY	SUFFOLK	39000689	NOx	60	0.117	63	0.122	63	0.123	64	0.126	65	0.127
450 SMITH ST		39000689	CO	50	0.098	53	0.103	53	0.104	54	0.105	55	0.106
EAST FARMINGDALE, NY 11735		40500311	VOC	37000	154.167	34717	144.655	34337	143.070	34821	145.087	35063	146.096
		40500311	VOC	5604	23.350	5258	21.909	5201	21.669	5274	21.975	5311	22.128
LAWRENCE RIPAK FACILITY	SUFFOLK	39000689	NOx	2057	3.165	2153	3.313	2169	3.337	2207	3.395	2225	3.424
165 FIELD ST		39000689	CO	1728	2.658	1809	2.783	1822	2.803	1854	2.852	1869	2.876
WEST BABYLON, NY 11704													
BROOKHAVEN LANDFILL & RECYCLING AREA	SUFFOLK	10500205	NOx	350	0.000	371	0.000	375	0.000	379	0.000	380	0.000
350 HORSEBLOCK RD		10500205	CO	97	0.000	103	0.000	104	0.000	105	0.000	106	0.000
YAPHANK, NY 11980		50100405	VOC	6823	22.086	7209	23.333	7273	23.541	7507	24.299	7624	24.678
		50100410	VOC	23	0.064	23	0.063	23	0.063	23	0.063	23	0.063
		50100410	VOC	5	0.013	5	0.012	4	0.012	4	0.012	4	0.012

		50100410	NOx	4660	12.944	4639	12.885	4635	12.875	4635	12.875	4635	12.875
		50100410	CO	13718	38.101	13655	37.926	13644	37.897	13644	37.897	13644	37.897
BROOKHAVEN NATIONAL LABORATORY	SUFFOLK	10300401	VOC	3029	0.057	2816	0.053	2781	0.053	2824	0.054	2845	0.054
53 BELL AVE		10300401	VOC	3147	0.060	2926	0.055	2890	0.055	2934	0.056	2956	0.056
UPTON, NY 11973		10300401	NOx	105501	2.317	98105	2.155	96872	2.127	98360	2.160	99104	2.176
		10300401	CO	13925	0.264	12949	0.245	12786	0.242	12983	0.246	13081	0.248
		10300501	VOC	0	0.021	0	0.023	0	0.023	0	0.023	0	0.023
		10300501	VOC	0	0.025	0	0.027	0	0.027	0	0.027	0	0.027
		10300501	NOx	6	0.955	6	1.014	7	1.024	7	1.033	7	1.038
		10300501	CO	1	0.367	2	0.390	2	0.394	2	0.398	2	0.400
		10300601	VOC	934	7.726	943	7.796	944	7.808	960	7.936	968	8.000
		10300601	VOC	1213	10.033	1224	10.124	1226	10.139	1246	10.305	1256	10.389
		10300601	NOx	19211	166.335	19384	167.840	19413	168.090	19733	170.853	19892	172.235
		10300601	CO	18532	153.228	18699	154.614	18727	154.845	19035	157.390	19189	158.663
		10500105	NOx	2280	0.000	2301	0.000	2304	0.000	2277	0.000	2263	0.000
		10500105	CO	570	0.000	575	0.000	576	0.000	569	0.000	566	0.000
		10500110	VOC	12	0.131	11	0.123	11	0.122	11	0.122	11	0.123
		10500110	NOx	770	8.268	726	7.788	718	7.708	723	7.755	725	7.779
		10500110	CO	130	1.393	122	1.312	121	1.298	122	1.306	122	1.310
		20300101	VOC	457	1.785	485	1.896	490	1.915	495	1.932	497	1.941
		20300101	VOC	457	1.785	485	1.896	490	1.915	495	1.932	497	1.941
		20300101	NOx	5475	21.388	5818	22.727	5875	22.950	5928	23.157	5955	23.260
		20300101	CO	1206	4.710	1281	5.004	1294	5.054	1305	5.099	1311	5.122
		20301001	NOx	78	6.487	81	6.748	82	6.792	82	6.863	83	6.899
		20301001	CO	72	6.020	75	6.263	76	6.303	76	6.370	77	6.403
		39999994	VOC	1197	4.980	1715	7.134	1801	7.493	1905	7.924	1956	8.139
		40100398	VOC	434	4.340	554	5.540	574	5.740	606	6.055	621	6.213
		40204330	VOC	410	1.602	444	1.735	450	1.757	464	1.812	471	1.839
		40500415	VOC	21	0.082	20	0.077	19	0.076	20	0.077	20	0.078
		40600603	VOC	1223	4.777	1218	4.759	1218	4.756	1208	4.720	1204	4.703
HOLTSVILLE GT FACILITY	SUFFOLK	10200602	VOC	11	0.000	12	0.000	12	0.000	12	0.000	12	0.000
180-A MORRIS AVE		10200602	NOx	141	0.000	148	0.000	149	0.000	151	0.000	153	0.000
HOLTSVILLE, NY 11742		10200602	CO	174	0.000	182	0.000	183	0.000	187	0.000	188	0.000

		20100901	VOC	15755	840.865	25365	1353.728	26967	1439.205	24695	1317.967	23559	1257.349
		20100901	NOx	2820700	150540.759	4541110	242359.067	4827845	257662.101	4421151	235956.855	4217804	225104.199
		20100901	CO	12998	693.714	20926	1116.826	22247	1187.344	20373	1087.323	19436	1037.313
		39990023	VOC	6	0.016	7	0.018	7	0.018	7	0.019	7	0.019
		39990023	NOx	73	0.198	79	0.215	80	0.218	83	0.224	84	0.228
		39990023	CO	91	0.247	98	0.267	100	0.271	103	0.279	104	0.283
PORT JEFFERSON POWER STATION	SUFFOLK	10100404	VOC	61337	325.746	91428	485.555	96443	512.190	95223	505.707	94612	502.465
BEACH ST		10100404	NOx	1925605	10235.890	2870294	15257.552	3027742	16094.494	2989419	15890.780	2970257	15788.922
PORT JEFFERSON, NY 11777		10100404	CO	403532	2143.067	601501	3194.442	634496	3369.671	626465	3327.019	622450	3305.694
		10100604	VOC	28230	359.261	30901	393.261	31347	398.927	34632	440.735	36274	461.639
		10100604	NOx	791159	10107.605	866033	11064.169	878512	11223.596	970580	12399.830	1016614	12987.949
		10100604	CO	123185	1567.685	134843	1716.047	136786	1740.774	151121	1923.208	158289	2014.425
		20100101	VOC	9	1.447	19	2.880	20	3.119	15	2.337	13	1.947
		20100101	NOx	10987	1687.383	21865	3358.011	23678	3636.448	17744	2725.097	14777	2269.419
		20100101	CO	76	11.649	151	23.183	163	25.105	122	18.813	102	15.667
		20100102	VOC	4	2.484	8	4.943	8	5.353	6	4.011	5	3.341
		20100102	VOC	4	2.504	8	4.983	8	5.396	6	4.044	5	3.367
		20100102	NOx	72	47.112	144	93.756	156	101.530	117	76.085	97	63.363
		20100102	CO	16	10.140	31	20.179	34	21.853	25	16.376	21	13.638
		20200202	NOx	57	1.183	59	1.239	60	1.248	61	1.269	61	1.280
		20200202	CO	8	0.166	8	0.174	8	0.175	9	0.178	9	0.180
WADING RIVER GT FACILITY	SUFFOLK	20100101	VOC	1361	33.469	2709	66.606	2934	72.129	2198	54.052	1831	45.014
NORTH COUNTRY RD		20100101	NOx	845183	26879.279	1681973	53491.636	1821438	57927.024	1364957	43409.593	1136715	36150.856
SHOREHAM, NY 11786		20100101	CO	10956	269.374	21803	536.073	23611	580.522	17694	435.034	14735	362.290
		20200102	VOC	106	8.851	107	8.931	107	8.944	106	8.837	105	8.784
		20200102	NOx	1301	108.428	1313	109.404	1315	109.567	1299	108.255	1291	107.599
		20200102	CO	280	23.357	283	23.568	283	23.603	280	23.320	278	23.179
ST CHARLES HOSPITAL	SUFFOLK	10300502	NOx	70	0.000	74	0.000	75	0.000	76	0.000	76	0.000
200 BELLE TERRE RD		10300502	CO	18	0.000	19	0.000	19	0.000	19	0.000	19	0.000
PORT JEFFERSON, NY 11777		10300602	VOC	580	2.049	585	2.067	586	2.070	596	2.104	601	2.122
		10300602	NOx	5273	18.626	5320	18.794	5328	18.822	5416	19.132	5460	19.286
		10300602	CO	8858	31.291	8938	31.574	8951	31.622	9098	32.141	9172	32.401
		20300101	VOC	3908	6.499	4153	6.907	4194	6.974	4231	7.037	4250	7.068

		20300101	VOC	3908	6.500	4153	6.907	4194	6.975	4232	7.038	4251	7.069
		20300101	NOx	47518	79.025	50494	83.974	50990	84.799	51449	85.562	51679	85.944
		20300101	CO	10314	17.153	10960	18.227	11068	18.406	11167	18.572	11217	18.654
		20300201	VOC	4685	9.014	4728	9.096	4735	9.110	4813	9.259	4852	9.334
		20300201	NOx	137333	264.216	138575	266.606	138782	267.004	141063	271.393	142204	273.587
		20300201	CO	16116	31.007	16262	31.287	16286	31.334	16554	31.849	16688	32.106
HOLTSVILLE TERMINAL, NORTHVILLE IND CORP	SUFFOLK	40400117	VOC	24	0.462	27	0.517	27	0.527	28	0.545	29	0.555
586 UNION AVE		40600140	VOC	2393	23.930	2384	23.839	2382	23.824	2365	23.645	2356	23.556
HOLTSVILLE, NY 11742		40600163	VOC	41169	791.715	41013	788.719	40987	788.220	40679	782.294	40525	779.331
		40600706	VOC	2180	30.185	2172	30.070	2170	30.051	2154	29.825	2146	29.712
		40600706	VOC	2594	35.910	2584	35.774	2582	35.751	2563	35.483	2553	35.348
		40714697	VOC	71	1.365	69	1.333	69	1.328	70	1.350	71	1.361
		40714698	VOC	2831	54.442	2764	53.162	2753	52.948	2799	53.831	2822	54.273
		40717613	VOC	34309	659.779	33502	644.261	33367	641.675	33923	652.373	34202	657.722
BROOKHAVEN LANDFILL GAS RECOVERY FACILITY	SUFFOLK	20100802	NOx	134807	648.263	181882	874.641	189728	912.370	189728	912.370	189728	912.370
350 HORSEBLOCK RD		20100802	CO	138220	664.676	186487	896.785	194532	935.470	194532	935.470	194532	935.470
YAPHANK, NY 11980													
RICHARD M FLYNN POWER PLANT	SUFFOLK	20100101	VOC	1816	0.000	3614	0.000	3914	0.000	2933	0.000	2442	0.000
607 UNION AVE		20100101	NOx	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
HOLTSVILLE, NY 11742		20100101	CO	5448	0.000	10842	0.000	11741	0.000	8798	0.000	7327	0.000
		20100201	VOC	75984	217.097	83175	237.643	84373	241.067	93216	266.331	97637	278.963
		20100201	NOx	331881	948.231	363290	1037.970	368524	1052.927	407146	1163.273	426456	1218.447
		20100201	CO	199460	569.886	218336	623.819	221483	632.807	244694	699.126	256300	732.285
		20300102	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		20300102	NOx	21	0.439	22	0.467	23	0.472	23	0.476	23	0.478
		20300102	CO	0	0.002	0	0.002	0	0.002	0	0.002	0	0.002
		20300202	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		20300202	NOx	0	0.002	0	0.002	0	0.002	0	0.002	0	0.002
		20300202	CO	0	0.001	0	0.001	0	0.001	0	0.001	0	0.001
		39999999	VOC	1	0.003	1	0.004	2	0.004	2	0.004	2	0.004
GERSHOW RECYCLING CORP	SUFFOLK	20200102	VOC	68	3.246	68	3.276	68	3.280	68	3.241	67	3.222
71 PECONIC AVE		20200102	VOC	113	3.451	114	3.482	114	3.487	113	3.445	112	3.424

MEDFORD, NY 11763		20200102	NOx	47515	218.412	47943	220.379	48014	220.706	47439	218.063	47152	216.742
		20200102	CO	1931	15.340	1948	15.478	1951	15.501	1928	15.316	1916	15.223
		20200202	NOx	33072	126.776	34619	132.708	34877	133.697	35479	136.001	35779	137.153
		20200202	CO	5283	20.252	5530	21.200	5572	21.358	5668	21.726	5716	21.910
NISSEQUOGUE COGEN PARTNERS PLANT	SUFFOLK	20200103	VOC	41	0.000	41	0.000	41	0.000	41	0.000	41	0.000
2099 SUNY@ STONY BROOK		20200103	NOx	984	0.000	993	0.000	994	0.000	982	0.000	976	0.000
STONY BROOK, NY 11794		20200103	CO	82	0.000	83	0.000	83	0.000	82	0.000	81	0.000
		20200203	VOC	30155	86.521	31566	90.569	31801	91.244	32349	92.817	32623	93.603
		20200203	VOC	34125	97.912	35722	102.494	35988	103.257	36608	105.037	36918	105.927
		20200203	NOx	318156	912.852	333043	955.565	335524	962.683	341307	979.277	344199	987.573
		20200203	CO	233658	670.345	244591	701.711	246413	706.938	250660	719.123	252784	725.216
MONTAUK GENERATING FACILITY	SUFFOLK	20100102	VOC	3291	133.529	6549	265.732	7092	287.765	5315	215.647	4426	179.587
NAVY RD		20100102	NOx	124272	5042.201	247310	10034.332	267816	10866.352	200697	8143.072	167138	6781.428
MONTAUK, NY 11954		20100102	CO	31068	1260.550	61827	2508.583	66954	2716.588	50174	2035.768	41784	1695.357
EAST HAMPTON GT FACILITY	SUFFOLK	20100101	VOC	91	2.297	181	4.570	196	4.949	147	3.709	122	3.089
BUELL LN WEST OF COVE HOLLOW LN		20100101	NOx	186196	4705.069	370543	9363.416	401267	10139.806	300703	7598.610	250421	6328.008
EAST HAMPTON, NY 11937		20100101	CO	731	18.484	1456	36.785	1576	39.835	1181	29.852	984	24.860
		20100102	VOC	3858	135.285	7678	269.227	8314	291.550	6231	218.483	5189	181.949
		20100102	NOx	162933	5713.424	324248	11370.112	351134	12312.892	263134	9227.086	219134	7684.179
		20100102	CO	36444	1277.949	72526	2543.207	78540	2754.083	58856	2063.866	49015	1718.757
NORTHPORT POWER STATION	SUFFOLK	10100404	VOC	242725	1383.553	361805	2062.315	381651	2175.442	376820	2147.907	374405	2134.139
WATERSIDE AVE & EATONS NECK RD		10100404	NOx	9669350	53670.281	14413070	80000.572	15203689	84388.949	15011250	83320.804	14915030	82786.730
NORTHPORT, NY 11768		10100404	CO	1596876	9102.323	2380293	13567.863	2510863	14312.119	2479082	14130.965	2463191	14040.388
		10100501	VOC	74	8.110	148	16.139	160	17.477	120	13.097	100	10.907
		10100501	VOC	98	10.694	195	21.282	211	23.047	158	17.271	132	14.383
		10100501	NOx	12232	1327.090	24343	2641.000	26361	2859.985	19754	2143.228	16451	1784.848
		10100501	CO	2446	267.357	4869	532.058	5272	576.175	3951	431.777	3290	359.577
		10100604	VOC	113745	914.282	124510	1000.808	126304	1015.229	139540	1121.625	146159	1174.824
		10100604	VOC	147702	1187.228	161680	1299.585	164010	1318.311	181198	1456.470	189792	1525.550
		10100604	NOx	4588347	37578.275	5022579	41134.608	5094951	41727.330	5628903	46100.359	5895879	48286.880
		10100604	CO	644517	5180.631	705513	5670.916	715679	5752.630	790682	6355.506	828184	6656.946
		10101302	VOC	960	25.912	1545	41.717	1643	44.351	1504	40.615	1435	38.747

		10101302	NOx	18257	499.234	29392	803.728	31248	854.477	28616	782.497	27300	746.506
		10101302	CO	4799	129.562	7725	208.584	8213	221.755	7521	203.074	7175	193.734
		10200603	NOx	652	55.377	683	57.968	688	58.399	699	59.406	705	59.909
		10200603	CO	548	46.516	573	48.693	578	49.056	588	49.901	593	50.324
		20100101	VOC	8	1.178	16	2.344	18	2.539	13	1.902	11	1.584
		20100101	NOx	9488	1373.230	18882	2732.823	20447	2959.422	15323	2217.744	12761	1846.904
		20100101	CO	66	9.481	130	18.868	141	20.432	106	15.311	88	12.751
		20100102	VOC	4	2.584	8	5.141	9	5.568	7	4.172	6	3.475
		20100102	NOx	79	48.612	156	96.741	169	104.762	127	78.507	106	65.380
		20100102	CO	17	10.463	34	20.822	36	22.548	27	16.897	23	14.072
		20200202	NOx	114	9.467	119	9.910	120	9.983	122	10.156	123	10.242
		20200202	CO	16	1.330	17	1.392	17	1.403	17	1.427	17	1.439
		50300701	NOx	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		50300701	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
OAK TREE FARM DAIRY	SUFFOLK	20200401	VOC	3286	10.358	3316	10.452	3321	10.467	3281	10.342	3261	10.279
544 ELWOOD RD		20200401	NOx	87850	276.918	88641	279.412	88773	279.828	87710	276.477	87178	274.802
E NORTHPORT, NY 11731		20200401	CO	34034	107.282	34341	108.249	34392	108.410	33980	107.111	33774	106.462
		39000689	VOC	7	0.018	7	0.019	7	0.019	7	0.019	7	0.019
		39000689	NOx	120	0.326	126	0.341	127	0.344	129	0.350	130	0.353
		39000689	CO	101	0.274	106	0.287	106	0.289	108	0.294	109	0.296
POLY-PAK MFG PLANT	SUFFOLK	39000689	NOx	2520	6.873	2638	7.194	2658	7.248	2703	7.373	2726	7.435
125 SPAGNOLI RD		39000689	CO	2117	5.773	2216	6.043	2232	6.088	2271	6.193	2290	6.246
MELVILLE, NY 11747		40500301	VOC	68953	261.186	69141	261.897	69172	262.016	70774	268.084	71575	271.119
		40500301	VOC	69050	261.553	69238	262.266	69270	262.385	70874	268.462	71676	271.500
		40714698	VOC	1719	4.671	1679	4.561	1672	4.543	1700	4.619	1714	4.657
EAST NORTHPORT SOLID WASTE DISPOSAL FAC	SUFFOLK	50100403	VOC	81	0.221	86	0.233	87	0.235	89	0.243	91	0.247
DEPOSIT ROAD													
EAST NORTHPORT, NY 11731													
110 CLEAN FILL DISPOSAL SITE	SUFFOLK	20200401	VOC	470	3.583	474	3.616	474	3.621	469	3.578	466	3.556
136 BETHPAGE-SPAGNOLI RD		20200401	NOx	18346	140.006	18511	141.267	18538	141.477	18316	139.783	18205	138.936
MELVILLE, NY 11747		20200401	CO	4873	37.189	4917	37.524	4924	37.580	4865	37.130	4836	36.905
		50200601	VOC	68	0.185	68	0.185	68	0.184	68	0.184	68	0.184

		50200601	NOx	12631	34.324	12573	34.166	12564	34.140	12564	34.140	12564	34.140
		50200601	CO	42104	114.413	41911	113.888	41878	113.800	41878	113.800	41878	113.800
HUNTINGTON RESOURCE RECOVERY FACILITY	SUFFOLK	50100105	VOC	170	0.534	179	0.564	181	0.569	187	0.587	189	0.596
99 TOWN LINE RD		50100105	NOx	898012	2826.742	948712	2986.335	957162	3012.934	987992	3109.980	1003407	3158.503
E NORTHPORT, NY 11731		50100105	CO	117406	369.568	124035	390.433	125139	393.911	129170	406.598	131185	412.942
		50190006	NOx	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		50190006	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
PE - BAYSHORE LLC	SUFFOLK	20200401	VOC	774	0.000	781	0.000	782	0.000	773	0.000	768	0.000
55 PARADISE LN		20200401	NOx	30923	0.000	31201	0.000	31248	0.000	30874	0.000	30687	0.000
BAY SHORE, NY 11706		20200401	CO	1739	0.000	1755	0.000	1757	0.000	1736	0.000	1726	0.000
		20200402	VOC	11461	36.127	11461	36.127	11461	36.127	11461	36.127	11461	36.127
		20200402	NOx	338085	1065.703	338085	1065.703	338085	1065.703	338085	1065.703	338085	1065.703
		20200402	CO	25786	81.282	25786	81.282	25786	81.282	25786	81.282	25786	81.282
ISLIP MCARTHUR RESOURCE RECOVERY FACIL	SUFFOLK	50100106	VOC	17766	51.463	18769	54.369	18936	54.853	19546	56.620	19851	57.503
4001 VETERANS MEMORIAL HWY		50100106	NOx	254222	736.415	268575	777.992	270967	784.921	279695	810.203	284059	822.844
RONKONKOMA, NY 11779		50100106	CO	400506	1160.161	423118	1225.662	426887	1236.579	440636	1276.409	447511	1296.324
		50190005	NOx	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		50190005	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
ALADDIN PACKAGING PROPERTY	SUFFOLK	39000589	VOC	5	0.001	5	0.001	5	0.001	5	0.001	5	0.001
40 RANICK RD		39000589	NOx	542	0.059	547	0.059	548	0.060	541	0.059	538	0.058
HAUPPAUGE, NY 11788		39000589	CO	136	0.015	137	0.015	137	0.015	135	0.015	134	0.015
		39990003	NOx	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		39990003	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		40500301	VOC	138000	543.636	138376	545.118	138439	545.365	141645	557.996	143248	564.311
		40500301	NOx	2350	9.258	2356	9.283	2357	9.287	2412	9.502	2439	9.610
BLYDENBURGH ROAD LANDFILL	SUFFOLK	50100406	VOC	9583	86.705	10124	91.600	10214	92.416	10543	95.393	10708	96.881
440 BLYDENBURGH RD		50100410	VOC	928	2.522	924	2.510	923	2.508	923	2.508	923	2.508
ISLIP, NY 11751		50100410	NOx	13458	36.571	13396	36.403	13386	36.375	13386	36.375	13386	36.375
		50100410	CO	44860	121.902	44654	121.342	44620	121.249	44620	121.249	44620	121.249
DISC GRAPHICS FACILITY	SUFFOLK	10500106	NOx	740	0.072	775	0.076	780	0.076	794	0.078	801	0.078
10 GILPIN AVE		10500106	CO	622	0.061	651	0.064	656	0.064	667	0.065	672	0.066
HAUPPAUGE		40500401	VOC	36438	99.016	34190	92.907	33815	91.889	34292	93.185	34530	93.833
		40500401	VOC	35359	96.084	33177	90.156	32814	89.168	33277	90.425	33508	91.054

MASON INDUSTRIES PROPERTY	SUFFOLK	10500105	NOx	468	0.624	472	0.630	473	0.631	467	0.623	464	0.619
350 RABRO DR.		10500105	CO	117	0.156	118	0.157	118	0.158	117	0.156	116	0.155
HAUPPAUGE, NY 11788		10500106	NOx	695	0.941	728	0.985	733	0.992	746	1.009	752	1.018
		10500106	CO	584	0.790	611	0.827	616	0.834	626	0.848	632	0.855
		30800699	VOC	20837	80.142	26104	100.398	26981	103.774	28539	109.766	29318	112.762
		40200998	VOC	1528	5.788	2049	7.763	2136	8.092	2300	8.714	2383	9.025
CEDAR GRAPHICS IGI	SUFFOLK	10500106	VOC	8	0.000	8	0.000	8	0.000	8	0.000	8	0.000
1700 OCEAN AVE		10500106	NOx	140	0.003	147	0.003	148	0.003	150	0.003	151	0.003
RONKONKOMA, NY 11779		10500106	CO	118	0.003	123	0.003	124	0.003	126	0.003	127	0.003
		40500212	VOC	44662	121.364	41906	113.876	41447	112.628	42032	114.217	42324	115.011
JASCO INDUSTRIES INC.	SUFFOLK	10500106	NOx	224	0.136	234	0.142	236	0.143	240	0.146	242	0.147
42 WINDSOR PLACE		10500106	CO	188	0.114	197	0.119	198	0.120	202	0.122	204	0.123
CENTRAL ISLIP, NY 11722		40200110	VOC	37919	143.633	50860	192.650	53016	200.820	57089	216.247	59126	223.961
ENTENMANN'S INC	SUFFOLK	10300501	VOC	2	0.000	2	0.000	2	0.000	2	0.000	2	0.000
1724 FIFTH AVE		10300501	NOx	137	0.022	145	0.024	147	0.024	148	0.024	149	0.024
BAYSHORE, NY 11706		10300501	CO	29	0.005	30	0.005	31	0.005	31	0.005	31	0.005
		10300603	VOC	170	0.392	172	0.395	172	0.396	175	0.403	177	0.406
		10300603	VOC	221	0.509	223	0.513	224	0.514	227	0.523	229	0.527
		10300603	NOx	4025	9.253	4061	9.336	4067	9.350	4134	9.504	4168	9.581
		10300603	CO	3381	7.772	3412	7.842	3417	7.854	3473	7.983	3501	8.048
		10500106	VOC	18	0.000	19	0.000	19	0.000	19	0.000	19	0.000
		10500106	NOx	324	0.000	339	0.000	342	0.000	348	0.000	351	0.000
		10500106	CO	272	0.000	285	0.000	287	0.000	292	0.000	294	0.000
		20300101	VOC	108	0.543	115	0.577	116	0.583	117	0.588	118	0.591
		20300101	VOC	108	0.543	115	0.577	116	0.583	117	0.588	118	0.591
		20300101	NOx	1303	6.543	1384	6.952	1398	7.021	1411	7.084	1417	7.116
		20300101	CO	286	1.434	303	1.524	306	1.539	309	1.553	311	1.560
		30203202	VOC	59015	182.252	60947	188.220	61270	189.214	62574	193.244	63227	195.259
		39000689	NOx	14051	45.035	14708	47.142	14818	47.494	15073	48.312	15201	48.722
		39000689	CO	11803	37.830	12355	39.600	12447	39.895	12662	40.582	12769	40.926
		40500212	VOC	32	0.123	30	0.115	30	0.114	30	0.116	30	0.117
		50410420	VOC	26	0.090	27	0.095	28	0.096	28	0.099	29	0.101

ADCHEM CORPORATION	SUFFOLK	39000689	NOx	3040	9.050	3182	9.473	3206	9.544	3261	9.709	3289	9.791
1852 OLD COUNTRY RD		39000689	CO	2554	7.602	2673	7.958	2693	8.017	2739	8.155	2763	8.224
RIVERHEAD, 11901		39001089	NOx	90	0.000	85	0.000	84	0.000	85	0.000	85	0.000
		39001089	CO	12	0.000	12	0.000	11	0.000	11	0.000	12	0.000
		40200701	VOC	14309	72.948	19192	97.842	20006	101.992	21543	109.827	22311	113.745
		40200701	VOC	9009	45.928	12083	61.601	12596	64.214	13563	69.147	14047	71.613
		40200706	VOC	4259	32.572	5713	43.688	5955	45.540	6413	49.039	6642	50.788
		40200706	VOC	2074	15.863	2782	21.277	2900	22.179	3123	23.883	3235	24.735
RIVERHEAD TERMINAL-CONOCOPHILLIPS	SUFFOLK	10200401	VOC	370	0.643	437	0.760	448	0.780	449	0.780	449	0.781
212 SOUND SHORE RD		10200401	NOx	62087	107.977	73360	127.583	75239	130.851	75324	130.999	75367	131.073
RIVERHEAD, NY 11901		10200401	CO	6605	11.487	7804	13.573	8004	13.920	8013	13.936	8018	13.944
		20300101	VOC	1992	10.399	2117	11.051	2138	11.159	2157	11.260	2166	11.310
		20300101	NOx	16504	99.940	17538	106.199	17710	107.242	17870	108.207	17949	108.689
		20300101	CO	5257	27.443	5586	29.162	5641	29.448	5692	29.713	5717	29.846
		40400114	VOC	37235	716.058	41743	802.754	42495	817.204	44001	846.173	44754	860.657
		40400114	VOC	13791	265.212	15461	297.322	15739	302.674	16297	313.403	16576	318.768
		40400151	VOC	1023	19.673	1147	22.055	1168	22.452	1209	23.248	1230	23.646
		40600163	VOC	1213	30.786	1208	30.670	1207	30.651	1198	30.420	1194	30.305
		40600234	VOC	199074	3675.220	223177	4120.196	227194	4194.359	235248	4343.044	239275	4417.386
		40600706	VOC	98	1.875	97	1.868	97	1.867	96	1.853	96	1.846
		40717613	VOC	1053	20.240	1028	19.764	1024	19.685	1041	20.013	1049	20.177
ARKAY PACKAGING CORP	SUFFOLK	10200501	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
22 ARKAY DR		10200501	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
HAUPPAUGE, NY 11787		10200501	NOx	5	0.000	6	0.000	6	0.000	5	0.000	5	0.000
		10200501	CO	1	0.000	1	0.000	1	0.000	1	0.000	1	0.000
		10200603	NOx	1542	4.406	1614	4.612	1626	4.646	1654	4.726	1668	4.766
		10200603	CO	1295	3.701	1356	3.874	1366	3.903	1390	3.970	1401	4.004
		30104005	VOC	370	1.016	462	1.270	478	1.312	506	1.389	520	1.427
		39999994	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		40201330	VOC	798	2.192	1070	2.941	1116	3.065	1201	3.301	1244	3.419
		40204435	VOC	123	0.339	134	0.367	135	0.372	139	0.383	142	0.389
		40500801	VOC	259	0.712	243	0.668	240	0.661	244	0.670	246	0.674
SMITHTOWN LANDFILL GAS RECOVERY FACILITY	SUFFOLK	20300802	VOC	220	0.657	219	0.654	219	0.654	219	0.654	219	0.654

OLD NORTHPORT & COMMACK RDS		20300802	NOx	63559	189.946	63267	189.074	63218	188.929	63218	188.929	63218	188.929
KINGS PARK, NY 11754		20300802	CO	34976	104.526	34815	104.046	34789	103.966	34789	103.966	34789	103.966
SOUTHAMPTON HOSPITAL	SUFFOLK	10300401	VOC	10	0.000	9	0.000	9	0.000	9	0.000	9	0.000
240 MEETING HOUSE LN		10300401	NOx	418	0.000	389	0.000	384	0.000	390	0.000	393	0.000
SOUTHAMPTON, NY 11968		10300401	CO	45	0.000	41	0.000	41	0.000	41	0.000	42	0.000
		10300602	VOC	170	0.462	171	0.466	172	0.467	175	0.474	176	0.478
		10300602	NOx	3090	8.397	3118	8.473	3123	8.485	3174	8.625	3200	8.695
		10300602	CO	2596	7.053	2619	7.117	2623	7.128	2666	7.245	2688	7.303
		20300101	VOC	2087	5.672	2218	6.027	2240	6.086	2260	6.141	2270	6.168
		20300101	NOx	25247	68.607	26828	72.903	27092	73.619	27336	74.282	27458	74.613
		20300101	CO	5508	14.967	5853	15.904	5910	16.060	5963	16.205	5990	16.277
		20300201	VOC	4095	11.127	4132	11.228	4138	11.245	4206	11.429	4240	11.522
		20300201	NOx	100252	272.424	101159	274.887	101310	275.298	102975	279.823	103808	282.086
		20300201	CO	14085	38.274	14212	38.620	14233	38.677	14467	39.313	14584	39.631
SOUTHAMPTON GT FACILITY	SUFFOLK	20100102	VOC	30	18.462	60	36.740	65	39.787	49	29.816	40	24.830
DAVID WHITES LN		20100102	NOx	368	226.185	733	450.125	794	487.448	595	365.286	496	304.204
SOUTHAMPTON, NY 11968		20100102	CO	79	48.682	158	96.881	171	104.914	128	78.621	107	65.474
		20100901	VOC	170	15.169	273	24.421	290	25.963	266	23.776	254	22.682
		20100901	NOx	20266	1812.591	32627	2918.132	34687	3102.389	31765	2841.046	30304	2710.375
		20100901	CO	140	12.514	225	20.147	239	21.419	219	19.615	209	18.713
SOUTHOLD GT FACILITY	SUFFOLK	20100102	VOC	31	28.491	61	56.698	66	61.399	49	46.012	41	38.318
ST RTE 25 W/O CHAPEL LN		20100102	VOC	30	28.342	61	56.403	66	61.080	49	45.772	41	38.118
SOUTHOLD, NY 11944		20100102	NOx	374	349.053	745	694.639	807	752.237	605	563.715	504	469.453
		20100102	CO	81	75.127	160	149.508	174	161.905	130	121.329	108	101.041
		20100901	NOx	47659	2006.444	76727	3230.221	81572	3434.183	74700	3144.890	71265	3000.244
		20100901	CO	329	13.853	530	22.302	563	23.710	516	21.713	492	20.714
TRACEY TOWERS	BRONX	10300401	VOC	1055	1.147	981	1.066	969	1.053	984	1.069	991	1.077
20 WEST MOSHOLU PKWY SOUTH		10300401	NOx	43884	47.700	40808	44.356	40295	43.799	40914	44.472	41224	44.808
BRONX, NY 10468		10300401	CO	4669	5.075	4341	4.719	4287	4.659	4353	4.731	4385	4.767
AMALGAMATED HOUSING-130 GALE PL	BRONX	10300402	NOx	54010	88.060	50224	81.887	49593	80.858	50354	82.100	50735	82.721
130 GALE PL		10300402	CO	4910	8.005	4566	7.444	4508	7.351	4578	7.464	4612	7.520

BRONX, NY 10463		10300602	VOC	85	0.138	85	0.139	86	0.140	87	0.142	88	0.143
		10300602	VOC	65	0.106	66	0.107	66	0.107	67	0.109	68	0.110
		10300602	NOx	1540	2.511	1554	2.534	1556	2.537	1582	2.579	1595	2.600
		10300602	CO	1294	2.109	1305	2.128	1307	2.131	1329	2.166	1339	2.184
NORTH CENTRAL BRONX HOSPITAL	BRONX	10300502	VOC	1	0.000	1	0.000	1	0.000	1	0.000	1	0.000
3424 KOSSUTH AVE		10300502	NOx	34	0.000	36	0.000	36	0.000	37	0.000	37	0.000
BRONX, NY 10467		10300502	CO	9	0.000	9	0.000	9	0.000	9	0.000	9	0.000
		10300602	VOC	728	1.979	735	1.997	736	2.000	748	2.033	754	2.049
		10300602	VOC	561	1.524	566	1.538	567	1.540	576	1.565	581	1.578
		10300602	NOx	13240	35.978	13360	36.304	13380	36.358	13600	36.955	13710	37.254
		10300602	CO	11122	30.222	11222	30.495	11239	30.541	11424	31.043	11516	31.294
		20100102	VOC	80	1.659	158	3.301	172	3.574	129	2.678	107	2.231
		20100102	NOx	1498	31.207	2981	62.103	3228	67.253	2419	50.398	2015	41.971
		20100102	CO	322	6.717	642	13.367	695	14.475	521	10.847	434	9.033
		39999999	VOC	10	0.027	14	0.039	15	0.041	16	0.043	16	0.044
MONTEFIORE MEDICAL CTR-111 E 210TH ST	BRONX	10300501	VOC	16	0.000	17	0.000	18	0.000	18	0.000	18	0.000
111 EAST 210TH ST		10300501	VOC	14	0.000	15	0.000	15	0.000	15	0.000	15	0.000
BRONX, NY 10467-2401		10300501	NOx	1154	0.000	1226	0.000	1238	0.000	1250	0.000	1255	0.000
		10300501	CO	240	0.000	255	0.000	258	0.000	260	0.000	261	0.000
		10300502	NOx	5301	203.839	5633	216.605	5689	218.732	5740	220.700	5766	221.685
		10300502	CO	1325	50.960	1408	54.151	1422	54.683	1435	55.175	1441	55.421
		10300601	VOC	1912	5.975	1930	6.029	1933	6.038	1964	6.137	1980	6.187
		10300601	NOx	66063	206.408	66660	208.275	66760	208.586	67857	212.015	68406	213.729
		10300601	CO	29207	91.254	29471	92.079	29515	92.217	30000	93.733	30243	94.491
		20100102	VOC	6702	67.015	13336	133.365	14442	144.423	10823	108.228	9013	90.131
		20100102	NOx	37829	378.291	75283	752.826	81525	815.248	61093	610.934	50878	508.777
		20100102	CO	13570	135.701	27005	270.053	29245	292.446	21915	219.154	18251	182.508
		20100202	NOx	11775	43.937	12889	48.095	13075	48.788	14445	53.901	15130	56.457
		20100202	CO	19625	73.228	21482	80.158	21792	81.313	24076	89.834	25217	94.095
		20300101	VOC	214	4.451	227	4.730	229	4.776	231	4.819	232	4.841
		20300101	NOx	2560	53.341	2721	56.681	2747	57.238	2772	57.753	2785	58.011
		20300101	CO	564	11.746	599	12.481	605	12.604	610	12.717	613	12.774
RIVERBAY CORP-CO-OP CITY	BRONX	10300401	VOC	9866	61.990	9174	57.644	9059	56.920	9198	57.794	9268	58.231

2049 BARTOW AVE		10300401	NOx	320864	2016.036	298371	1874.706	294622	1851.151	299147	1879.586	301410	1893.804
BRONX, NY 10475		10300401	CO	43655	274.291	40595	255.062	40085	251.857	40700	255.726	41008	257.660
		10300601	VOC	22	0.360	22	0.364	22	0.364	22	0.370	22	0.373
		10300601	NOx	808	13.499	815	13.621	816	13.641	829	13.865	836	13.977
		10300601	CO	329	5.504	332	5.554	333	5.562	338	5.654	341	5.700
NYC-HH - JACOBI MEDICAL CTR	BRONX	10300401	VOC	2468	5.519	2295	5.132	2267	5.068	2301	5.146	2319	5.185
50 EASTCHESTER RD & PELHAM PKWY SOUTH		10300401	NOx	102671	229.559	95473	213.466	94274	210.784	95722	214.022	96446	215.640
BRONX, NY 10461		10300401	CO	10922	24.421	10157	22.709	10029	22.424	10183	22.768	10260	22.940
		20100102	VOC	19	0.398	38	0.792	41	0.858	31	0.643	26	0.535
		20100102	VOC	19	0.401	38	0.799	42	0.865	31	0.648	26	0.540
		20100102	NOx	362	7.550	721	15.025	781	16.271	585	12.193	487	10.154
		20100102	CO	78	1.625	155	3.234	168	3.502	126	2.624	105	2.186
MTP INDUSTRIES - 1180 COMMERCE AVENUE	BRONX	39000689	NOx	410	1.089	429	1.140	432	1.149	440	1.168	444	1.178
1180 COMMERCE AVENUE		39000689	CO	344	0.915	361	0.958	363	0.965	369	0.981	373	0.990
BRONX, NY 10462-5506		40500311	VOC	62656	244.750	58790	229.649	58146	227.133	58966	230.336	59376	231.937
		40500311	VOC	62788	245.266	58914	230.133	58268	227.611	59090	230.821	59501	232.426
BRONX PSYCHIATRIC CENTER	BRONX	10300402	VOC	1202	2.473	1118	2.299	1103	2.271	1120	2.305	1129	2.323
1500 WATERS PL		10300402	NOx	58494	120.357	54393	111.920	53710	110.513	54535	112.211	54947	113.060
BRONX, NY 10461		10300402	CO	5318	10.942	4945	10.175	4883	10.047	4958	10.201	4995	10.278
		10300503	VOC	24	0.001	26	0.001	26	0.001	26	0.001	27	0.001
		10300503	NOx	1437	0.075	1527	0.080	1542	0.080	1555	0.081	1562	0.082
		10300503	CO	359	0.019	382	0.020	385	0.020	389	0.020	391	0.020
		10300603	VOC	6	0.000	6	0.000	6	0.000	6	0.000	6	0.000
		10300603	VOC	8	0.000	8	0.000	8	0.000	8	0.000	8	0.000
		10300603	NOx	138	0.007	139	0.007	139	0.007	141	0.007	143	0.007
		10300603	CO	116	0.006	117	0.006	117	0.006	119	0.006	120	0.006
		20100102	VOC	1	0.233	2	0.463	2	0.502	2	0.376	1	0.313
		20100102	VOC	1	0.231	2	0.459	2	0.498	1	0.373	1	0.310
		20100102	NOx	18	4.379	35	8.715	38	9.437	28	7.072	24	5.889
		20100102	CO	4	0.943	8	1.876	8	2.031	6	1.522	5	1.268
		20200401	VOC	101	25.133	101	25.359	102	25.397	100	25.093	100	24.941
		20200401	NOx	3214	803.511	3243	810.747	3248	811.953	3209	802.230	3189	797.369
		20200401	CO	851	212.802	859	214.718	860	215.038	850	212.463	845	211.175

		40600401	VOC	398	1.082	397	1.078	397	1.077	394	1.069	392	1.065
BRONX ZOO	BRONX	10300501	VOC	16	0.000	18	0.000	18	0.000	18	0.000	18	0.000
2300 SOUTHERN BLVD		10300501	NOx	1164	0.000	1237	0.000	1249	0.000	1260	0.000	1266	0.000
BRONX, NY 10460		10300501	CO	242	0.000	258	0.000	260	0.000	263	0.000	264	0.000
		10300603	VOC	285	0.000	288	0.000	288	0.000	293	0.000	295	0.000
		10300603	NOx	5184	0.000	5231	0.000	5238	0.000	5324	0.000	5367	0.000
		10300603	CO	4354	0.000	4394	0.000	4400	0.000	4473	0.000	4509	0.000
		20200102	VOC	11681	36.821	11786	37.153	11804	37.208	11663	36.762	11592	36.540
		20200102	NOx	736435	2321.371	743067	2342.277	744173	2345.762	735261	2317.672	730806	2303.627
		20200102	CO	30825	97.166	31103	98.042	31149	98.187	30776	97.012	30590	96.424
		20200202	VOC	25451	80.225	26642	83.979	26840	84.605	27303	86.063	27534	86.792
		20200202	NOx	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		20200202	CO	87542	275.948	91638	288.859	92321	291.011	93912	296.027	94708	298.535
ALBERT EINSTEIN COLLEGE OF MEDICINE	BRONX	10300401	VOC	1573	39.668	1463	36.887	1444	36.423	1466	36.983	1478	37.263
1300 MORRIS PARK AVE		10300401	NOx	65421	1649.892	60835	1534.230	60070	1514.952	60993	1538.224	61455	1549.859
BRONX, NY 10461		10300401	CO	6960	175.520	6472	163.216	6390	161.165	6489	163.641	6538	164.879
		10300602	VOC	1642	7.657	1657	7.727	1659	7.738	1686	7.865	1700	7.929
		10300602	NOx	29850	139.224	30120	140.483	30165	140.693	30661	143.006	30909	144.162
		10300602	CO	25074	116.948	25301	118.006	25339	118.182	25755	120.125	25963	121.096
		20200102	VOC	25	0.529	26	0.534	26	0.534	25	0.528	25	0.525
		20200102	NOx	311	6.477	314	6.536	314	6.545	310	6.467	309	6.428
		20200102	CO	67	1.395	68	1.408	68	1.410	67	1.393	66	1.385
PARKCHESTER SOUTH CONDOMINIUM	BRONX	10300401	VOC	1105	0.553	1028	0.514	1015	0.507	1030	0.515	1038	0.519
2020 EAST TREMONT AVE		10300401	NOx	45973	22.987	42750	21.375	42213	21.107	42861	21.431	43186	21.593
BRONX, NY 10462		10300401	CO	4891	2.445	4548	2.274	4491	2.245	4560	2.280	4594	2.297
		10300602	VOC	4173	5.081	4211	5.126	4217	5.134	4287	5.219	4321	5.261
		10300602	NOx	75878	92.373	76564	93.209	76679	93.348	77939	94.882	78569	95.649
		10300602	CO	63738	77.594	64314	78.295	64410	78.412	65469	79.701	65998	80.346
BRONX LEBANON HOSPITAL	BRONX	10300401	VOC	232	0.258	216	0.240	213	0.237	216	0.240	218	0.242
1650 GRAND CONCOURSE		10300401	NOx	9650	10.722	8973	9.970	8861	9.845	8997	9.996	9065	10.072
BRONX, NY 10457		10300401	CO	1027	1.141	955	1.061	943	1.047	957	1.063	964	1.071
		10300502	VOC	29	0.081	31	0.086	31	0.087	32	0.088	32	0.088
		10300502	NOx	2065	5.736	2194	6.095	2216	6.155	2236	6.211	2246	6.238

		10300502	CO	430	1.195	457	1.270	462	1.282	466	1.294	468	1.300
BRONX LEBANON HOSPITAL CTR	BRONX	10300502	NOx	500	10.000	531	10.626	537	10.731	541	10.827	544	10.875
1276 FULTON AVE		10300502	CO	125	2.500	133	2.657	134	2.683	135	2.707	136	2.719
BRONX, NY 10456		10300602	VOC	332	0.901	335	0.909	335	0.911	341	0.926	343	0.933
		10300602	NOx	6030	16.386	6085	16.534	6094	16.559	6194	16.831	6244	16.967
		10300602	CO	5065	13.764	5111	13.889	5119	13.909	5203	14.138	5245	14.252
		10300603	VOC	11	0.030	11	0.030	11	0.030	11	0.031	11	0.031
		10300603	VOC	14	0.039	14	0.039	14	0.039	15	0.040	15	0.040
		10300603	NOx	260	0.707	262	0.713	263	0.714	267	0.726	269	0.732
		10300603	CO	218	0.593	220	0.599	221	0.600	224	0.610	226	0.615
ST BARNABAS HOSPITAL	BRONX	10200402	VOC	294	0.927	348	1.096	357	1.124	357	1.125	357	1.126
183RD ST & 3RD AVE		10200402	NOx	28893	91.077	34140	107.614	35014	110.371	35054	110.495	35073	110.558
BRONX, NY 10457		10200402	CO	5253	16.559	6207	19.566	6366	20.067	6373	20.090	6377	20.101
FORDHAM UNIVERSITY	BRONX	10200402	NOx	32325	87.840	38194	103.789	39173	106.447	39217	106.568	39239	106.628
441 EAST FORDHAM ROAD		10200402	CO	2939	7.985	3472	9.435	3561	9.677	3565	9.688	3567	9.693
BRONX, NY 10458		10200602	VOC	97	0.265	102	0.277	103	0.279	104	0.284	105	0.286
		10200602	NOx	1770	4.810	1853	5.035	1867	5.073	1899	5.160	1915	5.204
		10200602	CO	1487	4.041	1557	4.230	1568	4.261	1595	4.335	1609	4.371
		10300504	VOC	12	0.033	13	0.035	13	0.036	13	0.036	13	0.036
		10300504	NOx	723	1.963	768	2.086	775	2.107	782	2.126	786	2.135
		10300504	CO	181	0.491	192	0.522	194	0.527	196	0.531	196	0.534
		10300603	VOC	210	0.572	212	0.577	213	0.578	216	0.587	218	0.592
		10300603	VOC	273	0.742	276	0.749	276	0.750	281	0.762	283	0.768
		10300603	NOx	4966	13.494	5011	13.616	5018	13.636	5101	13.861	5142	13.973
		10300603	CO	4171	11.335	4209	11.437	4215	11.455	4285	11.643	4319	11.737
NYOFCO SLUDGE PELLETIZATION FACILITY	BRONX	39000589	VOC	0	0.011	0	0.011	0	0.011	0	0.011	0	0.011
1108 OAK POINT AVE		39000589	NOx	68	16.980	69	17.133	69	17.158	68	16.953	67	16.850
BRONX, NY 10474		39000589	CO	28	7.075	29	7.139	29	7.149	28	7.064	28	7.021
		39000689	VOC	151	0.412	159	0.431	160	0.434	162	0.441	164	0.445
		39000689	NOx	41304	112.239	43237	117.491	43559	118.366	44310	120.406	44685	121.426
		39000689	CO	57826	157.135	60531	164.487	60982	165.713	62033	168.569	62559	169.997
LAFAYETTE MORRISON HOUSING CORP	BRONX	10300401	VOC	666	0.666	619	0.619	612	0.612	621	0.621	626	0.626

820 BOYNTON AVE		10300401	NOx	27702	27.702	25760	25.760	25436	25.436	25827	25.827	26022	26.022
BRONX, NY 10473		10300401	CO	2947	2.947	2740	2.740	2706	2.706	2748	2.748	2768	2.768
LAFAYETTE BOYNTON HOUSES INC	BRONX	10300401	VOC	797	0.771	741	0.717	732	0.708	743	0.719	749	0.724
875 BOYNTON AVE		10300401	NOx	33150	32.069	30826	29.820	30438	29.446	30906	29.898	31140	30.124
BRONX, NY 10473		10300401	CO	3527	3.412	3279	3.172	3238	3.133	3288	3.181	3313	3.205
HUNTS POINT AVENUE COMPRESSOR STATION	BRONX	10200603	VOC	16	0.000	17	0.000	17	0.000	17	0.000	17	0.000
332 HUNTS POINT AVE		10200603	NOx	293	0.000	307	0.000	309	0.000	315	0.000	317	0.000
BRONX, NY 10474		10200603	CO	246	0.000	258	0.000	260	0.000	264	0.000	267	0.000
		10500106	VOC	6	0.016	6	0.017	6	0.017	6	0.017	6	0.017
		10500106	NOx	108	0.294	113	0.307	114	0.310	116	0.315	117	0.318
		10500106	CO	91	0.247	95	0.258	96	0.260	97	0.265	98	0.267
		20100201	VOC	1713	21.136	1875	23.136	1902	23.469	2101	25.929	2201	27.159
		20100201	NOx	22626	279.170	24767	305.590	25124	309.993	27757	342.481	29074	358.725
		20100201	CO	7566	93.353	8282	102.188	8401	103.660	9282	114.524	9722	119.955
JAMIE TOWERS	BRONX	10300401	VOC	371	0.403	345	0.375	340	0.370	346	0.376	348	0.378
2070 SEWARD AVE		10300401	NOx	15416	16.756	14335	15.582	14155	15.386	14372	15.622	14481	15.740
BRONX, NY 10473		10300401	CO	1640	1.783	1525	1.658	1506	1.637	1529	1.662	1541	1.674
NYC-DOC - RIKERS ISLAND	BRONX	10300502	NOx	3391	0.000	3603	0.000	3639	0.000	3671	0.000	3688	0.000
17-25 HAZEN ST		10300502	CO	848	0.000	901	0.000	910	0.000	918	0.000	922	0.000
EAST ELMHURST, NY 11370		10300602	VOC	5075	9.705	5121	9.793	5128	9.807	5212	9.969	5255	10.049
		10300602	VOC	3908	7.474	3943	7.541	3949	7.553	4014	7.677	4047	7.739
		10300602	NOx	92267	176.454	93101	178.049	93240	178.315	94773	181.246	95539	182.712
		10300602	CO	77504	148.221	78205	149.561	78322	149.785	79609	152.247	80253	153.478
NAP - KENT AVENUE FACILITY	KINGS	39000689	VOC	47	0.138	49	0.145	49	0.146	50	0.148	51	0.149
667 KENT AVE		39000689	NOx	850	2.511	890	2.629	896	2.648	912	2.694	920	2.717
BROOKLYN, NY 11211-7530		39000689	CO	714	2.110	747	2.208	753	2.225	766	2.263	772	2.282
		40500311	VOC	208480	789.697	195617	740.974	193473	732.854	196202	743.189	197566	748.356
ACME STEEL CO-513 PORTER AVE	KINGS	39000689	VOC	13	0.013	13	0.014	13	0.014	14	0.014	14	0.014
513 PORTER AVE		39000689	NOx	229	0.235	240	0.246	242	0.248	246	0.252	248	0.254
BROOKLYN, NY 11222		39000689	CO	192	0.197	201	0.207	203	0.208	206	0.212	208	0.213

		39990003	VOC	34	0.028	37	0.031	38	0.031	39	0.032	39	0.032
		39990003	NOx	622	0.512	674	0.555	683	0.562	704	0.579	714	0.588
		39990003	CO	522	0.430	566	0.466	574	0.472	591	0.487	600	0.494
		40200201	VOC	9055	28.655	12145	38.435	12660	40.065	13633	43.142	14119	44.681
		40202537	VOC	5641	17.851	8220	26.012	8649	27.372	9407	29.768	9786	30.967
		40202544	VOC	11745	37.167	17114	54.158	18009	56.990	19586	61.980	20374	64.475
		40288824	VOC	1461	4.624	1960	6.202	2043	6.465	2200	6.961	2278	7.210
NYC-DEP NEWTOWN CREEK WPCP	KINGS	10300602	VOC	35	0.061	36	0.062	36	0.062	36	0.063	36	0.063
329-69 GREENPOINT AVE		10300701	VOC	1960	3.409	2062	3.587	2079	3.616	2119	3.685	2139	3.720
BROOKLYN, NY 11222		10300701	NOx	15310	26.626	16109	28.015	16242	28.247	16552	28.786	16707	29.056
		10300701	CO	18420	32.035	19381	33.706	19541	33.985	19914	34.634	20101	34.958
		20200102	VOC	181	0.493	183	0.497	183	0.498	181	0.492	180	0.489
		20200102	NOx	2223	6.040	2243	6.094	2246	6.103	2219	6.030	2206	5.994
		20200102	CO	479	1.301	483	1.313	484	1.315	478	1.299	475	1.291
		50100707	VOC	199	0.562	210	0.594	212	0.599	219	0.619	222	0.628
		50100731	VOC	4628	13.079	4889	13.818	4933	13.941	5092	14.390	5171	14.614
		50100740	VOC	4355	12.308	4601	13.002	4642	13.118	4791	13.541	4866	13.752
		50100740	VOC	682	1.927	721	2.036	727	2.054	750	2.121	762	2.154
		50100771	VOC	100	0.283	106	0.299	107	0.301	110	0.311	112	0.316
		50100781	VOC	100	0.283	106	0.299	107	0.301	110	0.311	112	0.316
		50100789	NOx	44300	120.380	46801	127.177	47218	128.310	48739	132.442	49499	134.509
		50100789	CO	81610	221.766	86218	234.287	86985	236.374	89787	243.987	91188	247.794
		50100799	VOC	101	0.285	107	0.302	108	0.304	111	0.314	113	0.319
CON EDISON - HUDSON AVE STATION	KINGS	10100401	VOC	28666	203.625	42730	303.522	45073	320.171	44503	316.119	44218	314.092
1-11 HUDSON AVE		10100401	VOC	30290	215.156	45149	320.711	47626	338.303	47023	334.021	46722	331.880
BROOKLYN, NY 11201		10100401	NOx	1667694	11616.638	2485854	17315.686	2622214	18265.526	2589023	18034.332	2572428	17918.734
		10100401	CO	199273	1415.503	297035	2109.940	313329	2225.679	309363	2197.508	307380	2183.422
		10100501	VOC	0	0.001	0	0.001	0	0.001	0	0.001	0	0.001
		10100501	VOC	0	0.000	0	0.001	0	0.001	0	0.001	0	0.001
		10100501	NOx	11	0.067	22	0.134	24	0.145	18	0.109	15	0.091
		10100501	CO	2	0.014	5	0.028	5	0.030	4	0.023	3	0.019
		10100601	VOC	11	0.221	12	0.242	12	0.246	13	0.271	14	0.284
		10100601	NOx	367	7.644	402	8.367	407	8.487	450	9.377	471	9.822

		10100601	CO	162	3.379	178	3.699	180	3.752	199	4.146	208	4.342
		20100101	VOC	502	94.251	999	187.565	1082	203.117	811	152.213	675	126.761
		20100101	NOx	33496	6288.874	66659	12515.297	72187	13553.033	54095	10156.428	45050	8458.120
		20100101	CO	4088	767.522	8135	1527.422	8810	1654.072	6602	1239.535	5498	1032.266
		20100102	VOC	29	0.601	57	1.196	62	1.295	47	0.971	39	0.808
		20100102	NOx	543	11.309	1080	22.505	1170	24.371	877	18.263	730	15.209
		20100102	CO	117	2.434	233	4.844	252	5.245	189	3.931	157	3.274
		40301097	VOC	2000	5.435	2242	6.093	2283	6.202	2363	6.422	2404	6.532
BP PRODUCTS N AMERICA BROOKLYN TERMINAL	KINGS	40301016	VOC	113	0.308	127	0.346	130	0.352	134	0.364	136	0.371
125 APOLLO ST		40301018	VOC	48	0.131	54	0.147	55	0.149	57	0.154	58	0.157
BROOKLYN, NY 11222		40301120	VOC	102	0.298	114	0.334	116	0.340	120	0.352	122	0.358
		40400111	VOC	23759	57.541	26636	64.508	27115	65.669	28076	67.997	28557	69.161
		40400116	VOC	1930	5.259	2163	5.895	2202	6.001	2280	6.214	2319	6.321
		40400121	VOC	264	0.229	296	0.257	301	0.262	312	0.271	317	0.276
		40400122	VOC	256	0.222	287	0.249	292	0.254	302	0.263	307	0.267
		40400151	VOC	277	0.753	310	0.844	316	0.859	327	0.889	333	0.905
		40400154	VOC	14160	38.478	15874	43.137	16160	43.914	16733	45.470	17019	46.249
		40400160	VOC	19	0.055	21	0.062	22	0.063	22	0.065	23	0.067
		40400253	VOC	1853	5.036	2078	5.646	2115	5.748	2190	5.951	2228	6.053
		40600135	VOC	440	1.196	459	1.247	462	1.255	453	1.230	448	1.218
MOTIVA ENTERPRISES LLC	KINGS	10500106	NOx	77	0.208	80	0.218	81	0.220	82	0.224	83	0.225
25 PAIDGE AVE		10500106	CO	64	0.175	67	0.183	68	0.185	69	0.188	70	0.189
BROOKLYN, NY 11222-1281		40400151	VOC	1715	4.660	1923	5.225	1957	5.319	2027	5.507	2061	5.601
		40400160	VOC	18001	48.915	20180	54.837	20543	55.824	21271	57.803	21636	58.792
		40400250	VOC	41297	112.221	46297	125.808	47131	128.073	48802	132.613	49637	134.883
		40799997	VOC	991	2.694	968	2.631	964	2.620	980	2.664	988	2.686
		40799997	VOC	955	2.594	932	2.533	929	2.523	944	2.565	952	2.586
AMERICAN SUGAR REFINING INC	KINGS	10300401	VOC	659	0.000	613	0.000	605	0.000	615	0.000	619	0.000
266 KENT AVE		10300401	NOx	21477	0.000	19972	0.000	19721	0.000	20024	0.000	20175	0.000
BROOKLYN, NY 11211-4131		10300401	CO	2918	0.000	2713	0.000	2679	0.000	2720	0.000	2741	0.000
		10300601	VOC	4983	31.228	5028	31.510	5036	31.557	5118	32.076	5160	32.335
		10300601	NOx	96834	669.004	97709	675.054	97855	676.062	99464	687.175	100268	692.732
		10300601	CO	76104	476.933	76792	481.246	76907	481.965	78171	489.887	78803	493.849

		30201501	VOC	73	0.507	75	0.524	76	0.526	77	0.538	78	0.543
DITMAS TERMINAL - 364 MASPETH AVE	KINGS	10300501	VOC	2	0.000	2	0.000	2	0.000	2	0.000	2	0.000
364 MASPETH AVE		10300501	NOx	149	0.000	158	0.000	160	0.000	161	0.000	162	0.000
BROOKLYN, NY 11211		10300501	CO	31	0.000	33	0.000	33	0.000	34	0.000	34	0.000
		40301019	VOC	26250	71.332	29428	79.968	29958	81.407	31020	84.293	31551	85.736
		40400114	VOC	15600	42.391	17489	47.524	17804	48.379	18435	50.094	18750	50.952
		40400152	VOC	26453	71.883	29656	80.586	30190	82.037	31260	84.945	31795	86.399
BROOKLYN NAVY YARD COGENERATION PLANT	KINGS	20200101	VOC	302	4.042	305	4.079	305	4.085	302	4.036	300	4.012
BROOKLYN NAVY YARD, 63 FLUSHING AVE|BLDG 41 UNIT #234		20200101	NOx	5519	66.567	5569	67.167	5577	67.267	5511	66.461	5477	66.059
BROOKLYN, NY 11205		20200101	CO	251	26.572	254	26.811	254	26.851	251	26.530	249	26.369
		20200201	VOC	16601	49.352	17378	51.661	17508	52.046	17809	52.943	17960	53.392
		20200201	NOx	200277	599.417	209648	627.464	211209	632.139	214850	643.035	216670	648.483
		20200201	CO	6883	20.556	7205	21.518	7259	21.678	7384	22.052	7447	22.239
		20300101	VOC	3	0.046	3	0.048	4	0.049	4	0.049	4	0.050
		20300101	NOx	40	0.558	43	0.593	43	0.599	44	0.605	44	0.607
		20300101	CO	9	0.120	9	0.128	9	0.129	9	0.130	9	0.131
		40301019	VOC	23	0.063	26	0.071	27	0.072	28	0.075	28	0.076
		40301021	VOC	27	0.000	30	0.000	30	0.000	31	0.000	32	0.000
BEN FORMAN & SONS INC	KINGS	10500105	NOx	440	0.000	444	0.000	445	0.000	439	0.000	437	0.000
201 WATER ST		10500105	CO	110	0.000	111	0.000	111	0.000	110	0.000	109	0.000
BROOKLYN, NY 11201		10500106	NOx	245	0.133	256	0.139	258	0.140	263	0.143	265	0.144
		10500106	CO	206	0.112	215	0.117	217	0.118	221	0.120	223	0.121
		40100222	VOC	23760	75.190	30328	95.973	31422	99.437	33149	104.903	34013	107.636
COGEN CORP-111 LIVINGSTON ST	KINGS	10200502	NOx	1	0.000	1	0.000	1	0.000	1	0.000	1	0.000
111 LIVINGSTON ST		10200502	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
BROOKLYN, NY 11201		10200602	VOC	68	0.505	71	0.528	72	0.532	73	0.541	74	0.546
		10200602	VOC	89	0.655	93	0.686	93	0.691	95	0.703	96	0.709
		10200602	NOx	1612	11.915	1687	12.472	1700	12.565	1729	12.782	1744	12.890
		10200602	CO	1354	10.008	1417	10.477	1428	10.555	1453	10.737	1465	10.828
		20200202	VOC	10904	29.630	11414	31.017	11499	31.248	11697	31.787	11797	32.056
		20200202	NOx	45750	124.321	47891	130.138	48247	131.107	49079	133.367	49495	134.497
		20200202	CO	37506	101.918	39261	106.687	39553	107.482	40235	109.335	40576	110.261
		20300101	VOC	12929	51.995	13738	55.252	13873	55.795	13998	56.297	14060	56.548

		20300101	NOx	85646	344.446	91010	366.018	91904	369.613	92731	372.939	93144	374.601
		20300101	CO	34117	137.210	36254	145.803	36610	147.236	36939	148.560	37104	149.223
NYC-DEP OWLS HEAD WPCP	KINGS	10300603	VOC	89	0.243	90	0.245	90	0.245	92	0.249	92	0.251
6700 SHORE RD		10300603	VOC	116	0.315	117	0.318	117	0.318	119	0.323	120	0.326
BROOKLYN, NY 11220		10300603	NOx	2107	5.726	2126	5.777	2129	5.786	2164	5.881	2182	5.929
		10300603	CO	1770	4.809	1786	4.853	1789	4.860	1818	4.940	1833	4.980
		10300701	VOC	24	0.064	25	0.067	25	0.068	26	0.069	26	0.070
		10300701	NOx	787	2.138	828	2.249	834	2.268	850	2.311	858	2.333
		10300701	CO	661	1.796	695	1.889	701	1.905	714	1.941	721	1.959
		20200401	VOC	49	0.138	49	0.140	50	0.140	49	0.138	49	0.137
		20200401	NOx	47469	134.152	47897	135.360	47968	135.561	47393	133.938	47106	133.126
		20200401	CO	1555	4.395	1569	4.434	1571	4.441	1553	4.388	1543	4.361
		20200402	VOC	23015	62.541	23015	62.541	23015	62.541	23015	62.541	23015	62.541
		20200402	NOx	121334	329.712	121334	329.712	121334	329.712	121334	329.712	121334	329.712
		20200402	CO	85113	231.285	85113	231.285	85113	231.285	85113	231.285	85113	231.285
		20300101	VOC	89	1.856	95	1.973	96	1.992	96	2.010	97	2.019
		20300101	NOx	1092	22.741	1160	24.165	1171	24.402	1182	24.622	1187	24.732
		20300101	CO	235	4.899	250	5.206	252	5.257	255	5.304	256	5.328
		50100707	VOC	40	0.104	42	0.110	43	0.111	44	0.115	45	0.117
		50100720	VOC	507	1.323	536	1.397	540	1.410	558	1.455	567	1.478
		50100731	VOC	838	2.186	885	2.310	893	2.330	922	2.405	936	2.443
		50100740	VOC	314	0.819	332	0.865	335	0.873	345	0.901	351	0.915
		50100760	VOC	87	0.227	92	0.240	93	0.242	96	0.250	97	0.254
		50100771	VOC	104	0.271	110	0.287	111	0.289	114	0.298	116	0.303
		50100789	NOx	5817	15.175	6145	16.032	6200	16.174	6400	16.695	6500	16.956
		50100789	CO	10715	27.952	11320	29.530	11421	29.793	11789	30.753	11973	31.233
NARROWS GENERATING STATION	KINGS	10500106	NOx	320	0.000	335	0.000	337	0.000	343	0.000	346	0.000
53RD ST & FIRST AVE		10500106	CO	269	0.000	281	0.000	283	0.000	288	0.000	291	0.000
BROOKLYN, NY 11232		20100101	VOC	242	0.453	481	0.901	521	0.976	390	0.731	325	0.609
		20100101	NOx	355183	665.968	706839	1325.323	765448	1435.215	573615	1075.528	477698	895.683
		20100101	CO	1945	3.647	3871	7.258	4192	7.860	3141	5.890	2616	4.905
		20100201	VOC	9331	89.815	10215	98.315	10362	99.732	11448	110.184	11991	115.410
		20100201	VOC	9327	89.772	10210	98.268	10357	99.684	11442	110.131	11985	115.355

		20100201	NOx	1659217	15969.964	1816242	17481.329	1842413	17733.223	2035498	19591.667	2132041	20520.892
		20100201	CO	364712	3510.355	399228	3842.568	404980	3897.937	447422	4306.441	468644	4510.694
		20200102	VOC	1671	12.953	1686	13.070	1689	13.089	1669	12.933	1659	12.854
		20200102	NOx	20474	158.677	20659	160.106	20690	160.344	20442	158.424	20318	157.464
		20200102	CO	4411	34.182	4450	34.490	4457	34.541	4404	34.128	4377	33.921
MAIMONIDES MEDICAL CENTER	KINGS	10300602	VOC	1002	2.723	1011	2.747	1012	2.751	1029	2.797	1037	2.819
4802 TENTH AVE		10300602	VOC	1301	3.535	1313	3.567	1315	3.573	1336	3.631	1347	3.661
BROOKLYN, NY 11219		10300602	NOx	23655	64.280	23869	64.861	23905	64.958	24298	66.026	24494	66.560
		10300602	CO	19870	53.995	20050	54.483	20080	54.565	20410	55.462	20575	55.910
		20300101	VOC	188	3.913	200	4.158	202	4.199	203	4.236	204	4.255
		20300101	VOC	188	3.912	200	4.157	202	4.198	203	4.236	204	4.255
		20300101	NOx	2235	46.558	2375	49.474	2398	49.960	2420	50.410	2430	50.634
		20300101	CO	496	10.325	527	10.972	532	11.080	537	11.179	539	11.229
GOWANUS GENERATING STATION	KINGS	20100101	VOC	429	5.843	854	11.628	925	12.593	693	9.437	577	7.859
27TH ST & THIRD AVE		20100101	NOx	616775	8400.901	1227425	16718.377	1329200	18104.622	996081	13567.317	829522	11298.657
BROOKLYN, NY 11232		20100101	CO	3455	47.053	6875	93.639	7445	101.403	5579	75.990	4646	63.283
		20100201	VOC	3690	54.084	4040	59.202	4098	60.055	4527	66.349	4742	69.496
		20100201	NOx	464960	6814.069	508963	7458.939	516297	7566.417	570405	8359.379	597459	8755.861
		20100201	CO	144237	2113.821	157888	2313.869	160163	2347.210	176948	2593.198	185340	2716.192
		20200102	VOC	736	9.013	743	9.094	744	9.108	735	8.999	731	8.944
		20200102	NOx	9019	110.409	9101	111.404	9114	111.569	9005	110.233	8950	109.565
		20200102	CO	1943	23.784	1960	23.999	1963	24.034	1940	23.746	1928	23.603
EASTERN POLY PACKAGING CO INC	KINGS	39000689	NOx	120	0.455	126	0.476	127	0.479	129	0.488	130	0.492
149 47TH ST		39000689	CO	101	0.382	106	0.400	106	0.403	108	0.410	109	0.413
BROOKLYN, NY 11232-4225		40500301	VOC	4989	19.488	5003	19.541	5005	19.550	5121	20.003	5179	20.229
		40500311	VOC	35607	139.090	33410	130.508	33044	129.078	33510	130.898	33743	131.808
		40500311	VOC	35645	139.238	33446	130.648	33079	129.216	33546	131.038	33779	131.949
ULANO CORP-280 BERGEN ST	KINGS	10300501	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
280 BERGEN ST		10300501	NOx	12	0.000	13	0.000	13	0.000	13	0.000	13	0.000
BROOKLYN, NY 11217		10300501	CO	3	0.000	3	0.000	3	0.000	3	0.000	3	0.000
		10300602	VOC	1	0.004	1	0.004	1	0.004	1	0.004	1	0.004
		10300602	NOx	18	0.068	18	0.069	18	0.069	18	0.070	18	0.071
		10300602	CO	15	0.057	15	0.058	15	0.058	15	0.059	15	0.059

		40201399	VOC	700	2.692	858	3.301	885	3.403	938	3.606	964	3.708
NEW YORK METHODIST HOSPITAL	KINGS	10300602	VOC	713	1.937	719	1.954	720	1.957	732	1.989	738	2.005
506 6TH ST		10300602	NOx	12959	35.215	13076	35.533	13096	35.586	13311	36.171	13419	36.464
BROOKLYN, NY 11215		10300602	CO	10886	29.580	10984	29.848	11000	29.892	11181	30.384	11272	30.629
		20200204	NOx	72680	175.709	76080	183.931	76647	185.301	77968	188.495	78629	190.092
		20200204	CO	42394	102.490	44377	107.286	44708	108.085	45479	109.948	45864	110.880
		20200401	VOC	10	0.213	10	0.215	10	0.215	10	0.212	10	0.211
		20200401	VOC	10	0.217	11	0.219	11	0.219	10	0.217	10	0.215
		20200401	NOx	407	8.486	411	8.563	412	8.575	407	8.473	404	8.421
		20200401	CO	108	2.248	109	2.268	109	2.271	108	2.244	107	2.230
NYC-HH - WOODHULL HOSPITAL	KINGS	10300401	VOC	1	0.000	1	0.000	1	0.000	1	0.000	1	0.000
760 BROADWAY		10300401	NOx	24	0.000	22	0.000	22	0.000	22	0.000	22	0.000
BROOKLYN, NY 11206		10300401	CO	3	0.000	2	0.000	2	0.000	2	0.000	2	0.000
		10300601	VOC	753	1.136	760	1.147	761	1.148	774	1.167	780	1.177
		10300601	NOx	26022	39.260	26258	39.615	26297	39.674	26729	40.326	26945	40.652
		10300601	CO	11505	17.357	11609	17.514	11626	17.540	11817	17.828	11913	17.973
		20200102	VOC	371	7.739	375	7.808	375	7.820	371	7.726	369	7.680
		20200102	NOx	4550	94.800	4591	95.654	4598	95.796	4543	94.649	4516	94.075
		20200102	CO	980	20.422	989	20.606	991	20.636	979	20.389	973	20.266
DOWNSTATE MEDICAL CENTER	KINGS	10300402	VOC	1300	3.574	1209	3.324	1193	3.282	1212	3.332	1221	3.357
450 CLARKSON AVE		10300402	NOx	51198	140.794	47609	130.924	47010	129.279	47733	131.264	48094	132.257
BROOKLYN, NY 11203-2098		10300402	CO	5751	15.815	5348	14.706	5280	14.521	5362	14.744	5402	14.856
		10300504	NOx	1661	0.000	1765	0.000	1782	0.000	1798	0.000	1806	0.000
		10300504	CO	415	0.000	441	0.000	446	0.000	450	0.000	452	0.000
		10300602	VOC	1475	5.611	1488	5.662	1490	5.670	1515	5.764	1527	5.810
		10300602	NOx	8581	32.647	8659	32.942	8672	32.991	8815	33.534	8886	33.805
		10300602	CO	22526	85.698	22730	86.473	22764	86.602	23138	88.025	23325	88.737
		10300603	VOC	49	0.098	49	0.099	49	0.099	50	0.101	51	0.101
		10300603	NOx	890	1.780	898	1.796	899	1.799	914	1.828	922	1.843
		10300603	CO	748	1.495	754	1.509	755	1.511	768	1.536	774	1.548
		20300101	VOC	73	6.073	77	6.454	78	6.517	79	6.576	79	6.605
		20300101	VOC	73	6.073	77	6.453	78	6.517	79	6.575	79	6.605
		20300101	NOx	886	73.839	942	78.463	951	79.234	959	79.947	964	80.303

		20300101	CO	192	16.027	204	17.031	206	17.198	208	17.353	209	17.430
		20300201	VOC	0	0.001	0	0.001	0	0.001	0	0.001	0	0.001
		20300201	NOx	0	0.023	0	0.023	0	0.023	0	0.023	0	0.024
		20300201	CO	0	0.003	0	0.003	0	0.003	0	0.003	0	0.003
		50100505	VOC	23	2.250	23	2.322	23	2.334	23	2.331	23	2.330
		50100505	NOx	7	0.675	7	0.697	7	0.700	7	0.699	7	0.699
		50100505	CO	7	0.664	7	0.685	7	0.688	7	0.688	7	0.687
CONSOLIDATED PACKAGING GROUP INC-1250 METROPOLITA	KINGS	10300603	VOC	15	0.042	16	0.042	16	0.042	16	0.043	16	0.043
1250 METROPOLITAN AVE		10300603	VOC	12	0.032	12	0.033	12	0.033	12	0.033	12	0.033
BROOKLYN, NY 11237		10300603	NOx	281	0.764	284	0.770	284	0.772	289	0.784	291	0.791
		10300603	CO	236	0.641	238	0.647	239	0.648	242	0.659	244	0.664
		39000689	NOx	1282	4.931	1342	5.161	1352	5.200	1375	5.290	1387	5.334
		39000689	CO	1077	4.142	1127	4.336	1136	4.368	1155	4.443	1165	4.481
		40500311	VOC	29876	114.908	28033	107.818	27725	106.637	28116	108.140	28312	108.892
BROOKDALE MED HOSP CTR-1275 LINDEN BLVD	KINGS	10300401	VOC	2	0.000	2	0.000	2	0.000	2	0.000	2	0.000
1275 LINDEN BLVD		10300401	VOC	2	0.000	2	0.000	2	0.000	2	0.000	2	0.000
BROOKLYN, NY 11212		10300401	NOx	77	0.000	71	0.000	70	0.000	71	0.000	72	0.000
		10300401	CO	8	0.000	8	0.000	7	0.000	8	0.000	8	0.000
		10300602	VOC	479	1.355	483	1.367	484	1.369	492	1.392	496	1.403
		10300602	NOx	8707	24.635	8786	24.858	8799	24.895	8943	25.304	9016	25.509
		10300602	CO	7314	20.694	7380	20.881	7391	20.912	7513	21.256	7573	21.427
		20100102	VOC	77	1.600	153	3.185	166	3.449	124	2.584	103	2.152
		20100102	NOx	941	19.605	1873	39.015	2028	42.250	1520	31.661	1266	26.367
		20100102	CO	203	4.220	403	8.397	436	9.094	327	6.815	272	5.675
		40301097	VOC	10	0.027	11	0.030	11	0.031	12	0.032	12	0.033
		40301099	VOC	10	0.027	11	0.030	11	0.031	12	0.032	12	0.033
BROOKLYN COLLEGE	KINGS	10300602	VOC	1190	1.552	1201	1.566	1203	1.569	1223	1.595	1232	1.607
2900 BEDFORD AVE		10300602	NOx	10820	14.113	10918	14.241	10934	14.262	11114	14.496	11204	14.614
BROOKLYN, NY 11210		10300602	CO	18178	23.710	18342	23.924	18369	23.960	18671	24.354	18822	24.551
NYC-HH - KINGS COUNTY HOSPITAL CENTER	KINGS	10100401	VOC	6	0.000	9	0.000	10	0.000	10	0.000	10	0.000
451 CLARKSON AVE		10100401	NOx	387	0.000	577	0.000	608	0.000	600	0.000	597	0.000
BROOKLYN, NY 11203		10100401	CO	41	0.000	61	0.000	65	0.000	64	0.000	63	0.000

		10300602	VOC	2853	8.374	2879	8.450	2884	8.463	2931	8.602	2955	8.671
		10300602	NOx	51880	152.257	52349	153.634	52428	153.864	53289	156.393	53720	157.658
		10300602	CO	43579	127.896	43974	129.053	44039	129.246	44763	131.370	45125	132.432
		20100102	VOC	467	21.187	929	42.163	1006	45.659	754	34.216	628	28.494
		20100102	NOx	5719	259.567	11382	516.557	12326	559.388	9237	419.197	7692	349.101
		20100102	CO	1231	55.867	2450	111.179	2653	120.398	1988	90.224	1656	75.138
SAINT MARY'S HOSPITAL	KINGS	10300502	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
170 BUFFALO AVE		10300502	NOx	12	0.000	12	0.000	12	0.000	13	0.000	13	0.000
BROOKLYN, NY 11213		10300502	CO	3	0.000	3	0.000	3	0.000	3	0.000	3	0.000
		10300503	NOx	3	0.000	3	0.000	3	0.000	3	0.000	3	0.000
		10300503	CO	1	0.000	1	0.000	1	0.000	1	0.000	1	0.000
		10300602	VOC	217	5.431	219	5.480	220	5.489	223	5.579	225	5.624
		10300602	NOx	3950	98.750	3986	99.643	3992	99.792	4057	101.432	4090	102.252
		10300602	CO	3318	82.950	3348	83.700	3353	83.825	3408	85.203	3436	85.892
		10300603	VOC	52	1.304	53	1.315	53	1.317	54	1.339	54	1.350
		10300603	NOx	948	23.700	957	23.914	958	23.950	974	24.344	982	24.541
		10300603	CO	796	19.908	804	20.088	805	20.118	818	20.449	825	20.614
		20200254	VOC	10158	37.925	10634	39.699	10713	39.995	10898	40.684	10990	41.029
		20200254	NOx	72917	272.222	76328	284.959	76897	287.082	78222	292.030	78885	294.504
		20200254	CO	47951	179.017	50195	187.393	50569	188.789	51440	192.044	51876	193.671
		20200401	VOC	18	4.620	19	4.662	19	4.669	18	4.613	18	4.585
		20200401	NOx	723	180.675	729	182.302	730	182.573	722	180.387	717	179.294
		20200401	CO	191	47.850	193	48.281	193	48.353	191	47.774	190	47.484
KINGSBROOK JEWISH MEDICAL CENTER	KINGS	10300602	VOC	763	2.073	770	2.092	771	2.095	784	2.129	790	2.147
585 SCHENECTADY AVE		10300602	NOx	13871	37.692	13996	38.032	14017	38.089	14247	38.715	14362	39.028
BROOKLYN, NY 11203		10300602	CO	11651	31.661	11757	31.947	11774	31.995	11968	32.521	12064	32.784
		20200104	VOC	453	1.900	457	1.917	458	1.920	452	1.897	450	1.886
		20200104	NOx	8393	35.195	8468	35.512	8481	35.564	8379	35.139	8328	34.926
		20200104	CO	1806	7.575	1823	7.643	1825	7.655	1803	7.563	1793	7.517
		20200202	NOx	22	0.426	23	0.446	23	0.449	24	0.457	24	0.461
		20200202	CO	3	0.060	3	0.063	3	0.063	3	0.064	3	0.065
		20200204	VOC	1103	2.997	1155	3.137	1163	3.161	1183	3.215	1193	3.242
		20200204	NOx	27003	73.377	28266	76.810	28477	77.383	28968	78.716	29213	79.383

		20200204	CO	3794	10.309	3971	10.791	4001	10.872	4070	11.059	4104	11.153
		20200401	VOC	14	0.265	14	0.267	14	0.268	14	0.265	14	0.263
		20200401	NOx	538	10.353	543	10.446	544	10.462	537	10.336	534	10.274
		20200401	CO	143	2.750	144	2.775	145	2.779	143	2.746	142	2.729
ULTRA FLEX PKG CORP-975 ESSEX ST	KINGS	10200603	NOx	280	0.761	293	0.796	295	0.802	300	0.816	303	0.823
975 ESSEX STREET		10200603	CO	235	0.639	246	0.669	248	0.674	252	0.686	254	0.691
BROOKLYN, NY 11208-5419		20200252	VOC	328	0.900	343	0.942	345	0.949	351	0.965	354	0.974
		20200252	VOC	967	2.656	1012	2.781	1020	2.801	1037	2.850	1046	2.874
		20200252	NOx	2554	7.018	2674	7.346	2694	7.401	2740	7.528	2763	7.592
		20200252	CO	2977	8.180	3117	8.562	3140	8.626	3194	8.775	3221	8.849
		39000699	VOC	101	0.278	106	0.291	107	0.293	109	0.298	109	0.301
		39000699	NOx	1840	5.055	1926	5.291	1940	5.331	1974	5.423	1991	5.469
		39000699	CO	1546	4.246	1618	4.445	1630	4.478	1658	4.555	1672	4.594
		40100399	VOC	1400	3.889	1787	4.964	1851	5.143	1953	5.426	2004	5.567
		40500311	VOC	7480	20.778	7018	19.496	6942	19.282	7039	19.554	7088	19.690
		40500511	VOC	51302	140.027	48137	131.387	47609	129.947	48281	131.780	48616	132.696
ACTION PACKAGING CORP	KINGS	39000689	NOx	97	0.485	102	0.508	102	0.511	104	0.520	105	0.525
667 ATKINS AVE		39000689	CO	81	0.407	85	0.426	86	0.430	87	0.437	88	0.441
BROOKLYN, NY 11208		40500312	VOC	21548	107.740	20219	101.093	19997	99.985	20279	101.395	20420	102.100
		40500312	VOC	21627	108.135	20293	101.463	20070	100.351	20353	101.767	20495	102.474
GLENMORE PLASTIC INDUSTRIES INC	KINGS	10300603	VOC	1	0.000	1	0.000	1	0.000	1	0.000	1	0.000
807 BANK ST		10300603	VOC	1	0.000	1	0.000	1	0.000	1	0.000	1	0.000
BROOKLYN, NY 11236		10300603	NOx	15	0.000	15	0.000	15	0.000	15	0.000	15	0.000
		10300603	CO	12	0.000	13	0.000	13	0.000	13	0.000	13	0.000
		20200104	VOC	147	0.000	148	0.000	148	0.000	147	0.000	146	0.000
		20200104	NOx	2718	0.000	2742	0.000	2747	0.000	2714	0.000	2697	0.000
		20200104	CO	585	0.000	590	0.000	591	0.000	584	0.000	581	0.000
		20200204	NOx	257	7.425	269	7.772	271	7.830	276	7.965	278	8.033
		20200204	CO	36	1.043	38	1.092	38	1.100	39	1.119	39	1.129
ARROW LOCK MANUFACTURING CO	KINGS	10200603	VOC	23	0.063	24	0.066	24	0.067	25	0.068	25	0.068
103-00 FOSTER AVE		10200603	NOx	422	1.147	442	1.200	445	1.209	453	1.230	457	1.241
BROOKLYN, NY 11236-2206		10200603	CO	354	0.963	371	1.008	374	1.016	380	1.033	383	1.042
		10300603	VOC	43	0.819	44	0.826	44	0.827	45	0.841	45	0.848

		10300603	NOx	788	14.884	795	15.019	796	15.041	809	15.289	816	15.412
		10300603	CO	662	12.503	668	12.616	669	12.635	680	12.843	685	12.946
		20100201	VOC	13	0.036	15	0.040	15	0.040	16	0.045	17	0.047
		20100201	NOx	2035	5.530	2228	6.054	2260	6.141	2497	6.785	2615	7.106
		20100201	CO	522	1.417	571	1.551	579	1.574	640	1.739	670	1.821
		20200102	VOC	217	22.482	219	22.685	219	22.718	217	22.446	215	22.310
		20200102	NOx	2658	275.405	2682	277.885	2686	278.299	2654	274.966	2638	273.300
		20200102	CO	573	59.328	578	59.862	579	59.951	572	59.233	568	58.874
		40200101	VOC	1617	6.125	2169	8.215	2261	8.564	2434	9.222	2521	9.550
		40201001	NOx	113	0.307	118	0.321	119	0.324	121	0.329	122	0.332
		40201001	CO	95	0.258	99	0.270	100	0.272	102	0.277	103	0.279
NYC-TA EAST NY BUS DEPOT & SHOPS	KINGS	10300401	VOC	252	0.000	234	0.000	231	0.000	235	0.000	237	0.000
1 JAMAICA AVE		10300401	NOx	10486	0.000	9751	0.000	9628	0.000	9776	0.000	9850	0.000
BROOKLYN, NY 11207		10300401	CO	1116	0.000	1037	0.000	1024	0.000	1040	0.000	1048	0.000
		10300602	VOC	605	2.353	610	2.374	611	2.378	621	2.417	626	2.436
		10300602	NOx	11000	42.778	11099	43.165	11116	43.229	11299	43.940	11390	44.295
		10300602	CO	9240	35.933	9324	36.258	9337	36.312	9491	36.909	9568	37.208
		10500106	VOC	165	0.553	172	0.579	174	0.583	177	0.593	178	0.598
		10500106	NOx	2993	10.056	3133	10.527	3156	10.605	3211	10.788	3238	10.880
		10500106	CO	2514	8.447	2632	8.843	2651	8.908	2697	9.062	2720	9.139
		20300101	VOC	46	0.126	49	0.134	50	0.135	50	0.136	50	0.137
		20300101	NOx	556	1.510	590	1.605	596	1.620	602	1.635	604	1.642
		20300101	CO	122	0.333	130	0.353	131	0.357	132	0.360	133	0.362
		31499999	VOC	492	2.050	592	2.467	609	2.536	643	2.680	661	2.753
		40201601	VOC	1115	4.646	1367	5.696	1409	5.871	1493	6.223	1536	6.398
		40600401	VOC	60	0.165	60	0.164	60	0.164	59	0.163	59	0.162
		40600602	VOC	21	0.058	21	0.058	21	0.058	21	0.057	21	0.057
		40600603	VOC	37	0.102	37	0.102	37	0.102	37	0.101	37	0.101
STARRETT CITY POWER PLANT	KINGS	10300401	VOC	2288	45.345	2128	42.166	2101	41.636	2133	42.276	2150	42.595
165 ELMIRA LOOP		10300401	NOx	91115	1805.529	84728	1678.956	83663	1657.860	84948	1683.327	85591	1696.060
BROOKLYN, NY 11239		10300401	CO	10125	200.640	9415	186.575	9297	184.230	9440	187.060	9511	188.475
		10300601	VOC	7376	33.298	7442	33.599	7453	33.649	7576	34.202	7637	34.479
		10300601	NOx	375480	1695.166	378875	1710.495	379441	1713.050	385679	1741.209	388797	1755.288

		10300601	CO	112644	508.550	113663	513.148	113832	513.915	115704	522.363	116639	526.586
		20200401	VOC	2979	50.893	3006	51.351	3011	51.428	2974	50.812	2956	50.504
		20200401	VOC	2921	49.907	2948	50.356	2952	50.431	2917	49.827	2899	49.525
		20200401	NOx	102669	1752.850	103594	1768.637	103748	1771.268	102505	1750.057	101884	1739.452
		20200401	CO	30856	527.104	31134	531.851	31180	532.642	30807	526.264	30620	523.075
KINGS PLAZA TOTAL ENERGY PLANT	KINGS	10200602	VOC	194	0.718	203	0.752	205	0.757	208	0.771	210	0.777
5100 KINGS PLZ		10200602	NOx	3534	13.059	3699	13.670	3727	13.772	3791	14.010	3823	14.128
BROOKLYN, NY 11234		10200602	CO	2968	10.970	3107	11.483	3130	11.569	3184	11.768	3211	11.868
		20200401	VOC	8773	10.489	8852	10.584	8865	10.600	8759	10.473	8706	10.409
		20200401	VOC	8609	10.293	8686	10.386	8699	10.401	8595	10.276	8543	10.214
		20200401	NOx	389910	466.197	393422	470.395	394007	471.095	389289	465.454	386930	462.633
		20200401	CO	91050	108.865	91870	109.845	92007	110.008	90905	108.691	90354	108.032
		20200402	VOC	45844	134.542	45844	134.542	45844	134.542	45844	134.542	45844	134.542
		20200402	NOx	557001	1634.677	557001	1634.677	557001	1634.677	557001	1634.677	557001	1634.677
		20200402	CO	265895	780.344	265895	780.344	265895	780.344	265895	780.344	265895	780.344
		20300201	NOx	17063	111.281	17217	112.288	17243	112.455	17527	114.304	17668	115.228
		20300201	CO	10837	70.675	10935	71.314	10951	71.421	11131	72.595	11221	73.182
NYC-DEP CONEY ISLAND WPCP	KINGS	10300602	VOC	274	0.745	277	0.752	277	0.753	282	0.765	284	0.772
2591 KNAPP ST		10300602	NOx	4985	13.547	5030	13.670	5038	13.690	5121	13.915	5162	14.028
BROOKLYN, NY 11235		10300602	CO	4188	11.380	4226	11.483	4232	11.500	4301	11.689	4336	11.783
		10300701	VOC	421	1.144	443	1.204	447	1.214	455	1.237	459	1.248
		10300701	NOx	7655	20.801	8054	21.886	8121	22.067	8276	22.489	8353	22.699
		10300701	CO	11242	30.550	11829	32.144	11927	32.409	12154	33.028	12268	33.338
		20200401	VOC	110	0.275	111	0.277	111	0.278	110	0.275	109	0.273
		20200401	NOx	107494	268.735	108462	271.155	108623	271.559	107323	268.307	106672	266.681
		20200401	CO	3520	8.800	3552	8.879	3557	8.892	3514	8.786	3493	8.733
		20200402	VOC	8419	25.075	8419	25.075	8419	25.075	8419	25.075	8419	25.075
		20200402	VOC	9483	28.233	9483	28.233	9483	28.233	9483	28.233	9483	28.233
		20200402	NOx	50445	153.491	50445	153.491	50445	153.491	50445	153.491	50445	153.491
		20200402	CO	35123	105.417	35123	105.417	35123	105.417	35123	105.417	35123	105.417
		39999999	VOC	1223	3.323	1752	4.761	1840	5.000	1946	5.288	1999	5.431
		50100789	NOx	719	3.595	760	3.798	766	3.832	791	3.955	803	4.017
		50100789	CO	1324	6.620	1399	6.994	1411	7.056	1457	7.283	1479	7.397

NYC-HH - CONEY ISLAND HOSPITAL	KINGS	10300401	VOC	686	0.886	638	0.824	630	0.813	640	0.826	645	0.832
2601 OCEAN PKWY @ AVE Z		10300401	NOx	28550	36.835	26548	34.253	26215	33.823	26617	34.342	26819	34.602
BROOKLYN, NY 11235		10300401	CO	3037	3.919	2824	3.644	2789	3.598	2832	3.653	2853	3.681
		20200101	VOC	0	0.004	0	0.004	0	0.004	0	0.004	0	0.004
		20200101	NOx	372	7.755	376	7.825	376	7.836	372	7.743	369	7.696
		20200101	CO	1	0.029	1	0.029	1	0.029	1	0.029	1	0.029
NYC-TA CONEY ISLAND YARD	KINGS	10200401	VOC	58	0.000	68	0.000	70	0.000	70	0.000	70	0.000
2556 MCDONALD AVE @ AVE X		10200401	VOC	45	0.000	53	0.000	55	0.000	55	0.000	55	0.000
BROOKLYN, NY 11223		10200401	NOx	9669	0.000	11425	0.000	11717	0.000	11731	0.000	11737	0.000
		10200401	CO	1029	0.000	1215	0.000	1247	0.000	1248	0.000	1249	0.000
		10200602	VOC	279	1.073	292	1.123	294	1.131	299	1.151	302	1.160
		10200602	VOC	215	0.826	225	0.865	226	0.871	230	0.886	232	0.894
		10200602	NOx	5070	19.500	5307	20.412	5347	20.564	5439	20.919	5485	21.096
		10200602	CO	4259	16.380	4458	17.146	4491	17.274	4569	17.572	4607	17.721
		10500105	VOC	14	0.047	14	0.047	14	0.047	14	0.047	14	0.046
		10500105	NOx	1404	4.679	1416	4.721	1418	4.728	1401	4.671	1393	4.643
		10500105	CO	351	1.170	354	1.180	355	1.182	350	1.168	348	1.161
		10500106	NOx	1975	17.243	2067	18.050	2083	18.185	2119	18.498	2137	18.655
		10500106	CO	1659	14.484	1737	15.162	1750	15.275	1780	15.538	1795	15.670
		20200102	VOC	15	1.260	15	1.271	15	1.273	15	1.258	15	1.250
		20200102	NOx	185	15.435	187	15.574	187	15.597	185	15.410	184	15.317
		20200102	CO	40	3.325	40	3.355	40	3.360	40	3.320	40	3.300
		40202501	VOC	8761	33.695	12765	49.098	13433	51.665	14609	56.189	15197	58.451
		40202501	VOC	9263	35.629	13498	51.916	14204	54.631	15448	59.414	16070	61.806
WARBASSE HOUSES & POWER PLANT	KINGS	10200405	NOx	620	0.000	733	0.000	751	0.000	752	0.000	753	0.000
2701 WEST 6TH ST		10200405	CO	56	0.000	67	0.000	68	0.000	68	0.000	68	0.000
BROOKLYN, NY 11224		20100101	VOC	0	0.000	1	0.000	1	0.000	1	0.000	0	0.000
		20100101	NOx	160	0.000	318	0.000	345	0.000	258	0.000	215	0.000
		20100101	CO	47	0.000	94	0.000	101	0.000	76	0.000	63	0.000
		20100201	VOC	2002	13.643	2191	14.934	2223	15.149	2456	16.737	2572	17.531
		20100201	NOx	86929	588.951	95156	644.688	96527	653.978	106643	722.515	111701	756.783
		20100201	CO	35907	242.497	39305	265.446	39872	269.271	44050	297.490	46139	311.600
		20300101	VOC	393	5.778	418	6.140	422	6.200	426	6.256	428	6.284

		20300101	VOC	393	5.778	418	6.139	422	6.200	426	6.255	428	6.283
		20300101	NOx	4522	66.500	4805	70.665	4852	71.359	4896	72.001	4918	72.322
		20300101	CO	1037	15.248	1102	16.202	1113	16.362	1123	16.509	1128	16.582
NYC-TA 207TH STREET OVERHAUL SHOP	NEW YORK	10200503	VOC	0	0.004	0	0.004	0	0.004	0	0.004	0	0.004
3961 10TH AVE		10200503	NOx	20	0.385	20	0.388	20	0.389	20	0.384	20	0.382
NEW YORK, NY 10034		10200503	CO	5	0.096	5	0.097	5	0.097	5	0.096	5	0.095
		10300401	VOC	835	3.249	777	3.021	767	2.983	779	3.029	785	3.052
		10300401	NOx	34749	135.134	32313	125.661	31907	124.082	32397	125.988	32642	126.941
		10300401	CO	3697	14.376	3438	13.368	3394	13.200	3446	13.403	3473	13.504
		10500106	VOC	8	0.028	9	0.030	9	0.030	9	0.030	9	0.031
		10500106	NOx	154	0.514	161	0.538	163	0.542	165	0.551	167	0.556
		10500106	CO	129	0.431	136	0.452	137	0.455	139	0.463	140	0.467
		20200102	VOC	149	0.727	150	0.733	150	0.735	148	0.726	148	0.721
		20200102	VOC	147	0.719	148	0.726	149	0.727	147	0.718	146	0.714
		20200102	NOx	1821	8.905	1838	8.985	1840	8.998	1818	8.891	1807	8.837
		20200102	CO	392	1.918	396	1.936	396	1.938	392	1.915	389	1.904
NEW YORK PRESBYTERIAN HOSPITAL	NEW YORK	10300401	VOC	59	7.979	55	7.420	54	7.326	55	7.439	55	7.495
622 WEST 168TH ST		10300401	NOx	2447	331.868	2275	308.603	2247	304.725	2281	309.406	2298	311.746
NEW YORK, NY 10032-3702		10300401	CO	260	35.305	242	32.830	239	32.418	243	32.916	245	33.165
		10300601	VOC	5368	14.666	5417	14.799	5425	14.821	5514	15.065	5558	15.187
		10300601	NOx	136632	373.304	137868	376.680	138074	377.243	140343	383.444	141478	386.544
		10300601	CO	81984	223.995	82725	226.021	82849	226.359	84211	230.079	84892	231.940
		10300602	VOC	407	4.549	411	4.590	411	4.597	418	4.672	421	4.710
		10300602	VOC	94	1.046	94	1.055	95	1.057	96	1.074	97	1.083
		10300602	NOx	7400	82.706	7467	83.454	7478	83.578	7601	84.952	7662	85.639
		10300602	CO	6216	69.473	6272	70.101	6282	70.206	6385	71.360	6436	71.937
		20200102	VOC	797	16.603	804	16.752	805	16.777	796	16.576	791	16.476
		20200102	NOx	9762	203.384	9850	205.215	9865	205.521	9747	203.060	9688	201.829
		20200102	CO	2103	43.813	2122	44.207	2125	44.273	2100	43.743	2087	43.478
RACHEL BRIDGE CORP	NEW YORK	10300401	VOC	993	2.699	924	2.510	912	2.479	926	2.517	933	2.536
1365 ST NICHOLAS AVE		10300401	NOx	41318	112.276	38421	104.405	37938	103.094	38521	104.677	38813	105.469
NEW YORK, NY 10033		10300401	CO	4396	11.944	4087	11.107	4036	10.967	4098	11.136	4129	11.220

NYC-DEP NORTH RIVER WPCP	NEW YORK	10300501	VOC	80	0.191	85	0.203	86	0.205	86	0.206	87	0.207
725 W 135TH ST		10300501	NOx	5626	13.453	5978	14.295	6037	14.436	6091	14.566	6118	14.631
NEW YORK, NY 10031		10300501	CO	1172	2.803	1245	2.978	1258	3.007	1269	3.034	1275	3.048
		10300602	VOC	158	0.344	160	0.347	160	0.348	163	0.353	164	0.356
		10300602	NOx	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		10300602	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		10300701	VOC	900	1.957	947	2.059	955	2.076	973	2.115	982	2.135
		10300701	NOx	26560	57.739	27946	60.752	28177	61.254	28715	62.424	28984	63.009
		10300701	CO	6630	14.413	6976	15.165	7034	15.290	7168	15.582	7235	15.728
		20200401	VOC	410	1.292	414	1.304	414	1.306	409	1.290	407	1.283
		20200401	NOx	142510	449.216	143793	453.262	144007	453.936	142283	448.500	141421	445.782
		20200401	CO	7350	23.168	7416	23.377	7427	23.412	7338	23.132	7294	22.991
		20200402	VOC	26270	57.109	26270	57.109	26270	57.109	26270	57.109	26270	57.109
		20200402	NOx	172636	375.296	172636	375.296	172636	375.296	172636	375.296	172636	375.296
		20200402	CO	195240	424.435	195240	424.435	195240	424.435	195240	424.435	195240	424.435
		20300101	VOC	1109	21.323	1178	22.658	1190	22.881	1201	23.087	1206	23.190
		20300101	NOx	13288	255.538	14120	271.542	14259	274.209	14387	276.677	14451	277.910
		20300101	CO	2926	56.269	3109	59.793	3140	60.381	3168	60.924	3182	61.195
		39999999	VOC	2135	5.802	3058	8.311	3212	8.729	3397	9.231	3489	9.482
CON ED-59TH ST STA	NEW YORK	10100404	VOC	11235	79.112	16746	117.923	17665	124.392	17442	122.817	17330	122.030
850 12TH AVE		10100404	NOx	477200	3360.283	711311	5008.817	750330	5283.572	740832	5216.695	736084	5183.257
NEW YORK, NY 10019		10100404	CO	73913	520.471	110174	775.811	116218	818.367	114747	808.009	114011	802.830
		10100601	VOC	8573	44.713	9384	48.944	9519	49.650	10517	54.853	11016	57.455
		10100601	NOx	340355	1775.185	372566	1943.185	377934	1971.185	417541	2177.765	437345	2281.056
		10100601	CO	130930	682.888	143321	747.515	145386	758.286	160622	837.755	168240	877.489
		10100604	VOC	3056	21.267	3346	23.279	3394	23.615	3749	26.089	3927	27.327
		10100604	VOC	2354	16.377	2576	17.927	2613	18.186	2887	20.091	3024	21.044
		10100604	NOx	52084	362.418	57013	396.716	57835	402.433	63896	444.608	66926	465.695
		10100604	CO	13336	92.799	14599	101.582	14809	103.045	16361	113.845	17137	119.244
		20100101	VOC	205	35.178	408	70.007	442	75.811	331	56.812	276	47.312
		20100101	VOC	201	34.537	401	68.731	434	74.430	325	55.776	271	46.450
		20100101	NOx	17905	3072.498	35632	6114.485	38587	6621.482	28916	4962.034	24081	4132.307
		20100101	CO	4021	690.034	8002	1373.217	8666	1487.080	6494	1114.394	5408	928.051

CITY COLLEGE OF NEW YORK	NEW YORK	10200602	VOC	169	0.169	177	0.177	178	0.178	181	0.181	183	0.183
160 CONVENT AVE		10200602	VOC	219	0.219	230	0.230	231	0.231	235	0.235	237	0.237
NEW YORK, NY 10031		10200602	NOx	3990	3.990	4177	4.177	4208	4.208	4280	4.280	4317	4.317
		10200602	CO	3352	3.352	3508	3.508	3535	3.535	3595	3.595	3626	3.626
		10300502	VOC	1	0.000	1	0.000	1	0.000	1	0.000	1	0.000
		10300502	NOx	44	0.000	47	0.000	48	0.000	48	0.000	48	0.000
		10300502	CO	15	0.000	16	0.000	16	0.000	16	0.000	16	0.000
		10300602	VOC	839	1.550	846	1.564	847	1.566	861	1.592	868	1.605
		10300602	VOC	1089	2.012	1099	2.030	1100	2.034	1119	2.067	1128	2.084
		10300602	NOx	12357	22.834	12469	23.040	12487	23.074	12693	23.454	12795	23.643
		10300602	CO	4528	8.367	4569	8.443	4576	8.455	4651	8.594	4689	8.664
		10300603	VOC	3	0.008	3	0.008	3	0.008	3	0.008	3	0.008
		10300603	VOC	4	0.010	4	0.011	4	0.011	4	0.011	4	0.011
		10300603	NOx	70	0.190	71	0.192	71	0.192	72	0.195	72	0.197
		10300603	CO	59	0.160	59	0.161	59	0.161	60	0.164	61	0.165
		20200401	VOC	13	1.680	14	1.695	14	1.698	13	1.677	13	1.667
		20200401	NOx	526	65.700	530	66.292	531	66.390	525	65.595	522	65.198
		20200401	CO	139	17.400	140	17.557	141	17.583	139	17.372	138	17.267
		20300101	VOC	76	6.300	80	6.695	81	6.760	82	6.821	82	6.852
		20300101	NOx	906	75.500	963	80.228	972	81.016	981	81.745	985	82.110
		20300101	CO	200	16.625	212	17.666	214	17.840	216	18.000	217	18.080
		39000689	NOx	2	0.250	2	0.262	2	0.264	2	0.268	2	0.270
		39000689	CO	2	0.210	2	0.220	2	0.221	2	0.225	2	0.227
		40301021	VOC	0	0.001	0	0.001	0	0.001	0	0.001	0	0.001
		40600302	VOC	123	0.334	123	0.333	122	0.333	122	0.330	121	0.329
		40600307	VOC	17	0.046	17	0.045	17	0.045	17	0.045	17	0.045
		40600401	VOC	19	0.050	18	0.050	18	0.050	18	0.050	18	0.049
		40600402	VOC	12	0.032	12	0.032	12	0.032	12	0.032	12	0.032
		50200505	NOx	2	0.225	2	0.232	2	0.233	2	0.233	2	0.233
		50200505	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
ONE LINCOLN PLAZA CONDOMINIUM	NEW YORK	10300401	VOC	783	2.127	728	1.978	719	1.953	730	1.983	735	1.998
1900 BROADWAY		10300401	NOx	38095	103.519	35424	96.262	34979	95.053	35517	96.513	35785	97.243
NEW YORK, NY 10023		10300401	CO	3463	9.411	3220	8.751	3180	8.641	3229	8.774	3253	8.840

RIVERSIDE PARK COMMUNITY, LLC	NEW YORK	10300401	VOC	763	0.829	709	0.771	700	0.761	711	0.773	716	0.779
3333 BROADWAY		10300401	NOx	38192	41.513	35515	38.603	35068	38.118	35607	38.703	35876	38.996
NEW YORK, NY 10031		10300401	CO	3374	3.667	3137	3.410	3098	3.367	3146	3.419	3169	3.445
COLUMBIA UNIVERSITY-410 W 118TH ST	NEW YORK	10200602	VOC	2950	12.824	3088	13.424	3111	13.524	3164	13.758	3191	13.874
410 WEST 118TH STREET		10200602	NOx	53629	233.170	56138	244.080	56557	245.898	57531	250.136	58019	252.256
NEW YORK, NY 10027		10200602	CO	45048	195.862	47156	205.027	47508	206.554	48326	210.115	48736	211.895
		10300401	VOC	1116	0.000	1037	0.000	1024	0.000	1040	0.000	1048	0.000
		10300401	NOx	34355	0.000	31947	0.000	31545	0.000	32030	0.000	32272	0.000
		10300401	CO	4936	0.000	4590	0.000	4532	0.000	4602	0.000	4637	0.000
LE PARKER MERIDIEN-109 WEST 56TH ST	NEW YORK	10300401	VOC	456	1.939	424	1.803	419	1.781	425	1.808	429	1.822
109 WEST 56TH STREET		10300401	NOx	18980	80.665	17650	75.011	17428	74.068	17695	75.206	17829	75.775
NEW YORK, NY 10019		10300401	CO	2019	8.581	1878	7.980	1854	7.880	1882	8.001	1897	8.061
ASTRID OFFSET CORP	NEW YORK	10300603	VOC	7	0.019	7	0.020	7	0.020	7	0.020	7	0.020
525 WEST 52ND ST (4TH & 5TH FL)		10300603	NOx	130	0.353	131	0.356	131	0.357	134	0.363	135	0.366
NEW YORK, NY 10019		10300603	CO	109	0.297	110	0.299	110	0.300	112	0.305	113	0.307
		33000297	VOC	39157	148.322	46502	176.145	47727	180.782	49770	188.522	50792	192.392
ST LUKE'S ROOSEVELT HOSPITAL	NEW YORK	10300401	VOC	569	0.000	529	0.000	523	0.000	531	0.000	535	0.000
1111 AMSTERDAM AVE		10300401	NOx	23679	0.000	22019	0.000	21742	0.000	22076	0.000	22243	0.000
NEW YORK, NY 10025		10300401	CO	2519	0.000	2342	0.000	2313	0.000	2349	0.000	2366	0.000
		10300602	VOC	949	5.159	958	5.206	959	5.214	975	5.299	983	5.342
		10300602	NOx	17260	93.804	17416	94.653	17442	94.794	17729	96.352	17872	97.131
		10300602	CO	14498	78.796	14630	79.508	14651	79.627	14892	80.936	15013	81.590
		39999999	VOC	360	0.978	516	1.401	542	1.472	573	1.556	588	1.599
NYC-HH - HARLEM HOSPITAL	NEW YORK	10300401	VOC	8	0.000	7	0.000	7	0.000	7	0.000	7	0.000
506 LENOX AVENUE		10300401	NOx	329	0.000	306	0.000	302	0.000	307	0.000	309	0.000
NEW YORK, NY 10037		10300401	CO	35	0.000	33	0.000	32	0.000	33	0.000	33	0.000
		10300602	VOC	1858	5.929	1875	5.982	1878	5.991	1909	6.090	1924	6.139
		10300602	NOx	33789	107.794	34095	108.769	34145	108.931	34707	110.722	34987	111.617
		10300602	CO	28383	90.547	28639	91.366	28682	91.502	29154	93.007	29389	93.759
		20200102	VOC	292	6.076	294	6.131	295	6.140	291	6.067	289	6.030

		20200102	VOC	3	0.065	3	0.065	3	0.065	3	0.064	3	0.064
		20200102	NOx	3573	74.436	3605	75.106	3610	75.218	3567	74.317	3546	73.867
		20200102	CO	770	16.035	777	16.179	778	16.203	768	16.009	764	15.912
NYC-DEP WARDS ISLAND WPCP	NEW YORK	10300501	VOC	97	0.011	103	0.011	104	0.011	105	0.011	106	0.012
WARDS ISLAND - E SIDE		10300501	VOC	114	0.012	122	0.013	123	0.013	124	0.013	124	0.014
NEW YORK, NY 10035		10300501	NOx	8076	0.878	8581	0.933	8666	0.942	8744	0.950	8783	0.955
		10300501	CO	1682	0.183	1788	0.194	1805	0.196	1822	0.198	1830	0.199
		20300102	VOC	4	0.073	4	0.078	4	0.079	4	0.079	4	0.080
		20300102	NOx	8183	157.364	8695	167.220	8781	168.862	8860	170.382	8899	171.141
		20300102	CO	31	0.590	33	0.627	33	0.633	33	0.639	33	0.642
		39999999	VOC	5039	13.693	7219	19.616	7582	20.603	8017	21.787	8235	22.378
		50100789	NOx	1700	4.620	1796	4.880	1812	4.924	1870	5.082	1900	5.162
		50100789	CO	3140	8.533	3317	9.014	3347	9.095	3455	9.388	3509	9.534
MANHATTAN PSYCH CTR	NEW YORK	10300402	NOx	117631	376.706	109385	350.298	108010	345.897	109670	351.210	110499	353.867
600 E 125TH ST		10300402	CO	10694	34.246	9944	31.845	9819	31.445	9970	31.928	10045	32.170
WARDS ISLAND, NY 10035		10300701	VOC	959	2.417	1009	2.544	1017	2.565	1036	2.614	1046	2.638
		10300701	NOx	31954	80.581	33622	84.785	33900	85.486	34547	87.119	34871	87.935
		10300701	CO	26842	67.688	28242	71.220	28476	71.808	29020	73.180	29291	73.865
		20100102	VOC	16	4.077	32	8.113	35	8.786	26	6.584	22	5.483
		20100102	NOx	307	76.708	611	152.654	661	165.312	496	123.882	413	103.167
		20100102	CO	66	16.510	131	32.856	142	35.580	107	26.663	89	22.205
		20200401	VOC	79	20.233	80	20.415	80	20.445	79	20.200	79	20.078
		20200401	VOC	81	20.628	82	20.814	82	20.845	81	20.596	80	20.471
		20200401	NOx	3162	806.718	3191	813.983	3196	815.194	3157	805.432	3138	800.551
		20200401	CO	838	213.651	845	215.575	846	215.896	836	213.311	831	212.018
TAINO TOWERS-2253 THIRD AVENUE	NEW YORK	10200602	VOC	778	2.664	815	2.789	821	2.810	835	2.858	842	2.883
2253 THIRD AVE		10200602	NOx	14149	48.444	14811	50.711	14921	51.089	15178	51.969	15307	52.409
NEW YORK, NY 10035		10200602	CO	11885	40.693	12441	42.597	12534	42.914	12750	43.654	12858	44.024
		20100202	VOC	2	0.185	2	0.202	2	0.205	3	0.227	3	0.237
		20100202	NOx	54	4.524	59	4.953	60	5.024	67	5.551	70	5.814
		20100202	CO	8	0.636	8	0.696	8	0.706	9	0.780	10	0.817
		40400413	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
CON ED-74TH STREET STA	NEW YORK	10100401	VOC	7520	21.907	11210	32.655	11825	34.446	11675	34.010	11600	33.792

503 E 74TH ST		10100401	NOx	672892	1960.164	1003008	2921.807	1058028	3082.081	1044636	3043.070	1037940	3023.564
NEW YORK, NY 10021		10100401	CO	49476	144.126	73749	214.834	77794	226.618	76810	223.750	76317	222.316
		10100404	VOC	27617	82.851	41166	123.497	43424	130.272	42874	128.623	42599	127.798
		10100404	NOx	1233342	3700.026	1838412	5515.235	1939256	5817.769	1914710	5744.131	1902437	5707.312
		10100404	CO	181691	545.073	270827	812.482	285683	857.050	282067	846.202	280259	840.778
		10100501	VOC	5	0.105	11	0.209	12	0.226	9	0.170	7	0.141
		10100501	NOx	655	12.600	1304	25.075	1412	27.154	1058	20.349	881	16.946
		10100501	CO	137	2.625	272	5.224	294	5.657	220	4.239	184	3.530
		20100102	VOC	145	2.786	288	5.545	312	6.004	234	4.500	195	3.747
		20100102	NOx	2726	52.425	5425	104.329	5875	112.980	4403	84.665	3666	70.508
		20100102	CO	587	11.283	1168	22.455	1264	24.317	948	18.223	789	15.176
		20100901	VOC	11	2.750	18	4.427	19	4.707	17	4.310	16	4.112
		20100901	NOx	867	216.750	1396	348.951	1484	370.984	1359	339.733	1296	324.107
		20100901	CO	214	53.500	345	86.131	366	91.569	335	83.856	320	79.999
		40100296	VOC	10	0.038	13	0.049	13	0.051	14	0.054	14	0.055
		40400301	VOC	300	0.815	344	0.934	351	0.954	367	0.997	375	1.019
CON ED-EAST 60TH STREET STEAM PLANT	NEW YORK	10100601	VOC	8324	27.233	9111	29.810	9243	30.239	10211	33.409	10696	34.993
514 EAST 60TH ST		10100601	NOx	268371	878.040	293769	961.136	298002	974.985	329233	1077.164	344848	1128.253
NEW YORK, NY 10022		10100601	CO	127124	415.917	139155	455.279	141160	461.839	155954	510.240	163351	534.441
		40400301	VOC	200	0.543	229	0.623	234	0.636	245	0.665	250	0.679
NYC-HH - METROPOLITAN HOSPITAL	NEW YORK	10300402	NOx	57115	155.204	53111	144.324	52444	142.510	53249	144.699	53652	145.794
1901 1ST AVE		10300402	CO	5192	14.109	4828	13.120	4768	12.955	4841	13.154	4877	13.254
NEW YORK, NY 10029-7491		20300101	VOC	150	3.130	160	3.326	161	3.359	163	3.389	163	3.404
		20300101	NOx	1788	37.247	1900	39.579	1918	39.968	1936	40.328	1944	40.508
		20300101	CO	396	8.260	421	8.778	425	8.864	429	8.944	431	8.983
MOUNT SINAI HOSPITAL	NEW YORK	10200602	VOC	2379	18.055	2491	18.899	2509	19.040	2552	19.368	2574	19.533
1 GUSTAVE L LEVY PL		10200602	NOx	43264	328.297	45288	343.659	45626	346.219	46412	352.186	46805	355.170
NEW YORK, NY 10029		10200602	CO	36338	275.744	38039	288.647	38322	290.797	38983	295.809	39313	298.315
		10300402	NOx	157924	712.584	146853	662.630	145008	654.304	147235	664.355	148349	669.380
		10300402	CO	17545	79.166	16315	73.617	16110	72.692	16358	73.808	16481	74.367
		20200401	VOC	86	7.168	87	7.233	87	7.243	86	7.157	85	7.113
		20200401	NOx	3364	280.320	3394	282.845	3399	283.265	3358	279.873	3338	278.177
		20200401	CO	891	74.240	899	74.909	900	75.020	889	74.122	884	73.673

NY - PRESBYTERIAN HOSPITAL-525 E 68TH ST	NEW YORK	10300401	VOC	10	0.000	10	0.000	9	0.000	10	0.000	10	0.000
525 EAST 68TH ST		10300401	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
NEW YORK, NY 10021		10300401	NOx	427	0.000	397	0.000	392	0.000	398	0.000	401	0.000
		10300401	CO	45	0.000	42	0.000	42	0.000	42	0.000	43	0.000
		10300601	VOC	5949	16.167	6003	16.313	6012	16.338	6111	16.606	6160	16.740
		10300601	NOx	205527	558.497	207385	563.547	207695	564.389	211109	573.666	212816	578.305
		10300601	CO	90864	246.914	91686	249.147	91823	249.519	93332	253.621	94087	255.672
		20300101	VOC	487	9.371	518	9.958	523	10.056	528	10.146	530	10.191
		20300101	NOx	5798	111.508	6162	118.491	6222	119.655	6278	120.732	6306	121.270
		20300101	CO	1286	24.729	1366	26.278	1380	26.536	1392	26.775	1398	26.894
ROCKEFELLER UNIVERSITY	NEW YORK	10300401	VOC	1320	3.587	1228	3.336	1212	3.294	1231	3.345	1240	3.370
1230 YORK AVENUE		10300401	NOx	54908	149.207	51059	138.747	50417	137.004	51192	139.108	51579	140.161
NEW YORK, NY 10021		10300401	CO	5841	15.873	5432	14.760	5364	14.575	5446	14.799	5487	14.911
		10300602	VOC	1119	3.040	1129	3.068	1131	3.073	1149	3.123	1159	3.148
		10300602	VOC	1453	3.948	1466	3.984	1468	3.990	1492	4.055	1504	4.088
		10300602	NOx	26417	71.785	26656	72.434	26696	72.542	27134	73.735	27354	74.331
		10300602	CO	22190	60.299	22391	60.845	22424	60.936	22793	61.937	22977	62.438
		20100102	VOC	26	0.535	51	1.065	55	1.153	41	0.864	35	0.720
		20100102	VOC	25	0.531	51	1.056	55	1.144	41	0.857	34	0.714
		20100102	NOx	483	10.067	962	20.033	1041	21.694	780	16.258	650	13.539
		20100102	CO	104	2.167	207	4.312	224	4.669	168	3.499	140	2.914
		39999999	VOC	8862	24.082	12695	34.498	13334	36.234	14100	38.316	14483	39.356
		50200101	NOx	51	0.528	59	0.614	60	0.628	63	0.653	64	0.665
		50200101	CO	169	1.760	196	2.045	201	2.092	209	2.176	213	2.218
COLER-GOLDWATER MEMORIAL HOSPITAL	NEW YORK	10300401	VOC	2458	3.331	2285	3.098	2257	3.059	2291	3.106	2309	3.129
1 MAIN ST|ROOSEVELT ISLAND		10300401	NOx	102218	138.550	95052	128.837	93858	127.218	95300	129.172	96020	130.149
NEW YORK, NY 10044		10300401	CO	10874	14.739	10112	13.706	9985	13.534	10138	13.742	10215	13.846
		20200101	VOC	0	0.004	0	0.004	0	0.004	0	0.004	0	0.004
		20200101	NOx	372	7.755	376	7.825	376	7.836	372	7.743	369	7.696
		20200101	CO	1	0.029	1	0.029	1	0.029	1	0.029	1	0.029
FRANKLIN PLAZA APARTMENTS	NEW YORK	10300401	VOC	1487	1.450	1383	1.348	1366	1.332	1387	1.352	1397	1.362
2085 SECOND AVE		10300401	NOx	61862	60.315	57525	56.087	56802	55.382	57675	56.233	58111	56.658
NEW YORK, NY 10029		10300401	CO	6581	6.416	6120	5.967	6043	5.892	6136	5.982	6182	6.027

		40400497	VOC	0	0.000	0	0.001	0	0.001	0	0.001	0	0.001
ENTERPRISE PRESS	NEW YORK	10200602	VOC	6	0.023	6	0.024	6	0.024	6	0.024	6	0.025
627 GREENWICH ST		10200602	NOx	105	0.412	110	0.431	111	0.435	113	0.442	114	0.446
NEW YORK, NY 10014		10200602	CO	88	0.346	92	0.362	93	0.365	95	0.371	95	0.374
		10300501	VOC	4	0.000	4	0.000	4	0.000	4	0.000	4	0.000
		10300501	NOx	251	0.000	267	0.000	269	0.000	272	0.000	273	0.000
		10300501	CO	52	0.000	56	0.000	56	0.000	57	0.000	57	0.000
		40500401	VOC	6399	27.341	6004	25.654	5938	25.373	6022	25.731	6064	25.910
TANAGRAPHICS INC-263 NINTH AVE	NEW YORK	10200503	VOC	1	0.000	1	0.000	1	0.000	1	0.000	1	0.000
263 NINTH AVE		10200503	NOx	57	0.000	57	0.000	57	0.000	56	0.000	56	0.000
NEW YORK, NY 10001		10200503	CO	14	0.000	14	0.000	14	0.000	14	0.000	14	0.000
		10500106	NOx	8	0.000	8	0.000	8	0.000	8	0.000	8	0.000
		10500106	CO	7	0.000	7	0.000	7	0.000	7	0.000	7	0.000
		40500401	VOC	36624	116.981	34364	109.763	33988	108.560	34467	110.091	34707	110.857
MUTUAL REDEVELOPMENT HOUSES	NEW YORK	10300602	VOC	860	2.338	868	2.359	869	2.362	884	2.401	891	2.420
315 WEST 25TH ST		10300602	NOx	15640	42.500	15781	42.884	15805	42.948	16065	43.654	16195	44.007
NEW YORK, NY 10001		10300602	CO	13138	35.700	13256	36.023	13276	36.077	13494	36.670	13604	36.966
		20200401	VOC	10173	27.645	10265	27.894	10280	27.935	10157	27.601	10095	27.433
		20200401	NOx	340797	926.079	343866	934.419	344378	935.809	340254	924.603	338192	919.000
		20200401	CO	98020	266.359	98903	268.758	99050	269.157	97864	265.934	97271	264.323
		20300201	VOC	9020	24.511	9102	24.733	9115	24.769	9265	25.177	9340	25.380
		20300201	NOx	18953	51.503	19124	51.968	19153	52.046	19468	52.902	19625	53.329
		20300201	CO	26307	71.486	26545	72.133	26585	72.241	27022	73.428	27240	74.022
CENTRAL PLANT - 251 MERCER ST	NEW YORK	10300401	VOC	1710	0.546	1590	0.508	1570	0.502	1594	0.509	1606	0.513
251 MERCER ST		10300401	NOx	71953	19.960	66909	18.560	66068	18.327	67083	18.609	67590	18.749
NEW YORK, NY 10012		10300401	CO	7565	2.418	7035	2.248	6947	2.220	7053	2.254	7107	2.271
		10300601	VOC	1610	6.573	1624	6.632	1626	6.642	1653	6.751	1667	6.806
		10300601	NOx	45652	186.429	46065	188.115	46134	188.396	46892	191.493	47271	193.041
		10300601	CO	24582	100.384	24804	101.292	24841	101.443	25249	103.111	25454	103.944
		10300602	VOC	1037	5.035	1047	5.081	1048	5.089	1065	5.172	1074	5.214
		10300602	NOx	14653	71.131	14786	71.774	14808	71.881	15051	73.063	15173	73.654
		10300602	CO	15842	76.905	15986	77.600	16010	77.716	16273	78.993	16404	79.632
		20200401	VOC	19583	64.071	19760	64.648	19789	64.744	19552	63.969	19433	63.581

		20200401	NOx	278854	912.338	281365	920.554	281784	921.923	278410	910.884	276722	905.364
		20200401	CO	203244	664.962	205075	670.951	205380	671.949	202920	663.902	201691	659.879
CITIGROUP GLOBAL MARKETS INC	NEW YORK	20200401	VOC	1913	5.199	1931	5.246	1934	5.254	1910	5.191	1899	5.160
388/390 GREENWICH ST		20200401	NOx	77083	209.465	77777	211.351	77893	211.666	76960	209.131	76494	207.864
NEW YORK, NY 10013		20200401	CO	20475	55.639	20660	56.140	20690	56.224	20443	55.550	20319	55.214
		40301019	VOC	3	0.008	3	0.009	3	0.009	4	0.010	4	0.010
		40301021	VOC	3	0.007	3	0.008	3	0.008	3	0.009	3	0.009
CON ED-EAST RIVER GENERATING STATION	NEW YORK	10100401	VOC	20898	90.954	31150	135.576	32859	143.013	32443	141.203	32235	140.297
701-827 EAST 14TH ST		10100401	NOx	1319710	5554.036	1967151	8278.810	2075058	8732.939	2048793	8622.402	2035661	8567.134
NEW YORK, NY 10009		10100401	CO	137485	598.383	204935	891.946	216176	940.873	213440	928.964	212072	923.009
		10100601	VOC	48905	270.198	53533	295.769	54304	300.031	59995	331.474	62841	347.196
		10100601	NOx	1616462	9191.556	1769441	10061.427	1794937	10206.405	1983047	11276.038	2077102	11810.856
		10100601	CO	746909	4126.662	817595	4517.201	829376	4582.291	916294	5062.516	959754	5302.629
		20100102	VOC	288	5.530	572	11.004	620	11.917	464	8.930	387	7.437
		20100102	NOx	5410	104.046	10767	207.058	11660	224.227	8738	168.032	7277	139.935
		20100102	CO	1164	22.394	2317	44.566	2510	48.261	1881	36.166	1566	30.118
		40400301	VOC	3000	8.152	3437	9.340	3510	9.538	3669	9.971	3749	10.187
CON ED-WATERSIDE STATION	NEW YORK	10100505	VOC	118	0.000	235	0.000	255	0.000	191	0.000	159	0.000
700 FIRST AVE		10100505	NOx	3222	0.000	6412	0.000	6944	0.000	5203	0.000	4333	0.000
NEW YORK, NY 10017		10100505	CO	777	0.000	1547	0.000	1675	0.000	1255	0.000	1045	0.000
		10100604	VOC	85886	315.525	94014	345.386	95369	350.362	105364	387.080	110361	405.439
		10100604	NOx	1199800	4447.288	1313347	4868.170	1332271	4938.317	1471893	5455.854	1541705	5714.623
		10100604	CO	374777	1376.836	410245	1507.137	416156	1528.854	459770	1689.078	481576	1769.190
		20100102	VOC	285	5.942	568	11.826	615	12.807	461	9.597	384	7.992
		20100102	VOC	288	5.990	572	11.921	620	12.910	464	9.674	387	8.057
		20100102	NOx	5410	112.716	10767	224.314	11660	242.913	8738	182.035	7277	151.596
		20100102	CO	1164	24.260	2317	48.279	2510	52.283	1881	39.180	1566	32.628
		40400301	VOC	10	0.000	11	0.000	12	0.000	12	0.000	12	0.000
KNICKERBOCKER VILLAGE-10 MONROE ST	NEW YORK	10300401	VOC	862	1.158	801	1.077	791	1.064	803	1.080	809	1.088
10 MONROE ST		10300401	NOx	35842	48.181	33330	44.804	32911	44.241	33416	44.920	33669	45.260
NEW YORK, NY 10002		10300401	CO	3813	5.126	3546	4.766	3501	4.706	3555	4.779	3582	4.815
VILLAGE VIEW HOUSING	NEW YORK	10200504	VOC	150	0.147	151	0.148	152	0.148	150	0.146	149	0.146

60 FIRST AVE		10200504	NOx	35236	34.470	35553	34.780	35606	34.832	35180	34.415	34967	34.206
NEW YORK, NY 10009		10200504	CO	3749	3.667	3782	3.700	3788	3.706	3743	3.661	3720	3.639
EAST RIVER HOUSING CORP	NEW YORK	10200401	VOC	343	0.000	405	0.000	416	0.000	416	0.000	416	0.000
26 LEWIS ST		10200401	NOx	57575	0.000	68029	0.000	69772	0.000	69850	0.000	69890	0.000
NEW YORK, NY 10002		10200401	CO	6125	0.000	7237	0.000	7423	0.000	7431	0.000	7435	0.000
		10200402	VOC	552	0.648	652	0.765	668	0.785	669	0.786	670	0.786
		10200402	NOx	108350	127.193	128024	150.289	131303	154.138	131451	154.312	131525	154.399
		10200402	CO	9850	11.563	11639	13.663	11937	14.013	11950	14.028	11957	14.036
STEINWAY & SONS - QUEENS FACILITY	QUEENS	10200502	NOx	35	3.500	35	3.532	35	3.537	35	3.494	35	3.473
1 STEINWAY PL		10200502	CO	9	0.875	9	0.883	9	0.884	9	0.874	9	0.868
LONG ISLAND CITY, NY 11105-2601		10200602	VOC	206	0.344	216	0.360	218	0.363	221	0.369	223	0.372
		10200602	NOx	3750	6.250	3925	6.542	3955	6.591	4023	6.705	4057	6.762
		10200602	CO	3150	5.250	3297	5.496	3322	5.537	3379	5.632	3408	5.680
		10300502	NOx	35	3.500	37	3.719	38	3.756	38	3.790	38	3.806
		10300502	CO	9	0.875	9	0.930	9	0.939	9	0.947	10	0.952
		10300602	VOC	159	0.265	160	0.267	161	0.268	163	0.272	164	0.274
		10300602	VOC	206	0.344	208	0.347	208	0.347	212	0.353	214	0.356
		10300602	NOx	3750	6.250	3784	6.307	3790	6.316	3852	6.420	3883	6.472
		10300602	CO	3150	5.250	3178	5.297	3183	5.305	3236	5.393	3262	5.436
		40201901	VOC	114739	509.951	127430	566.356	129545	575.757	136639	607.285	140186	623.050
		40201901	VOC	127637	567.276	141755	630.021	144108	640.479	151999	675.551	155945	693.088
		40299998	VOC	7443	33.080	9983	44.369	10406	46.251	11206	49.804	11606	51.580
CON ED - ASTORIA FACILITY	QUEENS	10300603	VOC	112	0.304	113	0.307	113	0.307	115	0.312	116	0.315
20TH AVE & 21ST ST		10300603	VOC	145	0.395	147	0.399	147	0.399	149	0.406	151	0.409
QUEENS, NY 11105		10300603	NOx	2643	7.182	2667	7.246	2671	7.257	2715	7.377	2737	7.436
		10300603	CO	2220	6.032	2240	6.087	2243	6.096	2280	6.196	2299	6.246
		20200209	VOC	199	0.000	208	0.000	210	0.000	213	0.000	215	0.000
		20200209	NOx	19782	0.000	20708	0.000	20862	0.000	21222	0.000	21402	0.000
		20200209	CO	20445	0.000	21401	0.000	21561	0.000	21932	0.000	22118	0.000
		20200401	VOC	478	1.300	483	1.311	483	1.313	477	1.297	475	1.290
		20200401	VOC	469	1.275	473	1.286	474	1.288	468	1.273	465	1.265
		20200401	NOx	18703	50.822	18871	51.280	18899	51.356	18673	50.741	18560	50.434

		20200401	CO	4953	13.460	4998	13.581	5005	13.601	4945	13.438	4915	13.357
		30190003	VOC	3	0.067	3	0.066	3	0.066	4	0.068	4	0.068
		30190003	NOx	60	1.151	60	1.145	59	1.144	61	1.165	61	1.176
		30190003	CO	225	4.333	224	4.310	224	4.306	228	4.386	230	4.426
		30190023	VOC	89	0.242	89	0.241	88	0.240	90	0.245	91	0.247
		30190023	NOx	1127	3.061	1120	3.045	1119	3.042	1140	3.099	1151	3.127
		30190023	CO	6130	16.657	6097	16.567	6091	16.552	6204	16.859	6261	17.013
		39999994	VOC	13366	55.692	19147	79.781	20111	83.796	21266	88.610	21844	91.017
		40100398	VOC	200	0.833	255	1.064	264	1.102	279	1.163	286	1.193
		40200110	VOC	538	1.462	722	1.961	752	2.044	810	2.201	839	2.280
		40200110	VOC	477	1.296	640	1.739	667	1.812	718	1.951	744	2.021
		40301097	VOC	10	0.027	11	0.030	11	0.031	12	0.032	12	0.033
		40301099	VOC	10	0.027	11	0.030	11	0.031	12	0.032	12	0.033
ELMHURST HOSP-79-01 BROADWAY	QUEENS	10300401	VOC	541	5.917	503	5.502	497	5.433	505	5.516	508	5.558
79-01 BROADWAY		10300401	NOx	22514	246.103	20935	228.850	20672	225.975	20990	229.446	21149	231.182
ELMHURST, NY 11373		10300401	CO	2395	26.181	2227	24.346	2199	24.040	2233	24.409	2250	24.594
		10300602	VOC	634	2.084	639	2.103	640	2.106	651	2.141	656	2.158
		10300602	NOx	11519	37.891	11623	38.234	11641	38.291	11832	38.921	11928	39.235
		10300602	CO	9676	31.829	9763	32.117	9778	32.165	9939	32.693	10019	32.958
		20200101	VOC	1	0.012	1	0.012	1	0.012	1	0.012	1	0.012
		20200101	VOC	1	0.012	1	0.012	1	0.012	1	0.011	1	0.011
		20200101	NOx	1365	26.248	1377	26.484	1379	26.523	1363	26.206	1354	26.047
		20200101	CO	5	0.098	5	0.099	5	0.099	5	0.098	5	0.098
POLETTI POWER PROJECT	QUEENS	10100401	VOC	30112	130.922	44885	195.151	47347	205.856	46748	203.250	46448	201.947
31-03 20TH AVE		10100401	VOC	28498	123.905	42479	184.691	44809	194.823	44242	192.357	43958	191.124
ASTORIA, NY 11105		10100401	NOx	4107313	17857.883	6122334	26618.844	6458171	28079.002	6376427	27723.595	6335555	27545.891
		10100401	CO	198105	861.326	295294	1283.887	311492	1354.314	307549	1337.172	305578	1328.601
		10100601	VOC	96844	457.615	106009	500.922	107537	508.140	118806	561.393	124441	588.020
		10100601	NOx	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		10100601	CO	1479072	6989.022	1619048	7650.449	1642378	7760.686	1814499	8574.007	1900560	8980.669
		10101302	NOx	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		10101302	CO	6	0.026	10	0.042	10	0.045	9	0.041	9	0.039
		20100102	VOC	74	1.538	147	3.061	159	3.315	119	2.484	99	2.069

		20100102	NOx	1389	28.942	2765	57.596	2994	62.372	2244	46.740	1868	38.925
		20100102	CO	299	6.229	595	12.396	644	13.424	483	10.060	402	8.378
		39999994	VOC	1	0.005	1	0.007	2	0.007	2	0.007	2	0.007
		40301097	VOC	249	1.081	279	1.212	284	1.234	294	1.277	299	1.299
STD FOLDING CARTON INC-85 ST & 24 AVE	QUEENS	10300603	VOC	15	0.878	15	0.886	15	0.887	15	0.902	15	0.909
85TH ST & 24 AVE|85-14 24TH AVENUE		10300603	NOx	266	15.960	268	16.104	269	16.128	273	16.393	275	16.526
JACKSON HEIGHTS, NY 11370		10300603	CO	223	13.406	225	13.528	226	13.548	230	13.771	231	13.882
		10500106	VOC	0	0.021	0	0.022	0	0.022	0	0.023	0	0.023
		10500106	NOx	4	0.387	5	0.405	5	0.408	5	0.415	5	0.419
		10500106	CO	4	0.325	4	0.340	4	0.343	4	0.349	4	0.352
		20200253	VOC	1483	5.393	1552	5.645	1564	5.687	1591	5.785	1604	5.834
		20200253	VOC	1129	4.104	1181	4.296	1190	4.328	1211	4.403	1221	4.440
		20200253	NOx	4449	16.179	4657	16.936	4692	17.062	4773	17.356	4813	17.503
		20200253	CO	5931	21.569	6209	22.578	6255	22.746	6363	23.138	6417	23.334
ASTORIA GENERATING STATION	QUEENS	10100401	VOC	23093	731.287	34423	1090.052	36311	1149.846	35851	1135.292	35622	1128.015
18-01 20TH AVE		10100401	NOx	1465200	46398.000	2184018	69160.558	2303820	72954.313	2274660	72030.901	2260080	71569.193
ASTORIA, NY 11105		10100401	CO	151930	4811.101	226465	7171.396	238888	7564.778	235864	7469.027	234352	7421.152
		10100404	VOC	27402	119.882	40845	178.696	43085	188.498	42540	186.112	42267	184.919
		10100404	NOx	2207200	9656.500	3290038	14393.916	3470511	15183.485	3426583	14991.301	3404619	14895.209
		10100404	CO	180274	788.699	268715	1175.629	283455	1240.118	279868	1224.421	278074	1216.573
		10100601	VOC	46524	3460.696	50927	3788.210	51661	3842.795	57075	4245.521	59782	4446.884
		10100601	NOx	141600	5244.444	155001	5740.768	157234	5823.489	173712	6433.791	181951	6738.943
		10100601	CO	710548	52854.272	777792	57856.295	789000	58689.965	871687	64840.680	913031	67916.048
		10100604	VOC	88852	499.035	97261	546.262	98663	554.133	109003	612.207	114173	641.243
		10100604	NOx	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		10100604	CO	387720	2177.605	424413	2383.690	430529	2418.037	475648	2671.448	498208	2798.153
		20100102	VOC	23	0.451	47	0.897	51	0.971	38	0.728	32	0.606
		20100102	NOx	441	8.479	877	16.874	950	18.273	712	13.694	593	11.404
		20100102	CO	95	1.825	189	3.632	205	3.933	153	2.947	128	2.455
ASTORIA GAS TURBINE POWER	QUEENS	20100102	VOC	28	7.030	56	13.990	61	15.150	45	11.353	38	9.455
31-01 20TH AVE		20100102	NOx	529	132.276	1053	263.238	1140	285.065	854	213.624	712	177.902
ASTORIA, NY 11105		20100102	CO	114	28.470	227	56.657	245	61.355	184	45.979	153	38.290
		20200201	VOC	6230	31.040	6521	32.492	6570	32.734	6683	33.298	6740	33.580

		20200201	NOx	1320100	6577.542	1381868	6885.309	1392163	6936.603	1416159	7056.165	1428157	7115.946
		20200201	CO	243251	1212.022	254632	1268.733	256529	1278.185	260951	1300.217	263162	1311.232
		20200901	VOC	265	2.515	274	2.602	276	2.616	277	2.633	278	2.642
		20200901	NOx	337375	3203.493	348987	3313.750	350922	3332.126	353246	3354.196	354408	3365.231
		20200901	CO	2132	20.243	2205	20.939	2217	21.055	2232	21.195	2239	21.265
NYC-DEP TALLMAN ISLAND WPCP	QUEENS	10300501	VOC	39	0.042	41	0.045	41	0.045	42	0.045	42	0.046
127-01 POWELLS COVE BLVD		10300501	NOx	2726	2.963	2896	3.148	2925	3.179	2951	3.208	2964	3.222
COLLEGE POINT, NY 11356		10300501	CO	568	0.617	603	0.656	609	0.662	615	0.668	618	0.671
		10300701	VOC	13	0.000	14	0.000	14	0.000	14	0.000	14	0.000
		10300701	NOx	442	0.000	465	0.000	469	0.000	478	0.000	482	0.000
		10300701	CO	371	0.000	391	0.000	394	0.000	401	0.000	405	0.000
		20200401	VOC	150	0.413	151	0.417	152	0.417	150	0.412	149	0.410
		20200401	NOx	96580	264.537	97450	266.919	97595	267.316	96426	264.115	95842	262.515
		20200401	CO	4760	13.185	4803	13.304	4810	13.323	4752	13.164	4724	13.084
		20200402	VOC	20159	56.260	20159	56.260	20159	56.260	20159	56.260	20159	56.260
		20200402	NOx	204039	562.569	204039	562.569	204039	562.569	204039	562.569	204039	562.569
		20200402	CO	141441	395.876	141441	395.876	141441	395.876	141441	395.876	141441	395.876
		39999999	VOC	1375	3.736	1970	5.353	2069	5.622	2188	5.945	2247	6.106
GRACE ASPHALT INC	QUEENS	10300503	NOx	64	0.000	68	0.000	69	0.000	69	0.000	70	0.000
30-01 HARPER ST		10300503	CO	16	0.000	17	0.000	17	0.000	17	0.000	17	0.000
CORONA, NY 11368		10500105	NOx	18	0.000	18	0.000	18	0.000	18	0.000	18	0.000
		10500105	CO	5	0.000	5	0.000	5	0.000	4	0.000	4	0.000
		20200402	VOC	1735	10.516	1735	10.516	1735	10.516	1735	10.516	1735	10.516
		20200402	NOx	23425	141.973	23425	141.973	23425	141.973	23425	141.973	23425	141.973
		20200402	CO	10064	60.996	10064	60.996	10064	60.996	10064	60.996	10064	60.996
		30500251	VOC	5842	35.403	7020	42.543	7216	43.733	7648	46.351	7864	47.659
		30500251	NOx	8301	50.308	9975	60.455	10254	62.146	10868	65.865	11175	67.725
		30500251	CO	112892	684.195	135660	822.184	139455	845.182	147801	895.764	151974	921.055
		30590001	VOC	14	0.061	15	0.064	15	0.064	15	0.064	15	0.063
		30590001	NOx	1400	6.087	1469	6.385	1480	6.435	1466	6.376	1460	6.346
		30590001	CO	350	1.522	367	1.596	370	1.609	367	1.594	365	1.586
		30590003	VOC	25	0.110	27	0.118	28	0.120	28	0.120	28	0.120
		30590003	NOx	1260	5.478	1361	5.918	1378	5.991	1377	5.988	1377	5.986

		30590003	CO	756	3.287	817	3.551	827	3.595	826	3.593	826	3.592
		39000689	NOx	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		39000689	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
POLY PLASTIC PACKAGING - QUEENS FACILITY	QUEENS	39000689	VOC	15	0.058	16	0.061	16	0.062	17	0.063	17	0.063
36-36 36 STREET		39000689	NOx	280	1.061	293	1.110	295	1.119	300	1.138	303	1.147
QUEENS, NY 11106		39000689	CO	235	0.891	246	0.933	248	0.940	252	0.956	254	0.964
		40500311	VOC	33732	127.773	31651	119.889	31304	118.576	31745	120.248	31966	121.084
RAVENSWOOD GENERATING STATION	QUEENS	10100404	VOC	32931	936.709	49087	1396.252	51779	1472.842	51124	1454.200	50796	1444.879
38-54 VERNON BLVD		10100404	VOC	34796	989.756	51867	1475.324	54712	1556.252	54019	1536.554	53673	1526.705
QUEENS, NY 11101		10100404	NOx	933942	25797.807	1392128	38454.043	1468492	40563.414	1449905	40049.986	1440611	39793.272
		10100404	CO	228921	6511.554	341228	9706.080	359946	10238.501	355390	10108.908	353112	10044.111
		10100604	VOC	264925	1536.213	289997	1681.597	294176	1705.828	325006	1884.599	340421	1973.985
		10100604	VOC	204019	1183.035	223327	1294.995	226545	1313.655	250286	1451.327	262157	1520.162
		10100604	NOx	5546207	31797.589	6071089	34806.849	6158569	35308.392	6803988	39008.716	7126699	40858.884
		10100604	CO	1156038	6703.475	1265443	7337.879	1283677	7443.613	1418207	8223.704	1485472	8613.751
		20100201	VOC	3561	2280.689	3898	2496.529	3954	2532.502	4369	2797.909	4576	2930.613
		20100201	NOx	772091	489795.762	845160	536149.061	857338	543874.602	947188	600872.731	992112	629371.881
		20100201	CO	139179	89138.716	152350	97574.627	154545	98980.611	170742	109353.792	178840	114540.398
		20100901	NOx	85947	34296.388	138368	55214.552	147105	58700.909	134713	53755.992	128517	51283.526
		20100901	CO	344	139.584	554	224.720	589	238.909	540	218.784	515	208.721
		20200102	VOC	80	6.646	80	6.705	81	6.715	80	6.635	79	6.595
		20200102	NOx	977	81.409	986	82.142	987	82.264	975	81.279	969	80.786
		20200102	CO	210	17.537	212	17.695	213	17.721	210	17.509	209	17.403
		20200902	NOx	17227	12000.106	17820	12413.122	17919	12481.958	18037	12564.630	18097	12605.967
		20200902	CO	3712	2585.644	3839	2674.636	3861	2689.468	3886	2707.281	3899	2716.188
GRAND BASKET-53-06 GRAND AVE	QUEENS	10500106	NOx	122	0.019	128	0.020	129	0.020	131	0.020	132	0.021
53-06 GRAND AVE		10500106	CO	102	0.016	107	0.017	108	0.017	110	0.017	111	0.017
MASPETH, NY 11378		40200501	VOC	10626	40.250	14252	53.986	14857	56.275	15998	60.599	16569	62.760
		40200501	VOC	7455	28.239	9999	37.876	10423	39.482	11224	42.515	11624	44.031
SIMSMETAL EAST LLC-QUEENS PLANT	QUEENS	20200401	VOC	8098	21.301	8171	21.493	8183	21.525	8085	21.267	8036	21.138
30-27 GREENPOINT AVE		20200401	VOC	7946	20.902	8018	21.090	8030	21.122	7934	20.869	7885	20.742
LONG ISLAND CITY, NY 11101		20200401	NOx	245080	644.667	247287	650.473	247655	651.440	244689	643.640	243207	639.739
		20200401	CO	84045	221.076	84802	223.067	84928	223.399	83911	220.723	83403	219.386

		31401101	VOC	17453	74.099	19538	82.952	19886	84.428	20742	88.062	21170	89.880
BIG SIX TOWERS INC	QUEENS	10300502	NOx	53	0.000	56	0.000	57	0.000	57	0.000	58	0.000
59-55 47TH AVE		10300502	CO	13	0.000	14	0.000	14	0.000	14	0.000	14	0.000
WOODSIDE, NY 11377		10300602	VOC	319	0.000	322	0.000	322	0.000	328	0.000	330	0.000
		10300602	NOx	5800	0.000	5852	0.000	5861	0.000	5958	0.000	6006	0.000
		10300602	CO	4872	0.000	4916	0.000	4923	0.000	5004	0.000	5045	0.000
		20300101	VOC	37382	264.787	39723	281.370	40113	284.133	40474	286.690	40654	287.968
		20300101	VOC	37385	264.807	39726	281.391	40116	284.155	40477	286.712	40658	287.991
		20300101	NOx	296688	2101.540	315269	2233.154	318366	2255.089	321230	2275.380	322662	2285.526
		20300101	CO	98654	698.797	104832	742.561	105862	749.855	106814	756.602	107291	759.975
		20300201	VOC	1154	10.935	1165	11.033	1166	11.050	1186	11.232	1195	11.322
		20300201	NOx	1224	11.598	1235	11.703	1237	11.720	1257	11.913	1268	12.009
		20300201	CO	3970	37.611	4006	37.951	4012	38.008	4078	38.633	4111	38.945
SIRMOS DIV OF BROMANTE-30-00 47TH AVE	QUEENS	30800703	VOC	25209	95.489	31581	119.624	32643	123.646	34527	130.785	35469	134.354
30-00 47TH AVE													
LONG ISLAND CITY, NY 11101													
RAVENSWOOD STEAM PLANT	QUEENS	10100401	VOC	10090	74.500	15040	111.050	15865	117.141	15664	115.658	15563	114.917
7-18 37TH AVE		10100401	NOx	644118	4714.615	960118	7027.575	1012785	7413.068	999966	7319.238	993556	7272.323
LONG ISLAND CITY, NY 11101		10100401	CO	66380	490.133	98945	730.589	104373	770.665	103052	760.910	102391	756.033
		10100601	VOC	3273	119.460	3582	130.766	3634	132.650	4015	146.552	4205	153.502
		10100601	NOx	184411	6732.147	201863	7369.264	204772	7475.451	226232	8258.879	236962	8650.594
		10100601	CO	49981	1824.482	54711	1997.148	55499	2025.925	61316	2238.242	64224	2344.401
		20200102	VOC	27	2.231	27	2.251	27	2.254	27	2.227	27	2.214
		20200102	NOx	328	27.327	331	27.573	331	27.614	327	27.284	325	27.118
		20200102	CO	71	5.887	71	5.940	71	5.949	71	5.877	70	5.842
BARKER BROS - RIDGEWOOD	QUEENS	10300501	VOC	4	0.000	4	0.000	4	0.000	4	0.000	4	0.000
1666 SUMMERFIELD ST		10300501	VOC	4	0.000	5	0.000	5	0.000	5	0.000	5	0.000
RIDGEWOOD, NY 11385		10300501	NOx	317	0.000	337	0.000	340	0.000	343	0.000	345	0.000
		10300501	CO	66	0.000	70	0.000	71	0.000	71	0.000	72	0.000
		39000689	VOC	20	0.115	21	0.121	21	0.122	21	0.124	21	0.125
		39000689	NOx	360	2.097	377	2.195	380	2.211	386	2.250	389	2.269
		39000689	CO	302	1.761	317	1.844	319	1.858	324	1.890	327	1.906

		40201103	VOC	3549	13.650	3844	14.785	3893	14.974	4015	15.443	4076	15.677
		40204321	VOC	12006	46.177	13005	50.017	13171	50.657	13583	52.242	13789	53.035
		40204330	VOC	39084	150.323	42335	162.825	42876	164.909	44218	170.069	44889	172.648
ST JOHNS UNIVERSITY	QUEENS	10300502	NOx	7356	2.887	7817	3.068	7893	3.098	7964	3.126	8000	3.140
81-50 UTOPIA PKWY		10300502	CO	1839	0.722	1954	0.767	1973	0.774	1991	0.781	2000	0.785
JAMAICA, NY 11439		10300503	VOC	14	0.009	15	0.010	15	0.010	15	0.010	15	0.010
		10300503	NOx	828	0.540	880	0.574	888	0.579	896	0.585	900	0.587
		10300503	CO	207	0.135	220	0.143	222	0.145	224	0.146	225	0.147
		10300602	VOC	1065	4.150	1075	4.188	1077	4.194	1094	4.263	1103	4.298
		10300602	VOC	820	3.196	828	3.225	829	3.230	843	3.283	850	3.310
		10300602	NOx	19370	75.461	19545	76.143	19574	76.257	19896	77.510	20057	78.137
		10300602	CO	16271	63.387	16418	63.960	16442	64.056	16713	65.109	16848	65.635
		10300603	VOC	133	0.504	134	0.509	134	0.510	136	0.518	137	0.522
		10300603	VOC	102	0.388	103	0.392	103	0.392	105	0.399	106	0.402
		10300603	NOx	2410	9.168	2432	9.251	2435	9.265	2475	9.418	2495	9.494
		10300603	CO	2024	7.702	2043	7.771	2046	7.783	2079	7.911	2096	7.975
		10500106	NOx	48	0.000	50	0.000	51	0.000	51	0.000	52	0.000
		10500106	CO	40	0.000	42	0.000	43	0.000	43	0.000	44	0.000
		20200401	VOC	27	0.146	27	0.147	27	0.148	27	0.146	27	0.145
		20200401	NOx	1051	5.713	1061	5.764	1062	5.773	1050	5.704	1043	5.669
		20200401	CO	278	1.513	281	1.527	281	1.529	278	1.511	276	1.501
		20300101	VOC	570	1.610	605	1.710	611	1.727	617	1.743	619	1.750
		20300101	NOx	6825	19.289	7253	20.497	7324	20.698	7390	20.884	7423	20.977
		20300101	CO	1503	4.247	1597	4.513	1613	4.558	1627	4.599	1634	4.619
QUEENS FRESH MEADOWS FACILITY	QUEENS	10200501	VOC	26	0.138	26	0.139	26	0.139	25	0.138	25	0.137
67-10 192ND ST		10200501	NOx	3061	16.532	3089	16.681	3094	16.705	3057	16.505	3038	16.405
QUEENS, NY 11365		10200501	CO	638	3.444	644	3.475	645	3.480	637	3.439	633	3.418
		10200602	VOC	1879	24.104	1966	25.231	1981	25.419	2015	25.858	2032	26.077
		10200602	NOx	34156	438.248	35754	458.754	36021	462.171	36641	470.137	36952	474.121
		10200602	CO	28691	368.128	30034	385.353	30257	388.224	30779	394.915	31040	398.261
PARKER TOWERS	QUEENS	10300402	VOC	705	0.536	655	0.499	647	0.492	657	0.500	662	0.504
104-40 QUEENS BLVD		10300402	NOx	34294	26.094	31890	24.264	31490	23.959	31973	24.327	32215	24.511
QUEENS, NY 11375		10300402	CO	3118	2.372	2899	2.206	2863	2.178	2907	2.212	2929	2.228

CREEDMOOR PSYCHIATRIC CTR	QUEENS	10200602	VOC	214	1.950	224	2.042	226	2.057	230	2.092	232	2.110
80-45 WINCHESTER BLVD		10200602	VOC	165	1.502	173	1.572	174	1.584	177	1.611	179	1.625
QUEENS VILLAGE, NY 11427		10200602	NOx	3897	35.459	4079	37.118	4109	37.395	4180	38.039	4216	38.362
		10200602	CO	3273	29.786	3426	31.179	3452	31.412	3511	31.953	3541	32.224
		10300402	VOC	1434	2.812	1333	2.615	1317	2.582	1337	2.621	1347	2.641
		10300402	NOx	69791	136.851	64898	127.257	64083	125.658	65067	127.588	65559	128.554
		10300402	CO	6345	12.441	5900	11.569	5826	11.423	5915	11.599	5960	11.687
		10300503	VOC	7	0.000	7	0.000	8	0.000	8	0.000	8	0.000
		10300503	NOx	413	0.022	439	0.023	443	0.023	447	0.023	449	0.023
		10300503	CO	103	0.005	110	0.006	111	0.006	112	0.006	112	0.006
		10300603	VOC	8	0.021	8	0.021	8	0.021	8	0.021	8	0.021
		10300603	VOC	6	0.016	6	0.016	6	0.016	6	0.016	6	0.016
		10300603	NOx	138	0.374	139	0.378	139	0.378	141	0.384	143	0.387
		10300603	CO	116	0.314	117	0.317	117	0.318	119	0.323	120	0.325
		20200401	VOC	82	20.546	83	20.731	83	20.762	82	20.514	82	20.389
		20200401	VOC	81	20.155	81	20.336	81	20.367	80	20.123	80	20.001
		20200401	NOx	3214	803.511	3243	810.747	3248	811.953	3209	802.230	3189	797.369
		20200401	CO	851	212.802	859	214.718	860	215.038	850	212.463	845	211.175
		40400302	VOC	704	1.913	806	2.191	823	2.238	861	2.339	880	2.390
ROCHDALE VILLAGE	QUEENS	10300501	VOC	48	0.000	52	0.000	52	0.000	52	0.000	53	0.000
132-11 BEDELL ST		10300501	NOx	3422	0.000	3636	0.000	3672	0.000	3705	0.000	3722	0.000
QUEENS, NY 11434		10300501	CO	713	0.000	758	0.000	765	0.000	772	0.000	775	0.000
		10300601	VOC	7314	23.371	7380	23.583	7391	23.618	7512	24.006	7573	24.200
		10300601	NOx	252649	807.377	254933	814.678	255314	815.895	259511	829.307	261609	836.013
		10300601	CO	111697	356.946	112707	360.174	112876	360.712	114731	366.641	115659	369.606
INTERSTATE BRANDS CORPORATION	QUEENS	10300603	VOC	416	1.130	420	1.140	420	1.142	427	1.161	431	1.170
168-23 DOUGLAS AVE		10300603	NOx	7560	20.543	7628	20.729	7640	20.760	7765	21.101	7828	21.272
QUEENS, NY 11433		10300603	CO	6350	17.257	6408	17.413	6417	17.439	6523	17.725	6576	17.869
		30203201	VOC	86875	236.073	89420	242.990	89845	244.143	90820	246.793	91307	248.117
		30203299	VOC	2619	7.117	2696	7.326	2709	7.360	2738	7.440	2753	7.480
		30290003	VOC	15	0.040	15	0.042	16	0.042	16	0.043	16	0.044
		30290003	NOx	742	2.016	773	2.101	778	2.115	798	2.169	808	2.196

		30290003	CO	445	1.210	464	1.261	467	1.269	479	1.302	485	1.318
LONG ISLAND JEWISH MEDICAL CENTER-QUEENS	QUEENS	10300402	NOx	36017	163.108	33492	151.673	33071	149.768	33579	152.068	33833	153.219
270-05 76TH AVE		10300402	CO	3274	14.828	3045	13.788	3006	13.615	3053	13.824	3076	13.929
QUEENS, NY 11040		10300501	VOC	11	0.031	12	0.033	12	0.033	12	0.034	12	0.034
		10300501	NOx	805	2.188	856	2.325	864	2.348	872	2.369	876	2.380
		10300501	CO	168	0.456	178	0.484	180	0.489	182	0.494	182	0.496
		10300504	NOx	4043	10.471	4296	11.127	4338	11.236	4377	11.338	4397	11.388
		10300504	CO	1011	2.618	1074	2.782	1085	2.809	1094	2.834	1099	2.847
		10300602	VOC	1162	6.096	1172	6.151	1174	6.160	1193	6.262	1203	6.312
		10300602	VOC	1508	7.916	1522	7.988	1524	8.000	1549	8.131	1562	8.197
		10300602	NOx	27424	143.929	27672	145.231	27713	145.448	28169	147.839	28396	149.034
		10300602	CO	23036	120.901	23244	121.994	23279	122.176	23662	124.184	23853	125.189
		10300603	VOC	16	0.044	16	0.044	16	0.045	17	0.045	17	0.046
		10300603	NOx	295	0.802	298	0.809	298	0.810	303	0.823	305	0.830
		10300603	CO	248	0.673	250	0.679	250	0.680	255	0.692	257	0.697
		20300101	VOC	1055	20.298	1122	21.569	1133	21.781	1143	21.977	1148	22.075
		20300101	NOx	12471	239.827	13252	254.847	13382	257.350	13503	259.666	13563	260.824
		20300101	CO	2785	53.564	2960	56.919	2989	57.478	3016	57.995	3029	58.254
N SHORE TOWERS APT TOTAL ENERGY PLANT	QUEENS	10300501	VOC	37	1.198	40	1.273	40	1.285	41	1.297	41	1.303
272-40 GRAND CENTRAL PARKWAY		10300501	NOx	2642	84.549	2808	89.844	2835	90.727	2861	91.543	2873	91.951
FLORAL PARK, NY 11005		10300501	CO	550	17.614	585	18.718	591	18.901	596	19.071	599	19.157
		10300602	VOC	624	2.223	630	2.243	631	2.247	641	2.284	646	2.302
		10300602	NOx	11345	40.425	11448	40.790	11465	40.851	11653	41.523	11747	41.858
		10300602	CO	9530	33.957	9616	34.264	9630	34.315	9789	34.879	9868	35.161
		20200401	VOC	8540	23.207	8617	23.416	8630	23.450	8526	23.170	8475	23.029
		20200401	NOx	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		20200401	CO	73204	198.924	73863	200.715	73973	201.014	73087	198.607	72644	197.403
		20200402	VOC	37516	130.490	37516	130.490	37516	130.490	37516	130.490	37516	130.490
		20200402	NOx	478554	1664.536	478554	1664.536	478554	1664.536	478554	1664.536	478554	1664.536
		20200402	CO	217593	756.844	217593	756.844	217593	756.844	217593	756.844	217593	756.844
MARY IMMACULATE HOSPITAL	QUEENS	10300602	VOC	127	0.187	128	0.189	128	0.189	130	0.192	131	0.194
152-11 89TH AVE		10300602	NOx	2301	3.401	2322	3.432	2325	3.437	2363	3.494	2383	3.522
JAMAICA, NY 11432		10300602	CO	1933	2.857	1950	2.883	1953	2.887	1985	2.935	2001	2.959

		10300603	VOC	123	0.183	125	0.184	125	0.184	127	0.187	128	0.189
		10300603	NOx	2245	3.319	2265	3.349	2269	3.354	2306	3.409	2325	3.436
		10300603	CO	1886	2.788	1903	2.813	1906	2.817	1937	2.863	1953	2.887
		20200253	VOC	248	1.561	259	1.634	261	1.646	266	1.674	268	1.689
		20200253	NOx	18986	119.696	19875	125.297	20023	126.230	20368	128.406	20540	129.494
		20200253	CO	29358	185.081	30731	193.741	30960	195.184	31494	198.548	31761	200.231
		20200401	VOC	45	0.117	45	0.118	45	0.118	45	0.117	44	0.116
		20200401	VOC	1	0.002	1	0.002	1	0.002	1	0.002	1	0.002
		20200401	NOx	1748	4.578	1763	4.619	1766	4.626	1745	4.571	1734	4.543
		20200401	CO	463	1.212	467	1.223	468	1.225	462	1.211	459	1.203
KEYSPAN GENERATION-FAR ROCKAWAY STATION	QUEENS	10100604	VOC	24835	100.448	27186	109.954	27577	111.538	30467	123.228	31913	129.072
1425 BAY 24TH ST		10100604	NOx	357282	1445.050	391094	1581.807	396730	1604.600	438307	1772.762	459096	1856.843
FAR ROCKAWAY, NY 11691		10100604	CO	108372	438.318	118628	479.799	120337	486.713	132949	537.720	139255	563.224
		10200602	VOC	1	0.005	1	0.006	1	0.006	1	0.006	1	0.006
		10200602	NOx	22	0.099	23	0.104	23	0.104	24	0.106	24	0.107
		10200602	CO	18	0.083	19	0.087	19	0.088	20	0.089	20	0.090
		20200202	VOC	2	0.045	2	0.047	2	0.047	2	0.048	3	0.048
		20200202	NOx	57	1.092	59	1.143	60	1.152	61	1.172	61	1.182
		20200202	CO	8	0.153	8	0.161	8	0.162	9	0.165	9	0.166
KIAC COGENERATION PLANT-JFK AIRPORT	QUEENS	20200203	VOC	11032	44.746	11548	46.839	11634	47.188	11835	48.001	11935	48.408
BUILDING 49 JFK AIRPORT		20200203	NOx	168108	681.837	175974	713.740	177285	719.057	180340	731.451	181868	737.648
JAMAICA, NY 11430		20200203	CO	86155	349.441	90187	365.792	90858	368.517	92424	374.869	93208	378.045
DAYTON BEACH PARK # 1 CORPORATION	QUEENS	10300402	VOC	838	22.359	780	20.792	770	20.530	782	20.846	788	21.003
8600 SHORE FRONT PARKWAY		10300402	NOx	40810	1088.267	37949	1011.976	37472	999.261	38048	1014.610	38336	1022.285
FAR ROCKAWAY, NY 11693		10300402	CO	3710	98.933	3450	91.998	3407	90.842	3459	92.237	3485	92.935
ARTHUR KILL GENERATING STATION	RICHMOND	10100601	VOC	42416	213.651	46430	233.870	47099	237.240	52035	262.103	54503	274.535
4401 VICTORY BLVD		10100601	NOx	1237529	6233.479	1354646	6823.404	1374166	6921.724	1518179	7647.122	1590185	8009.822
STATEN ISLAND, NY 10314		10100601	CO	647808	3263.033	709115	3571.840	719333	3623.308	794719	4003.031	832413	4192.893
		10100602	VOC	184	0.000	201	0.000	204	0.000	225	0.000	236	0.000
		10100602	VOC	141	0.000	155	0.000	157	0.000	174	0.000	182	0.000
		10100602	NOx	7796	0.000	8534	0.000	8657	0.000	9564	0.000	10018	0.000

		10100602	CO	2806	0.000	3071	0.000	3115	0.000	3442	0.000	3605	0.000
		10100604	VOC	35508	502.185	38868	549.710	39428	557.631	43561	616.071	45627	645.291
		10100604	NOx	1029254	14556.592	1126661	15934.199	1142895	16163.800	1262671	17857.769	1322558	18704.755
		10100604	CO	154944	2191.351	169608	2398.736	172052	2433.300	190083	2688.310	199098	2815.816
		20100102	VOC	144	2.778	287	5.528	311	5.987	233	4.486	194	3.736
		20100102	NOx	2718	52.269	5409	104.019	5858	112.644	4390	84.414	3656	70.299
		20100102	CO	585	11.250	1164	22.388	1261	24.245	945	18.169	787	15.131
		20100201	VOC	25	16.809	27	18.399	27	18.664	30	20.621	32	21.599
		20100201	VOC	25	16.801	27	18.391	27	18.656	30	20.611	32	21.588
		20100201	NOx	3335	2277.805	3651	2493.372	3703	2529.300	4091	2794.371	4285	2926.907
		20100201	CO	962	656.950	1053	719.123	1068	729.485	1180	805.935	1236	844.160
		20200102	VOC	287	71.658	289	72.303	290	72.411	286	71.544	284	71.110
		20200102	NOx	3511	877.811	3543	885.716	3548	887.034	3506	876.412	3484	871.101
		20200102	CO	756	189.098	763	190.801	764	191.084	755	188.796	751	187.652
VANBRO CORPORATION	RICHMOND	10300501	VOC	6	0.128	7	0.136	7	0.137	7	0.138	7	0.139
1900 SOUTH AVE		10300501	VOC	5	0.109	6	0.115	6	0.117	6	0.118	6	0.118
STATEN ISLAND, NY 10314		10300501	NOx	432	9.010	460	9.574	464	9.668	468	9.755	470	9.799
		10300501	CO	90	1.877	96	1.995	97	2.014	98	2.032	98	2.041
		10500106	NOx	485	0.000	508	0.000	512	0.000	520	0.000	525	0.000
		10500106	CO	407	0.000	427	0.000	430	0.000	437	0.000	441	0.000
		20100102	VOC	1390	3.777	2766	7.517	2996	8.140	2245	6.100	1869	5.080
		20100102	NOx	6392	17.370	12721	34.567	13775	37.433	10323	28.052	8597	23.361
		20100102	CO	1409	3.829	2804	7.620	3037	8.251	2276	6.183	1895	5.149
		20300101	VOC	1	0.021	1	0.022	1	0.022	1	0.023	1	0.023
		20300101	NOx	145	3.021	154	3.210	156	3.242	157	3.271	158	3.285
		20300101	CO	41	0.854	44	0.908	44	0.917	44	0.925	45	0.929
		20300201	NOx	5354	111.542	5402	112.550	5410	112.718	5499	114.571	5544	115.498
		20300201	CO	8100	168.750	8173	170.276	8185	170.530	8320	173.333	8387	174.735
		30500251	VOC	1283	9.669	1541	11.619	1584	11.944	1679	12.658	1727	13.016
		30500251	VOC	1280	9.650	1538	11.596	1581	11.920	1676	12.633	1723	12.990
		30500251	NOx	13900	104.785	16703	125.918	17171	129.440	18198	137.186	18712	141.060
		30500251	CO	8100	61.062	9734	73.376	10006	75.429	10605	79.943	10904	82.200
VISY PAPER STATEN ISLAND PLANT	RICHMOND	10300601	VOC	9508	25.011	9594	25.237	9609	25.275	9767	25.691	9846	25.898

4435 VICTORY BLVD		10300601	NOx	13030	34.274	13148	34.584	13167	34.635	13384	35.205	13492	35.489
STATEN ISLAND, NY 10314		10300601	CO	145219	381.990	146532	385.444	146751	386.020	149164	392.365	150370	395.538
		30788801	VOC	11062	29.418	12068	32.094	12236	32.540	12724	33.838	12968	34.487
		40301019	VOC	109	0.296	122	0.332	124	0.338	129	0.350	131	0.356
KINDER MORGAN LIQUIDS TERMINALS LLC	RICHMOND	10200502	NOx	10622	28.864	10718	29.124	10734	29.167	10605	28.818	10541	28.643
4101 ARTHUR KILL RD		10200502	CO	2656	7.216	2679	7.281	2683	7.292	2651	7.205	2635	7.161
STATEN ISLAND, NY 10309		40301019	VOC	17312	47.043	19408	52.739	19757	53.689	20458	55.592	20808	56.543
		40400151	VOC	1265	3.438	1418	3.854	1444	3.923	1495	4.062	1521	4.132
		40400160	VOC	100310	272.582	112455	305.585	114479	311.085	118537	322.113	120567	327.627
		40600232	VOC	48481	131.742	54351	147.692	55329	150.351	57290	155.681	58271	158.346
		40600232	VOC	56739	154.182	63609	172.850	64754	175.961	67049	182.198	68197	185.317
		40600251	VOC	5500	14.945	6166	16.754	6277	17.056	6499	17.660	6610	17.963
		40799997	VOC	366	0.995	358	0.972	356	0.968	362	0.984	365	0.992
STATEN ISLAND LANDFILL	RICHMOND	10300502	VOC	57	0.000	61	0.000	61	0.000	62	0.000	62	0.000
RICHMOND AVE		10300502	NOx	3356	0.000	3566	0.000	3601	0.000	3634	0.000	3650	0.000
STATEN ISLAND, NY 10314		10300502	CO	839	0.000	892	0.000	900	0.000	908	0.000	912	0.000
		10300503	VOC	44	0.000	47	0.000	47	0.000	48	0.000	48	0.000
		10300503	NOx	2593	0.000	2755	0.000	2782	0.000	2807	0.000	2820	0.000
		10300503	CO	648	0.000	689	0.000	696	0.000	702	0.000	705	0.000
		10300603	VOC	154	0.000	155	0.000	155	0.000	158	0.000	159	0.000
		10300603	VOC	118	0.000	119	0.000	120	0.000	122	0.000	123	0.000
		10300603	NOx	2795	0.000	2820	0.000	2824	0.000	2871	0.000	2894	0.000
		10300603	CO	2348	0.000	2369	0.000	2373	0.000	2412	0.000	2431	0.000
		39999994	VOC	2167	5.889	3104	8.436	3261	8.860	3448	9.369	3542	9.624
		40100295	VOC	1128	3.065	1440	3.912	1492	4.054	1574	4.277	1615	4.388
		40301019	VOC	1790	4.864	2007	5.453	2043	5.551	2115	5.748	2151	5.846
		50100402	VOC	131739	357.987	139177	378.198	140416	381.567	144939	393.857	147201	400.002
		50100402	VOC	165712	450.305	175068	475.728	176627	479.965	182316	495.425	185161	503.155
		50100410	VOC	517	1.404	514	1.397	514	1.396	514	1.396	514	1.396
		50100410	NOx	50223	136.474	49992	135.848	49954	135.743	49954	135.743	49954	135.743
		50100410	CO	2273	6.176	2262	6.147	2260	6.142	2260	6.142	2260	6.142
		50100421	VOC	28658	77.875	28526	77.517	28504	77.458	28504	77.458	28504	77.458
		50100421	NOx	163336	443.848	162586	441.809	162461	441.470	162461	441.470	162461	441.470

		50100421	CO	102044	277.293	101575	276.020	101497	275.808	101497	275.808	101497	275.808
CHEMPRENE INC	DUTCHESS	31000412	NOx	13778	0.000	10380	0.000	9814	0.000	9795	0.000	9786	0.000
483 FISHKILL AVE		31000412	CO	1253	0.000	944	0.000	892	0.000	890	0.000	890	0.000
BEACON, NY 12508-1200		31000414	NOx	7939	18.088	8576	19.541	8682	19.783	8678	19.772	8675	19.766
		31000414	CO	1985	4.522	2144	4.885	2171	4.946	2169	4.943	2169	4.942
		33000212	VOC	10988	137.350	13049	163.115	13393	167.409	13966	174.576	14253	178.160
		33000214	VOC	8565	47.583	10172	56.509	10439	57.997	10886	60.480	11110	61.722
		33000214	VOC	2246	12.478	2667	14.818	2738	15.209	2855	15.860	2913	16.185
IBM EAST FISHKILL FACILITY	DUTCHESS	10200402	VOC	10	0.000	12	0.000	12	0.000	12	0.000	12	0.000
2070 ST RTE 52		10200402	NOx	1490	0.000	1761	0.000	1806	0.000	1808	0.000	1809	0.000
HOPEWELL JUNCTION, NY 12533		10200402	CO	175	0.000	207	0.000	212	0.000	212	0.000	212	0.000
		10200501	VOC	433	1.168	437	1.179	438	1.181	432	1.167	430	1.160
		10200501	NOx	130	0.000	131	0.000	131	0.000	130	0.000	129	0.000
		10200501	CO	77	0.000	77	0.000	77	0.000	76	0.000	76	0.000
		10200503	VOC	26	0.057	26	0.057	26	0.057	26	0.057	26	0.056
		10200503	NOx	2606	5.665	2629	5.716	2633	5.725	2602	5.656	2586	5.622
		10200503	CO	652	1.416	657	1.429	658	1.431	650	1.414	647	1.405
		10200602	VOC	8851	19.669	9265	20.589	9334	20.743	9495	21.100	9576	21.279
		10200602	VOC	6816	15.147	7135	15.856	7188	15.974	7312	16.249	7374	16.387
		10200602	NOx	72355	165.063	75741	172.786	76305	174.073	77620	177.073	78278	178.574
		10200602	CO	135183	300.401	141508	314.457	142562	316.800	145019	322.260	146248	324.990
		10200603	VOC	8	0.017	8	0.017	8	0.018	8	0.018	8	0.018
		10200603	NOx	139	0.303	146	0.317	147	0.319	149	0.325	151	0.328
		10200603	CO	117	0.254	122	0.266	123	0.268	126	0.273	127	0.275
		20200101	VOC	1	0.002	1	0.002	1	0.002	1	0.002	1	0.002
		20200101	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		20200101	NOx	1201	3.263	1212	3.292	1213	3.297	1199	3.258	1192	3.238
		20200101	CO	5	0.012	5	0.012	5	0.012	4	0.012	4	0.012
		31306501	VOC	1500	4.076	2072	5.632	2168	5.891	2344	6.370	2432	6.609
		31306599	VOC	50960	138.478	75920	206.305	80080	217.610	88650	240.896	92935	252.540
		31306599	CO	270	0.734	402	1.093	424	1.153	470	1.276	492	1.338
		31307001	VOC	2960	117.880	4090	162.865	4278	170.362	4626	184.213	4800	191.138
		39999994	NOx	5790	22.269	8294	31.902	8712	33.507	9212	35.432	9463	36.395

		39999994	CO	1540	5.923	2206	8.485	2317	8.912	2450	9.424	2517	9.680
		40100501	VOC	1180	7.564	1152	7.386	1148	7.357	1167	7.479	1176	7.541
		40799997	VOC	2720	7.391	2656	7.217	2645	7.188	2689	7.308	2712	7.368
		50300702	VOC	320	0.870	418	1.135	434	1.179	465	1.263	480	1.304
BEACON TECHNOLOGY CENTER	DUTCHESS	10200402	NOx	2147	57.254	2537	67.650	2602	69.383	2605	69.461	2606	69.500
45 OLD GLENHAM RD		10200402	CO	195	5.205	231	6.150	237	6.308	237	6.315	237	6.318
BEACON, NY 12508		10200602	VOC	237	0.304	249	0.319	250	0.321	255	0.327	257	0.329
		10200602	VOC	308	0.395	323	0.414	325	0.417	331	0.424	334	0.428
		10200602	NOx	5607	7.188	5869	7.524	5913	7.580	6015	7.711	6066	7.776
		10200602	CO	4710	6.038	4930	6.321	4967	6.368	5052	6.477	5095	6.532
		20400401	VOC	9635	114.702	11293	134.440	11569	137.729	12146	144.591	12434	148.022
		20400401	NOx	6640	79.051	7783	92.654	7973	94.922	8371	99.651	8569	102.015
		20400401	CO	256498	3053.547	300636	3579.001	307992	3666.577	323337	3849.248	331009	3940.584
		30600503	VOC	173	0.470	194	0.527	197	0.537	204	0.556	208	0.565
		30688801	VOC	1378	3.745	1545	4.198	1573	4.274	1628	4.425	1656	4.501
		49099998	VOC	250	1.359	244	1.327	243	1.321	247	1.343	249	1.354
DUTCHESS CO RESOURCE RECOVERY FACILITY	DUTCHESS	50300113	VOC	14460	39.293	18875	51.291	19611	53.290	20997	57.056	21690	58.940
98 SAND DOCK RD		50300113	NOx	310217	842.981	404935	1100.366	420721	1143.263	450454	1224.059	465320	1264.457
POUGHKEEPSIE, NY 12601		50300113	CO	355355	965.639	463855	1260.474	481938	1309.614	515997	1402.165	533026	1448.441
SHOEMAKER GAS TURBINE FACILITY	ORANGE	20100201	VOC	74	19.313	82	21.141	83	21.445	91	23.693	96	24.817
71 DOLSON AVE		20100201	VOC	74	19.304	81	21.131	83	21.435	91	23.682	96	24.805
MIDDLETOWN, NY 10940		20100201	NOx	10003	2594.111	10950	2839.613	11107	2880.530	12272	3182.410	12854	3333.350
		20100201	CO	2911	754.834	3186	826.270	3232	838.176	3571	926.017	3740	969.938
		20100901	NOx	9325	102.575	15013	165.138	15960	175.565	14616	160.776	13944	153.381
		20100901	CO	40	0.439	64	0.707	68	0.752	63	0.688	60	0.657
		20200202	VOC	81	19.975	85	20.910	86	21.066	87	21.429	88	21.610
		20200202	NOx	1988	489.048	2081	511.931	2097	515.745	2133	524.634	2151	529.079
		20200202	CO	279	68.708	292	71.923	295	72.458	300	73.707	302	74.332
GENPAK LLC MIDDLETOWN MAIN PLANT	ORANGE	39000689	VOC	305	0.364	319	0.381	322	0.384	327	0.391	330	0.394
26 REPUBLIC PLZ		39000689	NOx	3813	4.553	3991	4.766	4021	4.801	4090	4.884	4125	4.926
MIDDLETOWN, NY 10940		39000689	CO	763	0.911	798	0.953	804	0.960	818	0.977	825	0.985
		39999994	VOC	97280	259.413	139358	371.622	146371	390.323	154780	412.748	158985	423.960

ORANGE COUNTY SANITARY LANDFILL	ORANGE	10500105	NOx	9	0.023	9	0.024	9	0.024	9	0.023	9	0.023
21 TRAINING CENTER LN		10500105	CO	2	0.006	2	0.006	2	0.006	2	0.006	2	0.006
GOSHEN, NY 10924-0637		50100404	VOC	3768	10.238	3750	10.191	3747	10.183	3747	10.183	3747	10.183
		50100404	VOC	338	0.918	336	0.914	336	0.913	336	0.913	336	0.913
AL TURI LANDFILL & LFGTE FACILITY	ORANGE	10500205	VOC	11	0.031	12	0.033	12	0.033	12	0.033	12	0.034
73 HARTLEY RD		10500205	NOx	292	0.794	310	0.844	313	0.852	316	0.860	318	0.863
GOSHEN, NY 10924		10500205	CO	81	0.221	86	0.234	87	0.237	88	0.239	88	0.240
		20200102	VOC	5	0.014	5	0.014	5	0.014	5	0.014	5	0.013
		20200102	VOC	5	0.014	5	0.014	5	0.014	5	0.014	5	0.014
		20200102	NOx	62	0.168	63	0.170	63	0.170	62	0.168	61	0.167
		20200102	CO	13	0.036	13	0.037	13	0.037	13	0.036	13	0.036
		20300801	VOC	6763	18.378	6732	18.293	6727	18.279	6727	18.279	6727	18.279
		20300801	NOx	266040	722.935	264818	719.615	264615	719.061	264615	719.061	264615	719.061
		20300801	CO	247380	672.228	246244	669.141	246055	668.626	246055	668.626	246055	668.626
		40799997	VOC	23737	64.502	23179	62.985	23086	62.732	23470	63.778	23663	64.301
		40799997	VOC	32611	88.617	31844	86.532	31716	86.185	32245	87.622	32509	88.340
		50100410	NOx	263	0.714	262	0.711	261	0.710	261	0.710	261	0.710
		50100410	CO	4928	13.390	4905	13.328	4901	13.318	4901	13.318	4901	13.318
US ARMY ACADEMY	ORANGE	10100405	VOC	1740	0.000	2594	0.000	2737	0.000	2702	0.000	2685	0.000
WEST POINT		10100405	NOx	133305	0.000	198704	0.000	209603	0.000	206950	0.000	205624	0.000
WEST POINT, NY 10996		10100405	CO	11450	0.000	17067	0.000	18004	0.000	17776	0.000	17662	0.000
		10100602	VOC	703	3.123	769	3.419	780	3.468	862	3.831	903	4.013
		10100602	VOC	912	4.055	999	4.439	1013	4.503	1119	4.975	1172	5.211
		10100602	NOx	8295	36.867	9080	40.356	9211	40.937	10176	45.227	10659	47.372
		10100602	CO	13936	61.936	15254	67.798	15474	68.774	17096	75.982	17907	79.586
		10300501	VOC	93	0.020	99	0.022	100	0.022	101	0.022	101	0.022
		10300501	VOC	109	0.024	116	0.025	117	0.026	119	0.026	119	0.026
		10300501	NOx	7728	1.680	8212	1.785	8293	1.803	8367	1.819	8405	1.827
		10300501	CO	1610	0.350	1711	0.372	1728	0.376	1743	0.379	1751	0.381
		10300502	VOC	43	0.061	46	0.064	46	0.065	46	0.066	47	0.066
		10300502	NOx	2520	3.561	2678	3.784	2704	3.821	2728	3.855	2741	3.873
		10300502	CO	630	0.890	669	0.946	676	0.955	682	0.964	685	0.968
		10300602	VOC	375	0.611	378	0.617	379	0.618	385	0.628	388	0.633

		10300602	VOC	487	0.794	491	0.801	492	0.802	500	0.815	504	0.822
		10300602	NOx	4425	7.215	4465	7.280	4472	7.291	4545	7.411	4582	7.471
		10300602	CO	7434	12.121	7501	12.230	7512	12.249	7636	12.450	7698	12.551
		10300603	VOC	963	1.779	971	1.795	973	1.797	989	1.827	997	1.842
		10300603	VOC	741	1.370	748	1.382	749	1.384	761	1.407	768	1.418
		10300603	NOx	17500	32.337	17658	32.629	17685	32.678	17975	33.215	18121	33.484
		10300603	CO	14700	27.163	14833	27.409	14855	27.450	15099	27.901	15221	28.126
		10301002	VOC	16	0.031	17	0.032	17	0.033	17	0.033	17	0.033
		10301002	NOx	742	1.452	772	1.510	777	1.520	785	1.536	789	1.544
		10301002	CO	101	0.197	105	0.205	105	0.206	107	0.208	107	0.210
		20200254	VOC	8	0.630	8	0.659	8	0.664	8	0.676	8	0.682
		20200254	NOx	134	11.200	141	11.724	142	11.811	144	12.015	145	12.117
		20200254	CO	18	1.470	18	1.539	19	1.550	19	1.577	19	1.590
		20200401	VOC	653	4.933	684	5.164	689	5.203	700	5.292	706	5.337
		20200401	NOx	18526	139.974	19393	146.524	19537	147.615	19874	150.160	20042	151.432
		20200401	CO	6763	51.097	7079	53.488	7132	53.886	7255	54.815	7316	55.279
		20300101	VOC	305	6.345	303	6.315	303	6.311	303	6.311	303	6.311
		20300101	VOC	305	6.345	303	6.316	303	6.311	303	6.311	303	6.311
		20300101	NOx	3624	75.500	3607	75.153	3605	75.095	3605	75.095	3605	75.095
		20300101	CO	804	16.744	800	16.667	799	16.654	799	16.654	799	16.654
		20300301	NOx	408	8.500	406	8.461	406	8.454	406	8.454	406	8.454
		20300301	CO	15700	327.083	15628	325.581	15616	325.331	15616	325.331	15616	325.331
		40299995	VOC	1269	31.725	1542	38.545	1587	39.681	1665	41.629	1704	42.602
		40299995	VOC	800	20.000	972	24.299	1001	25.016	1050	26.243	1074	26.857
		40600301	VOC	75	0.375	78	0.391	79	0.394	77	0.386	76	0.382
		40600306	VOC	6119	16.934	6380	17.654	6423	17.774	6296	17.423	6232	17.247
		50200101	NOx	1	0.138	2	0.160	2	0.164	2	0.171	2	0.174
		50200101	CO	5	0.460	5	0.534	5	0.547	6	0.569	6	0.580
DANSKAMMER GENERATING STATION	ORANGE	10100212	NOx	8930052	29698.779	10040964	33393.350	10226115	34009.111	10434745	34702.953	10539060	35049.875
994 RIVER RD		10100212	CO	455022	1513.868	511627	1702.195	521062	1733.583	531692	1768.951	537008	1786.635
NEWBURGH, NY 12550		10100401	VOC	1493	63.662	2226	94.894	2348	100.100	2318	98.833	2304	98.199
		10100401	NOx	58574	2471.584	87311	3684.127	92100	3886.218	90934	3837.028	90351	3812.434
		10100401	CO	9825	418.829	14645	624.304	15448	658.550	15253	650.215	15155	646.047

		10100601	VOC	1993	355.822	2182	389.496	2213	395.109	2445	436.516	2561	457.220
		10100601	VOC	1535	274.018	1680	299.950	1704	304.272	1883	336.160	1972	352.104
		10100601	NOx	107113	22456.558	117250	24581.802	118940	24936.009	131405	27549.305	137637	28855.958
		10100601	CO	30440	5434.371	33321	5948.669	33801	6034.385	37343	6666.790	39114	6982.993
		20100102	VOC	2252	206.638	4483	411.225	4854	445.322	3638	333.718	3029	277.915
		20100102	NOx	42383	3888.149	84344	7737.688	91338	8379.277	68447	6279.297	57002	5229.304
		20100102	CO	9122	836.853	18154	1665.396	19659	1803.487	14732	1351.504	12269	1125.513
ROSETON GENERATING STATION	ORANGE	10100401	VOC	58075	386.214	86565	575.688	91314	607.267	90158	599.580	89580	595.737
992 RIVER RD		10100401	NOx	1961926	12699.570	2924434	18929.897	3084852	19968.284	3045806	19715.537	3026283	19589.164
NEWBURGH, NY 12550		10100401	CO	382069	2540.880	569510	3787.419	600750	3995.176	593146	3944.607	589344	3919.323
		10100601	VOC	8445	505.681	9244	553.537	9377	561.513	10360	620.360	10851	649.783
		10100601	NOx	264248	15683.860	289256	17168.150	293424	17415.531	324175	19240.681	339550	20153.259
		10100601	CO	128973	7723.121	141178	8454.022	143212	8575.839	158221	9474.587	165726	9923.963
		10200501	VOC	0	0.005	0	0.005	0	0.005	0	0.005	0	0.005
		10200501	NOx	1	0.580	1	0.585	1	0.586	1	0.579	1	0.576
		10200501	CO	0	0.125	0	0.126	0	0.126	0	0.125	0	0.124
		10200602	VOC	1	0.005	1	0.005	1	0.005	1	0.006	1	0.006
		10200602	NOx	12	0.094	13	0.098	13	0.099	13	0.100	13	0.101
		10200602	CO	10	0.079	11	0.082	11	0.083	11	0.084	11	0.085
		20100102	VOC	102	38.048	202	75.718	219	81.996	164	61.447	137	51.172
		20100102	NOx	1912	715.917	3804	1424.724	4120	1542.858	3087	1156.194	2571	962.861
		20100102	CO	411	154.088	819	306.646	887	332.072	664	248.850	553	207.238
NEW ENGLAND LAMINATES	ORANGE	10200602	VOC	175	0.380	183	0.398	184	0.401	188	0.408	189	0.411
40 GOVERNOR DRIVE		10200602	NOx	3180	6.913	3329	7.237	3354	7.290	3411	7.416	3440	7.479
NEWBURGH, NY 12550		10200602	CO	2671	5.807	2796	6.079	2817	6.124	2866	6.230	2890	6.282
		10500206	NOx	1000	0.000	1009	0.000	1011	0.000	1027	0.000	1035	0.000
		10500206	CO	200	0.000	202	0.000	202	0.000	205	0.000	207	0.000
		39000689	VOC	176	0.611	184	0.640	186	0.644	189	0.656	190	0.661
		39000689	NOx	3200	11.111	3350	11.631	3375	11.718	3433	11.920	3462	12.021
		39000689	CO	2688	9.333	2814	9.770	2835	9.843	2884	10.012	2908	10.097
		40200898	VOC	12215	48.466	14977	59.425	15437	61.251	16361	64.916	16823	66.749
		40200898	VOC	4195	16.647	5144	20.411	5302	21.038	5619	22.297	5777	22.926
		40201103	VOC	205	0.557	249	0.677	256	0.697	269	0.731	275	0.748

		40799997	VOC	30	0.082	29	0.080	29	0.079	30	0.081	30	0.081
WAREX CARGO TERMINAL	ORANGE	10201002	VOC	1	0.003	1	0.003	1	0.003	1	0.003	1	0.003
1096 RIVER RD		10201002	NOx	74	0.190	70	0.179	69	0.177	70	0.178	70	0.179
NEW WINDSOR, NY 12553		10201002	CO	12	0.032	12	0.030	12	0.030	12	0.030	12	0.030
		10300503	VOC	1	0.000	1	0.000	1	0.000	1	0.000	1	0.000
		10300503	NOx	32	0.000	34	0.000	34	0.000	35	0.000	35	0.000
		10300503	CO	8	0.000	9	0.000	9	0.000	9	0.000	9	0.000
		40301097	VOC	377	1.161	423	1.302	431	1.325	446	1.372	454	1.396
		40301099	VOC	592	1.821	664	2.042	676	2.079	699	2.152	711	2.189
		40400110	VOC	13201	36.669	14799	41.109	15066	41.849	15600	43.332	15867	44.074
		40400116	VOC	203	0.743	228	0.833	232	0.848	240	0.878	244	0.893
		40400199	VOC	11242	0.000	12604	0.000	12831	0.000	13285	0.000	13513	0.000
		40400250	VOC	31868	116.192	35726	130.260	36370	132.604	37659	137.305	38303	139.655
		40400254	VOC	11786	43.064	13213	48.278	13451	49.147	13927	50.889	14166	51.760
		49000599	VOC	1	0.004	1	0.004	1	0.004	1	0.004	1	0.004
METAL CONTAINER CORP	ORANGE	10200603	NOx	25224	60.981	26404	63.834	26601	64.310	27059	65.418	27289	65.973
130 BRUENIG RD		10200603	CO	21188	51.224	22180	53.621	22345	54.020	22730	54.952	22923	55.417
NEW WINDSOR, NY 12553		40201721	VOC	30456	87.017	37003	105.723	38094	108.841	39963	114.181	40898	116.852
		40201722	VOC	109773	313.637	133370	381.059	137303	392.295	144041	411.545	147409	421.170
		40201722	VOC	118197	337.706	143605	410.301	147840	422.400	155094	443.127	158722	453.490
		40201727	VOC	99052	283.006	120345	343.842	123894	353.982	129973	371.351	133013	380.036
		40201727	VOC	83830	239.514	101851	291.002	104854	299.583	109999	314.283	112572	321.633
WAREX TERMINALS CORP - NORTH TERMINAL	ORANGE	10201002	NOx	124	0.429	116	0.404	115	0.400	116	0.402	116	0.403
1254 RIVER RD|HUDSON RIVER		10201002	CO	21	0.072	20	0.068	19	0.067	20	0.068	20	0.068
NEW WINDSOR, NY 12553		10500105	NOx	37	0.000	38	0.000	38	0.000	37	0.000	37	0.000
		10500105	CO	9	0.000	9	0.000	9	0.000	9	0.000	9	0.000
		40400111	VOC	23590	84.873	26446	95.149	26922	96.861	27877	100.295	28354	102.012
		40400151	VOC	98428	354.127	110345	397.003	112331	404.149	116313	418.475	118304	425.638
		40600140	VOC	442	1.105	461	1.152	464	1.160	455	1.137	450	1.125
		40600140	VOC	437	1.093	456	1.139	459	1.147	450	1.124	445	1.113
LAFAYETTE PAPER LP	ORANGE	10200603	VOC	8	0.000	9	0.000	9	0.000	9	0.000	9	0.000
112 FORGE HILL RD		10200603	NOx	152	0.000	159	0.000	160	0.000	163	0.000	164	0.000
NEW WINDSOR, NY 12553		10200603	CO	127	0.000	133	0.000	134	0.000	137	0.000	138	0.000

EXXONMOBIL OIL CORP-NEWBURGH TERMINAL	ORANGE	40301099	VOC	2560	6.957	2870	7.799	2922	7.939	3025	8.221	3077	8.361
1281 RIVER RD		40400151	VOC	405	1.101	454	1.234	462	1.256	479	1.301	487	1.323
NEW WINDSOR, NY 12553-6733		40400154	VOC	15792	42.913	17704	48.109	18023	48.975	18662	50.711	18981	51.579
		40400160	VOC	85437	232.167	95782	260.276	97506	264.961	100962	274.354	102690	279.050
		40400250	VOC	3128	8.500	3507	9.529	3570	9.701	3696	10.045	3760	10.216
		40799997	VOC	185	0.503	181	0.491	180	0.489	183	0.497	184	0.501
WAREX TERMINALS CORP - SOUTH TERMINAL	ORANGE	10300501	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
1184 RIVER DRIVE		10300501	NOx	21	0.012	22	0.013	23	0.013	23	0.014	23	0.014
NEW WINDSOR, NY 12553		10300501	CO	4	0.003	5	0.003	5	0.003	5	0.003	5	0.003
		40400151	VOC	5038	13.993	5648	15.688	5749	15.970	5953	16.536	6055	16.819
		40400160	VOC	8320	17.564	9327	19.691	9495	20.045	9832	20.756	10000	21.111
		40400250	VOC	16333	60.018	18311	67.285	18640	68.496	19301	70.924	19632	72.138
BALL METAL BEVERAGE CONTAINER CORP	ORANGE	39000689	NOx	15280	31.557	15995	33.033	16114	33.279	16392	33.853	16531	34.140
95 BALLARD RD		39000689	CO	12835	26.507	13436	27.748	13536	27.954	13769	28.436	13886	28.677
MIDDLETOWN, NY 10940		40200842	VOC	102934	324.467	125062	394.216	128750	405.841	135067	425.755	138226	435.712
		40200843	VOC	247181	779.158	300317	946.651	309173	974.567	324344	1022.388	331929	1046.298
		40201721	VOC	3662	11.543	4449	14.025	4580	14.438	4805	15.147	4918	15.501
		40201721	VOC	4831	15.227	5869	18.501	6042	19.046	6339	19.981	6487	20.448
TESA TAPE - MIDDLETOWN	ORANGE	10200602	VOC	10	0.000	10	0.000	10	0.000	11	0.000	11	0.000
135 CROTTY RD		10200602	VOC	8	0.000	8	0.000	8	0.000	8	0.000	8	0.000
MIDDLETOWN, NY 10940		10200602	NOx	180	0.000	188	0.000	190	0.000	193	0.000	195	0.000
		10200602	CO	151	0.000	158	0.000	159	0.000	162	0.000	164	0.000
		10500110	NOx	1	0.000	1	0.000	1	0.000	1	0.000	1	0.000
		10500110	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		39000689	VOC	688	1.955	720	2.046	726	2.061	738	2.097	744	2.115
		39000689	NOx	12510	35.540	13095	37.203	13193	37.480	13420	38.126	13534	38.449
		39000689	CO	10508	29.853	11000	31.250	11082	31.483	11273	32.026	11369	32.297
		39001089	VOC	1	0.001	1	0.001	1	0.001	1	0.001	1	0.001
		39001089	NOx	31	0.060	29	0.056	29	0.056	29	0.056	29	0.056
		39001089	CO	4	0.008	4	0.008	4	0.008	4	0.008	4	0.008
		39999994	VOC	445831	1688.754	638674	2419.219	670814	2540.963	709353	2686.943	728622	2759.934
REVERE SMELTING & REFINING CORP	ORANGE	10200602	VOC	114	0.311	120	0.325	121	0.328	123	0.333	124	0.336

65 BALLARD RD		10200602	NOx	8669	23.557	9075	24.659	9142	24.843	9300	25.271	9379	25.485
MIDDLETOWN, NY 10941		10200602	CO	1747	4.748	1829	4.970	1843	5.007	1874	5.093	1890	5.136
		10201002	NOx	29	0.000	27	0.000	27	0.000	27	0.000	27	0.000
		10201002	CO	5	0.000	5	0.000	4	0.000	5	0.000	5	0.000
		20100102	VOC	293	1.223	582	2.434	631	2.636	473	1.975	394	1.645
		20100102	VOC	295	1.233	587	2.454	636	2.657	476	1.991	397	1.658
		20100102	NOx	8716	39.372	17345	78.353	18784	84.850	14076	63.585	11722	52.953
		20100102	CO	584	2.565	1162	5.105	1259	5.528	943	4.143	785	3.450
		30400402	NOx	497518	1351.951	665083	1807.291	693011	1883.181	739870	2010.517	763300	2074.185
		30400414	NOx	94472	256.717	126290	343.180	131593	357.591	140491	381.770	144940	393.860
		30400499	NOx	14990	40.734	20039	54.453	20880	56.739	22292	60.576	22998	62.494
		39000689	VOC	114	0.311	120	0.325	121	0.328	123	0.333	124	0.336
		39000689	NOx	2080	5.652	2177	5.917	2194	5.961	2231	6.063	2250	6.115
		39000689	CO	1747	4.748	1829	4.970	1843	5.007	1874	5.093	1890	5.136
		39900601	NOx	5256	14.283	5696	15.479	5770	15.678	5947	16.160	6035	16.400
		39900601	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
GEORGIA PACIFIC - WARWICK FACILITY	ORANGE	10201002	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
17 FORESTER AVE		10201002	NOx	8	0.000	8	0.000	8	0.000	8	0.000	8	0.000
WARWICK, NY 10990		10201002	CO	1	0.000	1	0.000	1	0.000	1	0.000	1	0.000
		30190013	VOC	62	0.169	62	0.168	62	0.168	63	0.171	63	0.173
		30190013	NOx	1110	3.016	1104	3.000	1103	2.997	1124	3.053	1134	3.081
		30190013	CO	932	2.534	927	2.520	927	2.518	944	2.565	952	2.588
		39999994	VOC	2024	8.434	2900	12.082	3046	12.690	3221	13.419	3308	13.784
		40500311	VOC	21773	59.167	20430	55.516	20206	54.908	20491	55.682	20633	56.069
		49099999	VOC	390803	1061.964	381611	1036.987	380079	1032.824	386416	1050.044	389584	1058.653
NEPERA INC	ORANGE	10200401	NOx	28942	144.709	34197	170.984	35073	175.363	35112	175.561	35132	175.660
41 ARDEN HOUSE RD		10200401	CO	3079	15.395	3638	18.190	3731	18.656	3735	18.677	3737	18.687
HARRIMAN, NY 10926		10200501	NOx	1753	0.000	1769	0.000	1772	0.000	1750	0.000	1740	0.000
		10200501	CO	365	0.000	369	0.000	369	0.000	365	0.000	362	0.000
		10200602	NOx	24292	105.548	25428	110.487	25618	111.310	26059	113.229	26280	114.188
		10200602	CO	20405	88.661	21360	92.809	21519	93.501	21890	95.112	22075	95.918
		10300602	VOC	7861	22.853	9825	28.560	9933	29.514	10746	31.238	11043	32.100
		10300602	NOx	26293	106.787	26531	107.753	26571	107.914	27007	109.688	27226	110.575

		10300602	CO	22086	89.701	22286	90.512	22319	90.648	22686	92.138	22870	92.883
		30102499	VOC	19305	56.119	24128	70.141	24932	72.478	26389	76.713	27118	78.831
		30102499	NOx	4289	12.468	5361	15.583	5539	16.102	5863	17.043	6025	17.514
		39000489	NOx	36253	0.000	42836	0.000	43933	0.000	43982	0.000	44007	0.000
		39000489	CO	3296	0.000	3894	0.000	3994	0.000	3998	0.000	4001	0.000
		39000689	NOx	2000	16.667	2094	17.447	2109	17.576	2146	17.879	2164	18.031
		39000689	CO	1680	14.000	1759	14.655	1772	14.764	1802	15.019	1818	15.146
ALGONQUIN GAS SOUTHEAST COMPRESSOR STATION	PUTNAM	20100201	VOC	758	2.089	830	2.287	842	2.320	930	2.563	974	2.684
142 TULIP RD		20100201	NOx	115657	318.643	126602	348.798	128426	353.824	141885	390.905	148615	409.445
BREWSTER, NY 10509		20100201	CO	29637	81.652	32442	89.380	32909	90.667	36358	100.169	38083	104.920
		49099998	VOC	8700	23.641	8495	23.085	8461	22.993	8602	23.376	8673	23.568
BOWLINE POINT GENERATING STATION	ROCKLAND	10100404	VOC	33800	720.257	50383	1073.610	53147	1132.502	52474	1118.168	52137	1111.000
140 SAMSONDALE AVE		10100404	VOC	35715	761.046	53236	1134.411	56156	1196.638	55446	1181.492	55090	1173.918
WEST HAVERSTRAW, NY 10993		10100404	NOx	2024328	43815.769	3017450	65311.501	3182970	68894.119	3142682	68022.099	3122538	67586.087
		10100404	CO	234965	5006.883	350237	7463.228	369449	7872.618	364773	7772.971	362435	7723.148
		10100601	VOC	129	3.863	141	4.228	143	4.289	158	4.739	165	4.964
		10100601	VOC	167	5.016	183	5.491	186	5.570	205	6.154	215	6.445
		10100601	NOx	5776	173.280	6323	189.679	6414	192.412	7086	212.577	7422	222.659
		10100601	CO	2554	76.608	2795	83.858	2836	85.066	3133	93.981	3281	98.439
		10100604	VOC	60658	601.511	66398	658.436	67355	667.924	74414	737.923	77943	772.922
		10100604	NOx	2033713	20620.791	2226180	22572.302	2258257	22897.553	2494923	25297.220	2613256	26497.057
		10100604	CO	264689	2624.774	289738	2873.177	293913	2914.578	324716	3220.026	340117	3372.750
		10101002	NOx	1140	3.098	1835	4.987	1951	5.302	1787	4.856	1705	4.632
		10101002	CO	192	0.522	309	0.840	329	0.893	301	0.818	287	0.780
		10101302	NOx	49	0.132	78	0.213	83	0.227	76	0.208	73	0.198
		10101302	CO	13	0.035	21	0.056	22	0.060	20	0.055	19	0.052
		50100769	VOC	38	0.103	40	0.109	41	0.110	42	0.114	42	0.115
LOUIS HORNICK CO INC	ROCKLAND	10200602	VOC	201	1.253	210	1.312	211	1.322	215	1.345	217	1.356
152 BROADWAY		10200602	NOx	3646	22.788	3817	23.854	3845	24.031	3911	24.446	3944	24.653
HAVERSTRAW, NY 10927		10200602	CO	3063	19.142	3206	20.037	3230	20.186	3285	20.534	3313	20.708
		10200603	VOC	55	0.203	58	0.213	58	0.214	59	0.218	60	0.220
		10200603	NOx	1008	3.696	1055	3.869	1063	3.898	1081	3.965	1091	3.999
		10200603	CO	847	3.105	886	3.250	893	3.274	908	3.331	916	3.359

		10500106	NOx	1322	5.444	1384	5.698	1394	5.741	1418	5.840	1430	5.889
		10500106	CO	1110	4.573	1162	4.787	1171	4.822	1191	4.905	1201	4.947
WYETH PHARMACEUTICALS	ROCKLAND	10200501	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
401 N MIDDLETOWN RD		10200501	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
PEARL RIVER, NY 10965-1299		10200501	NOx	42	0.000	42	0.000	42	0.000	42	0.000	41	0.000
		10200501	CO	9	0.000	9	0.000	9	0.000	9	0.000	9	0.000
		10200601	VOC	3547	11.180	3713	11.703	3740	11.790	3805	11.994	3837	12.095
		10200601	VOC	4606	14.518	4821	15.197	4857	15.310	4941	15.574	4983	15.706
		10200601	NOx	234470	739.090	245441	773.673	247270	779.437	251532	792.871	253663	799.589
		10200601	CO	70341	221.727	73632	232.102	74181	233.831	75459	237.861	76099	239.877
		10201403	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		10201403	CO	4	0.000	4	0.000	4	0.000	4	0.000	4	0.000
		20100102	VOC	381	7.318	757	14.564	820	15.771	615	11.819	512	9.842
		20100102	NOx	7160	137.700	14250	274.033	15431	296.755	11564	222.384	9630	185.198
		20100102	CO	1541	29.638	3067	58.981	3321	63.871	2489	47.864	2073	39.860
		20100201	VOC	4641	14.353	5080	15.712	5153	15.938	5693	17.608	5964	18.444
		20100201	NOx	257300	706.868	281650	773.765	285709	784.914	315651	867.173	330622	908.303
		20100201	CO	181389	560.990	198555	614.081	201417	622.929	222525	688.212	233079	720.854
		20100202	NOx	105	2.021	115	2.212	117	2.244	129	2.479	135	2.597
		20100202	CO	15	0.284	16	0.311	16	0.315	18	0.348	19	0.365
		20200102	VOC	110	2.109	111	2.128	111	2.131	109	2.106	109	2.093
		20200102	NOx	6643	127.750	6703	128.901	6713	129.092	6632	127.546	6592	126.773
		20200102	CO	289	5.566	292	5.616	292	5.624	289	5.557	287	5.523
		20201001	NOx	332	6.389	313	6.017	310	5.955	312	5.992	313	6.011
		20201001	CO	308	5.929	290	5.584	287	5.527	289	5.561	290	5.578
		30106010	VOC	280	0.773	386	1.065	404	1.114	432	1.193	447	1.233
		30106099	VOC	232	0.629	319	0.868	334	0.907	358	0.972	369	1.004
		30182002	VOC	685	1.861	855	2.323	883	2.400	936	2.544	962	2.615
		30182002	VOC	680	1.848	849	2.306	877	2.382	929	2.525	955	2.596
		31502001	VOC	9	0.000	9	0.000	9	0.000	9	0.000	9	0.000
		31503001	VOC	269	0.803	346	1.034	358	1.073	379	1.134	389	1.164
NYACK HOSPITAL	ROCKLAND	10300602	VOC	397	1.079	401	1.089	401	1.091	408	1.109	411	1.118
160 NORTH MIDLAND AVE		10300602	NOx	7222	19.626	7288	19.803	7298	19.833	7418	20.159	7478	20.322

NYACK, NY 10960		10300602	CO	6067	16.485	6122	16.635	6131	16.659	6231	16.933	6282	17.070
		20200101	VOC	0	0.004	0	0.004	0	0.004	0	0.004	0	0.004
		20200101	NOx	436	9.081	440	9.163	440	9.177	435	9.067	433	9.012
		20200101	CO	2	0.034	2	0.034	2	0.034	2	0.034	2	0.034
		50100505	VOC	135	0.368	140	0.379	140	0.381	140	0.381	140	0.381
		50100505	VOC	1	0.002	1	0.002	1	0.002	1	0.002	1	0.002
		50100505	NOx	10961	29.786	11311	30.737	11369	30.895	11357	30.860	11350	30.843
		50100505	CO	9702	26.364	10011	27.205	10063	27.345	10052	27.314	10046	27.299
AVERY DENNISON INFORMATION AND BRAND MGMT DIV	ROCKLAND	10300603	VOC	279	1.163	282	1.174	282	1.176	287	1.195	289	1.205
524 ST RTE 303		10300603	NOx	27579	114.913	27828	115.952	27870	116.125	28328	118.034	28557	118.988
ORANGEBURG, NY 10962		10300603	CO	4265	17.770	4303	17.930	4310	17.957	4381	18.252	4416	18.400
		40200803	VOC	13288	55.367	16293	67.886	16793	69.973	17798	74.159	18301	76.252
ROCKLAND PSYCHIATRIC CENTER		10300402	NOx	50314	30.189	46787	28.072	46199	27.720	46909	28.145	47264	28.358
140 OLD ORANGEBURG RD		10300402	CO	4574	2.744	4253	2.552	4200	2.520	4264	2.559	4297	2.578
ORANGEBURG, NY 10962		10300602	VOC	358	1.588	361	1.603	362	1.605	368	1.632	371	1.645
		10300602	NOx	6508	28.881	6567	29.143	6576	29.186	6684	29.666	6739	29.906
		10300602	CO	5466	24.260	5516	24.480	5524	24.516	5615	24.919	5660	25.121
		10500206	VOC	29	0.002	29	0.002	30	0.002	30	0.002	30	0.002
		10500206	NOx	551	0.029	556	0.029	557	0.029	566	0.030	570	0.030
		10500206	CO	110	0.006	111	0.006	111	0.006	113	0.006	114	0.006
		20200401	VOC	65	16.374	66	16.522	66	16.546	65	16.348	65	16.249
		20200401	VOC	64	16.067	65	16.212	65	16.236	64	16.041	64	15.944
		20200401	NOx	2561	640.356	2584	646.123	2588	647.084	2557	639.335	2542	635.461
		20200401	CO	678	169.592	684	171.119	685	171.374	677	169.322	673	168.296
		40400414	VOC	4240	11.521	4420	12.011	4450	12.093	4362	11.854	4318	11.734
GOOD SAMARITAN HOSPITAL	ROCKLAND	10300504	NOx	120	0.000	128	0.000	129	0.000	130	0.000	131	0.000
255 LAFAYETTE AVE		10300504	CO	30	0.000	32	0.000	32	0.000	33	0.000	33	0.000
SUFFERN, NY 10901		10300602	VOC	453	0.726	457	0.732	458	0.733	466	0.746	469	0.752
		10300602	NOx	8242	13.196	8317	13.315	8329	13.335	8466	13.555	8534	13.664
		10300602	CO	6923	11.085	6986	11.185	6996	11.202	7111	11.386	7169	11.478
		20200102	VOC	8	0.172	8	0.174	8	0.174	8	0.172	8	0.171
		20200102	NOx	101	2.109	102	2.128	102	2.132	101	2.106	100	2.093
		20200102	CO	22	0.454	22	0.459	22	0.459	22	0.454	22	0.451

ALLIANCE ENERGY- HILLBURN GAS TURBINE FACILITY	ROCKLAND	20100201	VOC	69	21.900	76	23.972	77	24.318	85	26.866	89	28.140
4TH ST		20100201	VOC	69	21.910	76	23.984	77	24.329	85	26.879	89	28.154
HILLBURN, Ny 10931		20100201	NOx	11692	3694.672	12799	4044.328	12983	4102.604	14344	4532.558	15024	4747.535
		20100201	CO	2710	856.340	2966	937.382	3009	950.889	3325	1050.542	3482	1100.369
		20100901	NOx	7486	905.806	12052	1458.278	12813	1550.357	11734	1419.756	11194	1354.455
		20100901	CO	11	1.388	18	2.235	20	2.376	18	2.176	17	2.076
ATLANTIC TUBING COMPANY	ROCKLAND	10500106	VOC	10	0.000	11	0.000	11	0.000	11	0.000	11	0.000
200 RAM RIDGE RD		10500106	NOx	188	0.000	196	0.000	198	0.000	201	0.000	203	0.000
CHESTNUT RIDGE, NY 10977		10500106	CO	158	0.000	165	0.000	166	0.000	169	0.000	170	0.000
		30101852	VOC	21392	82.277	26737	102.834	27628	106.260	29242	112.470	30050	115.575
ALGONQUIN GAS: STONY POINT COMPRESSOR STA	ROCKLAND	10200603	VOC	26	0.000	27	0.000	27	0.000	28	0.000	28	0.000
LINDBERG RD		10200603	NOx	472	0.000	494	0.000	498	0.000	507	0.000	511	0.000
STONY POINT, NY 10980		10200603	CO	397	0.000	415	0.000	418	0.000	426	0.000	429	0.000
		20100201	VOC	904	4.833	990	5.290	1004	5.367	1109	5.929	1162	6.210
		20100201	NOx	137911	737.131	150962	806.891	153137	818.518	169186	904.299	177211	947.190
		20100201	CO	35340	188.890	38684	206.766	39241	209.745	43354	231.727	45410	242.717
		20100202	VOC	559	0.000	612	0.000	621	0.000	686	0.000	718	0.000
		20100202	NOx	13689	0.000	14984	0.000	15200	0.000	16793	0.000	17590	0.000
		20100202	CO	1923	0.000	2105	0.000	2136	0.000	2359	0.000	2471	0.000
		49099998	VOC	15760	42.825	15389	41.818	15327	41.650	15583	42.344	15710	42.691
LOVETT GENERATING STATION	ROCKLAND	10100202	NOx	6161120	26456.554	6927572	29747.787	7055314	30296.326	7199254	30914.421	7271224	31223.469
37 ELM ST		10100202	CO	310280	1321.178	348879	1485.535	355312	1512.927	362561	1543.794	366185	1559.227
TOMPKINS COVE, NY 10986		10100404	VOC	521	5.207	776	7.762	819	8.188	808	8.084	803	8.033
		10100404	VOC	550	5.502	820	8.202	865	8.652	854	8.542	849	8.487
		10100404	NOx	28140	281.400	41945	419.453	44246	442.462	43686	436.861	43406	434.061
		10100404	CO	3620	36.200	5396	53.959	5692	56.919	5620	56.199	5584	55.839
		10100601	VOC	9345	37.184	10229	40.702	10376	41.289	11464	45.616	12007	47.780
		10100601	VOC	7196	28.635	7877	31.345	7991	31.797	8828	35.129	9247	36.795
		10100601	NOx	653813	2618.980	715689	2866.835	726001	2908.144	802086	3212.918	840129	3365.305
		10100601	CO	142716	567.894	156222	621.638	158473	630.595	175081	696.682	183385	729.725
		10100604	VOC	4208	50.359	4606	55.124	4672	55.919	5162	61.779	5407	64.709
		10100604	VOC	3240	38.781	3547	42.451	3598	43.063	3975	47.576	4164	49.832
		10100604	NOx	134491	1609.689	147219	1762.027	149340	1787.417	164991	1974.738	172817	2068.399

		10100604	CO	18360	219.746	20098	240.543	20387	244.009	22524	269.581	23592	282.367
		10101302	NOx	44	0.119	71	0.192	75	0.204	69	0.187	66	0.178
		10101302	CO	12	0.031	19	0.051	20	0.054	18	0.049	17	0.047
STONY POINT FACILITY	ROCKLAND	39000589	VOC	3	0.016	3	0.016	3	0.016	3	0.016	3	0.016
70 EAST MAIN ST		39000589	NOx	259	1.616	261	1.631	261	1.633	258	1.614	257	1.604
STONY POINT, NY 10980		39000589	CO	65	0.404	65	0.408	65	0.408	65	0.403	64	0.401
		39000689	VOC	8259	21.577	8646	22.587	8710	22.755	8860	23.147	8935	23.343
		39000689	NOx	150168	392.309	157195	410.666	158366	413.725	161095	420.856	162460	424.422
		39000689	CO	126141	329.540	132044	344.959	133027	347.529	135320	353.519	136467	356.514
SULLIVAN COUNTY LANDFILL	SULLIVAN	10301002	VOC	2	0.008	3	0.008	3	0.008	3	0.008	3	0.008
91 LANDFILL DR		10301002	NOx	115	0.370	120	0.385	121	0.387	122	0.391	123	0.393
MONTICELLO, NY 12701-3835		10301002	CO	16	0.050	16	0.052	16	0.053	17	0.053	17	0.053
		20100101	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		20100101	NOx	2	0.204	5	0.406	5	0.439	4	0.329	3	0.274
		20100101	CO	0	0.001	0	0.002	0	0.002	0	0.001	0	0.001
		40799997	VOC	53	0.144	52	0.141	52	0.140	53	0.143	53	0.144
		50200601	VOC	253	0.688	252	0.684	252	0.684	252	0.684	252	0.684
		50200601	NOx	384	1.043	382	1.039	382	1.038	382	1.038	382	1.038
		50200601	CO	7208	19.586	7174	19.496	7169	19.481	7169	19.481	7169	19.481
		50200602	VOC	10527	28.606	10479	28.475	10471	28.453	10471	28.453	10471	28.453
SUNY AT NEW PALTZ	ULSTER	10300401	VOC	878	1.254	817	1.167	806	1.152	819	1.170	825	1.178
75 S MANHIEM BLVD		10300401	VOC	845	1.207	786	1.123	776	1.109	788	1.126	794	1.134
NEW PALTZ, NY 12561		10300401	NOx	36524	52.177	33963	48.519	33537	47.909	34052	48.645	34309	49.013
		10300401	CO	3886	5.551	3613	5.162	3568	5.097	3623	5.175	3650	5.214
		10300501	VOC	64	0.000	68	0.000	69	0.000	69	0.000	70	0.000
		10300501	VOC	54	0.000	58	0.000	58	0.000	59	0.000	59	0.000
		10300501	NOx	3760	0.000	3995	0.000	4035	0.000	4071	0.000	4089	0.000
		10300501	CO	940	0.000	999	0.000	1009	0.000	1018	0.000	1022	0.000
		10300602	VOC	52	0.145	53	0.146	53	0.147	54	0.149	54	0.150
		10300602	VOC	40	0.112	41	0.113	41	0.113	41	0.115	42	0.116
		10300602	NOx	475	1.319	479	1.331	480	1.333	488	1.355	492	1.366
		10300602	CO	798	2.217	805	2.237	806	2.240	820	2.277	826	2.295
		10500105	VOC	4	0.001	4	0.001	4	0.001	4	0.001	4	0.001

		10500105	NOx	376	0.070	379	0.071	380	0.071	375	0.070	373	0.070
		10500105	CO	94	0.018	95	0.018	95	0.018	94	0.018	93	0.017
		10500106	VOC	62	0.089	64	0.093	65	0.094	66	0.095	67	0.096
		10500106	NOx	1120	1.618	1172	1.693	1181	1.706	1201	1.735	1212	1.750
		10500106	CO	941	1.359	985	1.423	992	1.433	1009	1.458	1018	1.470
		10500110	NOx	808	12.689	761	11.952	753	11.829	757	11.902	760	11.939
		10500110	CO	136	2.137	128	2.013	127	1.992	128	2.005	128	2.011
		39001089	NOx	56	0.784	53	0.738	52	0.731	53	0.735	53	0.738
		39001089	CO	8	0.106	7	0.100	7	0.099	7	0.100	7	0.100
		40200210	VOC	30	0.000	40	0.000	42	0.000	45	0.000	47	0.000
		40714698	VOC	10	0.028	10	0.027	10	0.027	10	0.027	10	0.028
VERTIS INC	ULSTER	39000589	NOx	1265	3.438	1276	3.468	1278	3.474	1263	3.432	1255	3.411
1 TOMSONS RD		39000589	CO	316	0.859	319	0.867	320	0.868	316	0.858	314	0.853
SAUGERTIES, NY 12477		39000689	NOx	3391	8.478	3550	8.874	3576	8.940	3638	9.094	3669	9.171
		39000689	CO	2848	7.121	2982	7.454	3004	7.510	3056	7.639	3082	7.704
		40500401	VOC	25942	66.297	24342	62.207	24075	61.525	24414	62.392	24584	62.826
		40500431	VOC	27025	69.065	25358	64.804	25080	64.094	25434	64.998	25611	65.450
		40500431	VOC	14118	36.078	13246	33.852	13101	33.481	13286	33.953	13378	34.189
		40588801	VOC	17152	43.833	17199	43.952	17207	43.972	17605	44.991	17804	45.500
		40588801	VOC	16621	42.475	16666	42.591	16674	42.610	17060	43.597	17253	44.090
NORTHEAST SOLITE CORPORATION	ULSTER	20201707	VOC	1	0.003	1	0.003	1	0.003	1	0.003	1	0.003
962 OLD KINGS HWY		20201707	NOx	185	0.680	185	0.680	185	0.680	186	0.683	186	0.685
MT MARION, NY 12456		20201707	CO	7099	26.099	7098	26.094	7097	26.093	7133	26.225	7151	26.291
		30500915	VOC	206714	833.524	203818	821.847	203335	819.900	206407	832.286	207943	838.479
		30500915	NOx	503534	2030.379	496479	2001.933	495304	1997.192	502786	2027.363	506527	2042.448
		39000289	VOC	717	2.891	700	2.823	697	2.811	674	2.717	662	2.670
		39000289	NOx	9198	37.089	8980	36.209	8944	36.063	8644	34.856	8495	34.253
		39000289	CO	460	1.855	449	1.811	447	1.804	432	1.743	425	1.713
		39000589	VOC	2	0.008	2	0.009	2	0.009	2	0.008	2	0.008
		39000589	NOx	105	0.423	106	0.427	106	0.428	105	0.423	104	0.420
		39000589	CO	53	0.214	53	0.216	54	0.216	53	0.213	53	0.212
		40714697	VOC	60	0.163	58	0.159	58	0.158	59	0.161	60	0.162
WALLKILL/SHAWANGUNK CORRECTIONAL	ULSTER	10200401	VOC	192	0.334	227	0.394	233	0.404	233	0.405	233	0.405

ROUTE 208 & MCKENDRICK RD		10200401	NOx	32214	56.024	38063	66.197	39038	67.892	39082	67.969	39104	68.007
WALLKILL, NY 12589		10200401	CO	3427	5.960	4049	7.042	4153	7.223	4158	7.231	4160	7.235
		10301002	NOx	7	0.020	8	0.021	8	0.021	8	0.021	8	0.021
		10301002	CO	1	0.003	1	0.003	1	0.003	1	0.003	1	0.003
		10500105	VOC	5	0.007	5	0.007	5	0.007	5	0.007	5	0.007
		10500105	NOx	540	0.695	545	0.701	546	0.702	539	0.693	536	0.689
		10500105	CO	135	0.174	136	0.175	136	0.175	135	0.173	134	0.172
		20100102	VOC	51	0.987	102	1.964	111	2.127	83	1.594	69	1.328
		20100102	VOC	52	0.995	103	1.980	112	2.144	84	1.607	70	1.338
		20100102	NOx	966	18.573	1922	36.962	2081	40.026	1560	29.995	1299	24.979
		20100102	CO	208	3.998	414	7.955	448	8.615	336	6.456	280	5.376
		40100295	VOC	1400	3.804	1787	4.856	1851	5.031	1953	5.308	2004	5.446
TECH CITY	ULSTER	10200402	VOC	119	0.000	140	0.000	144	0.000	144	0.000	144	0.000
300 ENTERPRISE DR		10200402	NOx	23320	0.000	27554	0.000	28260	0.000	28292	0.000	28308	0.000
KINGSTON, NY 12401		10200402	CO	2120	0.000	2505	0.000	2569	0.000	2572	0.000	2573	0.000
		10200602	VOC	162	0.000	169	0.000	171	0.000	173	0.000	175	0.000
		10200602	NOx	2940	0.000	3078	0.000	3100	0.000	3154	0.000	3181	0.000
		10200602	CO	2470	0.000	2585	0.000	2604	0.000	2649	0.000	2672	0.000
		20100102	VOC	15	0.027	29	0.054	32	0.059	24	0.044	20	0.037
		20100102	NOx	276	0.514	549	1.022	595	1.107	446	0.829	371	0.691
		20100102	CO	59	0.111	118	0.220	128	0.238	96	0.178	80	0.149
HYDRO ALUMINUM NORTH AMERICA	ULSTER	10200504	VOC	389	1.232	393	1.243	393	1.245	389	1.230	386	1.223
9 ALUMINUM DR		10200504	NOx	91500	289.558	92324	292.166	92462	292.600	91355	289.097	90801	287.345
ELLENVILLE, NY 12428		10200504	CO	9734	30.804	9822	31.081	9836	31.128	9719	30.755	9660	30.569
		10500105	VOC	8	0.000	8	0.000	8	0.000	8	0.000	8	0.000
		10500105	NOx	800	0.000	807	0.000	808	0.000	799	0.000	794	0.000
		10500105	CO	200	0.000	202	0.000	202	0.000	200	0.000	198	0.000
		30400114	VOC	5214	16.500	6088	19.267	6234	19.728	6584	20.834	6758	21.387
		30400114	NOx	372	1.179	435	1.376	445	1.409	470	1.488	483	1.528
		40100251	VOC	316005	1000.016	403352	1276.432	417910	1322.501	440882	1395.196	452368	1431.544
SPRAYLAT CORP	WESTCHESTE R	10200501	VOC	2	0.000	2	0.000	2	0.000	2	0.000	2	0.000
716 SOUTH COLUMBUS AVE		10200501	VOC	3	0.000	3	0.000	3	0.000	3	0.000	3	0.000
MOUNT VERNON, NY 10550		10200501	NOx	357	0.055	360	0.055	360	0.055	356	0.055	354	0.054

		10200501	CO	74	0.011	75	0.012	75	0.012	74	0.011	74	0.011
		10200603	VOC	2	0.000	2	0.000	2	0.000	2	0.000	2	0.000
		10200603	NOx	28	0.004	29	0.005	30	0.005	30	0.005	30	0.005
		10200603	CO	24	0.004	25	0.004	25	0.004	25	0.004	25	0.004
		10500105	VOC	4	0.001	4	0.001	4	0.001	4	0.001	4	0.001
		10500105	NOx	401	0.062	404	0.062	405	0.062	400	0.062	398	0.061
		10500105	CO	100	0.015	101	0.016	101	0.016	100	0.015	99	0.015
		10500106	VOC	21	0.003	22	0.003	22	0.003	22	0.003	22	0.003
		10500106	NOx	374	0.058	391	0.060	394	0.061	401	0.062	405	0.062
		10500106	CO	314	0.048	329	0.051	331	0.051	337	0.052	340	0.052
		30101401	VOC	15231	58.582	19037	73.218	19671	75.658	20821	80.079	21395	82.290
		39090003	VOC	3	0.000	3	0.000	3	0.000	2	0.000	2	0.000
CANAL ASPHALT	WESTCHESTER	20200102	VOC	73	0.442	74	0.446	74	0.447	73	0.441	72	0.439
800 CANAL ST|687 S COLUMBUS AVE		20200102	VOC	74	0.447	74	0.451	75	0.452	74	0.446	73	0.443
MOUNT VERNON, NY 10550		20200102	NOx	903	5.474	911	5.523	913	5.531	902	5.465	896	5.432
		20200102	CO	195	1.179	196	1.190	197	1.192	194	1.177	193	1.170
		30500205	NOx	6786	37.700	8155	45.303	8383	46.571	8884	49.358	9135	50.751
		30500205	CO	5278	29.322	6342	35.236	6520	36.222	6910	38.389	7105	39.473
WHEELABRATOR WESTCHESTER LP	WESTCHESTER	20200102	VOC	0	0.001	0	0.001	0	0.001	0	0.001	0	0.001
CHARLES PT AVE		20200102	NOx	1	0.011	1	0.011	1	0.011	1	0.011	1	0.011
PEEKSKILL, NY 10566		20200102	CO	0	0.002	0	0.002	0	0.002	0	0.002	0	0.002
		39000689	VOC	119	12.752	125	13.349	126	13.448	128	13.680	129	13.796
		39000689	NOx	2164	231.857	2265	242.705	2282	244.513	2321	248.728	2341	250.835
		39000689	CO	1818	194.759	1903	203.872	1917	205.391	1950	208.931	1967	210.701
		39090001	VOC	77	0.209	91	0.247	93	0.254	93	0.254	93	0.254
		40100251	VOC	11	0.030	14	0.038	15	0.040	15	0.042	16	0.043
		50100102	VOC	18536	54.679	19583	57.766	19757	58.280	20393	60.157	20711	61.096
		50100102	NOx	1865600	5500.357	1970929	5810.898	1988483	5862.655	2052532	6051.489	2084556	6145.907
		50100102	CO	166800	495.006	176217	522.954	177787	527.611	183513	544.606	186376	553.103
BASF CORP	WESTCHESTER	10200602	VOC	477	1.309	499	1.370	503	1.381	511	1.404	516	1.416
1057 LOWER SOUTH ST		10200602	VOC	619	1.700	648	1.779	653	1.793	664	1.824	669	1.839
PEEKSKILL, NY 10566		10200602	NOx	14146	38.863	14808	40.681	14918	40.984	15175	41.691	15304	42.044
		10200602	CO	2598	7.137	2720	7.471	2740	7.527	2787	7.657	2811	7.722

		10200704	VOC	65	0.095	55	0.080	53	0.078	50	0.073	49	0.071
		10200704	NOx	909	1.328	767	1.120	743	1.086	703	1.026	682	0.997
		10200704	CO	149	0.217	126	0.183	122	0.178	115	0.168	112	0.163
		30101809	VOC	1078	4.478	1347	5.597	1392	5.783	1474	6.121	1514	6.290
		30101809	VOC	1079	4.482	1349	5.602	1394	5.788	1475	6.127	1516	6.296
		30103553	VOC	6	0.052	7	0.065	8	0.067	8	0.071	8	0.073
		30103553	CO	25	0.216	31	0.270	32	0.279	34	0.295	35	0.303
		30103554	VOC	915	2.374	893	2.318	890	2.308	905	2.347	912	2.366
		30190004	NOx	7276	19.016	9094	23.767	9397	24.559	9946	25.994	10221	26.712
		30190004	CO	4464	11.667	5579	14.582	5765	15.067	6102	15.948	6271	16.388
		39900601	NOx	13654	40.753	14798	44.167	14988	44.736	15448	46.109	15678	46.795
		39900601	CO	5792	15.916	6277	17.249	6358	17.471	6553	18.007	6651	18.275
AMERICAN SUGAR REFINING COMPANY INC	WESTCHESTER	10100501	VOC	5	0.000	11	0.000	11	0.000	9	0.000	7	0.000
ONE FEDERAL ST		10100501	NOx	634	0.000	1261	0.000	1365	0.000	1023	0.000	852	0.000
YONKERS, NY 10705		10100501	CO	132	0.000	263	0.000	284	0.000	213	0.000	178	0.000
		10100601	VOC	4308	14.248	4715	15.597	4783	15.821	5284	17.479	5535	18.309
		10100601	NOx	148808	492.211	162891	538.793	165238	546.557	182555	603.836	191214	632.475
		10100601	CO	65789	217.609	72015	238.203	73053	241.636	80709	266.959	84537	279.621
		20100201	VOC	18	1.717	20	1.879	20	1.906	22	2.106	23	2.206
		20100201	NOx	2742	261.838	3001	286.618	3044	290.748	3364	321.218	3523	336.454
		20100201	CO	703	67.096	769	73.446	780	74.504	862	82.312	903	86.216
		20200103	VOC	40	1.512	41	1.525	41	1.528	40	1.509	40	1.500
		20200103	NOx	86664	3244.188	87444	3273.405	87574	3278.274	86526	3239.018	86001	3219.389
		20200103	CO	325	12.174	328	12.283	329	12.302	325	12.154	323	12.081
		20200203	VOC	1572	4.292	1646	4.493	1658	4.527	1687	4.605	1701	4.644
		20200203	VOC	1572	4.290	1645	4.491	1657	4.524	1686	4.602	1700	4.641
		20200203	NOx	239826	654.677	251048	685.310	252918	690.415	257278	702.315	259457	708.265
		20200203	CO	61455	167.761	64331	175.611	64810	176.919	65927	179.968	66486	181.493
		39000689	NOx	1940	4.705	2031	4.925	2046	4.962	2081	5.047	2099	5.090
		39000689	CO	1630	3.952	1706	4.137	1719	4.168	1748	4.240	1763	4.276
SAINT JOHN'S RIVERSIDE HOSPITAL	WESTCHESTER	10300401	VOC	545	1.482	507	1.378	501	1.361	509	1.382	512	1.392
967 NORTH BROADWAY		10300401	NOx	22687	61.649	21097	57.328	20831	56.607	21151	57.477	21311	57.912
YONKERS, NY 10701		10300401	CO	2414	6.558	2244	6.099	2216	6.022	2250	6.115	2267	6.161

		20200101	VOC	0	0.002	0	0.002	0	0.002	0	0.002	0	0.002
		20200101	NOx	188	3.919	190	3.954	190	3.960	188	3.913	187	3.889
		20200101	CO	1	0.015	1	0.015	1	0.015	1	0.015	1	0.015
		20300204	NOx	2410	17.445	2432	17.603	2435	17.629	2475	17.919	2495	18.064
		20300204	CO	2410	17.445	2432	17.603	2435	17.629	2475	17.919	2495	18.064
STEWART EFI NEW YORK LLC	WESTCHESTER	10200504	NOx	2261	1.687	2281	1.702	2284	1.705	2257	1.684	2243	1.674
630 CENTRAL PARK AVE		10200504	CO	241	0.179	243	0.181	243	0.181	240	0.179	239	0.178
YONKERS, NY 10701		20200202	NOx	48280	180.149	50539	188.579	50916	189.983	51793	193.258	52232	194.895
		20200202	CO	6783	25.310	7100	26.494	7153	26.691	7277	27.151	7338	27.381
YONKERS JOINT WWTP	WESTCHESTER	10200502	VOC	29	0.006	29	0.006	30	0.006	29	0.006	29	0.006
LUDLOW DOCK SOUTH		10200502	NOx	2920	0.635	2947	0.641	2951	0.642	2916	0.634	2898	0.630
YONKERS, NY 10705		10200502	CO	730	0.159	737	0.160	738	0.160	729	0.158	725	0.158
		10300603	VOC	42	0.000	42	0.000	42	0.000	43	0.000	43	0.000
		10300603	NOx	760	0.000	767	0.000	768	0.000	781	0.000	787	0.000
		10300603	CO	638	0.000	644	0.000	645	0.000	656	0.000	661	0.000
		10300701	VOC	1000	1.798	1052	1.892	1061	1.908	1081	1.944	1091	1.962
		10300701	NOx	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		10300701	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		20100102	VOC	27	0.568	54	1.131	59	1.225	44	0.918	37	0.765
		20100102	VOC	27	0.564	54	1.122	58	1.215	44	0.911	36	0.758
		20100102	NOx	513	10.696	1022	21.285	1106	23.050	829	17.274	690	14.385
		20100102	CO	111	2.302	220	4.581	238	4.961	178	3.718	149	3.096
		20200102	VOC	1130	21.528	1140	21.722	1142	21.754	1128	21.494	1122	21.363
		20200102	NOx	13845	263.718	13970	266.093	13991	266.489	13823	263.298	13739	261.702
		20200102	CO	2983	56.810	3009	57.322	3014	57.407	2978	56.719	2960	56.376
		50100410	NOx	1523	4.138	1516	4.119	1514	4.115	1514	4.115	1514	4.115
		50100410	CO	28550	77.580	28418	77.224	28397	77.164	28397	77.164	28397	77.164
BEDFORD HILLS CORRECTIONAL FACILITY	WESTCHESTER	10100602	VOC	425	0.508	465	0.556	472	0.564	521	0.623	546	0.652
247 HARRIS RD		10100602	NOx	7721	9.232	8452	10.106	8574	10.251	9472	11.326	9922	11.863
BEDFORD HILLS, NY 10507		10100602	CO	6486	7.755	7100	8.489	7202	8.611	7957	9.514	8334	9.965
		10200602	VOC	425	0.508	445	0.532	448	0.535	456	0.545	459	0.549
		10200602	NOx	7721	9.232	8083	9.664	8143	9.736	8283	9.904	8353	9.988
		10200602	CO	6486	7.755	6789	8.118	6840	8.178	6958	8.319	7017	8.390

		20100102	VOC	77	19.260	153	38.329	166	41.507	124	31.105	104	25.903
		20100102	NOx	1450	362.400	2885	721.201	3124	781.001	2341	585.270	1950	487.404
		20100102	CO	312	78.000	621	155.225	672	168.096	504	125.969	420	104.905
LAFARGE NORTH AMERICA INC - BUCHANAN	WESTCHESTER	20200102	VOC	99	24.845	100	25.069	100	25.106	99	24.806	99	24.655
350 BROADWAY		20200102	VOC	100	25.112	101	25.338	102	25.376	100	25.072	100	24.920
BUCHANAN, NY 10511-1010		20200102	NOx	1230	307.620	1242	310.390	1243	310.852	1229	307.129	1221	305.268
		20200102	CO	265	66.267	267	66.864	268	66.964	265	66.162	263	65.761
		30501520	VOC	11245	40.133	11583	41.340	11640	41.542	11932	42.585	12078	43.107
		30501520	NOx	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		30501520	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		39000589	VOC	18	0.581	18	0.586	18	0.587	18	0.580	18	0.576
		39000589	NOx	1815	58.067	1831	58.590	1834	58.677	1812	57.975	1801	57.623
		39000589	CO	454	14.517	458	14.648	458	14.669	453	14.494	450	14.406
		39000689	NOx	31922	128.311	33416	134.314	33665	135.315	34245	137.647	34535	138.814
		39000689	CO	53629	215.562	56139	225.648	56557	227.329	57532	231.248	58019	233.207
		39090003	VOC	108	0.293	109	0.296	109	0.297	108	0.293	107	0.291
LANDMARK @ EASTVIEW	WESTCHESTER	10300601	VOC	1595	4.431	1609	4.471	1612	4.477	1638	4.551	1652	4.588
777 OLD SAW MILL RIVER RD		10300601	NOx	29000	80.556	29262	81.284	29306	81.405	29788	82.744	30029	83.413
TARRYTOWN, NY 10591		10300601	CO	24360	67.667	24580	68.279	24617	68.381	25022	69.505	25224	70.067
		10300602	VOC	704	1.957	711	1.974	712	1.977	723	2.010	729	2.026
		10300602	NOx	12806	35.573	12922	35.895	12942	35.949	13154	36.540	13261	36.835
		10300602	CO	10757	29.882	10855	30.152	10871	30.197	11050	30.693	11139	30.941
WESTCHESTER CO HEALTH CARE - VALHALLA CAMPUS	WESTCHESTER	10300601	VOC	153	0.415	154	0.419	154	0.420	157	0.427	158	0.430
ST RTE 100C		10300601	NOx	5281	14.351	5329	14.481	5337	14.503	5425	14.741	5469	14.860
VALHALLA, NY 10595		10300601	CO	2335	6.345	2356	6.402	2359	6.412	2398	6.517	2418	6.570
		20200101	VOC	0	0.003	0	0.003	0	0.003	0	0.003	0	0.003
		20200101	VOC	0	0.002	0	0.003	0	0.003	0	0.002	0	0.002
		20200101	NOx	271	5.651	274	5.702	274	5.710	271	5.642	269	5.608
		20200101	CO	1	0.021	1	0.021	1	0.021	1	0.021	1	0.021
VALHALLA CAMPUS (GRASSLANDS)	WESTCHESTER	10300501	VOC	30	0.000	31	0.000	32	0.000	32	0.000	32	0.000
OPERATIONS BUILDING|35 WOODS RD		10300501	NOx	870	0.000	924	0.000	934	0.000	942	0.000	946	0.000
VALHALLA, NY 10595		10300501	CO	435	0.000	462	0.000	467	0.000	471	0.000	473	0.000
		10300602	VOC	2140	3.488	2159	3.520	2162	3.525	2198	3.583	2215	3.612

		10300602	NOx	19450	31.712	19626	31.999	19655	32.047	19978	32.573	20140	32.837
		10300602	CO	32676	53.276	32971	53.758	33021	53.838	33564	54.723	33835	55.166
		40200110	VOC	154	0.583	207	0.782	215	0.816	232	0.878	240	0.910
PEPSI-COLA SOMERS OFFICE FACILITY	WESTCHESTER	20200104	VOC	24	0.652	24	0.657	24	0.658	24	0.651	24	0.647
1 PEPSI WAY		20200104	NOx	397	10.699	401	10.796	402	10.812	397	10.682	394	10.617
SOMERS, NY 10589		20200104	CO	52	1.397	52	1.410	52	1.412	52	1.395	52	1.387
		20300204	CO	3669	28.741	3702	29.000	3708	29.044	3769	29.521	3799	29.760
		30282001	VOC	9	0.025	9	0.025	9	0.025	9	0.025	9	0.026
THOMAS J WATSON RESEARCH CENTER	WESTCHESTER	10200402	VOC	319	0.833	377	0.985	387	1.010	388	1.011	388	1.011
1101 KITCHAWAN RD & ST RTE 134		10200402	NOx	85557	223.192	101092	263.718	103681	270.473	103798	270.778	103857	270.931
YORKTOWN HEIGHTS, NY 10598		10200402	CO	5704	14.880	6739	17.581	6912	18.032	6920	18.052	6924	18.062
		10200502	VOC	16	0.015	16	0.015	16	0.015	16	0.015	15	0.015
		10200502	NOx	1559	1.525	1573	1.539	1575	1.541	1556	1.522	1547	1.513
		10200502	CO	390	0.381	393	0.385	394	0.385	389	0.381	387	0.378
		10201002	VOC	3	0.024	2	0.023	2	0.023	2	0.023	2	0.023
		10201002	NOx	165	1.537	156	1.447	154	1.432	155	1.441	155	1.446
		10201002	CO	28	0.259	26	0.244	26	0.241	26	0.243	26	0.243
		20200102	VOC	42	0.745	42	0.752	42	0.753	42	0.744	41	0.740
		20200102	NOx	511	9.129	516	9.211	517	9.225	510	9.114	507	9.059
		20200102	CO	110	1.967	111	1.984	111	1.987	110	1.963	109	1.951
		31299999	VOC	3390	9.212	4885	13.274	5134	13.951	5480	14.891	5653	15.361
GLOBAL COMPANIES LLC - ALBANY TERMINAL	ALBANY	10200501	VOC	0	0.001	0	0.001	0	0.001	0	0.001	0	0.001
50 CHURCH ST - PORT OF ALBANY		10200501	NOx	36	0.098	36	0.099	36	0.099	36	0.098	36	0.097
ALBANY, NY 12202		10200501	CO	8	0.020	8	0.021	8	0.021	7	0.020	7	0.020
		39000689	NOx	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		39000689	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		40301019	VOC	7034	19.114	7886	21.428	8028	21.814	8312	22.587	8454	22.974
		40400150	VOC	6463	17.563	7246	19.689	7376	20.043	7637	20.754	7768	21.109
		40400153	VOC	479	1.302	537	1.459	547	1.485	566	1.538	576	1.564
		40400154	VOC	25389	68.992	28463	77.345	28975	78.737	30002	81.528	30516	82.924
		40400160	VOC	85846	233.277	96240	261.521	97972	266.229	101445	275.666	103182	280.385
		40400250	VOC	105206	285.886	117944	320.499	120067	326.268	124323	337.834	126451	343.617
		40799997	VOC	1836	4.989	1793	4.872	1786	4.852	1815	4.933	1830	4.974

		40799997	VOC	1638	4.451	1599	4.346	1593	4.329	1620	4.401	1633	4.437
NYS OGS SHERIDAN STEAM PLANT	ALBANY	10200502	NOx	21060	0.000	21250	0.000	21281	0.000	21026	0.000	20899	0.000
79 SHERIDAN AVE		10200502	CO	5265	0.000	5312	0.000	5320	0.000	5257	0.000	5225	0.000
ALBANY, NY 12210		10200602	VOC	7667	27.501	8026	28.788	8086	29.002	8225	29.502	8295	29.752
		10200602	VOC	5904	21.178	6180	22.169	6226	22.334	6334	22.719	6387	22.911
		10200602	NOx	139400	500.022	145923	523.418	147010	527.317	149544	536.406	150811	540.951
		10200602	CO	117096	420.018	122575	439.671	123488	442.947	125617	450.581	126681	454.399
		20300101	VOC	75	3.065	80	3.257	81	3.289	81	3.318	82	3.333
		20300101	NOx	919	37.546	977	39.897	987	40.289	996	40.651	1000	40.833
		20300101	CO	198	8.088	210	8.595	213	8.679	214	8.757	215	8.796
SUNY AT ALBANY	ALBANY	10300402	VOC	191	0.000	177	0.000	175	0.000	178	0.000	179	0.000
1400 WASHINGTON AVE		10300402	NOx	9275	0.000	8625	0.000	8517	0.000	8647	0.000	8713	0.000
ALBANY, NY 12222		10300402	CO	843	0.000	784	0.000	774	0.000	786	0.000	792	0.000
		10300502	VOC	0	0.000	0	0.000	0	0.000	1	0.000	1	0.000
		10300502	NOx	27	0.000	29	0.000	29	0.000	29	0.000	30	0.000
		10300502	CO	7	0.000	7	0.000	7	0.000	7	0.000	7	0.000
		10300602	VOC	1226	1.839	1237	1.855	1239	1.858	1259	1.889	1269	1.904
		10300602	VOC	1592	2.388	1606	2.409	1609	2.413	1635	2.453	1648	2.473
		10300602	NOx	28944	43.415	29205	43.808	29249	43.873	29730	44.594	29970	44.955
		10300602	CO	24313	36.469	24532	36.799	24569	36.854	24973	37.459	25175	37.762
		10300603	VOC	443	4.431	447	4.471	448	4.478	455	4.551	459	4.588
		10300603	VOC	341	3.412	344	3.443	345	3.448	351	3.505	353	3.533
		10300603	NOx	8056	80.564	8129	81.293	8141	81.414	8275	82.752	8342	83.421
		10300603	CO	6767	67.674	6829	68.286	6839	68.388	6951	69.512	7007	70.074
		20100102	VOC	117	29.137	232	57.984	251	62.792	188	47.055	157	39.187
		20100102	VOC	117	29.372	234	58.451	253	63.298	190	47.434	158	39.503
		20100102	NOx	2211	552.660	4399	1099.832	4764	1191.027	3570	892.537	2973	743.291
		20100102	CO	476	118.950	947	236.719	1025	256.347	768	192.102	640	159.980
		20100202	VOC	3	0.667	3	0.730	3	0.741	3	0.818	3	0.857
		20100202	NOx	65	16.330	72	17.875	73	18.133	80	20.033	84	20.984
		20100202	CO	9	2.294	10	2.511	10	2.548	11	2.815	12	2.948
		20300301	NOx	10	3.433	11	3.632	11	3.665	11	3.633	11	3.617
		20300301	CO	400	132.116	424	139.765	427	141.040	424	139.809	422	139.193

		40301097	VOC	27	0.073	30	0.082	31	0.084	32	0.087	32	0.088
ALBANY LANDFILL	ALBANY	20200202	VOC	571	0.000	598	0.000	602	0.000	613	0.000	618	0.000
RAPP RD		20200202	NOx	68103	0.000	71289	0.000	71820	0.000	73058	0.000	73677	0.000
ALBANY, NY 12205		20200202	CO	80666	0.000	84440	0.000	85069	0.000	86536	0.000	87269	0.000
		40301019	VOC	1	0.002	1	0.002	1	0.002	1	0.002	1	0.002
		40301021	VOC	91	0.246	102	0.276	103	0.281	107	0.291	109	0.296
		50100402	VOC	17662	47.994	17581	47.774	17567	47.737	17567	47.737	17567	47.737
		50100410	VOC	11596	31.511	11543	31.366	11534	31.342	11534	31.342	11534	31.342
		50100410	NOx	17112	46.500	17033	46.286	17020	46.251	17020	46.251	17020	46.251
		50100410	CO	24997	67.927	24882	67.615	24863	67.563	24863	67.563	24863	67.563
		50300801	VOC	1174	3.190	1532	4.164	1592	4.327	1705	4.632	1761	4.785
NORLITE CORP	ALBANY	30502001	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
628 S SARATOGA ST		30502004	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
COHOES, NY 12047		30502006	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		30502006	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		30502007	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		30502009	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		30599999	VOC	2611	7.095	2983	8.106	3045	8.275	3183	8.650	3252	8.838
		39000689	VOC	479	1.180	501	1.235	505	1.244	514	1.265	518	1.276
		39000689	NOx	8264	20.350	8651	21.302	8715	21.460	8865	21.830	8940	22.015
		39000689	CO	6942	17.094	7267	17.893	7321	18.027	7447	18.337	7510	18.493
		39001399	VOC	10348	27.565	11672	31.091	11892	31.679	12081	32.180	12175	32.431
		39001399	NOx	139838	372.495	157727	420.147	160709	428.089	163253	434.866	164525	438.255
		39001399	CO	41432	110.355	46732	124.472	47616	126.825	48369	128.833	48746	129.837
		40301097	VOC	241	0.651	270	0.730	275	0.743	284	0.769	289	0.782
		40301099	VOC	264	0.718	296	0.805	301	0.819	312	0.848	318	0.863
		40301099	NOx	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		40301099	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		40400151	VOC	3615	9.823	4053	11.013	4126	11.211	4272	11.608	4345	11.807
		40400497	VOC	0	0.001	0	0.001	0	0.001	0	0.001	0	0.001
		40400498	VOC	0	0.001	0	0.001	0	0.001	0	0.001	0	0.001
		50300830	VOC	31	0.084	40	0.110	42	0.114	45	0.122	46	0.126
OWENS-CORNING INSULATING SYSTEMS-FEURA BUSH	ALBANY	10200602	VOC	21	0.056	22	0.059	22	0.059	22	0.060	22	0.061

1277 FEURA BUSH RD	10200602	VOC	27	0.073	28	0.076	28	0.077	29	0.078	29	0.079
FEURA BUSH, NY 12067	10200602	NOx	488	1.326	511	1.388	515	1.398	524	1.423	528	1.435
	10200602	CO	410	1.114	429	1.166	432	1.175	440	1.195	443	1.205
	10500105	VOC	40	0.110	42	0.115	43	0.116	43	0.118	44	0.119
	10500105	NOx	4032	10.957	4221	11.469	4252	11.555	4325	11.754	4362	11.853
	10500105	CO	1008	2.739	1055	2.867	1063	2.889	1081	2.938	1091	2.963
	10500106	VOC	11	0.030	12	0.031	12	0.032	12	0.032	12	0.032
	10500106	NOx	200	0.543	209	0.569	211	0.573	215	0.583	216	0.588
	10500106	CO	168	0.457	176	0.478	177	0.481	180	0.490	182	0.494
	20200102	VOC	2203	5.986	2223	6.040	2226	6.049	2199	5.977	2186	5.941
	20200102	NOx	26987	73.333	27230	73.993	27270	74.104	26944	73.216	26780	72.772
	20200102	CO	5813	15.797	5866	15.940	5875	15.963	5804	15.772	5769	15.677
	30501202	VOC	2797	7.601	2758	7.495	2752	7.477	2793	7.590	2814	7.647
	30501202	NOx	120010	326.113	118328	321.544	118048	320.783	119831	325.629	120723	328.052
	30501202	CO	4380	11.902	4319	11.735	4308	11.708	4373	11.884	4406	11.973
	30501204	VOC	100647	273.498	99237	269.666	99002	269.028	100498	273.091	101245	275.123
	30501204	VOC	7420	20.164	7316	19.881	7299	19.834	7409	20.134	7464	20.284
	30501204	NOx	135972	369.489	134067	364.312	133749	363.450	135770	368.940	136780	371.685
	30501204	CO	340089	924.155	335324	911.208	334530	909.050	339584	922.782	342111	929.648
	30501205	VOC	722	1.961	712	1.934	710	1.929	721	1.958	726	1.973
	30501205	VOC	64	0.173	63	0.170	62	0.170	63	0.172	64	0.174
	30501205	NOx	927	2.519	914	2.483	912	2.478	926	2.515	932	2.534
	30501205	CO	2733	7.426	2694	7.322	2688	7.304	2729	7.415	2749	7.470
	30501206	VOC	7863	21.366	7752	21.066	7734	21.016	7851	21.334	7909	21.493
	30501206	VOC	462	1.256	456	1.238	455	1.236	462	1.254	465	1.264
	30501206	NOx	6304	17.129	6215	16.889	6201	16.849	6294	17.104	6341	17.231
	30501206	CO	21441	58.265	21141	57.448	21091	57.312	21410	58.178	21569	58.611
	30501299	VOC	2981	8.101	3297	8.960	3350	9.103	3472	9.434	3533	9.600
	30501299	VOC	3282	8.919	3630	9.865	3688	10.022	3823	10.387	3890	10.570
	39000689	VOC	5348	14.531	5598	15.211	5639	15.324	5737	15.589	5785	15.721
	39000689	NOx	97228	264.207	101777	276.569	102536	278.629	104303	283.432	105187	285.833
	39000689	CO	81672	221.933	85493	232.318	86130	234.049	87614	238.083	88357	240.100
	40799998	VOC	1014	2.754	990	2.690	986	2.679	1002	2.724	1010	2.746

SABIC NORYL US - SELKIRK PLASTICS PLT	ALBANY	10200501	VOC	7	0.000	7	0.000	7	0.000	7	0.000	7	0.000
1 NORYL AVE		10200501	NOx	2720	0.000	2744	0.000	2749	0.000	2716	0.000	2699	0.000
SELKIRK, NY 12158		10200501	CO	172	0.000	173	0.000	173	0.000	171	0.000	170	0.000
		10200601	VOC	3003	8.683	3144	9.090	3167	9.157	3222	9.315	3249	9.394
		10200601	NOx	102000	294.940	106773	308.740	107568	311.040	109422	316.401	110349	319.082
		10200601	CO	45864	132.619	48010	138.824	48368	139.858	49201	142.269	49618	143.474
		10200602	VOC	506	1.631	529	1.707	533	1.720	543	1.750	547	1.765
		10200602	NOx	3964	12.686	4149	13.279	4180	13.378	4252	13.609	4288	13.724
		10200602	CO	3330	10.656	3486	11.155	3512	11.238	3572	11.432	3602	11.528
		10200799	VOC	1379	4.652	1436	4.845	1446	4.877	1450	4.893	1453	4.901
		10200799	NOx	29710	100.227	30939	104.372	31144	105.063	31247	105.412	31299	105.587
		10200799	CO	13324	44.948	13875	46.807	13967	47.117	14013	47.274	14036	47.352
		10201301	NOx	85000	1219.412	95874	1375.407	97686	1401.407	99233	1423.592	100006	1434.684
		10201301	CO	5265	73.416	5939	82.808	6051	84.373	6147	85.709	6194	86.377
		20200102	VOC	242	50.893	244	51.351	245	51.428	242	50.812	240	50.504
		20200102	NOx	8690	1698.571	8768	1713.869	8781	1716.418	8676	1695.864	8624	1685.588
		20200102	CO	1697	105.643	1712	106.594	1715	106.753	1694	105.474	1684	104.835
		30101817	VOC	8976	0.117	11219	0.146	11592	0.151	12270	0.160	12609	0.164
		30101891	VOC	36510	113.531	45632	141.898	47153	146.625	49908	155.194	51286	159.479
		30101891	CO	6990	35.624	8736	44.524	9028	46.008	9555	48.697	9819	50.041
		30101892	VOC	287	0.891	359	1.114	371	1.151	392	1.218	403	1.252
		30101893	VOC	59	0.160	74	0.200	76	0.207	81	0.219	83	0.225
		30101893	VOC	347	0.943	434	1.179	448	1.218	474	1.289	487	1.325
		30101894	VOC	5406	14.677	6757	18.344	6982	18.955	7390	20.063	7594	20.616
		30101899	VOC	42704	125.982	53374	157.459	55152	162.705	58375	172.214	59987	176.969
		30101899	CO	237	0.644	296	0.805	306	0.832	324	0.880	333	0.905
		30184001	VOC	6	0.016	7	0.020	8	0.021	8	0.022	8	0.023
		30188805	VOC	83301	226.361	103952	282.479	107394	291.832	113829	309.319	117047	318.062
		39990003	VOC	2819	8.805	3055	9.542	3094	9.665	3189	9.962	3237	10.110
		39990003	NOx	9396	32.059	10183	34.744	10314	35.192	10631	36.272	10789	36.812
		39990003	CO	7893	26.929	8554	29.185	8664	29.561	8930	30.468	9063	30.922
		39990004	NOx	40	0.116	43	0.125	44	0.127	45	0.131	46	0.133
		39990004	CO	18	0.052	19	0.056	20	0.057	20	0.058	20	0.059

		39990014	VOC	1281	3.918	1405	4.299	1426	4.362	1466	4.486	1487	4.547
		39990014	NOx	13300	40.682	14592	44.635	14807	45.293	15225	46.572	15434	47.211
		39990014	CO	323	0.988	354	1.084	360	1.100	370	1.131	375	1.147
		39999994	VOC	1270	3.451	1819	4.944	1911	5.193	2021	5.491	2076	5.640
CITGO PETROLEUM GLENMONT TERMINAL	ALBANY	10200503	NOx	66	0.000	66	0.000	66	0.000	65	0.000	65	0.000
495 RIVER RD		10200503	CO	16	0.000	17	0.000	17	0.000	16	0.000	16	0.000
GLENMONT, NY 12077		40301098	VOC	4099	11.138	4595	12.486	4678	12.711	4843	13.161	4926	13.387
		40301099	VOC	1055	2.866	1182	3.213	1204	3.271	1246	3.387	1268	3.445
		40400114	VOC	32515	81.196	36452	91.027	37108	92.665	38423	95.950	39081	97.593
		40400114	VOC	28353	70.799	31786	79.371	32358	80.800	33505	83.664	34079	85.096
		40400117	VOC	337	0.982	378	1.101	385	1.121	398	1.160	405	1.180
		40400151	VOC	1169	3.177	1311	3.561	1334	3.626	1382	3.754	1405	3.818
		40400250	VOC	63771	173.291	71492	194.272	72779	197.769	75359	204.779	76649	208.285
		40400250	VOC	73132	198.728	81986	222.789	83462	226.799	86421	234.839	87900	238.859
		40799997	VOC	6	0.016	6	0.016	6	0.016	6	0.016	6	0.016
		40799998	VOC	2	0.005	2	0.005	2	0.005	2	0.005	2	0.005
BETHLEHEM ENERGY CENTER	ALBANY	10100404	VOC	12	0.000	19	0.000	20	0.000	19	0.000	19	0.000
380 RIVER RD		10100404	VOC	12	0.000	18	0.000	19	0.000	18	0.000	18	0.000
GLENMONT, NY 12077		10100404	NOx	477	0.000	711	0.000	750	0.000	741	0.000	736	0.000
		10100404	CO	82	0.000	122	0.000	129	0.000	127	0.000	126	0.000
		10100604	VOC	6906	143.379	7559	156.948	7668	159.209	8472	175.894	8874	184.237
		10100604	VOC	8968	186.190	9816	203.811	9958	206.748	11001	228.415	11523	239.249
		10100604	NOx	163185	3381.812	178629	3701.860	181202	3755.201	200192	4148.747	209688	4345.520
		10100604	CO	39132	812.467	42835	889.358	43453	902.173	48006	996.721	50283	1043.995
		10200602	VOC	378	0.000	396	0.000	399	0.000	406	0.000	409	0.000
		10200602	NOx	5991	0.000	6271	0.000	6318	0.000	6427	0.000	6481	0.000
		10200602	CO	5779	0.000	6050	0.000	6095	0.000	6200	0.000	6252	0.000
		20200102	VOC	10	0.187	10	0.189	10	0.189	10	0.187	10	0.185
		20200102	NOx	119	2.290	120	2.310	120	2.314	119	2.286	118	2.272
		20200102	CO	26	0.493	26	0.498	26	0.498	26	0.492	25	0.489
		40400301	VOC	94	0.255	107	0.292	110	0.298	115	0.312	117	0.319
SELKIRK COGENERATION PROJECT	ALBANY	10100601	VOC	4275	26.138	4680	28.611	4747	29.024	5244	32.065	5493	33.586
24 POWER PARK DR ON GE PROPERTY		10100601	NOx	38130	212.021	41739	232.087	42340	235.431	46777	260.104	48996	272.441

SELKIRK, NY 12158-2299		10100601	CO	1273	7.212	1393	7.895	1414	8.009	1562	8.848	1636	9.268
		10300601	VOC	4	0.063	4	0.064	4	0.064	4	0.065	4	0.065
		10300601	VOC	5	0.082	5	0.083	5	0.083	5	0.084	5	0.085
		10300601	NOx	128	2.245	129	2.265	130	2.269	132	2.306	133	2.324
		10300601	CO	73	1.251	73	1.263	74	1.265	75	1.285	75	1.296
		10300602	VOC	1	0.022	1	0.023	1	0.023	1	0.023	1	0.023
		10300602	VOC	1	0.017	1	0.017	1	0.017	1	0.018	1	0.018
		10300602	NOx	15	0.418	15	0.422	15	0.422	16	0.429	16	0.433
		10300602	CO	12	0.342	13	0.345	13	0.345	13	0.351	13	0.354
		20100201	NOx	915004	2637.433	1001598	2887.034	1016031	2928.634	1122511	3235.555	1175751	3389.017
		20100201	CO	546314	1486.011	598016	1626.644	606633	1650.083	670208	1823.011	701996	1909.476
		20300101	VOC	3	0.038	3	0.040	3	0.041	3	0.041	3	0.041
		20300101	NOx	125	1.833	133	1.948	135	1.967	136	1.984	136	1.993
		20300101	CO	18	0.269	20	0.286	20	0.289	20	0.291	20	0.292
		30187098	VOC	132	0.363	129	0.354	128	0.353	131	0.359	132	0.362
LAFARGE BUILDING MATERIALS INC	ALBANY	10500106	VOC	47	0.180	49	0.188	49	0.190	50	0.193	51	0.195
US RTE 9W		10500106	NOx	850	3.269	890	3.422	896	3.448	912	3.507	920	3.537
RAVENA, NY 12143-0003		10500106	CO	714	2.746	747	2.875	753	2.896	766	2.946	772	2.971
		30500706	VOC	48363	131.421	54924	149.250	56018	152.222	57873	157.264	58801	159.785
		30500706	NOx	10692200	29054.891	12142732	32996.553	12384487	33653.496	12794739	34768.312	12999865	35325.721
		30500706	CO	207269	563.231	235388	639.640	240074	652.375	248027	673.986	252003	684.791
		39000589	VOC	31	0.118	31	0.120	31	0.120	31	0.118	31	0.118
		39000589	NOx	3080	11.846	3108	11.953	3112	11.971	3075	11.827	3056	11.756
		39000589	CO	770	2.962	777	2.988	778	2.993	769	2.957	764	2.939
COLONIE - T LANDFILL	ALBANY	10500110	VOC	7	0.000	7	0.000	7	0.000	7	0.000	7	0.000
1319 LOUDON RD		10500110	NOx	446	0.000	420	0.000	415	0.000	418	0.000	419	0.000
COHOES, NY 12047		10500110	CO	75	0.000	71	0.000	70	0.000	70	0.000	71	0.000
		40400302	VOC	9	0.024	10	0.028	10	0.028	11	0.029	11	0.030
		50100403	VOC	7454	20.254	7419	20.161	7414	20.146	7414	20.146	7414	20.146
		50100410	VOC	74	0.200	73	0.199	73	0.199	73	0.199	73	0.199
		50100410	NOx	9832	26.717	9787	26.595	9779	26.574	9779	26.574	9779	26.574
		50100410	CO	184359	500.976	183512	498.675	183371	498.291	183371	498.291	183371	498.291
SAINT-GOBAIN ABRASIVES INC	ALBANY	10200602	VOC	567	1.980	593	2.073	598	2.088	608	2.124	613	2.142

2600 TENTH AVE		10200602	VOC	736	2.571	770	2.692	776	2.712	789	2.758	796	2.782
WATERVLIET, NY 12189		10200602	NOx	13380	46.749	14006	48.937	14110	49.301	14354	50.151	14475	50.576
		10200602	CO	11239	39.269	11765	41.107	11853	41.413	12057	42.127	12159	42.484
		10500106	NOx	2430	0.000	2544	0.000	2563	0.000	2607	0.000	2629	0.000
		10500106	CO	2041	0.000	2137	0.000	2153	0.000	2190	0.000	2208	0.000
		39000689	NOx	5070	25.548	5307	26.744	5347	26.943	5439	27.407	5485	27.640
		39000689	CO	4259	21.461	4458	22.465	4491	22.632	4569	23.022	4607	23.217
		40200701	VOC	41626	184.313	55832	247.213	58199	257.697	62670	277.494	64906	287.392
		40200701	NOx	9020	52.905	12098	70.960	12611	73.969	13580	79.651	14065	82.493
		40200706	VOC	1800	5.844	2414	7.839	2517	8.171	2710	8.799	2807	9.113
LB FURNITURE INDUSTRIES LLC	COLUMBIA	10200603	VOC	11	0.000	11	0.000	11	0.000	12	0.000	12	0.000
99 S THIRD ST		10200603	NOx	195	0.000	204	0.000	206	0.000	209	0.000	211	0.000
HUDSON, NY 12534		10200603	CO	164	0.000	171	0.000	173	0.000	176	0.000	177	0.000
		10300603	VOC	34	0.044	34	0.044	34	0.044	34	0.045	35	0.045
		10300603	VOC	26	0.034	26	0.034	26	0.034	27	0.034	27	0.035
		10300603	NOx	610	0.792	616	0.799	616	0.801	627	0.814	632	0.820
		10300603	CO	512	0.665	517	0.671	518	0.672	526	0.684	531	0.689
		10500106	VOC	7	0.000	7	0.000	7	0.000	8	0.000	8	0.000
		10500106	NOx	129	0.000	135	0.000	136	0.000	138	0.000	140	0.000
		10500106	CO	108	0.000	113	0.000	114	0.000	116	0.000	117	0.000
		30702099	VOC	1082	2.941	1202	3.267	1222	3.321	1289	3.503	1322	3.594
		39000689	NOx	104	0.289	109	0.302	110	0.305	112	0.310	113	0.313
		39000689	CO	87	0.243	91	0.254	92	0.256	94	0.260	95	0.263
		39990003	VOC	14	0.138	15	0.149	16	0.151	16	0.156	16	0.158
		39990003	NOx	259	2.506	281	2.716	284	2.751	293	2.836	297	2.878
		39990003	CO	218	2.105	236	2.282	239	2.311	246	2.382	250	2.418
		40201901	VOC	31706	132.907	35213	147.608	35798	150.058	37758	158.275	38738	162.384
W B MCGUIRE CO INC	COLUMBIA	10200603	VOC	69	0.187	72	0.196	73	0.197	74	0.201	75	0.203
ONE HUDSON AVE		10200603	NOx	1253	3.405	1312	3.564	1321	3.591	1344	3.653	1356	3.684
HUDSON, NY 12534		10200603	CO	1053	2.860	1102	2.994	1110	3.016	1129	3.068	1139	3.094
		40200110	VOC	23172	482.750	31080	647.498	32398	674.956	34887	726.809	36131	752.735
COMPRESSOR STATION 254	COLUMBIA	10500106	VOC	65	0.354	68	0.370	69	0.373	70	0.380	70	0.383
ST RTE 66 - E SIDE - S OF COUNTY LINE		10500106	NOx	1184	6.435	1239	6.736	1249	6.786	1270	6.903	1281	6.962

RIDERS MILLS, NY 12123-0369		10500106	CO	995	5.405	1041	5.658	1049	5.700	1067	5.799	1076	5.848
		20200201	VOC	332	0.000	347	0.000	350	0.000	356	0.000	359	0.000
		20200201	VOC	332	0.000	348	0.000	350	0.000	356	0.000	359	0.000
		20200201	NOx	36000	0.000	37684	0.000	37965	0.000	38620	0.000	38947	0.000
		20200201	CO	49980	0.000	52319	0.000	52708	0.000	53617	0.000	54071	0.000
		20200202	VOC	16365	5.365	17131	5.616	17259	5.658	17556	5.755	17705	5.804
		20200202	NOx	254911	131.350	266838	137.496	268826	138.520	273460	140.908	275777	142.102
		20200202	CO	217348	18.454	227517	19.317	229212	19.461	233163	19.797	235139	19.964
		40301097	VOC	2	0.005	2	0.005	2	0.005	2	0.006	2	0.006
SONOCO-CRELLIN INC	COLUMBIA	10500105	NOx	308	0.000	311	0.000	311	0.000	307	0.000	305	0.000
87 CENTER ST		10500105	CO	77	0.000	78	0.000	78	0.000	77	0.000	76	0.000
CHATHAM, NY 12037		30800704	VOC	5915	16.432	7411	20.585	7660	21.277	8102	22.505	8323	23.120
		30800705	VOC	945	4.199	1183	5.260	1223	5.437	1294	5.751	1329	5.908
		39000989	NOx	1	0.003	1	0.003	1	0.003	1	0.003	1	0.003
		39000989	CO	4	0.017	4	0.019	4	0.019	4	0.020	4	0.020
DMV INTERNATIONAL NUTRITIONALS	DELAWARE	10200504	NOx	34902	136.136	35217	137.362	35269	137.566	34847	135.919	34635	135.095
40196 ST RTE 10		10200504	CO	3713	14.483	3746	14.613	3752	14.635	3707	14.459	3685	14.372
DELHI, NY 13753		30299998	VOC	91081	247.503	94063	255.607	94561	256.958	96574	262.431	97581	265.167
		39001089	VOC	7	0.062	7	0.058	7	0.058	7	0.058	7	0.058
		39001089	NOx	344	2.893	324	2.725	321	2.697	323	2.713	324	2.722
		39001089	CO	47	0.393	44	0.370	44	0.366	44	0.368	44	0.369
NORBORD INDUSTRIES	DELAWARE	10200602	VOC	323	4.894	338	5.123	341	5.161	346	5.250	349	5.295
LAUREL BANK AVE		10200602	NOx	5872	88.988	6147	93.151	6193	93.845	6299	95.463	6353	96.272
DEPOSIT, NY 13754		10200602	CO	4932	74.750	5163	78.247	5202	78.830	5291	80.189	5336	80.868
		10200905	VOC	1215	3.769	1370	4.251	1396	4.332	1418	4.400	1429	4.435
		10200905	NOx	115374	358.057	130133	403.862	132593	411.497	134692	418.011	135742	421.268
		10200905	CO	33398	103.649	37671	116.908	38383	119.118	38990	121.004	39294	121.947
		10500106	NOx	250	0.000	262	0.000	264	0.000	268	0.000	270	0.000
		10500106	CO	210	0.000	220	0.000	221	0.000	225	0.000	227	0.000
		20200102	VOC	25	0.479	25	0.483	25	0.484	25	0.478	25	0.475
		20200102	VOC	25	0.479	25	0.483	25	0.484	25	0.478	25	0.475
		20200102	NOx	305	5.865	308	5.918	308	5.927	305	5.856	303	5.820
		20200102	CO	66	1.264	66	1.275	66	1.277	66	1.261	65	1.254

		20200401	VOC	25	3.134	25	3.162	25	3.167	25	3.129	25	3.110
		20200401	NOx	802	100.198	809	101.100	810	101.251	800	100.038	795	99.432
		20200401	CO	212	26.536	214	26.775	215	26.815	212	26.494	211	26.334
		30700925	VOC	275361	862.577	299615	938.553	303657	951.216	314075	983.849	319284	1000.165
		30700960	VOC	73002	228.681	79432	248.823	80504	252.180	83266	260.832	84646	265.158
		39000689	NOx	271	0.849	284	0.889	286	0.895	291	0.911	293	0.918
		39000689	CO	105	0.329	110	0.344	111	0.347	113	0.353	114	0.356
		39000889	NOx	355263	1112.872	326905	1024.041	322179	1009.236	303683	951.296	294435	922.326
		39000889	CO	94737	296.767	87175	273.078	85915	269.130	80982	253.679	78516	245.954
AMPHENOL CORP - BENDIX CONNECTOR OPERS	DELAWARE	10300401	VOC	582	29.109	541	27.068	535	26.728	543	27.139	547	27.344
40-60 DELAWARE AVE		10300401	NOx	24214	1210.720	22517	1125.845	22234	1111.699	22576	1128.776	22746	1137.314
SIDNEY, NY 13838		10300401	CO	2576	128.800	2395	119.771	2365	118.266	2402	120.083	2420	120.991
		10500110	VOC	68	0.000	65	0.000	64	0.000	64	0.000	64	0.000
		10500110	NOx	4338	0.000	4086	0.000	4044	0.000	4069	0.000	4081	0.000
		10500110	CO	731	0.000	688	0.000	681	0.000	685	0.000	687	0.000
		30901099	VOC	18079	63.659	21775	76.672	22391	78.841	23609	83.130	24218	85.275
		39000489	NOx	4615	230.725	5452	272.619	5592	279.601	5598	279.917	5602	280.075
		39000489	CO	420	20.975	496	24.784	508	25.418	509	25.447	509	25.461
		39000589	NOx	1550	5.959	1564	6.013	1566	6.021	1548	5.949	1538	5.913
		39000589	CO	388	1.490	391	1.503	392	1.505	387	1.487	385	1.478
		39001089	NOx	1207	18.516	1137	17.440	1125	17.260	1132	17.367	1135	17.421
		39001089	CO	164	2.513	154	2.367	153	2.342	154	2.357	154	2.364
		39999994	VOC	2754	9.305	3946	13.330	4144	14.001	4382	14.805	4501	15.207
		39999999	VOC	107	0.503	154	0.721	161	0.758	171	0.801	175	0.823
		40200701	VOC	855	2.889	1147	3.874	1195	4.039	1287	4.349	1333	4.504
		40200701	VOC	779	2.633	1045	3.531	1090	3.681	1173	3.964	1215	4.105
		40200711	VOC	324	1.095	435	1.469	453	1.531	488	1.649	505	1.708
		40200801	VOC	31	0.125	41	0.167	43	0.174	47	0.188	48	0.194
		40200810	VOC	781	2.639	1048	3.540	1092	3.690	1176	3.973	1218	4.115
		40202501	VOC	379	1.279	508	1.716	529	1.789	570	1.926	590	1.995
		40202503	VOC	223	0.755	300	1.012	312	1.055	336	1.136	348	1.177
		40722097	VOC	238	0.647	232	0.632	231	0.629	235	0.639	237	0.645
		40786099	VOC	23	0.063	23	0.062	23	0.061	23	0.062	23	0.063

WORMUTH BROTHERS FOUNDRY	GREENE	30400301	NOx	3917	21.760	4838	26.880	4992	27.734	5299	29.440	5453	30.294
HOWARD HALL RD		30400301	CO	7582	42.123	9366	52.034	9663	53.686	10258	56.989	10555	58.641
ATHENS, NY 12015		30400320	VOC	1087	6.040	1343	7.461	1386	7.697	1471	8.171	1513	8.408
		30400320	NOx	75	0.415	92	0.513	95	0.529	101	0.561	104	0.578
		30400331	VOC	9318	51.767	11511	63.948	11876	65.978	12607	70.038	12972	72.068
		30400331	VOC	8964	49.800	11073	61.518	11425	63.471	12128	67.376	12479	69.329
		39001089	VOC	21	0.118	20	0.111	20	0.110	20	0.111	20	0.111
		39001089	NOx	991	5.508	934	5.188	924	5.135	930	5.166	933	5.182
		39001089	CO	135	0.748	127	0.704	125	0.697	126	0.701	127	0.703
LEHIGH NORTHEAST CEMENT COMPANY	GREENE	10500105	NOx	149	0.000	150	0.000	150	0.000	148	0.000	147	0.000
120 ALPHA RD OFF US RTE 9W		10500105	CO	37	0.000	37	0.000	38	0.000	37	0.000	37	0.000
CEMENTON, NY 12415		20200401	VOC	1487	16.518	1500	16.666	1502	16.691	1484	16.491	1475	16.391
		20200401	NOx	47527	528.082	47955	532.838	48027	533.631	47452	527.240	47164	524.045
		20200401	CO	12587	139.857	12701	141.117	12719	141.327	12567	139.634	12491	138.788
		30500613	NOx	3159	21.938	3789	26.311	3894	27.040	4083	28.353	4177	29.010
		30500613	CO	790	5.486	947	6.580	974	6.762	1021	7.091	1045	7.255
		40100398	VOC	26	0.071	34	0.091	35	0.095	37	0.100	38	0.102
		40701613	VOC	60	0.163	59	0.159	58	0.159	59	0.161	60	0.163
ST LAWRENCE CEMENT CORP-CATSKILL QUARRY	GREENE	10500105	NOx	422	0.000	426	0.000	427	0.000	422	0.000	419	0.000
6446 US RTE 9W		10500105	CO	106	0.000	107	0.000	107	0.000	105	0.000	105	0.000
ALSEN, NY 12414		30500706	NOx	6303372	17128.728	7158504	19452.456	7301026	19839.743	7542882	20496.961	7663810	20825.570
		30500706	CO	672628	1827.793	763878	2075.757	779087	2117.084	804895	2187.215	817799	2222.281
KEYMARK CORP PLANT	MONTGOMERY	10200602	VOC	786	2.232	823	2.337	829	2.354	843	2.395	850	2.415
1188 CAYADUTTA ST		10200602	VOC	605	1.719	634	1.800	638	1.813	649	1.844	655	1.860
FONDA, NY 12068		10200602	NOx	14290	40.590	14959	42.490	15070	42.806	15330	43.544	15460	43.913
		10200602	CO	12004	34.096	12565	35.691	12659	35.957	12877	36.577	12986	36.887
		10300603	VOC	141	0.433	142	0.437	142	0.437	145	0.444	146	0.448
		10300603	VOC	183	0.562	184	0.567	185	0.568	188	0.577	189	0.582
		10300603	NOx	3322	10.214	3352	10.306	3357	10.322	3412	10.491	3440	10.576
		10300603	CO	2790	8.580	2816	8.657	2820	8.670	2866	8.813	2889	8.884
		10500106	NOx	182	0.000	191	0.000	192	0.000	195	0.000	197	0.000
		10500106	CO	153	0.000	160	0.000	161	0.000	164	0.000	165	0.000
		39000689	VOC	1603	1.743	1678	1.824	1691	1.838	1720	1.869	1734	1.885

		39000689	NOx	29150	31.685	30514	33.167	30741	33.414	31271	33.990	31536	34.278
		39000689	CO	24486	26.615	25632	27.861	25823	28.068	26268	28.552	26490	28.794
		39999994	VOC	1226	4.257	1756	6.098	1845	6.405	1951	6.773	2004	6.957
		40200810	VOC	4008	13.917	5376	18.666	5604	19.458	6034	20.952	6250	21.700
		40202501	VOC	32094	111.438	46766	162.380	49211	170.871	53520	185.832	55674	193.313
PETROLEUM FUEL & TERMINAL CO-RENSSELAER	RENSSELAER	10500105	VOC	1	0.001	1	0.001	1	0.001	1	0.001	1	0.001
54 RIVERSIDE AVE		10500105	NOx	56	0.061	57	0.061	57	0.062	56	0.061	56	0.060
RENSSELAER, NY 12144		10500105	CO	14	0.015	14	0.015	14	0.015	14	0.015	14	0.015
		40400111	VOC	39545	107.460	44333	120.471	45131	122.639	46731	126.987	47531	129.160
		40400116	VOC	335	0.910	376	1.021	382	1.039	396	1.076	403	1.094
		40400251	VOC	22324	60.664	25027	68.009	25478	69.233	26381	71.687	26832	72.914
		40600131	VOC	11509	31.276	11466	31.157	11459	31.138	11372	30.903	11329	30.786
TRANSMONTAIGNE-RENSSELAER TERMINAL	RENSSELAER	40301017	VOC	706	1.918	791	2.150	805	2.189	834	2.266	848	2.305
58 RIVERSIDE AVE		40301018	VOC	88	0.240	99	0.269	101	0.274	104	0.283	106	0.288
RENSSELAER, NY 12144		40301018	VOC	68	0.185	76	0.208	78	0.212	81	0.219	82	0.223
		40301020	VOC	1873	5.090	2100	5.706	2138	5.809	2213	6.015	2251	6.117
		40301021	VOC	213	0.579	239	0.649	243	0.661	252	0.685	256	0.696
		40301151	VOC	50057	136.023	56117	152.492	57127	155.237	59152	160.740	60165	163.492
		40301197	VOC	379	1.031	425	1.156	433	1.177	448	1.218	456	1.239
		40400151	VOC	1441	3.915	1615	4.389	1644	4.468	1702	4.626	1732	4.705
		40400154	VOC	25206	68.493	28257	76.786	28766	78.168	29786	80.939	30296	82.325
		40600131	VOC	14200	43.217	14146	43.054	14137	43.027	14031	42.703	13978	42.541
		40600131	NOx	8200	24.957	8169	24.862	8164	24.846	8102	24.660	8072	24.566
		40600131	CO	7060	21.487	7033	21.406	7029	21.392	6976	21.231	6950	21.151
		40600135	VOC	424	0.921	442	0.960	445	0.967	436	0.947	431	0.938
AMRI RENSSELAER	RENSSELAER	10200602	VOC	702	1.908	735	1.997	740	2.012	753	2.046	759	2.064
33 RIVERSIDE AVE		10200602	NOx	12764	34.685	13361	36.308	13461	36.578	13693	37.209	13809	37.524
RENSSELAER, NY 12144		10200602	CO	10722	29.135	11223	30.498	11307	30.726	11502	31.255	11599	31.520
		20200102	VOC	116	4.818	117	4.862	117	4.869	115	4.811	115	4.782
		20200102	NOx	1417	59.026	1429	59.557	1432	59.646	1414	58.932	1406	58.575
		20200102	CO	305	12.715	308	12.830	308	12.849	305	12.695	303	12.618
		30106010	VOC	1498	4.071	2065	5.611	2159	5.868	2313	6.284	2389	6.492
		30106099	VOC	63410	432.590	87409	596.312	91409	623.599	97890	667.816	101131	689.924

		30106099	CO	5042	57.295	6950	78.980	7268	82.594	7784	88.451	8041	91.379
RENSSELAER COGEN FACILITY	RENSSELAER	10200603	VOC	8	0.000	9	0.000	9	0.000	9	0.000	9	0.000
39 RIVERSIDE AVE		10200603	NOx	150	0.000	157	0.000	158	0.000	161	0.000	162	0.000
RENSSELAER, NY 12144		10200603	CO	126	0.000	132	0.000	133	0.000	135	0.000	136	0.000
		10500106	VOC	2	0.001	2	0.001	2	0.001	2	0.001	2	0.001
		10500106	NOx	40	0.024	42	0.025	42	0.025	43	0.026	43	0.026
		10500106	CO	34	0.020	35	0.021	35	0.021	36	0.022	36	0.022
		20100102	VOC	98	0.384	194	0.764	210	0.827	158	0.620	131	0.516
		20100102	NOx	1836	7.222	3654	14.373	3957	15.564	2965	11.664	2470	9.713
		20100102	CO	395	1.554	786	3.093	852	3.350	638	2.510	532	2.091
		20100201	VOC	819	6.284	897	6.879	910	6.978	1005	7.709	1053	8.075
		20100201	NOx	47959	381.957	52498	418.105	53254	424.130	58835	468.579	61626	490.803
		20100201	CO	38146	300.797	41756	329.263	42358	334.008	46797	369.012	49016	386.514
		20200102	VOC	10	0.196	10	0.197	10	0.198	10	0.195	10	0.194
		20200102	NOx	120	2.397	121	2.419	121	2.422	120	2.393	119	2.379
		20200102	CO	26	0.516	26	0.521	26	0.522	26	0.516	26	0.512
		20200108	VOC	28	0.095	28	0.095	28	0.096	28	0.094	28	0.094
HESS RENSSELAER TERMINAL	RENSSELAER	10200401	VOC	38	0.062	45	0.073	46	0.075	46	0.075	46	0.075
367 AMERICAN OIL RD		10200401	VOC	30	0.049	35	0.058	36	0.059	36	0.059	36	0.059
RENSSELAER, NY 12144		10200401	NOx	6387	10.414	7547	12.305	7740	12.620	7749	12.634	7753	12.641
		10200401	CO	679	1.108	803	1.309	823	1.343	824	1.344	825	1.345
		10200402	VOC	77	0.067	91	0.079	93	0.081	93	0.081	93	0.081
		10200402	NOx	15091	13.122	17831	15.505	18288	15.902	18308	15.920	18319	15.929
		10200402	CO	1372	1.193	1621	1.410	1663	1.446	1664	1.447	1665	1.448
		39999995	NOx	115	0.000	165	0.000	174	0.000	184	0.000	189	0.000
		39999995	CO	289	0.000	414	0.000	434	0.000	459	0.000	472	0.000
		40400111	VOC	32748	88.990	36713	99.765	37374	101.560	38699	105.160	39361	106.961
		40400116	VOC	272	0.740	305	0.829	311	0.844	322	0.874	327	0.889
		40400150	VOC	2149	3.271	2409	3.667	2453	3.733	2540	3.865	2583	3.931
		40400151	VOC	5580	15.164	6256	16.999	6368	17.305	6594	17.919	6707	18.226
		40400153	VOC	35285	99.719	39558	111.793	40270	113.805	41697	117.839	42411	119.857
		40400154	VOC	8065	22.793	9042	25.553	9205	26.013	9531	26.935	9694	27.396
		40400301	VOC	3477	9.461	3984	10.839	4068	11.069	4253	11.571	4345	11.822

		40400302	VOC	2778	6.293	3183	7.210	3251	7.363	3398	7.697	3472	7.864
		40799997	VOC	33	0.089	32	0.087	32	0.087	32	0.088	33	0.089
		40799998	VOC	1	0.004	1	0.003	1	0.003	1	0.004	1	0.004
ISOLA LAMINATE SYSTEMS	RENSSELAER	10500110	NOx	2185	0.000	2058	0.000	2037	0.000	2049	0.000	2056	0.000
1 MECHANIC ST		10500110	CO	368	0.000	347	0.000	343	0.000	345	0.000	346	0.000
HOOSICK FALLS, NY 12090		39001089	NOx	406	0.000	382	0.000	378	0.000	381	0.000	382	0.000
		39001089	CO	55	0.000	52	0.000	51	0.000	52	0.000	52	0.000
		40201101	VOC	318	0.000	390	0.000	402	0.000	426	0.000	438	0.000
		40201103	VOC	191	0.000	234	0.000	241	0.000	256	0.000	263	0.000
		40201103	VOC	6	0.000	7	0.000	8	0.000	8	0.000	8	0.000
BENNINGTON PAPERBOARD CO	RENSSELAER	10200401	VOC	537	1.562	635	1.846	651	1.893	652	1.895	652	1.896
RT 67 AT COTTRELL RD		10200401	NOx	95940	278.895	113360	329.536	116264	337.976	116395	338.358	116461	338.549
WALLOOMSAC, NY 12133		10200401	CO	9595	27.892	11337	32.957	11628	33.801	11641	33.839	11647	33.858
		39999994	VOC	27520	96.000	39424	137.525	41408	144.445	43787	152.744	44976	156.893
		40799997	VOC	563	1.530	550	1.494	548	1.488	557	1.513	561	1.525
SAINT GOBAIN PERFORMANCE PLASTICS	RENSSELAER	10201002	NOx	806	0.000	759	0.000	751	0.000	756	0.000	758	0.000
1 LIBERTY ST		10201002	CO	136	0.000	128	0.000	126	0.000	127	0.000	128	0.000
HOOSICK FALLS, NY 12090		10500110	NOx	137	0.372	129	0.350	128	0.347	128	0.349	129	0.350
		10500110	CO	23	0.063	22	0.059	21	0.058	22	0.059	22	0.059
		39001089	VOC	140	0.752	132	0.708	131	0.701	132	0.705	132	0.707
		39001089	NOx	6544	35.072	6163	33.034	6100	32.694	6138	32.896	6157	32.998
		39001089	CO	888	4.760	836	4.483	828	4.437	833	4.465	836	4.478
		39999994	VOC	3346	12.869	4793	18.435	5034	19.363	5324	20.475	5468	21.032
		40201101	VOC	1640	5.560	2010	6.817	2072	7.026	2196	7.447	2258	7.657
		40201101	VOC	23359	89.088	28641	109.232	29521	112.589	31287	119.326	32170	122.694
		49000101	VOC	7106	27.332	6939	26.689	6911	26.582	7026	27.025	7084	27.246
EPCOR POWER CASTLETON	RENSSELAER	10100601	VOC	15	0.047	16	0.051	16	0.052	18	0.058	19	0.060
1902 RIVER RD |ST RTE 9J		10100601	VOC	19	0.061	21	0.067	21	0.068	23	0.075	24	0.078
CASTLETON-ON-HUDSON, NY 12033		10100601	NOx	654	2.109	715	2.309	726	2.342	802	2.587	840	2.710
		10100601	CO	289	0.932	316	1.021	321	1.035	354	1.144	371	1.198
		10500106	NOx	150	0.408	157	0.427	158	0.430	161	0.437	162	0.441
		10500106	CO	126	0.342	132	0.358	133	0.361	135	0.367	136	0.370
		20200103	VOC	1	0.063	1	0.064	1	0.064	1	0.063	1	0.063

		20200103	NOx	178	16.261	180	16.407	180	16.431	178	16.235	177	16.136
		20200103	CO	70	6.391	71	6.449	71	6.458	70	6.381	69	6.342
		20200203	VOC	7084	28.583	7416	29.920	7471	30.143	7600	30.663	7664	30.923
		20200203	NOx	220941	891.436	231279	933.146	233002	940.098	237018	956.302	239026	964.404
		20200203	CO	124401	501.923	130222	525.409	131192	529.323	133453	538.447	134584	543.008
GENERAL ELECTRIC STEAM TURBINE GENERATOR GLOBAL	SCHENECTADY	10200401	VOC	12	0.000	15	0.000	15	0.000	15	0.000	15	0.000
1 RIVER RD		10200401	VOC	10	0.000	11	0.000	12	0.000	12	0.000	12	0.000
SCHENECTADY, NY 12345		10200401	NOx	2074	0.000	2450	0.000	2513	0.000	2516	0.000	2517	0.000
		10200401	CO	221	0.000	261	0.000	267	0.000	268	0.000	268	0.000
		10200503	VOC	21	0.119	21	0.120	21	0.121	20	0.119	20	0.118
		10200503	NOx	2051	11.935	2069	12.042	2072	12.060	2048	11.916	2035	11.844
		10200503	CO	513	2.984	517	3.011	518	3.015	512	2.979	509	2.961
		10200504	VOC	7	0.000	7	0.000	7	0.000	7	0.000	7	0.000
		10200504	NOx	1692	0.000	1707	0.000	1710	0.000	1689	0.000	1679	0.000
		10200504	CO	180	0.000	182	0.000	182	0.000	180	0.000	179	0.000
		10200602	VOC	1849	0.000	1935	0.000	1950	0.000	1983	0.000	2000	0.000
		10200602	VOC	2401	0.000	2513	0.000	2532	0.000	2575	0.000	2597	0.000
		10200602	NOx	43646	0.000	45688	0.000	46029	0.000	46822	0.000	47219	0.000
		10200602	CO	36663	0.000	38378	0.000	38664	0.000	39330	0.000	39664	0.000
		10200603	VOC	123	0.205	129	0.215	130	0.217	132	0.220	133	0.222
		10200603	NOx	2240	3.733	2345	3.908	2362	3.937	2403	4.005	2423	4.039
		10200603	CO	1882	3.136	1970	3.283	1984	3.307	2019	3.364	2036	3.393
		10201401	VOC	319	6.644	334	6.955	336	7.007	342	7.128	345	7.188
		10201401	NOx	15946	332.208	16692	347.753	16816	350.343	17106	356.382	17251	359.401
		10201401	CO	3987	83.052	4173	86.938	4204	87.586	4277	89.095	4313	89.850
		20200102	VOC	181	0.000	183	0.000	183	0.000	181	0.000	180	0.000
		20200102	NOx	2223	0.000	2243	0.000	2246	0.000	2219	0.000	2206	0.000
		20200102	CO	479	0.000	483	0.000	484	0.000	478	0.000	475	0.000
		20200401	VOC	181	0.000	183	0.000	183	0.000	181	0.000	180	0.000
		20200401	VOC	178	0.000	180	0.000	180	0.000	178	0.000	177	0.000
		20200401	NOx	7096	0.000	7160	0.000	7170	0.000	7084	0.000	7041	0.000
		20200401	CO	1879	0.000	1896	0.000	1899	0.000	1876	0.000	1865	0.000
		30999999	VOC	1358	3.690	1636	4.445	1682	4.570	1773	4.819	1819	4.943

		39000689	VOC	357	0.595	374	0.623	376	0.627	383	0.638	386	0.644
		39000689	NOx	6490	10.817	6794	11.323	6844	11.407	6962	11.604	7021	11.702
		39000689	CO	5452	9.086	5707	9.511	5749	9.582	5848	9.747	5898	9.830
		39999994	VOC	120656	327.868	172845	469.687	181544	493.323	191973	521.665	197188	535.836
		39999994	VOC	134728	366.108	193004	524.466	202717	550.859	214363	582.507	220186	598.330
		39999994	NOx	326	0.709	467	1.015	491	1.066	519	1.128	533	1.158
		39999994	CO	84	0.183	120	0.262	126	0.275	134	0.291	137	0.298
		40200110	VOC	1715	4.660	2300	6.251	2398	6.516	2582	7.016	2674	7.267
		40201435	VOC	40879	111.084	40879	111.084	40879	111.084	42165	114.577	42807	116.324
		40202599	VOC	6849	18.610	9979	27.118	10501	28.535	11421	31.034	11880	32.283
		49099999	VOC	969	2.633	946	2.571	942	2.561	958	2.604	966	2.625
		49099999	VOC	1108	3.011	1082	2.940	1078	2.928	1096	2.977	1105	3.001
GE GLOBAL RESEARCH CENTER	SCHENECTADY	10300402	VOC	595	0.647	553	0.601	546	0.594	555	0.603	559	0.608
1 RESEARCH CIR		10300402	NOx	28959	31.478	26929	29.271	26591	28.903	26999	29.347	27204	29.569
NISKAYUNA, NY 12309		10300402	CO	2633	2.862	2448	2.661	2417	2.628	2454	2.668	2473	2.688
		10300602	VOC	1188	1.298	1199	1.310	1201	1.312	1221	1.333	1231	1.344
		10300602	VOC	1543	1.686	1557	1.701	1560	1.703	1585	1.731	1598	1.745
		10300602	NOx	28060	30.647	28314	30.924	28356	30.970	28822	31.479	29055	31.734
		10300602	CO	23570	25.743	23784	25.976	23819	26.015	24211	26.442	24406	26.656
		10300603	VOC	19	0.052	19	0.052	19	0.052	20	0.053	20	0.054
		10300603	VOC	25	0.067	25	0.068	25	0.068	25	0.069	26	0.070
		10300603	NOx	450	1.223	454	1.234	455	1.236	462	1.256	466	1.266
		10300603	CO	378	1.027	381	1.036	382	1.038	388	1.055	391	1.064
		20200102	VOC	28	6.931	28	6.994	28	7.004	28	6.920	28	6.878
		20200102	VOC	28	7.006	28	7.069	28	7.079	28	6.994	28	6.952
		20200102	NOx	343	85.819	346	86.591	347	86.720	343	85.682	341	85.163
		20200102	CO	74	18.487	75	18.653	75	18.681	74	18.458	73	18.346
		30101899	VOC	1741	6.801	2176	8.500	2248	8.783	2380	9.296	2446	9.553
		30101899	VOC	1683	6.574	2104	8.217	2174	8.491	2301	8.987	2364	9.235
		31306505	VOC	681	2.659	941	3.674	984	3.843	1064	4.156	1104	4.312
		40200110	VOC	7	0.025	9	0.034	9	0.035	10	0.038	10	0.040
		40400401	VOC	153	0.598	152	0.595	152	0.595	151	0.591	151	0.588
SI GROUP INC /ROTT JCT FAC	SCHENECTADY	10200502	NOx	524	23.272	529	23.482	530	23.517	523	23.235	520	23.094

1000 MAIN ST|ST RTE 5S		10200502	CO	131	5.818	132	5.870	132	5.879	131	5.809	130	5.774
ROTTERDAM JUNCTION, NY 12150		10200602	VOC	2695	7.944	2821	8.316	2842	8.378	2891	8.522	2916	8.595
		10200602	VOC	2075	6.118	2173	6.404	2189	6.452	2226	6.563	2245	6.619
		10200602	NOx	49001	144.442	51294	151.201	51676	152.327	52567	154.953	53012	156.266
		10200602	CO	41161	121.332	43087	127.009	43408	127.955	44156	130.160	44530	131.263
		10201301	VOC	60	0.000	68	0.000	69	0.000	70	0.000	71	0.000
		10201301	NOx	1385	0.000	1562	0.000	1592	0.000	1617	0.000	1629	0.000
		10201301	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		10500106	VOC	12	0.000	12	0.000	13	0.000	13	0.000	13	0.000
		10500106	NOx	216	0.000	226	0.000	228	0.000	232	0.000	234	0.000
		10500106	CO	181	0.000	190	0.000	191	0.000	195	0.000	196	0.000
		30101805	VOC	344140	1303.559	430124	1629.258	444455	1683.541	470430	1781.931	483417	1831.126
		30101805	VOC	83811	317.465	104751	396.785	108241	410.005	114567	433.966	117730	445.947
		30101805	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		30101899	VOC	82	0.311	102	0.388	106	0.401	112	0.425	115	0.436
		30101899	VOC	179	0.678	224	0.847	231	0.876	245	0.927	251	0.952
		30182002	VOC	103448	281.109	129094	350.799	133368	362.414	141360	384.130	145355	394.988
		30182002	VOC	14843	40.334	18523	50.334	19136	52.000	20283	55.116	20856	56.674
		30183001	VOC	12448	33.826	15534	42.212	16048	43.610	17010	46.223	17491	47.529
		30183001	VOC	15825	43.003	19748	53.664	20402	55.441	21625	58.763	22236	60.424
		30199999	VOC	25946	84.642	32378	105.626	33450	109.123	35455	115.662	36457	118.931
		30199999	VOC	12594	40.989	15716	51.150	16236	52.844	17209	56.010	17696	57.594
		39990003	VOC	185	0.482	200	0.523	203	0.529	209	0.546	212	0.554
		39990003	NOx	3361	8.767	3642	9.502	3689	9.624	3802	9.919	3859	10.067
		39990003	CO	2823	7.365	3060	7.981	3099	8.084	3194	8.332	3242	8.456
		39999994	VOC	137	0.372	196	0.533	206	0.560	218	0.592	224	0.608
		40799997	VOC	550	1.494	537	1.459	535	1.453	544	1.478	548	1.490
VON ROLL USA INC	SCHENECTAD Y	10200603	NOx	4990	8.774	5223	9.184	5262	9.253	5353	9.412	5398	9.492
200 VON ROLL DR		10200603	CO	4192	7.370	4388	7.715	4420	7.772	4497	7.906	4535	7.973
SCHENECTADY, NY 12306		10500105	NOx	164	0.000	165	0.000	166	0.000	164	0.000	163	0.000
		10500105	CO	41	0.000	41	0.000	41	0.000	41	0.000	41	0.000
		10500106	VOC	82	0.000	86	0.000	86	0.000	88	0.000	89	0.000
		10500106	NOx	1490	0.000	1560	0.000	1571	0.000	1598	0.000	1612	0.000

		10500106	CO	1252	0.000	1310	0.000	1320	0.000	1343	0.000	1354	0.000
		39990003	VOC	1	0.005	1	0.005	1	0.006	1	0.006	1	0.006
		39990003	NOx	19	0.091	21	0.099	21	0.100	21	0.103	22	0.105
		39990003	CO	16	0.077	17	0.083	18	0.084	18	0.087	18	0.088
		39999994	VOC	1570	6.040	2250	8.653	2363	9.088	2499	9.610	2567	9.872
		39999994	VOC	2693	10.359	3859	14.840	4053	15.587	4286	16.483	4402	16.931
		39999999	VOC	5524	21.194	7913	30.362	8311	31.890	8788	33.722	9027	34.638
		39999999	VOC	10445	40.103	14963	57.450	15716	60.341	16619	63.808	17070	65.541
		40201001	NOx	7080	20.012	7411	20.948	7466	21.104	7595	21.468	7660	21.650
		40201001	CO	5947	16.810	6225	17.596	6272	17.728	6380	18.033	6434	18.186
		40299995	VOC	110562	338.779	161104	493.649	169528	519.461	184372	564.945	191794	587.687
		40301021	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
COMPRESSOR STATION 249	SCHOHARIE	10500106	VOC	83	0.453	87	0.474	88	0.478	89	0.486	90	0.490
2840 US RTE 20		10500106	NOx	1515	8.234	1586	8.619	1598	8.683	1625	8.833	1639	8.908
CARLISLE, NY 12031		10500106	CO	1273	6.916	1332	7.240	1342	7.294	1365	7.420	1377	7.482
		20200202	VOC	27595	199.344	28886	208.671	29102	210.226	29603	213.849	29854	215.661
		20200202	NOx	162260	1176.449	169852	1231.496	171118	1240.671	174067	1262.055	175542	1272.748
		20200202	CO	150940	1089.777	158003	1140.768	159180	1149.266	161923	1169.076	163295	1178.980
		20200253	VOC	11	0.031	12	0.032	12	0.032	12	0.033	12	0.033
		20200253	VOC	11	0.031	12	0.032	12	0.032	12	0.033	12	0.033
		20200253	NOx	871	2.367	912	2.478	919	2.497	935	2.540	943	2.561
		20200253	CO	605	1.643	633	1.720	638	1.733	649	1.763	654	1.778
		40301098	VOC	1	0.004	2	0.004	2	0.005	2	0.005	2	0.005
		40799997	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		40799998	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
WYETH PHARMACEUTICALS	CLINTON	10200501	VOC	26	0.025	26	0.026	26	0.026	26	0.025	26	0.025
64 MAPLE ST		10200501	NOx	3106	3.038	3134	3.065	3138	3.070	3101	3.033	3082	3.015
ROUSES POINT, NY 12979		10200501	CO	647	0.633	653	0.639	654	0.640	646	0.632	642	0.628
		10200601	VOC	3212	7.332	3362	7.675	3387	7.732	3446	7.865	3475	7.932
		10200601	NOx	110960	253.278	116152	265.129	117017	267.104	119034	271.708	120043	274.010
		10200601	CO	49056	111.976	51351	117.215	51734	118.088	52626	120.124	53071	121.141
		20200102	VOC	45	1.013	45	1.022	46	1.024	45	1.012	45	1.006
		20200102	NOx	552	12.413	557	12.525	557	12.543	551	12.393	547	12.318

		20200102	CO	119	2.674	120	2.698	120	2.702	119	2.670	118	2.654
		30106002	VOC	1626	4.419	2242	6.092	2344	6.371	2511	6.822	2594	7.048
		30106004	VOC	19089	51.873	26314	71.505	27518	74.777	29469	80.079	30445	82.730
		30106004	VOC	18558	50.430	25582	69.516	26753	72.697	28649	77.852	29598	80.429
		30106008	VOC	14896	40.445	20533	55.752	21473	58.303	22995	62.437	23756	64.504
		30106008	NOx	531	0.000	732	0.000	765	0.000	820	0.000	847	0.000
		30106009	VOC	15304	41.587	21096	57.327	22062	59.950	23626	64.201	24408	66.326
		30106009	VOC	15504	42.131	21372	58.076	22350	60.733	23935	65.040	24727	67.193
		30106011	VOC	22099	60.053	30463	82.781	31857	86.569	34116	92.707	35246	95.776
		30106011	NOx	171	0.464	235	0.640	246	0.669	264	0.717	272	0.740
		30182001	VOC	2	0.020	2	0.025	2	0.026	2	0.028	2	0.029
		40708098	VOC	77	0.209	75	0.205	75	0.204	76	0.207	77	0.209
SARANAC POWER PARTNERS COGENERATION FAC	CLINTON	10200601	VOC	57	0.736	60	0.770	60	0.776	61	0.789	62	0.796
99 WEED ST EXT		10200601	VOC	44	0.567	46	0.593	46	0.598	47	0.608	48	0.613
PLATTSBURGH, NY 12901		10200601	NOx	254	3.268	266	3.421	268	3.446	272	3.506	275	3.536
		10200601	CO	57	0.731	59	0.765	60	0.771	61	0.784	61	0.791
		10201001	VOC	0	0.010	0	0.010	0	0.010	0	0.010	0	0.010
		10201001	NOx	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		10201001	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		20200102	VOC	38	0.643	38	0.649	38	0.650	38	0.642	38	0.638
		20200102	NOx	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		20200102	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		20200202	NOx	787	10.761	824	11.264	830	11.348	845	11.544	852	11.642
		20200202	CO	943	12.889	987	13.492	994	13.593	1012	13.827	1020	13.944
		20200203	VOC	81258	268.530	85061	281.095	85694	283.189	87171	288.070	87910	290.510
		20200203	NOx	475182	1269.758	497416	1329.170	501122	1339.072	509759	1362.153	514078	1373.694
		20200203	CO	7701	20.574	8061	21.537	8121	21.697	8261	22.071	8331	22.258
		20201002	VOC	4	0.692	3	0.652	3	0.645	3	0.649	3	0.651
		20201002	NOx	8	1.723	7	1.623	7	1.607	7	1.617	7	1.622
		20201002	CO	15	3.312	14	3.120	14	3.087	14	3.107	14	3.116
INTERNATIONAL PAPER TICONDEROGA MILL	ESSEX	10200401	VOC	9419	25.596	11130	30.244	11415	31.018	11428	31.053	11434	31.071
568 SHORE AIRPORT RD		10200401	VOC	10817	29.394	12781	34.731	13108	35.621	13123	35.661	13131	35.681
TICONDEROGA, NY 12883		10200401	NOx	880282	2392.071	1040120	2826.412	1066759	2898.802	1067964	2902.076	1068566	2903.713

		10200401	CO	412520	1120.978	487424	1324.520	499907	1358.444	500472	1359.978	500754	1360.745
		10500110	VOC	46	0.126	44	0.118	43	0.117	43	0.118	43	0.118
		10500110	NOx	2926	7.951	2756	7.489	2728	7.412	2744	7.458	2753	7.481
		10500110	CO	493	1.339	464	1.261	459	1.248	462	1.256	464	1.260
		20200102	VOC	657	1.785	663	1.801	664	1.804	656	1.782	652	1.772
		20200102	NOx	38330	104.158	38675	105.096	38733	105.252	38269	103.992	38037	103.361
		20200102	CO	1471	3.997	1484	4.033	1486	4.039	1469	3.991	1460	3.967
		30700105	VOC	87555	237.921	92106	250.289	92865	252.351	95811	260.355	97283	264.357
		30700106	VOC	10434	28.353	10976	29.827	11067	30.073	11418	31.027	11593	31.504
		30700106	NOx	29410	79.918	30939	84.073	31194	84.765	32183	87.454	32678	88.798
		30700106	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		30700110	VOC	93394	253.788	98249	266.981	99058	269.180	102200	277.718	103771	281.987
		30700110	NOx	563073	1530.090	592344	1609.630	597222	1622.887	616165	1674.362	625637	1700.099
		30700110	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		30700115	VOC	143665	390.394	151133	410.688	152378	414.071	157211	427.204	159628	433.771
		30700115	VOC	178387	484.747	187660	509.946	189206	514.146	195207	530.454	198208	538.608
		30700115	CO	316148	859.098	332583	903.757	335322	911.200	345958	940.102	351276	954.553
		30700121	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		30700121	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		30700122	VOC	124825	339.198	131314	356.831	132395	359.770	136595	371.181	138694	376.887
		30700199	VOC	123140	334.620	129541	352.014	130608	354.914	134751	366.171	136822	371.799
		30700199	VOC	170786	464.092	179664	488.218	181144	492.239	186889	507.852	189762	515.658
		30701399	VOC	194017	527.220	216028	587.033	219697	597.002	228709	621.492	233215	633.738
BORALEX NEW YORK LP	FRANKLIN	10100501	VOC	212	7.933	422	15.787	457	17.096	343	12.812	285	10.669
7019 ST RTE 374		10100501	VOC	211	7.894	420	15.710	455	17.013	341	12.749	284	10.617
CHATEAUGAY, NY 12920		10100501	NOx	4916	215.347	9783	428.555	10594	464.089	7939	347.781	6612	289.627
		10100501	CO	6390	294.200	12717	585.479	13771	634.025	10320	475.128	8594	395.680
		10100903	VOC	10447	31.576	17412	52.627	18573	56.136	19347	58.475	19734	59.644
		10100903	NOx	305760	924.150	509600	1540.251	543573	1642.934	566222	1711.390	577546	1745.617
		10100903	CO	425853	1287.130	709756	2145.216	757073	2288.231	788617	2383.573	804390	2431.245
		20200102	VOC	29	0.915	29	0.923	29	0.925	29	0.914	29	0.908
		20200102	NOx	934	32.684	942	32.978	944	33.027	932	32.632	927	32.434
		20200102	CO	314	10.967	317	11.066	317	11.083	313	10.950	312	10.883

		40701614	VOC	274	0.743	267	0.726	266	0.723	271	0.735	273	0.741
MILLIGAN & HIGGINS	FULTON	10200401	VOC	152	0.527	179	0.622	184	0.638	184	0.639	184	0.639
100 MAPLE AVE		10200401	NOx	25474	88.395	30099	104.445	30870	107.120	30905	107.241	30923	107.302
JOHNSTOWN, NY 12095		10200401	CO	2710	9.404	3202	11.111	3284	11.396	3288	11.409	3290	11.415
PEARL LEATHER FINISHERS INC	FULTON	39000689	NOx	1696	6.220	1776	6.511	1789	6.559	1820	6.673	1835	6.729
11-21 INDUSTRIAL PARK		39000689	CO	1425	5.225	1492	5.469	1503	5.510	1529	5.605	1542	5.652
JOHNSTOWN, NY 12095		40201122	VOC	79722	292.314	78151	286.554	77889	285.594	80333	294.554	81555	299.034
		40201122	VOC	67940	249.113	66601	244.205	66378	243.387	68461	251.022	69502	254.840
CALLAWAY GOLF BALL OPERATIONS INC	FULTON	10500106	NOx	270	1.038	283	1.087	285	1.095	290	1.114	292	1.123
133 CORPORATE DR|CROSSROADS INDUSTRIAL PARK		10500106	CO	227	0.872	237	0.913	239	0.920	243	0.936	245	0.944
JOHNSTOWN, NY 12095		40202220	VOC	56881	218.773	71258	274.068	73654	283.284	77906	299.640	80033	307.817
		40299995	VOC	6320	24.308	8477	32.603	8836	33.986	9515	36.597	9855	37.902
		40299995	VOC	6320	24.308	8477	32.603	8836	33.986	9515	36.597	9855	37.902
BALL METAL BEVERAGE CONTAINER CORP	SARATOGA	39000689	NOx	23886	64.908	25004	67.945	25190	68.451	25624	69.631	25841	70.221
11 ADAMS RD|CADY HILL INDUSTRIAL PARK		39000689	CO	20064	54.522	21003	57.074	21160	57.499	21524	58.490	21707	58.985
SARATOGA SPRINGS, NY 12866		39990003	NOx	113	0.307	122	0.332	124	0.336	128	0.347	130	0.352
		39990003	CO	95	0.257	103	0.279	104	0.283	107	0.291	109	0.296
		40200401	VOC	302372	821.663	405563	1102.073	422761	1148.807	455239	1237.062	471478	1281.190
		40200401	VOC	320406	870.669	429751	1167.803	447976	1217.325	482390	1310.844	499598	1357.603
		40200801	VOC	152477	414.340	204513	555.742	213186	579.309	229563	623.813	237752	646.065
		40200801	VOC	144626	393.005	193983	527.127	202209	549.480	217743	591.693	225510	612.799
QUADGRAPHICS	SARATOGA	10500106	VOC	93	0.000	98	0.000	98	0.000	100	0.000	101	0.000
GRANDE INDUSTRIAL PK - 56 DUPLAINVILLE RD		10500106	NOx	1695	0.000	1774	0.000	1788	0.000	1818	0.000	1834	0.000
SARATOGA SPRINGS, NY 12866		10500106	CO	1424	0.000	1490	0.000	1502	0.000	1527	0.000	1540	0.000
		39000689	VOC	839	2.214	878	2.317	885	2.335	900	2.375	908	2.395
		39000689	NOx	15255	40.250	15969	42.133	16088	42.447	16365	43.178	16504	43.544
		39000689	CO	12814	33.810	13414	35.392	13514	35.655	13747	36.270	13863	36.577
		40500411	VOC	92973	232.731	87237	218.372	86281	215.979	87498	219.025	88106	220.548
		40500511	VOC	5718	19.596	5365	18.387	5306	18.186	5381	18.442	5419	18.570
		40588801	VOC	137712	374.218	138087	375.238	138150	375.408	141350	384.102	142950	388.450
INTERNATIONAL PAPER HUDSON RIVER MILLS DEVELOPMENT	SARATOGA	10200401	VOC	70	0.000	82	0.000	84	0.000	84	0.000	84	0.000
15 PINE ST		10200401	VOC	89	0.000	105	0.000	107	0.000	108	0.000	108	0.000

CORINTH, NY 12822		10200401	NOx	9865	0.000	11656	0.000	11955	0.000	11968	0.000	11975	0.000
		10200401	CO	1583	0.000	1870	0.000	1918	0.000	1921	0.000	1922	0.000
		10200601	VOC	5288	17.819	5536	18.652	5577	18.791	5673	19.115	5721	19.277
		10200601	VOC	6867	23.138	7188	24.221	7242	24.401	7366	24.822	7429	25.032
		10200601	NOx	156064	525.868	163366	550.473	164583	554.574	167420	564.133	168839	568.913
		10200601	CO	104874	353.380	109781	369.915	110599	372.670	112505	379.094	113458	382.306
		10500110	NOx	61	0.000	57	0.000	57	0.000	57	0.000	57	0.000
		10500110	CO	10	0.000	10	0.000	10	0.000	10	0.000	10	0.000
		20200102	VOC	20	0.388	20	0.391	20	0.392	20	0.387	20	0.385
		20200102	NOx	247	4.749	249	4.792	250	4.799	247	4.742	245	4.713
		20200102	CO	53	1.023	54	1.032	54	1.034	53	1.021	53	1.015
		30701399	VOC	16058	54.108	17880	60.247	18183	61.270	18929	63.784	19302	65.040
INDECK CORINTH ENERGY CENTER	SARATOGA	10500206	VOC	16	0.032	16	0.032	16	0.032	16	0.033	16	0.033
24 WHITE ST		10500206	NOx	300	0.600	303	0.605	303	0.606	308	0.616	311	0.621
CORINTH, NY 12822		10500206	CO	60	0.120	61	0.121	61	0.121	62	0.123	62	0.124
		20200103	VOC	48	0.000	48	0.000	48	0.000	48	0.000	48	0.000
		20200103	VOC	48	0.000	48	0.000	49	0.000	48	0.000	48	0.000
		20200103	NOx	4184	0.000	4222	0.000	4228	0.000	4177	0.000	4152	0.000
		20200103	CO	2627	0.000	2651	0.000	2655	0.000	2623	0.000	2607	0.000
		20200203	VOC	2571	7.764	2691	8.128	2711	8.188	2758	8.329	2781	8.400
		20200203	VOC	2562	7.739	2682	8.101	2702	8.162	2749	8.302	2772	8.373
		20200203	NOx	181256	551.048	189737	576.832	191151	581.129	194445	591.146	196093	596.154
		20200203	CO	103317	315.206	108151	329.954	108957	332.413	110835	338.142	111774	341.007
SOUTH GLENS FALLS ENERGY LLC	SARATOGA	10200602	NOx	22683	51.516	23744	53.926	23921	54.328	24334	55.264	24540	55.732
1 HUDSON ST		10200602	CO	13945	31.671	14597	33.153	14706	33.400	14960	33.975	15086	34.263
SOUTH GLENS FALLS, NY 12803		10500105	NOx	17	0.000	17	0.000	17	0.000	17	0.000	17	0.000
		10500105	CO	4	0.000	4	0.000	4	0.000	4	0.000	4	0.000
		10500106	NOx	17	0.000	18	0.000	18	0.000	18	0.000	18	0.000
		10500106	CO	4	0.000	4	0.000	4	0.000	4	0.000	4	0.000
		20200101	NOx	2536	0.000	2559	0.000	2563	0.000	2532	0.000	2517	0.000
		20200101	CO	77	0.000	78	0.000	78	0.000	77	0.000	76	0.000
		20200102	VOC	366	1.885	369	1.902	370	1.905	365	1.882	363	1.871
		20200102	NOx	6062	35.199	6117	35.516	6126	35.568	6052	35.142	6016	34.929

		20200102	CO	986	5.026	995	5.071	996	5.079	984	5.018	978	4.988
		20200201	VOC	1887	8.892	1975	9.308	1990	9.377	2024	9.539	2041	9.620
		20200201	NOx	104868	494.172	109775	517.295	110593	521.149	112499	530.132	113452	534.623
		20200201	CO	11730	55.276	12279	57.862	12370	58.293	12584	59.298	12690	59.800
		20200203	VOC	1380	9.890	1445	10.353	1455	10.430	1480	10.610	1493	10.700
		20200203	NOx	69438	497.639	72687	520.924	73229	524.805	74491	533.850	75122	538.373
		20200203	CO	7880	56.473	8249	59.116	8310	59.556	8453	60.583	8525	61.096
		40301020	VOC	11	0.029	12	0.032	12	0.033	13	0.034	13	0.035
MOMENTIVE PERFORMANCE MATERIALS	SARATOGA	10200401	VOC	120	0.000	142	0.000	146	0.000	146	0.000	146	0.000
260 HUDSON RIVER RD		10200401	VOC	26	0.000	31	0.000	31	0.000	31	0.000	31	0.000
WATERFORD, NY 12188		10200401	VOC	94	0.000	112	0.000	114	0.000	115	0.000	115	0.000
		10200401	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		10200401	NOx	20205	0.000	23874	0.000	24486	0.000	24513	0.000	24527	0.000
		10200401	CO	2150	0.000	2540	0.000	2605	0.000	2608	0.000	2609	0.000
		10200601	VOC	8732	23.727	9140	24.837	9208	25.022	9367	25.454	9446	25.669
		10200601	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		10200601	VOC	11338	30.810	11869	32.252	11957	32.492	12163	33.052	12266	33.332
		10200601	VOC	2607	7.083	2729	7.415	2749	7.470	2796	7.599	2820	7.663
		10200601	NOx	391685	1064.361	410012	1114.164	413067	1122.464	420186	1141.811	423746	1151.485
		10200601	CO	173166	470.560	181269	492.578	182619	496.247	185767	504.801	187341	509.077
		10200602	VOC	515	1.399	539	1.464	543	1.475	552	1.501	557	1.513
		10200602	VOC	118	0.322	124	0.337	125	0.339	127	0.345	128	0.348
		10200602	VOC	396	1.077	415	1.128	418	1.136	425	1.156	429	1.165
		10200602	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		10200602	NOx	9360	25.435	9798	26.625	9871	26.823	10041	27.286	10126	27.517
		10200602	CO	7862	21.365	8230	22.365	8292	22.532	8435	22.920	8506	23.114
		10200603	VOC	913	2.481	956	2.597	963	2.616	979	2.662	988	2.684
		10200603	NOx	16600	45.109	17377	47.219	17506	47.571	17808	48.391	17959	48.801
		10200603	CO	13944	37.891	14596	39.664	14705	39.960	14959	40.649	15085	40.993
		30101847	VOC	54029	146.818	67528	183.501	69778	189.615	73856	200.696	75895	206.237
		30101847	VOC	28318	76.951	35393	96.178	36573	99.382	38710	105.190	39779	108.094
		30101847	VOC	25711	69.867	32135	87.323	33206	90.233	35146	95.506	36117	98.143
		30101847	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000

		30102630	VOC	79638	216.408	99536	270.478	102852	279.490	108863	295.824	111869	303.991
		30102630	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		30102630	VOC	248770	676.005	310926	844.908	321285	873.058	340062	924.082	349450	949.594
		30102630	VOC	169132	459.598	211390	574.430	218433	593.569	231199	628.258	237582	645.603
		30107002	VOC	27765	75.448	34702	94.299	35858	97.441	37954	103.136	39002	105.983
		30107002	VOC	504	1.370	630	1.712	651	1.769	689	1.872	708	1.924
		30107002	VOC	27261	74.079	34072	92.588	35207	95.672	37265	101.264	38294	104.059
		30107002	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		30107002	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		50300701	VOC	1993	5.416	2602	7.069	2703	7.345	2894	7.864	2989	8.124
		50300701	VOC	128	0.348	167	0.454	174	0.472	186	0.505	192	0.522
		50300701	VOC	1865	5.068	2434	6.615	2529	6.873	2708	7.359	2797	7.602
		50300701	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		50300701	NOx	69954	190.092	91313	248.133	94873	257.806	101577	276.026	104930	285.135
		50300701	CO	4318	11.734	5636	15.316	5856	15.913	6270	17.038	6477	17.600
FINCH PAPER LLC	WARREN	10200402	NOx	161007	845.454	190242	998.968	195114	1024.553	195335	1025.710	195445	1026.289
1 GLEN ST		10200402	CO	13756	66.465	16253	78.533	16669	80.545	16688	80.636	16698	80.681
GLENS FALLS, NY 12801		10200602	VOC	19418	51.139	20326	53.532	20478	53.930	20831	54.860	21007	55.325
		10200602	VOC	14954	39.382	15653	41.225	15770	41.532	16042	42.248	16178	42.605
		10200602	NOx	667635	1736.284	698874	1817.526	704081	1831.066	716216	1862.627	722284	1878.408
		10200602	CO	296562	781.028	310438	817.573	312751	823.664	318142	837.861	320837	844.959
		10200901	VOC	2677	0.000	3019	0.000	3076	0.000	3125	0.000	3149	0.000
		10200901	NOx	44077	0.000	49716	0.000	50655	0.000	51457	0.000	51858	0.000
		10200901	CO	303362	0.000	342170	0.000	348638	0.000	354157	0.000	356916	0.000
		40799997	VOC	26	0.071	25	0.069	25	0.069	26	0.070	26	0.070
LEHIGH NORTHEAST CEMENT COMPANY	WARREN	10200501	VOC	0	0.001	0	0.001	0	0.001	0	0.001	0	0.001
313 WARREN ST		10200501	VOC	0	0.001	0	0.001	0	0.001	0	0.001	0	0.001
GLENS FALLS, NY 12801		10200501	NOx	50	0.136	51	0.138	51	0.138	50	0.136	50	0.135
		10200501	CO	10	0.028	11	0.029	11	0.029	10	0.028	10	0.028
		10500106	VOC	8	0.381	8	0.399	8	0.402	8	0.409	8	0.413
		10500106	NOx	139	6.936	145	7.260	146	7.314	149	7.440	150	7.503
		10500106	CO	117	5.826	122	6.098	123	6.144	125	6.250	126	6.303
		20100202	NOx	2386	59.640	2611	65.284	2649	66.225	2927	73.165	3065	76.635

		20100202	CO	335	8.379	367	9.172	372	9.304	411	10.279	431	10.767
		20200202	VOC	123	5.104	128	5.343	129	5.383	131	5.476	133	5.522
		20200202	NOx	1501	62.533	1571	65.459	1583	65.947	1610	67.084	1624	67.652
		20200202	CO	323	13.471	338	14.101	341	14.206	347	14.451	350	14.573
		30500606	VOC	15781	52.603	18927	63.090	19451	64.838	20396	67.987	20869	69.562
		30500606	NOx	1489172	4963.907	1786056	5953.521	1835537	6118.457	1924685	6415.616	1969259	6564.196
		30500606	CO	2029025	6763.417	2433536	8111.785	2500954	8336.513	2622419	8741.398	2683152	8943.841
		39999994	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		39999995	VOC	2	0.005	3	0.008	3	0.008	3	0.009	3	0.009
		40100398	VOC	26	0.071	34	0.091	35	0.095	37	0.100	38	0.102
		40799997	VOC	47	0.127	46	0.124	45	0.123	46	0.125	47	0.127
NATIVE TEXTILES INC	WARREN	10200402	NOx	14795	45.523	17481	53.789	17929	55.167	17949	55.229	17960	55.260
211 WARREN ST		10200402	CO	1345	4.138	1589	4.890	1630	5.015	1632	5.021	1633	5.024
GLENS FALLS, NY 12801		10200602	VOC	402	1.235	420	1.293	423	1.303	431	1.325	434	1.337
		10200602	VOC	309	0.951	324	0.996	326	1.003	332	1.021	335	1.029
		10200602	NOx	7300	22.462	7642	23.513	7698	23.688	7831	24.096	7898	24.300
		10200602	CO	6132	18.868	6419	19.751	6467	19.898	6578	20.241	6634	20.412
		10500106	NOx	1600	3.200	1675	3.350	1687	3.375	1716	3.433	1731	3.462
		10500106	CO	1344	2.688	1407	2.814	1417	2.835	1442	2.884	1454	2.908
		39000689	VOC	66	0.213	69	0.223	70	0.225	71	0.229	71	0.231
		39000689	NOx	1200	3.877	1256	4.058	1266	4.089	1287	4.159	1298	4.194
		39000689	CO	1008	3.257	1055	3.409	1063	3.434	1081	3.494	1091	3.523
		40201201	VOC	1347	5.251	1320	5.148	1316	5.130	1357	5.291	1378	5.372
		40201201	VOC	1199	4.674	1175	4.582	1171	4.567	1208	4.710	1227	4.782
		40206031	VOC	13832	53.921	13559	52.859	13514	52.682	13938	54.335	14150	55.161
		40206034	VOC	524	2.043	514	2.002	512	1.996	528	2.058	536	2.090
PREGIS INNOVATIVE PACKAGING INC	WARREN	10500106	VOC	64	0.000	67	0.000	68	0.000	69	0.000	69	0.000
18 PECK AVE		10500106	NOx	1168	0.000	1223	0.000	1232	0.000	1253	0.000	1264	0.000
GLENS FALLS, NY 12801		10500106	CO	981	0.000	1027	0.000	1035	0.000	1053	0.000	1061	0.000
		30801002	VOC	21840	60.667	27360	76.000	28280	78.556	29913	83.091	30729	85.359
		30899999	VOC	30360	82.500	38034	103.352	39312	106.827	41582	112.995	42717	116.079
		39000689	VOC	250	0.651	261	0.682	263	0.687	268	0.698	270	0.704
		39000689	NOx	4538	11.838	4750	12.392	4786	12.484	4868	12.700	4909	12.807

		39000689	CO	3812	9.944	3990	10.409	4020	10.487	4089	10.668	4124	10.758
HOLLINGSWORTH & VOSE-EASTON MILL	WASHINGTON	10200402	VOC	245	0.000	289	0.000	297	0.000	297	0.000	297	0.000
CO RT 113		10200402	NOx	48070	0.000	56798	0.000	58253	0.000	58319	0.000	58352	0.000
EASTON, NY 12834		10200402	CO	4370	0.000	5163	0.000	5296	0.000	5302	0.000	5305	0.000
		10200602	VOC	631	3.595	661	3.763	666	3.791	677	3.856	683	3.889
		10200602	VOC	820	4.668	858	4.886	864	4.923	879	5.008	887	5.050
		10200602	NOx	14900	84.873	15597	88.845	15713	89.507	15984	91.049	16120	91.821
		10200602	CO	12516	71.294	13102	74.630	13199	75.186	13427	76.481	13540	77.129
		20200102	VOC	5	0.017	5	0.017	5	0.017	5	0.017	5	0.017
		20200102	VOC	5	0.017	5	0.017	5	0.017	5	0.017	5	0.017
		20200102	NOx	62	0.211	62	0.213	62	0.214	62	0.211	61	0.210
		20200102	CO	13	0.046	13	0.046	13	0.046	13	0.045	13	0.045
		20200202	NOx	6	0.118	6	0.124	6	0.125	6	0.127	6	0.128
		20200202	CO	1	0.017	1	0.017	1	0.018	1	0.018	1	0.018
		30799999	VOC	48	0.164	52	0.179	53	0.182	55	0.189	56	0.193
		39000689	NOx	2100	7.192	2198	7.528	2215	7.584	2253	7.715	2272	7.780
		39000689	CO	1764	6.041	1847	6.324	1860	6.371	1892	6.481	1908	6.536
		40301099	VOC	2000	5.435	2242	6.093	2283	6.202	2363	6.422	2404	6.532
NYS GREAT MEADOW CORRECTIONAL FACILITY	WASHINGTON	10300401	VOC	1715	2.073	1594	1.927	1574	1.903	1599	1.932	1611	1.947
ST RTE 22 EAST OF US RTE 4		10300401	NOx	71315	86.204	66315	80.161	65482	79.154	66488	80.370	66991	80.978
COMSTOCK, NY 12821		10300401	CO	7587	9.171	7055	8.528	6966	8.421	7073	8.550	7127	8.615
		10500205	VOC	25	0.000	27	0.000	27	0.000	27	0.000	27	0.000
		10500205	NOx	648	0.000	689	0.000	696	0.000	702	0.000	705	0.000
		10500205	CO	180	0.000	191	0.000	193	0.000	195	0.000	196	0.000
		10500210	VOC	2	0.000	2	0.000	2	0.000	2	0.000	2	0.000
		10500210	NOx	72	0.000	75	0.000	76	0.000	77	0.000	77	0.000
		10500210	CO	10	0.000	10	0.000	10	0.000	10	0.000	10	0.000
		20100101	VOC	0	0.021	1	0.041	1	0.045	0	0.033	0	0.028
		20100101	VOC	0	0.015	0	0.029	0	0.031	0	0.023	0	0.020
		20100101	NOx	607	44.492	1207	88.542	1308	95.884	980	71.854	816	59.839
		20100101	CO	2	0.167	5	0.332	5	0.360	4	0.270	3	0.225
		30100908	VOC	1559	5.996	1949	7.494	2013	7.744	2131	8.197	2190	8.423
IRVING TISSUE INC FT EDWARD OPERATIONS	WASHINGTON	10200501	VOC	5	0.000	5	0.000	5	0.000	5	0.000	5	0.000

1 EDDY ST		10200501	VOC	7	0.000	7	0.000	7	0.000	7	0.000	7	0.000
FORT EDWARD, NY 12828		10200501	NOx	806	0.000	814	0.000	815	0.000	805	0.000	800	0.000
		10200501	CO	168	0.000	170	0.000	170	0.000	168	0.000	167	0.000
		10200601	VOC	2585	6.541	2706	6.847	2727	6.898	2774	7.017	2797	7.077
		10200601	VOC	3357	8.494	3514	8.892	3540	8.958	3601	9.112	3632	9.189
		10200601	NOx	115976	293.433	121403	307.163	122307	309.451	124415	314.785	125469	317.452
		10200601	CO	51274	129.728	53673	135.798	54073	136.810	55005	139.168	55471	140.347
		30790003	NOx	10920	27.629	10535	26.656	10471	26.494	10545	26.681	10582	26.775
		30790003	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
PLIANT SOLUTIONS CORPORATION	WASHINGTON	10200603	VOC	202	0.550	212	0.575	213	0.580	217	0.590	219	0.595
1 MILL ST		10200603	NOx	3677	9.992	3849	10.459	3878	10.537	3944	10.719	3978	10.810
FORT EDWARD, NY 12828		10200603	CO	3089	8.393	3233	8.786	3257	8.851	3313	9.004	3341	9.080
		39000689	VOC	407	1.629	426	1.705	429	1.718	437	1.747	441	1.762
		39000689	NOx	7404	29.616	7751	31.002	7808	31.233	7943	31.771	8010	32.041
		39000689	CO	6219	24.878	6510	26.042	6559	26.236	6672	26.688	6729	26.914
		40200710	VOC	9896	38.324	13273	51.403	13836	53.583	14899	57.699	15430	59.757
		40200710	VOC	1030	4.770	1382	6.397	1440	6.669	1551	7.181	1606	7.437
		40201330	VOC	110	0.239	123	0.266	125	0.270	130	0.281	132	0.287
		40299995	VOC	15750	62.273	21125	83.525	22021	87.067	23713	93.756	24558	97.100
		40500511	VOC	49575	172.368	46516	161.734	46007	159.961	46655	162.217	46980	163.345
MANCHESTER WOOD INC	WASHINGTON	10200501	VOC	3	0.005	3	0.005	3	0.005	3	0.005	3	0.005
NORTH STREET		10200501	NOx	412	0.643	415	0.649	416	0.650	411	0.642	408	0.638
GRANVILLE, NY 12832		10200501	CO	86	0.134	87	0.135	87	0.135	86	0.134	85	0.133
		10500110	NOx	70	0.000	66	0.000	66	0.000	66	0.000	66	0.000
		10500110	CO	12	0.000	11	0.000	11	0.000	11	0.000	11	0.000
		10500209	VOC	7	0.000	7	0.000	7	0.000	7	0.000	7	0.000
		10500209	NOx	4	0.000	4	0.000	4	0.000	4	0.000	4	0.000
		10500209	CO	600	0.000	597	0.000	597	0.000	597	0.000	597	0.000
		40299995	VOC	114449	7065.758	153507	9477.093	160017	9878.982	172310	10637.915	178456	11017.382
		40299995	VOC	96014	6023.891	128781	8079.668	134242	8422.297	144555	9069.322	149711	9392.836
HOLLINGSWORTH & VOSE GREENWICH MILL	WASHINGTON	10200401	VOC	109	0.257	129	0.303	132	0.311	132	0.312	133	0.312
ST RTE 29 - E SIDE		10200401	VOC	139	0.327	164	0.387	169	0.397	169	0.397	169	0.397
CENTER FALLS, NY 12834		10200401	NOx	23359	54.940	27600	64.916	28307	66.579	28339	66.654	28355	66.691

		10200401	CO	2485	5.845	2936	6.906	3011	7.083	3015	7.091	3017	7.095
		20200102	VOC	5	1.220	5	1.231	5	1.233	5	1.218	5	1.211
		20200102	VOC	5	1.233	5	1.244	5	1.246	5	1.231	5	1.224
		20200102	NOx	60	15.104	61	15.240	61	15.263	60	15.080	60	14.989
		20200102	CO	13	3.254	13	3.283	13	3.288	13	3.249	13	3.229
		20201001	VOC	2	0.173	2	0.163	2	0.161	2	0.162	2	0.163
		20201001	NOx	3	0.290	3	0.273	3	0.270	3	0.272	3	0.272
		20201001	CO	3	0.269	3	0.253	3	0.251	3	0.252	3	0.253
		39001089	VOC	34	0.115	32	0.108	31	0.107	32	0.108	32	0.108
		39001089	NOx	1568	5.370	1477	5.058	1462	5.006	1471	5.037	1475	5.052
		39001089	CO	213	0.729	200	0.686	198	0.679	200	0.684	200	0.686
		40701698	VOC	1000	2.717	976	2.653	973	2.643	989	2.687	997	2.709
WHEELABRATOR HUDSON FALLS	WASHINGTO N	10300603	VOC	5	0.000	5	0.000	5	0.000	5	0.000	5	0.000
93 RIVER ST		10300603	NOx	84	0.000	85	0.000	85	0.000	86	0.000	87	0.000
HUDSON FALLS, NY 12839-1354		10300603	CO	71	0.000	71	0.000	71	0.000	72	0.000	73	0.000
		50300112	VOC	655	1.925	855	2.512	888	2.610	951	2.795	982	2.887
		50300112	NOx	457540	1344.914	597239	1755.553	620522	1823.993	664375	1952.896	686302	2017.348
		50300112	CO	41595	122.265	54294	159.596	56411	165.818	60398	177.536	62391	183.395
COMMONWEALTH PLYWOOD INC	WASHINGTO N	10200902	VOC	450	3.750	508	4.230	517	4.310	525	4.378	529	4.412
10068 US RTE 4		10200902	NOx	5625	46.875	6345	52.872	6465	53.871	6567	54.724	6618	55.150
WHITEHALL, NY 12887		10200902	CO	51000	425.000	57524	479.369	58612	488.430	59540	496.163	60003	500.029
		10201002	NOx	2461	20.512	2318	19.320	2295	19.121	2309	19.240	2316	19.299
		10201002	CO	415	3.455	390	3.254	386	3.220	389	3.240	390	3.250
		30700718	VOC	13240	110.333	14561	121.342	14781	123.176	15201	126.679	15412	128.430
		30700718	NOx	1960	16.333	2156	17.963	2188	18.235	2250	18.753	2281	19.012
		30700718	CO	37000	308.333	40692	339.097	41307	344.224	42481	354.012	43069	358.906
		30700727	VOC	3840	32.000	4223	35.193	4287	35.725	4409	36.741	4470	37.249
		31401503	VOC	104	0.867	116	0.970	118	0.987	124	1.030	126	1.051
		31401503	VOC	52	0.433	58	0.485	59	0.494	62	0.515	63	0.526
UNION TOOLS	HERKIMER	10200603	VOC	140	0.078	147	0.081	148	0.082	150	0.083	152	0.084
4167 ACME RD		10200603	NOx	2547	1.415	2666	1.481	2686	1.492	2732	1.518	2755	1.531
FRANKFORT, NY 13340		10200603	CO	2139	1.189	2240	1.244	2256	1.253	2295	1.275	2315	1.286
		30404901	VOC	174	0.696	203	0.813	208	0.832	220	0.879	226	0.902

		39000689	NOx	4810	19.240	5035	20.140	5073	20.290	5160	20.640	5204	20.815
		39000689	CO	4040	16.162	4229	16.918	4261	17.044	4334	17.338	4371	17.485
		39999994	VOC	38595	154.380	55289	221.157	58072	232.286	61408	245.631	63076	252.304
		40299995	VOC	131295	525.180	176102	704.409	183570	734.280	197672	790.689	204724	818.894
		40299995	VOC	123515	494.060	165667	662.668	172692	690.769	185959	743.836	192592	770.370
DOMINION TRANSMISSION INC - UTICA STATION	HERKIMER	10300603	VOC	243	7.959	245	8.031	246	8.043	250	8.175	252	8.241
HIGBY RD		10300603	VOC	243	7.958	245	8.030	245	8.042	249	8.174	251	8.240
FRANKFORT, NY 13340		10300603	NOx	7566	260.169	7634	262.521	7646	262.914	7772	267.235	7834	269.396
		10300603	CO	1229	30.589	1241	30.866	1242	30.912	1263	31.420	1273	31.674
		10500206	VOC	334	0.909	337	0.917	338	0.918	344	0.933	346	0.941
		10500206	NOx	6310	17.147	6367	17.302	6377	17.328	6481	17.612	6534	17.755
		10500206	CO	1262	3.429	1273	3.460	1275	3.466	1296	3.522	1307	3.551
		20100202	NOx	118	8.253	129	9.034	131	9.164	145	10.125	151	10.605
		20100202	CO	104	7.287	114	7.977	116	8.092	128	8.940	134	9.364
		20200202	VOC	0	0.012	0	0.013	0	0.013	0	0.013	0	0.013
		20200202	NOx	9	0.304	9	0.319	9	0.321	9	0.326	9	0.329
		20200202	CO	1	0.043	1	0.045	1	0.045	1	0.046	1	0.046
		20300201	VOC	7032	85.167	7095	85.937	7106	86.066	7223	87.480	7281	88.188
		20300201	NOx	33017	585.038	33316	590.328	33366	591.210	33914	600.928	34188	605.788
		20300201	CO	17797	218.312	17958	220.286	17985	220.615	18280	224.242	18428	226.055
		31088801	VOC	56239	152.824	62280	169.240	63287	171.976	65903	179.084	67211	182.638
		40714698	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
REMINGTON STEAM PLANT	HERKIMER	10100602	VOC	68	0.105	74	0.115	76	0.117	83	0.129	87	0.135
11 REMINGTON AVE		10100602	VOC	52	0.081	57	0.089	58	0.090	64	0.100	67	0.104
ILION, NY 13357		10100602	NOx	22040	34.146	24126	37.378	24473	37.917	27038	41.890	28321	43.877
		10100602	CO	1004	1.555	1099	1.703	1115	1.727	1232	1.908	1290	1.999
		20200103	NOx	231	231.000	233	233.080	233	233.427	231	230.632	229	229.234
		20200103	CO	34	34.000	34	34.306	34	34.357	34	33.946	34	33.740
		20200203	VOC	415	5.032	434	5.267	438	5.307	445	5.398	449	5.444
		20200203	NOx	66996	805.574	70131	843.267	70653	849.550	71871	864.193	72480	871.514
		20200203	CO	25894	295.210	27106	309.024	27308	311.326	27778	316.692	28014	319.375
TGP COMPRESSOR STATION 245	HERKIMER	10500106	VOC	8	0.042	8	0.044	8	0.045	8	0.046	8	0.046
457 BURROWS RD		10500106	NOx	142	0.772	149	0.808	150	0.814	152	0.828	154	0.835

WEST WINFIELD, NY 13491		10500106	CO	119	0.648	125	0.679	126	0.684	128	0.695	129	0.701
		20100202	VOC	160	0.533	175	0.584	178	0.592	196	0.654	206	0.685
		20100202	NOx	5300	17.667	5802	19.339	5885	19.617	6502	21.673	6810	22.701
		20100202	CO	29560	98.533	32357	107.858	32824	109.412	36264	120.879	37984	126.612
		20200202	VOC	30580	0.000	32011	0.000	32249	0.000	32805	0.000	33083	0.000
		20200202	NOx	575220	0.000	602135	0.000	606621	0.000	617077	0.000	622305	0.000
		20200202	CO	388180	0.000	406343	0.000	409370	0.000	416426	0.000	419954	0.000
		40400301	VOC	5	0.014	6	0.016	6	0.016	6	0.017	6	0.017
		40799997	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
KNOWLTON SPECIALTY PAPERS	JEFFERSON	10200501	VOC	37	1.843	37	1.860	37	1.862	37	1.840	37	1.829
213 FACTORY ST		10200501	NOx	4423	221.160	4463	223.152	4470	223.484	4416	220.808	4389	219.469
WATERTOWN, NY 13601		10200501	CO	922	46.075	930	46.490	931	46.559	920	46.002	914	45.723
		10200602	VOC	623	1.112	652	1.164	657	1.172	668	1.193	674	1.203
		10200602	VOC	143	0.256	150	0.268	151	0.270	154	0.274	155	0.277
		10200602	NOx	11320	20.214	11850	21.160	11938	21.318	12144	21.685	12247	21.869
		10200602	CO	9509	16.980	9954	17.775	10028	17.907	10201	18.216	10287	18.370
		30701399	VOC	6559	17.823	7303	19.845	7427	20.182	7732	21.010	7884	21.424
		30799998	VOC	180466	832.920	196884	908.697	199621	921.327	207581	958.068	211562	976.439
BLACK RIVER GENERATION LLC	JEFFERSON	10100217	VOC	8080	23.356	9086	26.262	9253	26.746	9442	27.292	9536	27.564
SECOND ST WEST & ONEIDA AVE		10100217	NOx	518793	1494.589	583332	1680.518	594088	1711.506	606208	1746.423	612269	1763.882
FORT DRUM, NY 13602		10100217	CO	575991	1665.864	647645	1873.100	659587	1907.639	673044	1946.558	679772	1966.018
		10100501	VOC	9	0.076	17	0.151	18	0.163	14	0.122	12	0.102
		10100501	VOC	11	0.100	23	0.199	24	0.215	18	0.161	15	0.134
		10100501	NOx	1358	11.972	2702	23.826	2926	25.801	2193	19.335	1826	16.102
		10100501	CO	283	2.494	563	4.964	610	5.375	457	4.028	380	3.355
		10100801	VOC	3098	10.317	3768	12.549	3880	12.922	3843	12.799	3825	12.738
		10100801	NOx	165171	550.058	200920	669.112	206879	688.954	204923	682.440	203945	679.183
		10100801	CO	179346	597.264	218163	726.535	224633	748.080	222509	741.007	221447	737.471
		10100903	VOC	261	5.064	435	8.441	464	9.003	483	9.378	493	9.566
		10100903	VOC	301	5.843	502	9.739	535	10.388	557	10.821	568	11.037
		10100903	NOx	931	18.076	1552	30.126	1655	32.135	1724	33.474	1759	34.143
		10100903	CO	1094	21.240	1823	35.401	1945	37.761	2026	39.334	2066	40.121
		10300603	VOC	11	0.000	11	0.000	11	0.000	11	0.000	11	0.000

		10300603	NOx	195	0.000	197	0.000	197	0.000	200	0.000	202	0.000
		10300603	CO	164	0.000	165	0.000	166	0.000	168	0.000	170	0.000
		20200102	NOx	3056	70.109	3083	70.740	3088	70.846	3051	69.997	3033	69.573
		20200102	CO	658	15.103	664	15.239	665	15.262	657	15.079	653	14.987
		40301021	VOC	92	0.250	103	0.280	105	0.285	109	0.295	111	0.300
DANC SOLID WASTE MANAGEMENT FACILITY	JEFFERSON	10200501	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
23400 ST RTE 177		10200501	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
RODMAN, NY 13682		10200501	NOx	10	0.000	10	0.000	10	0.000	10	0.000	10	0.000
		10200501	CO	3	0.000	3	0.000	3	0.000	2	0.000	2	0.000
		10500110	NOx	129	0.000	121	0.000	120	0.000	121	0.000	121	0.000
		10500110	CO	22	0.000	20	0.000	20	0.000	20	0.000	20	0.000
		20200102	VOC	112	2.146	113	2.165	113	2.169	111	2.143	111	2.130
		20200102	VOC	110	2.123	111	2.142	112	2.146	110	2.120	110	2.107
		20200102	NOx	1367	26.290	1379	26.527	1381	26.567	1365	26.248	1357	26.089
		20200102	CO	295	5.663	297	5.714	298	5.723	294	5.654	292	5.620
		20200301	VOC	37	0.710	37	0.710	37	0.710	37	0.714	37	0.715
		20200301	NOx	51	0.986	51	0.985	51	0.985	51	0.990	52	0.993
		20200301	CO	1975	37.981	1975	37.973	1975	37.972	1985	38.164	1990	38.260
		30502021	VOC	90	2.258	105	2.620	107	2.680	112	2.804	115	2.866
		30502021	NOx	1119	27.978	1299	32.470	1329	33.218	1390	34.750	1421	35.516
		30502021	CO	242	6.048	281	7.018	287	7.180	300	7.511	307	7.677
		50100402	VOC	2348	6.381	2481	6.741	2503	6.801	2583	7.020	2624	7.130
		50100402	VOC	4084	11.097	4314	11.724	4353	11.828	4493	12.209	4563	12.399
		50100410	NOx	7560	20.543	7525	20.449	7519	20.433	7519	20.433	7519	20.433
		50100410	CO	139660	379.511	139019	377.768	138912	377.477	138912	377.477	138912	377.477
DEFERIET PAPER MILL	JEFFERSON	10200501	VOC	457	3.791	461	3.826	462	3.831	456	3.785	454	3.762
400 ANDERSON AVE		10200501	NOx	45720	379.141	46132	382.556	46200	383.125	45647	378.537	45371	376.243
DEFERIET, NY 13628		10200501	CO	11430	94.785	11533	95.639	11550	95.781	11412	94.634	11343	94.061
		30700401	VOC	12609	135.466	13264	142.509	13374	143.682	13798	148.240	14010	150.518
CARTHAGE ENERGY COGEN FACILITY	JEFFERSON	10500106	NOx	17	0.000	18	0.000	18	0.000	18	0.000	18	0.000
701 WESTEND AVE		10500106	CO	4	0.000	4	0.000	4	0.000	4	0.000	4	0.000
CARTHAGE, NY 13619		20200102	VOC	83	0.627	84	0.633	84	0.633	83	0.626	82	0.622
		20200102	NOx	2382	19.526	2403	19.702	2407	19.731	2378	19.495	2364	19.377

		20200102	CO	389	3.769	393	3.803	393	3.808	388	3.763	386	3.740
		20200103	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		20200103	NOx	265	0.000	267	0.000	268	0.000	265	0.000	263	0.000
		20200103	CO	44	0.000	44	0.000	44	0.000	44	0.000	44	0.000
		20200201	VOC	221	8.148	231	8.529	233	8.592	237	8.741	239	8.815
		20200201	NOx	14197	523.261	14861	547.745	14972	551.825	15230	561.337	15359	566.092
		20200201	CO	2041	75.225	2136	78.745	2152	79.332	2190	80.699	2208	81.383
		20200203	VOC	1340	9.347	1403	9.785	1414	9.857	1438	10.027	1450	10.112
		20200203	NOx	79595	555.014	83319	580.983	83940	585.311	85387	595.400	86110	600.444
		20200203	CO	5750	40.095	6019	41.971	6064	42.283	6168	43.012	6221	43.377
		40301021	VOC	11	0.029	12	0.032	12	0.033	13	0.034	13	0.035
BEAVER FALLS GENERATING FACILITY	LEWIS	10200602	VOC	323	1.447	339	1.515	341	1.526	347	1.552	350	1.565
MAIN ST		10200602	VOC	420	1.879	440	1.967	443	1.982	451	2.016	454	2.033
BEAVER FALLS, NY 13305		10200602	NOx	13995	62.609	14650	65.539	14759	66.027	15013	67.165	15141	67.734
		10200602	CO	13995	62.609	14650	65.539	14759	66.027	15013	67.165	15141	67.734
		20200101	VOC	0	0.034	0	0.035	0	0.035	0	0.034	0	0.034
		20200101	NOx	73	73.392	74	74.053	74	74.163	73	73.275	73	72.831
		20200101	CO	2	1.500	2	1.514	2	1.516	1	1.498	1	1.489
		20200102	VOC	4	0.920	4	0.928	4	0.930	4	0.919	4	0.913
		20200102	NOx	142	32.660	143	32.954	143	33.003	142	32.608	141	32.410
		20200102	CO	45	10.350	45	10.443	45	10.459	45	10.334	45	10.271
		20200201	VOC	4236	59.047	4434	61.810	4467	62.271	4544	63.344	4583	63.881
		20200201	NOx	12846	179.065	13447	187.444	13547	188.840	13781	192.095	13898	193.723
		20200201	CO	3102	43.240	3247	45.263	3271	45.600	3328	46.386	3356	46.779
		20200203	NOx	11900	872.667	12457	913.499	12550	920.305	12766	936.167	12874	944.099
		20200203	CO	2874	210.760	3008	220.622	3031	222.265	3083	226.096	3109	228.012
		20200401	VOC	2	0.500	2	0.505	2	0.505	2	0.499	2	0.496
		20200401	NOx	80	20.000	81	20.180	81	20.210	80	19.968	79	19.847
		20200401	CO	25	6.250	25	6.306	25	6.316	25	6.240	25	6.202
		40301020	VOC	0	0.001	0	0.001	0	0.001	0	0.001	0	0.001
FIBERMARK NORTH AMERICA INC	LEWIS	10200401	VOC	15	0.000	18	0.000	18	0.000	18	0.000	18	0.000
5492 BOSTWICK STREET		10200401	NOx	2489	0.000	2941	0.000	3016	0.000	3019	0.000	3021	0.000
LOWVILLE, NY 13367		10200401	CO	265	0.000	313	0.000	321	0.000	321	0.000	321	0.000

		10300602	VOC	179	0.547	181	0.552	181	0.552	184	0.562	185	0.566
		10300602	NOx	3253	9.940	3282	10.030	3287	10.045	3341	10.210	3368	10.292
		10300602	CO	2733	8.349	2757	8.425	2761	8.437	2807	8.576	2829	8.645
		39000689	NOx	830	3.266	869	3.418	875	3.444	890	3.503	898	3.533
		39000689	CO	697	2.743	730	2.871	735	2.893	748	2.943	754	2.968
		40201301	VOC	18834	69.983	23093	85.807	23802	88.444	25227	93.736	25939	96.382
		40201303	VOC	1022	3.774	1253	4.628	1292	4.770	1369	5.055	1408	5.198
		40299995	VOC	5408	19.966	7253	26.780	7560	27.916	8141	30.060	8432	31.133
		40299995	VOC	1632	6.025	2189	8.082	2282	8.425	2457	9.072	2545	9.395
LYONSDALE BIOMASS LLC	LEWIS	10100902	VOC	70	0.000	117	0.000	125	0.000	130	0.000	133	0.000
MARMON LOWDALE & LYONSDALE RDS		10100902	NOx	1040	0.000	1733	0.000	1848	0.000	1925	0.000	1964	0.000
LYONSDALE, NY 13433		10100902	CO	868	0.000	1447	0.000	1544	0.000	1608	0.000	1640	0.000
		10200501	VOC	1	0.000	1	0.000	1	0.000	1	0.000	1	0.000
		10200501	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		10200501	NOx	115	0.000	116	0.000	116	0.000	115	0.000	114	0.000
		10200501	CO	115	0.000	116	0.000	116	0.000	115	0.000	114	0.000
		10200903	VOC	16386	71.902	18482	81.101	18832	82.634	19130	83.942	19279	84.596
		10200903	NOx	241860	1061.290	272800	1197.058	277957	1219.686	282357	1238.994	284557	1248.649
		10200903	CO	201965	886.232	227802	999.605	232108	1018.501	235783	1034.624	237620	1042.686
		10500105	NOx	294	0.000	297	0.000	297	0.000	294	0.000	292	0.000
		10500105	CO	73	0.000	74	0.000	74	0.000	73	0.000	73	0.000
		20200102	VOC	24	3.002	24	3.029	25	3.034	24	2.997	24	2.979
		20200102	NOx	297	36.776	300	37.107	300	37.162	297	36.717	295	36.495
		20200102	CO	64	7.922	65	7.994	65	8.006	64	7.910	64	7.862
VARFLEX CORP	ONEIDA	10500106	NOx	740	0.189	775	0.198	780	0.199	794	0.203	801	0.205
512 W COURT ST		10500106	CO	622	0.159	651	0.166	656	0.168	667	0.170	672	0.172
ROME, NY 13440		10500110	VOC	2	0.007	2	0.007	2	0.007	2	0.007	2	0.007
		10500110	NOx	156	0.450	147	0.424	145	0.420	146	0.422	147	0.423
		10500110	CO	26	0.076	25	0.071	24	0.071	25	0.071	25	0.071
ONEIDA CORRECTIONAL FACILITY	ONEIDA	10300401	VOC	328	0.000	305	0.000	301	0.000	306	0.000	308	0.000
6100 SCHOOL ROAD		10300401	NOx	13639	0.000	12683	0.000	12523	0.000	12716	0.000	12812	0.000
ROME, NY 13440		10300401	CO	1451	0.000	1349	0.000	1332	0.000	1353	0.000	1363	0.000
		10300602	VOC	1301	2.362	1313	2.383	1315	2.387	1336	2.426	1347	2.445

		10300602	NOx	23655	42.939	23869	43.327	23904	43.392	24297	44.105	24494	44.462
		10300602	CO	19870	36.069	20050	36.395	20080	36.449	20410	37.048	20575	37.348
		10500105	VOC	1	0.000	1	0.000	1	0.000	1	0.000	1	0.000
		10500105	NOx	122	0.000	123	0.000	124	0.000	122	0.000	121	0.000
		10500105	CO	31	0.000	31	0.000	31	0.000	31	0.000	30	0.000
		20200102	VOC	378	23.328	381	23.538	382	23.573	377	23.291	375	23.150
		20200102	NOx	4631	285.770	4672	288.343	4679	288.772	4623	285.314	4595	283.585
		20200102	CO	998	61.560	1006	62.115	1008	62.207	996	61.462	990	61.090
STERLING ENERGY FACILITY	ONEIDA	10200602	VOC	2718	1.726	2845	1.806	2866	1.820	2916	1.851	2940	1.867
110 E SENECA ST		10200602	NOx	16307	10.354	17070	10.838	17197	10.919	17494	11.107	17642	11.201
SHERRILL, NY 13461		10200602	CO	25367	16.106	26554	16.860	26752	16.985	27213	17.278	27443	17.424
		10500106	VOC	5	0.000	6	0.000	6	0.000	6	0.000	6	0.000
		10500106	NOx	99	0.000	104	0.000	105	0.000	107	0.000	107	0.000
		10500106	CO	83	0.000	87	0.000	88	0.000	89	0.000	90	0.000
		20200102	VOC	83	1.068	84	1.077	84	1.079	83	1.066	82	1.060
		20200102	NOx	1470	18.847	1483	19.017	1485	19.045	1468	18.817	1459	18.703
		20200102	CO	249	3.203	251	3.232	252	3.237	249	3.198	247	3.179
		20200201	VOC	69	0.899	72	0.941	73	0.948	74	0.964	75	0.972
		20200201	NOx	59250	771.628	62022	807.733	62484	813.750	63561	827.776	64100	834.790
		20200201	CO	10641	138.580	11139	145.065	11222	146.145	11415	148.664	11512	149.924
UTICA ALLOYS	ONEIDA	10200603	VOC	39	0.116	41	0.122	41	0.122	42	0.125	42	0.126
LELAND & WURZ AVES		10200603	NOx	710	2.112	743	2.210	748	2.227	761	2.265	768	2.284
UTICA, Ny 13502		10200603	CO	596	1.774	624	1.857	629	1.871	639	1.903	645	1.919
		30401002	VOC	9658	28.744	10920	32.500	11130	33.126	11679	34.758	11953	35.574
		30401002	VOC	20345	60.551	23004	68.464	23447	69.783	24602	73.221	25180	74.940
		39000689	NOx	2838	8.446	2971	8.842	2993	8.908	3045	9.061	3070	9.138
		39000689	CO	2384	7.095	2495	7.427	2514	7.482	2557	7.611	2579	7.676
		40100398	VOC	8778	26.125	11204	33.346	11609	34.550	12247	36.449	12566	37.398
UTICA METAL PRODUCTS	ONEIDA	30990003	VOC	18	0.039	21	0.045	21	0.046	22	0.048	23	0.049
1526 LINCOLN AVE		30990003	NOx	896	1.948	1044	2.269	1069	2.323	1109	2.412	1130	2.456
UTICA, Ny 13502-5298		30990003	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
HARDEN FURNITURE INC	ONEIDA	10300902	VOC	2501	9.279	2489	9.236	2488	9.229	2488	9.229	2488	9.229

8550 MILL POND WAY		10300902	VOC	2836	10.524	2823	10.476	2821	10.468	2821	10.468	2821	10.468
MCCONNELLSVILLE, NY 13401		10300902	NOx	48002	178.098	47782	177.280	47745	177.143	47745	177.143	47745	177.143
		10300902	CO	130915	485.721	130314	483.490	130214	483.118	130214	483.118	130214	483.118
		20300101	VOC	6	0.124	7	0.132	7	0.133	7	0.134	7	0.135
		20300101	NOx	478	9.192	508	9.767	513	9.863	518	9.952	520	9.996
		20300101	CO	103	1.981	109	2.105	111	2.125	112	2.144	112	2.154
		30702099	VOC	840	3.816	932	4.238	948	4.308	1000	4.544	1026	4.662
		40201901	VOC	185966	710.054	206536	788.592	209964	801.682	221462	845.582	227211	867.532
		68240030	VOC	23547	89.908	23442	89.507	23425	89.440	23388	89.300	23370	89.230
		68240030	VOC	23637	90.252	23532	89.849	23514	89.782	23477	89.641	23459	89.571
TYCO HEALTHCARE KENDALL	ONEIDA	10200401	VOC	54	0.149	64	0.177	66	0.181	66	0.181	66	0.181
130 SOUTH MAIN ST		10200401	NOx	9127	25.075	10785	29.628	11061	30.387	11073	30.421	11080	30.439
ORISKANY FALLS, NY 13425		10200401	CO	971	2.668	1147	3.152	1177	3.233	1178	3.236	1179	3.238
		10201002	NOx	318	0.875	300	0.824	297	0.815	299	0.820	299	0.823
		10201002	CO	54	0.147	50	0.139	50	0.137	50	0.138	50	0.139
		20200102	NOx	10	0.192	10	0.194	10	0.194	10	0.192	10	0.191
		20200102	CO	10	0.192	10	0.194	10	0.194	10	0.192	10	0.191
		30106011	VOC	88	1.833	121	2.527	127	2.643	136	2.830	140	2.924
		39999994	VOC	3451	13.300	4943	19.053	5192	20.012	5490	21.162	5639	21.737
		39999994	VOC	3501	13.494	5015	19.331	5267	20.304	5570	21.471	5721	22.054
ETHAN ALLEN INC	ONEIDA	10200903	VOC	421	0.562	475	0.633	484	0.645	492	0.656	496	0.661
7 GROVE ST		10200903	VOC	56	0.075	63	0.084	65	0.086	66	0.087	66	0.088
BOONVILLE, NY 13309		10200903	NOx	5265	7.020	5939	7.919	6051	8.068	6147	8.196	6195	8.260
		10200903	CO	47739	63.652	53846	71.795	54864	73.152	55732	74.310	56167	74.889
		10500105	NOx	287	0.000	290	0.000	290	0.000	287	0.000	285	0.000
		10500105	CO	72	0.000	72	0.000	73	0.000	72	0.000	71	0.000
		30702099	VOC	238528	1084.217	264911	1204.141	269308	1224.128	284055	1291.161	291429	1324.677
OGDENSBURG ENERGY FACILITY	ST LAWRENCE	10200501	VOC	1	0.009	1	0.009	1	0.009	1	0.009	1	0.009
ENTRANCE AVE		10200501	NOx	79	1.105	80	1.115	80	1.117	79	1.103	78	1.097
OGDENSBURG, NY 13669		10200501	CO	16	0.230	17	0.232	17	0.233	16	0.230	16	0.228
		10200601	VOC	757	9.460	792	9.903	798	9.976	812	10.148	819	10.234
		10200601	NOx	15000	187.500	15702	196.273	15819	197.735	16091	201.144	16228	202.848
		10200601	CO	11558	144.480	12099	151.240	12189	152.367	12399	154.993	12505	156.306

		10200602	VOC	380	1.645	397	1.721	400	1.734	407	1.764	411	1.779
		10200602	NOx	6900	29.900	7223	31.299	7277	31.532	7402	32.076	7465	32.347
		10200602	CO	5796	25.116	6067	26.291	6112	26.487	6218	26.944	6270	27.172
		10500106	NOx	100	0.000	105	0.000	105	0.000	107	0.000	108	0.000
		10500106	CO	84	0.000	88	0.000	89	0.000	90	0.000	91	0.000
		20200201	VOC	684	6.381	716	6.680	721	6.730	733	6.846	740	6.904
		20200201	NOx	10000	93.333	10468	97.700	10546	98.428	10728	100.125	10819	100.973
		20200201	CO	6800	63.467	7118	66.436	7171	66.931	7295	68.085	7357	68.662
		20200203	VOC	1502	14.273	1573	14.941	1584	15.052	1612	15.312	1625	15.441
		20200203	VOC	1503	14.280	1573	14.948	1585	15.059	1613	15.319	1626	15.449
		20200203	NOx	24400	231.800	25542	242.646	25732	244.454	26175	248.667	26397	250.774
		20200203	CO	16000	152.000	16749	159.112	16873	160.298	17164	163.060	17310	164.442
CORNING INC CANTON PLANT	ST LAWRENCE	10200603	VOC	284	0.802	298	0.839	300	0.845	305	0.860	307	0.867
MCADOO RD|334 CO RTE 16		10200603	NOx	5168	14.575	5409	15.257	5450	15.371	5544	15.636	5591	15.768
CANTON, NY 13617		10200603	CO	4341	12.243	4544	12.816	4578	12.912	4657	13.134	4696	13.245
		20200102	VOC	75	1.264	75	1.276	75	1.278	75	1.262	74	1.255
		20200102	VOC	76	1.278	76	1.289	76	1.291	75	1.276	75	1.268
		20200102	NOx	925	15.654	933	15.795	935	15.818	924	15.629	918	15.534
		20200102	CO	199	3.372	201	3.403	201	3.408	199	3.367	198	3.346
		30300934	VOC	77	0.217	74	0.210	74	0.208	76	0.214	77	0.216
		30300934	NOx	532	1.501	513	1.448	510	1.439	523	1.476	530	1.495
		30300934	CO	894	2.522	862	2.433	857	2.418	879	2.481	891	2.512
		30501401	NOx	214981	544.978	237783	602.781	241583	612.414	250379	634.711	254776	645.859
		30501416	NOx	4212	11.880	4659	13.140	4733	13.350	4906	13.836	4992	14.079
		39000689	NOx	491	22.095	514	23.129	518	23.301	527	23.703	531	23.904
		39000689	CO	71	3.195	74	3.344	75	3.369	76	3.427	77	3.457
ALCOA MASSENA OPERATIONS (WEST PLANT)	ST LAWRENCE	10200401	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
PARK AVE EAST		10200401	NOx	33	0.000	39	0.000	40	0.000	40	0.000	40	0.000
MASSENA, NY 13662		10200401	CO	4	0.000	4	0.000	4	0.000	4	0.000	4	0.000
		10200601	VOC	4094	3.738	4285	3.913	4317	3.942	4392	4.010	4429	4.044
		10200601	NOx	44658	40.775	46748	42.683	47096	43.001	47908	43.742	48313	44.112
		10200601	CO	62521	57.084	65446	59.755	65934	60.200	67070	61.238	67638	61.757
		10301002	NOx	218	0.197	227	0.205	229	0.206	231	0.208	232	0.209

		10301002	CO	30	0.027	31	0.028	31	0.028	31	0.028	32	0.028
		30300101	NOx	18598	50.538	21029	57.143	21434	58.244	22490	61.113	23018	62.548
		30300101	CO	25692588	69816.815	29050360	78941.196	29609988	80461.925	31068726	84425.887	31798098	86407.874
		30300105	VOC	6443	17.508	7285	19.796	7425	20.178	7791	21.172	7974	21.669
		30300105	NOx	37580	102.120	42491	115.466	43310	117.690	45444	123.488	46510	126.387
		30300105	CO	273836	744.120	309624	841.369	315588	857.577	331136	899.826	338910	920.950
		30300199	VOC	490	1.332	554	1.506	565	1.535	593	1.610	606	1.648
		30300312	VOC	1787	4.856	1724	4.685	1714	4.656	1758	4.777	1780	4.837
		30300399	VOC	1972	12.641	1903	12.196	1891	12.121	1940	12.436	1964	12.593
		30400109	VOC	12867	42.152	17201	56.349	17923	58.715	19135	62.685	19741	64.670
		30400109	VOC	12932	42.362	17288	56.630	18013	59.008	19231	62.998	19840	64.993
		30400109	NOx	39801	133.139	53206	177.980	55440	185.454	59189	197.994	61063	204.264
		30400109	CO	129332	419.429	172891	560.693	180151	584.237	192333	623.742	198423	643.494
		30400112	VOC	20662	56.147	27621	75.057	28781	78.209	30727	83.497	31700	86.141
		30400112	VOC	19462	52.886	26017	70.698	27109	73.667	28942	78.648	29859	81.138
		30400199	VOC	2480	9.538	3315	12.751	3454	13.286	3688	14.185	3805	14.634
		39000689	NOx	117996	320.640	123517	335.643	124437	338.143	126582	343.972	127654	346.886
		39000689	CO	99116	269.338	103754	281.940	104527	284.040	106329	288.936	107229	291.384
		40100335	VOC	1139	3.095	1454	3.951	1506	4.093	1589	4.318	1631	4.431
GM POWERTRAIN - MASSENA PLANT	ST LAWRENCE	10200602	VOC	739	2.369	774	2.480	780	2.499	793	2.542	800	2.563
ROOSEVELTOWN RD		10200602	NOx	29784	95.462	31178	99.928	31410	100.673	31951	102.408	32222	103.276
MASSENA, NY 13662		10200602	CO	39420	126.346	41264	132.258	41572	133.243	42288	135.540	42647	136.688
		20100102	VOC	208	0.566	415	1.127	449	1.220	336	0.914	280	0.761
		20100102	VOC	207	0.562	411	1.118	445	1.210	334	0.907	278	0.755
		20100102	NOx	3920	10.652	7801	21.198	8448	22.956	6331	17.203	5272	14.326
		20100102	CO	844	2.293	1679	4.563	1818	4.941	1363	3.703	1135	3.083
		30300503	VOC	1526	4.891	1725	5.530	1759	5.637	1845	5.914	1889	6.053
		30300503	NOx	36865	118.157	41683	133.599	42486	136.173	44579	142.881	45625	146.236
		30300503	CO	6527	20.920	7380	23.654	7522	24.110	7893	25.297	8078	25.891
		30400101	VOC	275	0.881	368	1.178	383	1.228	409	1.311	422	1.352
		30400101	NOx	1807	5.792	2416	7.742	2517	8.067	2687	8.613	2772	8.886
		30400101	CO	856	2.744	1144	3.668	1192	3.822	1273	4.080	1313	4.209
		30400103	VOC	0	0.002	1	0.002	1	0.002	1	0.002	1	0.002

		30400115	VOC	15381	49.298	20561	65.902	21425	68.669	22873	73.312	23598	75.634
		30400115	VOC	6426	20.596	8590	27.533	8951	28.689	9556	30.629	9859	31.599
		30400115	NOx	45835	146.907	61272	196.386	63845	204.632	68162	218.469	70321	225.387
		30400115	CO	38502	123.404	51470	164.967	53631	171.894	57257	183.517	59070	189.328
		30400132	VOC	42911	137.535	57364	183.857	59772	191.578	63814	204.532	65835	211.009
		30490003	NOx	5280	16.923	5722	18.341	5796	18.577	5974	19.147	6063	19.432
		30490003	CO	4435	14.215	4807	15.406	4869	15.605	5018	16.084	5093	16.323
		39000689	NOx	835	2.676	874	2.802	881	2.822	896	2.871	903	2.895
		39000689	CO	1094	3.506	1145	3.670	1154	3.698	1174	3.762	1184	3.793
		40400204	VOC	191	0.611	190	0.608	190	0.608	188	0.603	188	0.601
REYNOLDS METALS ST LAWRENCE REDUCTION PL	ST LAWRENCE	10200401	VOC	1	0.099	2	0.117	2	0.120	2	0.120	2	0.120
194 CO RTE 45		10200401	NOx	252	19.407	298	22.930	306	23.518	306	23.544	306	23.557
MASSENA, NY 13662		10200401	CO	23	1.764	27	2.085	28	2.138	28	2.140	28	2.142
		10200602	VOC	378	0.341	396	0.357	399	0.360	406	0.366	409	0.369
		10200602	VOC	491	0.443	514	0.464	518	0.467	527	0.475	531	0.479
		10200602	NOx	24557	22.155	25706	23.191	25898	23.364	26344	23.767	26567	23.968
		10200602	CO	14734	13.293	15424	13.915	15539	14.019	15806	14.260	15940	14.381
		10500110	VOC	1	0.001	1	0.001	1	0.001	1	0.001	1	0.001
		10500110	NOx	24	0.030	23	0.028	22	0.028	23	0.028	23	0.028
		10500110	CO	33	0.042	31	0.039	31	0.039	31	0.039	31	0.039
		30300102	VOC	235791	640.736	266607	724.474	271743	738.431	285130	774.810	291824	792.999
		30300102	VOC	167131	454.160	188973	513.515	192614	523.407	202103	549.193	206848	562.086
		30300102	NOx	17815	48.410	20143	54.737	20531	55.792	21543	58.540	22049	59.914
		30300102	CO	45825377	124525.481	51814310	140799.754	52812464	143512.130	55414273	150582.265	56715182	154117.343
		30300312	VOC	1628	6.167	1571	5.949	1561	5.913	1602	6.066	1622	6.143
		30300331	VOC	211	0.573	204	0.553	202	0.550	208	0.564	210	0.571
		30400112	VOC	485	1.318	648	1.762	676	1.836	721	1.960	744	2.022
		30400112	NOx	24234	65.853	32396	88.033	33756	91.729	36039	97.932	37180	101.033
		30400112	CO	14540	39.511	19437	52.819	20253	55.037	21623	58.758	22308	60.619
		30490003	VOC	572	1.555	620	1.685	628	1.707	648	1.760	657	1.786
		30490003	NOx	28616	77.761	31013	84.274	31412	85.360	32377	87.980	32859	89.290
		30490003	CO	17170	46.657	18608	50.565	18847	51.216	19426	52.788	19715	53.574
		39000589	VOC	0	0.001	0	0.001	0	0.001	0	0.001	0	0.001

		39000589	NOx	20	0.054	20	0.055	20	0.055	20	0.054	20	0.054
		39000589	CO	5	0.014	5	0.014	5	0.014	5	0.014	5	0.013
		39000689	NOx	5901	16.035	6177	16.786	6223	16.911	6330	17.202	6384	17.348
		39000689	CO	3540	9.621	3706	10.071	3734	10.146	3798	10.321	3830	10.408
		39000989	VOC	44	0.168	49	0.190	50	0.193	51	0.196	51	0.198
		39000989	NOx	21	0.082	24	0.092	24	0.094	25	0.095	25	0.096
		39000989	CO	125	0.481	141	0.542	144	0.553	146	0.561	147	0.566
		40100336	VOC	878	2.386	1121	3.045	1161	3.155	1225	3.329	1257	3.415
MASSENA ENERGY FACILITY	ST LAWRENCE	10500106	VOC	42	0.179	44	0.187	44	0.189	45	0.192	45	0.194
ALCOA POWER CANAL RD|NORTH MAIN ST GATE		10500106	NOx	229	0.981	240	1.027	242	1.035	246	1.053	248	1.062
MASSENA, NY 13662		10500106	CO	114	0.489	119	0.511	120	0.515	122	0.524	123	0.529
		20100101	VOC	111	24.109	221	47.979	239	51.957	179	38.936	149	32.425
		20100101	NOx	3361	730.009	6689	1452.769	7243	1573.229	5428	1178.953	4520	981.814
		20100101	CO	573	124.456	1140	247.675	1235	268.212	925	200.994	771	167.385
		20200203	VOC	1146	49.622	1200	51.944	1209	52.331	1229	53.233	1240	53.684
		20200203	NOx	13843	599.402	14491	627.448	14599	632.123	14850	643.018	14976	648.466
		20200203	CO	11164	483.401	11686	506.020	11773	509.790	11976	518.577	12078	522.970
BINGHAMTON CO-GENERATION PLANT	BROOME	20100201	NOx	10130	563.662	11089	617.006	11248	625.897	12427	691.491	13017	724.288
22 CHARLES ST		20100201	CO	334	18.585	366	20.344	371	20.637	410	22.799	429	23.881
BINGHAMTON, NY 13905													
INTELICOAT TECHNOLOGIES AZON LLC	BROOME	39000689	VOC	509	1.930	533	2.020	537	2.035	547	2.070	551	2.088
720 AZON RD		39000689	NOx	9263	35.087	9696	36.729	9769	37.002	9937	37.640	10021	37.959
JOHNSON CITY, NY 13790		39000689	CO	7781	29.473	8145	30.852	8206	31.082	8347	31.618	8418	31.886
		40201301	VOC	100204	379.562	111572	422.623	113467	429.800	118122	447.431	120449	456.247
		40201301	VOC	96270	364.659	107192	406.030	109012	412.925	113484	429.864	115720	438.333
		40204161	VOC	195	0.739	211	0.800	214	0.810	221	0.836	224	0.848
		40714698	VOC	206	0.560	201	0.547	200	0.544	204	0.553	205	0.558
ENDICOTT INTERCONNECT TECHNOLOGIES INC	BROOME	10200401	VOC	1	0.000	1	0.000	1	0.000	1	0.000	1	0.000
1701 NORTH ST		10200401	VOC	1	0.000	2	0.000	2	0.000	2	0.000	2	0.000
ENDICOTT, NY 13760		10200401	NOx	258	0.000	305	0.000	313	0.000	313	0.000	313	0.000
		10200401	CO	23	0.000	28	0.000	28	0.000	28	0.000	28	0.000
		10200601	VOC	4801	21.791	5026	22.811	5064	22.981	5151	23.377	5195	23.575

		10200601	VOC	3698	16.781	3871	17.567	3899	17.698	3967	18.003	4000	18.155
		10200601	NOx	147100	667.608	153983	698.845	155130	704.052	157804	716.187	159141	722.255
		10200601	CO	73332	332.813	76763	348.385	77335	350.981	78668	357.031	79334	360.055
		10200602	VOC	29	0.588	31	0.615	31	0.620	32	0.631	32	0.636
		10200602	NOx	1469	29.389	1538	30.764	1550	30.993	1576	31.527	1590	31.794
		10200602	CO	882	17.633	923	18.458	930	18.596	946	18.916	954	19.077
		10200603	NOx	1158	3.860	1212	4.041	1221	4.071	1242	4.141	1253	4.176
		10200603	CO	973	3.242	1018	3.394	1026	3.419	1044	3.478	1052	3.508
		20200102	VOC	369	8.525	373	8.601	373	8.614	369	8.511	367	8.460
		20200102	NOx	4525	104.427	4566	105.368	4573	105.525	4518	104.261	4491	103.629
		20200102	CO	975	22.496	984	22.698	985	22.732	973	22.460	967	22.324
		31306500	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		31306599	VOC	43003	143.371	64066	213.595	67576	225.299	74808	249.408	78424	261.463
		31306599	NOx	1	0.002	1	0.002	1	0.003	1	0.003	1	0.003
		31306599	CO	531	1.465	791	2.182	834	2.302	923	2.548	968	2.671
		39000689	NOx	2993	14.388	3133	15.061	3156	15.173	3210	15.434	3238	15.565
		39000689	CO	2514	12.086	2631	12.651	2651	12.745	2697	12.965	2720	13.075
		40202537	VOC	454	1.747	506	1.945	514	1.978	535	2.059	546	2.100
		40203001	VOC	20144	96.848	27019	129.899	28165	135.408	30329	145.810	31410	151.011
		40203001	VOC	20971	100.822	28128	135.229	29320	140.964	31573	151.793	32699	157.208
		49000599	VOC	465	1.532	454	1.496	452	1.490	460	1.515	463	1.527
AES WESTOVER	BROOME	10100202	VOC	22911	66.614	25761	74.900	26236	76.282	26771	77.838	27039	78.616
720 RIVERSIDE DR		10100202	NOx	5231837	15211.562	5882685	17103.902	5991160	17419.292	6113389	17774.674	6174504	17952.366
JOHNSON CITY, NY 13790-1839		10100202	CO	190922	555.113	214673	624.170	218631	635.679	223092	648.648	225322	655.133
SUNOCO BINGHAMTON TERMINAL	BROOME	40400117	VOC	14562	46.645	16325	52.292	16619	53.234	17208	55.121	17502	56.064
4324 WATSON BLVD		40400151	VOC	7259	23.252	8138	26.068	8284	26.537	8578	27.478	8725	27.948
JOHNSON CITY, NY 13790		40400153	VOC	13391	42.896	15013	48.090	15283	48.955	15825	50.691	16096	51.558
SUNY AT BINGHAMTON	BROOME	10100205	VOC	297	0.000	334	0.000	340	0.000	347	0.000	350	0.000
VESTAL PKWY E		10100205	VOC	296	0.000	333	0.000	339	0.000	346	0.000	349	0.000
BINGHAMTON, NY 13902		10100205	NOx	31783	0.000	35737	0.000	36396	0.000	37138	0.000	37509	0.000
		10100205	CO	25426	0.000	28589	0.000	29116	0.000	29710	0.000	30007	0.000

		10200603	VOC	564	1.226	590	1.283	595	1.292	605	1.315	610	1.326
		10200603	NOx	10250	22.283	10730	23.325	10810	23.499	10996	23.904	11089	24.107
		10200603	CO	8610	18.717	9013	19.593	9080	19.739	9237	20.079	9315	20.250
		10300602	VOC	479	6.149	483	6.205	484	6.214	492	6.316	496	6.367
		10300602	NOx	12184	156.528	12294	157.943	12313	158.179	12515	160.779	12616	162.079
		10300602	CO	7311	93.917	7377	94.766	7388	94.907	7509	96.467	7570	97.247
		10500206	NOx	4474	48.163	4515	48.599	4521	48.672	4596	49.472	4633	49.872
		10500206	CO	639	6.881	645	6.943	646	6.953	657	7.068	662	7.125
		20200102	VOC	128	12.830	129	12.946	130	12.965	128	12.810	127	12.732
		20200102	NOx	1572	157.172	1586	158.588	1588	158.824	1569	156.922	1560	155.971
		20200102	CO	339	33.858	342	34.163	342	34.214	338	33.804	336	33.599
		20200253	VOC	71	7.088	74	7.419	75	7.474	76	7.603	77	7.668
		20200253	NOx	5445	544.500	5700	569.977	5742	574.224	5841	584.121	5891	589.070
		20200253	CO	3780	378.000	3957	395.687	3986	398.635	4055	405.506	4089	408.941
BROOME CO NANTICOKE LANDFILL	BROOME	50100402	VOC	9548	25.944	10087	27.409	10176	27.653	10504	28.544	10668	28.989
286 KNAPP RD		50100402	VOC	12378	33.636	13077	35.535	13193	35.852	13618	37.006	13831	37.584
BINGHAMTON, NY 13902		50200601	VOC	927	2.547	923	2.535	922	2.533	922	2.533	922	2.533
		50200601	NOx	16677	45.816	16600	45.606	16588	45.570	16588	45.570	16588	45.570
		50200601	CO	83386	229.082	83003	228.030	82939	227.855	82939	227.855	82939	227.855
NUCOR STEEL AUBURN INC	CAYUGA	30400732	VOC	85710	235.467	105877	290.871	109238	300.105	115961	318.573	119322	327.807
25 QUARRY ROAD		30400732	NOx	95233	261.629	117641	323.189	121375	333.449	128845	353.969	132579	364.229
AUBURN, NY 13021		30400732	CO	482149	1324.585	595596	1636.253	614504	1688.197	652319	1792.086	671227	1844.031
		30400740	NOx	21878	60.772	27026	75.072	27884	77.455	29600	82.221	30458	84.604
		30400740	CO	447	1.242	552	1.534	570	1.583	605	1.680	622	1.729
BUCKEYE PIPE LINE CO	CAYUGA	30600811	VOC	1158	3.146	1298	3.527	1321	3.591	1368	3.718	1392	3.782
3186 GATES RD		40400122	VOC	3081	8.373	3454	9.387	3517	9.556	3641	9.895	3704	10.064
AUBURN, NY 13021		40400179	VOC	82650	224.592	92657	251.784	94324	256.316	97668	265.402	99340	269.945
OWENS-BROCKWAY GLASS CONTAINER INC	CAYUGA	10200602	VOC	809	1.845	846	1.932	853	1.946	867	1.980	875	1.997
7134 COUNTY HOUSE RD		10200602	VOC	623	1.421	652	1.488	657	1.499	668	1.525	674	1.538
AUBURN, NY 13021		10200602	NOx	14700	33.554	15388	35.124	15502	35.386	15770	35.996	15903	36.301
		10200602	CO	12348	28.186	12926	29.504	13022	29.724	13247	30.237	13359	30.493
		10500105	NOx	20	0.000	20	0.000	20	0.000	20	0.000	20	0.000

		10500105	CO	5	0.000	5	0.000	5	0.000	5	0.000	5	0.000
		20100102	VOC	2	0.616	5	1.226	5	1.328	4	0.995	3	0.829
		20100102	NOx	30	7.550	60	15.025	65	16.271	49	12.193	41	10.154
		20100102	CO	7	1.625	13	3.234	14	3.502	10	2.624	9	2.186
		30501402	NOx	1177822	3200.603	1302747	3540.074	1323568	3596.652	1371756	3727.597	1395850	3793.070
		30501402	CO	9358	25.429	10351	28.127	10516	28.576	10899	29.616	11090	30.137
		30501406	VOC	2058	5.592	2276	6.186	2313	6.284	2397	6.513	2439	6.628
		39000689	NOx	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		39000689	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		39999994	VOC	6	0.028	9	0.041	9	0.043	10	0.045	10	0.046
ELMER'S PRODUCTS INC	CHENANGO	40704420	VOC	1119	4.917	1093	4.801	1088	4.782	1106	4.862	1116	4.901
151 CO RTE 38|GUILFORD RD		64615012	VOC	21435	94.184	21499	94.467	21499	94.467	21480	94.382	21480	94.382
BAINBRIDGE, NY 13733													
RAYMOND CORPORATION	CHENANGO	10200401	VOC	39	0.000	46	0.000	47	0.000	47	0.000	47	0.000
20 S CANAL ST		10200401	VOC	31	0.000	36	0.000	37	0.000	37	0.000	37	0.000
GREENE, NY 13778-0130		10200401	NOx	6542	0.000	7730	0.000	7928	0.000	7937	0.000	7942	0.000
		10200401	CO	696	0.000	822	0.000	843	0.000	844	0.000	845	0.000
		10200501	VOC	3	0.006	3	0.006	3	0.006	3	0.006	3	0.006
		10200501	VOC	2	0.005	2	0.005	2	0.005	2	0.005	2	0.005
		10200501	NOx	370	0.723	373	0.730	373	0.731	369	0.722	367	0.718
		10200501	CO	77	0.151	78	0.152	78	0.152	77	0.150	76	0.150
		10500113	VOC	2	0.000	2	0.000	2	0.000	2	0.000	2	0.000
		10500113	NOx	26	0.000	27	0.000	27	0.000	28	0.000	28	0.000
		10500113	CO	3	0.000	4	0.000	4	0.000	4	0.000	4	0.000
		20200102	VOC	7	0.000	7	0.000	7	0.000	7	0.000	7	0.000
		20200102	NOx	83	0.000	84	0.000	84	0.000	83	0.000	83	0.000
		20200102	CO	18	0.000	18	0.000	18	0.000	18	0.000	18	0.000
		20201001	NOx	28	0.076	26	0.071	26	0.070	26	0.071	26	0.071
		20201001	CO	26	0.070	24	0.066	24	0.065	24	0.066	24	0.066
		30988801	VOC	9639	37.073	11609	44.652	11938	45.915	12587	48.413	12912	49.662
		39001089	NOx	1476	2.566	1390	2.417	1376	2.392	1384	2.407	1388	2.414
		39001089	CO	200	0.348	189	0.328	187	0.325	188	0.327	188	0.328

		39999994	VOC	2638	10.146	3779	14.535	3969	15.266	4197	16.143	4311	16.582
		40202502	VOC	215	0.595	313	0.868	330	0.913	359	0.993	373	1.033
		40202505	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		40202521	VOC	36207	139.258	52759	202.918	55517	213.528	60379	232.225	62809	241.573
		40202521	VOC	38217	146.988	55688	214.183	58599	225.382	63730	245.117	66296	254.984
KERRY BIO-SCIENCE	CHENANGO	10200602	VOC	773	4.526	809	4.738	815	4.773	829	4.855	836	4.896
158 ST RTE 320		10200602	NOx	14050	82.289	14707	86.139	14817	86.781	15072	88.277	15200	89.025
NORWICH, NY 13815		10200602	CO	11802	69.123	12354	72.357	12446	72.896	12661	74.152	12768	74.781
		30203099	NOx	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		39000689	NOx	1640	4.457	1717	4.665	1730	4.700	1759	4.781	1774	4.821
		39000689	CO	1378	3.743	1442	3.919	1453	3.948	1478	4.016	1490	4.050
TUSCARORA INC	CORTLAND	10200603	VOC	19	0.000	20	0.000	20	0.000	20	0.000	20	0.000
67 HUNTINGTON ST		10200603	NOx	344	0.000	360	0.000	363	0.000	369	0.000	372	0.000
CORTLAND, NY 13045		10200603	CO	289	0.000	302	0.000	305	0.000	310	0.000	313	0.000
PALL TRINITY MICRO	CORTLAND	39000689	NOx	3050	19.063	3193	19.954	3216	20.103	3272	20.450	3300	20.623
3643 ST RTE 281 - NW CORNER @ MCLEAN RD		39000689	CO	2562	16.013	2682	16.762	2702	16.887	2748	17.178	2772	17.323
CORTLAND, NY 13045		39999989	VOC	105305	658.156	150854	942.840	158446	990.287	167549	1047.180	172100	1075.626
		39999989	VOC	97320	608.250	139415	871.347	146431	915.196	154844	967.775	159050	994.064
		39999989	NOx	10	0.063	14	0.090	15	0.094	16	0.099	16	0.102
		39999999	VOC	6876	42.975	9850	61.564	10346	64.662	10940	68.377	11237	70.234
		40200101	VOC	1331	8.319	1785	11.158	1861	11.631	2004	12.524	2075	12.971
POA COGEN FAC/SYRACUSE UNIV STEAM STA	ONONDAGA	10100501	VOC	4	0.011	8	0.022	9	0.024	7	0.018	6	0.015
520 EAST TAYLOR ST		10100501	NOx	429	1.166	854	2.320	925	2.512	693	1.883	577	1.568
SYRACUSE, NY 13202		10100501	CO	102	0.278	204	0.553	220	0.599	165	0.449	138	0.374
		10100601	VOC	3694	10.038	4044	10.988	4102	11.146	4532	12.314	4747	12.898
		10100601	NOx	134798	366.299	147555	400.965	149681	406.742	165368	449.369	173211	470.682
		10100601	CO	56417	153.307	61756	167.816	62646	170.234	69211	188.074	72494	196.994
		10200602	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		10200602	NOx	0	0.001	0	0.001	0	0.001	0	0.001	0	0.001
		10200602	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		20100102	VOC	6	1.485	12	2.955	13	3.199	10	2.398	8	1.997
		20100102	NOx	58	14.450	115	28.757	125	31.141	93	23.337	78	19.434

		20100102	CO	29	7.223	57	14.373	62	15.565	47	11.664	39	9.714
		20100201	VOC	4708	27.735	5154	30.360	5228	30.797	5776	34.025	6050	35.638
		20100201	NOx	81800	480.283	89541	525.736	90832	533.311	100351	589.202	105110	617.148
		20100201	CO	2386	14.082	2612	15.414	2649	15.636	2927	17.275	3066	18.094
BRISTOL-MYERS SQUIBB COMPANY	ONONDAGA	10200401	VOC	17	0.045	20	0.054	20	0.055	20	0.055	20	0.055
6000 THOMPSON RD		10200401	NOx	3273	8.894	3867	10.509	3966	10.778	3971	10.790	3973	10.797
SYRACUSE, NY 13221-4755		10200401	CO	298	0.809	352	0.955	361	0.980	361	0.981	361	0.982
		10200501	VOC	4	0.012	4	0.012	4	0.012	4	0.012	4	0.012
		10200501	VOC	3	0.009	3	0.009	3	0.009	3	0.009	3	0.009
		10200501	NOx	434	1.179	438	1.190	439	1.192	433	1.177	431	1.170
		10200501	CO	109	0.295	109	0.297	110	0.298	108	0.294	108	0.293
		10200602	VOC	4116	11.186	4309	11.709	4341	11.796	4416	12.000	4453	12.101
		10200602	VOC	5345	14.525	5595	15.205	5637	15.318	5734	15.582	5783	15.714
		10200602	NOx	136059	369.726	142425	387.025	143486	389.908	145960	396.629	147196	399.989
		10200602	CO	81635	221.835	85455	232.215	86092	233.945	87576	237.977	88318	239.994
		10300701	VOC	53	0.145	56	0.152	57	0.154	58	0.157	58	0.158
		10300701	NOx	648	1.762	682	1.854	688	1.869	701	1.905	708	1.923
		10300701	CO	520	1.413	547	1.486	552	1.499	562	1.527	567	1.542
		20200102	VOC	73	6.047	73	6.101	73	6.110	72	6.037	72	6.000
		20200102	NOx	889	74.070	897	74.737	898	74.848	887	73.952	882	73.503
		20200102	CO	191	15.956	193	16.100	193	16.124	191	15.931	190	15.834
		20200301	NOx	2	0.171	2	0.171	2	0.171	2	0.172	2	0.172
		20200301	CO	79	6.583	79	6.582	79	6.582	79	6.615	80	6.632
		30106099	VOC	325806	885.341	449113	1220.417	469665	1276.263	502966	1366.756	519617	1412.003
		39999994	VOC	130	1.513	186	2.167	196	2.276	207	2.407	212	2.472
		40301097	VOC	140	0.389	157	0.436	160	0.444	165	0.460	168	0.467
		40301099	VOC	430	1.378	482	1.545	491	1.573	508	1.629	517	1.657
THOMPSONS CORNERS LLC	ONONDAGA	10500106	VOC	302	0.000	316	0.000	318	0.000	324	0.000	327	0.000
6223 THOMPSON RD		10500106	NOx	5490	0.000	5747	0.000	5790	0.000	5889	0.000	5939	0.000
EAST SYRACUSE, NY 13057-0639		10500106	CO	4612	0.000	4827	0.000	4863	0.000	4947	0.000	4989	0.000
		20200202	VOC	1	0.000	1	0.000	1	0.000	1	0.000	1	0.000
		20200202	NOx	14	0.000	15	0.000	15	0.000	15	0.000	15	0.000
		20200202	CO	2	0.000	2	0.000	2	0.000	2	0.000	2	0.000

		30400103	VOC	5492	0.000	7342	0.000	7651	0.000	8168	0.000	8427	0.000
		30400103	NOx	11473	0.000	15337	0.000	15981	0.000	17062	0.000	17602	0.000
		30400103	CO	13486	0.000	18028	0.000	18785	0.000	20055	0.000	20690	0.000
		30400108	VOC	22001	0.000	29411	0.000	30646	0.000	32718	0.000	33754	0.000
		30400108	VOC	22379	0.000	29916	0.000	31172	0.000	33280	0.000	34334	0.000
		30400108	NOx	1066	0.000	1425	0.000	1485	0.000	1585	0.000	1635	0.000
		30400108	CO	28672	0.000	38329	0.000	39938	0.000	42639	0.000	43989	0.000
		30400109	VOC	11	0.000	15	0.000	15	0.000	16	0.000	17	0.000
		30400109	NOx	73	0.000	98	0.000	102	0.000	109	0.000	112	0.000
		30400109	CO	191	0.000	255	0.000	266	0.000	284	0.000	293	0.000
		30490003	NOx	16142	0.000	17494	0.000	17719	0.000	18263	0.000	18535	0.000
		30490003	CO	2623	0.000	2843	0.000	2879	0.000	2968	0.000	3012	0.000
MARSELLUS CASKET CO	ONONDAGA	10200603	VOC	226	0.049	237	0.052	239	0.052	243	0.053	245	0.053
6666 KINNE ST		10200603	NOx	4116	0.895	4309	0.937	4341	0.944	4416	0.960	4453	0.968
EAST SYRACUSE, NY 13057		10200603	CO	3457	0.752	3619	0.787	3646	0.793	3709	0.806	3740	0.813
		10500105	VOC	1	0.000	1	0.000	1	0.000	1	0.000	1	0.000
		10500105	NOx	98	0.011	99	0.011	99	0.011	98	0.011	97	0.011
		10500105	CO	25	0.003	25	0.003	25	0.003	24	0.003	24	0.003
		10500106	VOC	53	0.144	56	0.151	56	0.152	57	0.155	57	0.156
		10500106	NOx	965	2.622	1010	2.745	1018	2.765	1035	2.813	1044	2.837
		10500106	CO	811	2.203	849	2.306	855	2.323	870	2.363	877	2.383
		20200102	VOC	27	0.523	27	0.528	28	0.529	27	0.523	27	0.519
		20200102	NOx	333	6.411	336	6.469	337	6.479	333	6.401	331	6.362
		20200102	CO	72	1.381	72	1.394	73	1.396	72	1.379	71	1.371
		40201901	VOC	159173	665.634	213495	892.796	222548	930.656	239645	1002.152	248193	1037.900
CARR STREET GENERATING STATION	ONONDAGA	10500106	VOC	143	0.000	150	0.000	151	0.000	153	0.000	155	0.000
64 CARR ST		10500106	NOx	2600	0.000	2722	0.000	2742	0.000	2789	0.000	2813	0.000
EAST SYRACUSE, NY 13057		10500106	CO	2184	0.000	2286	0.000	2303	0.000	2343	0.000	2363	0.000
		20100102	VOC	4	0.083	9	0.166	9	0.179	7	0.134	6	0.112
		20100102	VOC	4	0.084	9	0.167	9	0.181	7	0.136	6	0.113
		20100102	NOx	82	1.580	163	3.144	177	3.404	133	2.551	110	2.125
		20100102	CO	18	0.340	35	0.677	38	0.733	29	0.549	24	0.457
		20200203	NOx	20373	280.129	21326	293.236	21485	295.421	21855	300.513	22041	303.059

		20200203	CO	15706	215.958	16441	226.062	16563	227.746	16849	231.672	16992	233.635
GENERAL CHEMICAL LLC	ONONDAGA	30199999	VOC	41	0.111	51	0.139	53	0.144	56	0.152	58	0.157
1421 WILLIS AVE		30199999	NOx	1064644	2893.054	1328583	3610.281	1372573	3729.818	1454816	3953.305	1495938	4065.048
SYRACUSE, NY 13204		30199999	CO	469	1.274	585	1.590	605	1.643	641	1.742	659	1.791
WPS SYRACUSE GENERATION LLC	ONONDAGA	10300603	VOC	12	0.121	12	0.122	12	0.122	12	0.124	13	0.125
300 BELLE ISLE RD		10300603	VOC	9	0.093	9	0.094	9	0.094	10	0.096	10	0.096
SOLVAY, NY 13209		10300603	NOx	220	2.200	222	2.220	222	2.223	226	2.260	228	2.278
		10300603	CO	185	1.848	186	1.865	187	1.867	190	1.898	191	1.914
		20200102	VOC	15	3.726	15	3.760	15	3.765	15	3.720	15	3.698
		20200102	NOx	183	45.644	184	46.055	184	46.123	182	45.571	181	45.295
		20200102	CO	39	9.833	40	9.921	40	9.936	39	9.817	39	9.757
		20200201	NOx	14850	222.750	15545	233.173	15661	234.910	15931	238.959	16066	240.983
		20200201	CO	1625	24.375	1701	25.516	1714	25.706	1743	26.149	1758	26.370
		20200203	VOC	8485	164.851	8882	172.565	8948	173.851	9102	176.847	9180	178.345
		20200203	NOx	11550	224.400	12090	234.900	12181	236.650	12390	240.729	12495	242.768
		20200203	CO	1264	24.558	1323	25.707	1333	25.898	1356	26.345	1367	26.568
		20200401	VOC	1	0.164	1	0.166	1	0.166	1	0.164	1	0.163
		20200401	NOx	44	5.256	44	5.303	44	5.311	44	5.248	43	5.216
		20200401	CO	12	1.392	12	1.405	12	1.407	12	1.390	12	1.381
ONONDAGA COGENERATION FACILITY	ONONDAGA	10200502	VOC	5	0.000	5	0.000	5	0.000	5	0.000	5	0.000
300 BRIDGE ST		10200502	NOx	478	0.000	482	0.000	483	0.000	477	0.000	474	0.000
GEDDES, NY 13209		10200502	CO	120	0.000	121	0.000	121	0.000	119	0.000	119	0.000
		10200602	VOC	78	0.171	81	0.179	82	0.181	83	0.184	84	0.185
		10200602	NOx	1410	3.114	1476	3.260	1487	3.284	1513	3.341	1525	3.369
		10200602	CO	1184	2.616	1240	2.739	1249	2.759	1271	2.806	1281	2.830
		20100201	VOC	6515	36.369	7132	39.811	7234	40.385	7992	44.617	8372	46.734
		20100201	NOx	40910	228.377	44782	249.990	45427	253.592	50188	280.168	52568	293.457
		20100201	CO	18472	103.118	20220	112.877	20512	114.504	22661	126.504	23736	132.504
TRIGEN SYRACUSE ENERGY CORPORATION	ONONDAGA	10100202	VOC	14577	47.535	16391	53.449	16693	54.434	17034	55.545	17204	56.100
56 INDUSTRIAL DR		10100202	NOx	2492000	8126.087	2802008	9136.984	2853676	9305.467	2911896	9495.313	2941006	9590.237
SYRACUSE, NY 13204-1091		10100202	CO	1345501	4387.503	1512883	4933.315	1540780	5024.284	1572215	5126.787	1587932	5178.039
		10100501	VOC	52	0.125	104	0.248	112	0.269	84	0.201	70	0.168

		10100501	VOC	40	0.095	79	0.188	85	0.204	64	0.153	53	0.127
		10100501	NOx	6259	14.968	12456	29.787	13489	32.257	10109	24.173	8418	20.131
		10100501	CO	1304	3.118	2595	6.206	2810	6.720	2106	5.036	1754	4.194
		10101201	NOx	97504	339.145	131553	457.577	137228	477.315	137228	477.315	137228	477.315
		10500106	VOC	59	0.013	62	0.014	63	0.014	64	0.014	64	0.014
		10500106	NOx	1080	0.235	1131	0.246	1139	0.248	1159	0.252	1168	0.254
		10500106	CO	907	0.197	950	0.206	957	0.208	973	0.212	981	0.213
		20100102	VOC	5	0.093	10	0.184	10	0.200	8	0.150	6	0.125
		20100102	NOx	91	1.742	180	3.467	195	3.755	146	2.814	122	2.343
		20100102	CO	20	0.375	39	0.746	42	0.808	31	0.606	26	0.504
TENNESSEE GAS PIPELINE CO - COMP STA 241	ONONDAGA	10500206	VOC	54	0.294	54	0.296	55	0.297	55	0.301	56	0.304
3447 SENTINEL HEIGHTS RD		10500206	NOx	1019	5.538	1028	5.588	1030	5.596	1047	5.688	1055	5.734
LAFAYETTE, NY 13804		10500206	CO	204	1.108	206	1.118	206	1.119	209	1.138	211	1.147
		20200202	VOC	20473	73.753	21431	77.204	21590	77.779	21963	79.120	22149	79.790
		20200202	NOx	96340	193.067	100848	202.100	101599	203.606	103350	207.115	104226	208.870
		20200202	CO	142920	424.267	149607	444.118	150722	447.427	153320	455.139	154619	458.995
		40799997	VOC	405	1.102	396	1.076	394	1.072	401	1.090	404	1.098
ANHEUSER BUSCH BALDWINSVILLE BREWERY	ONONDAGA	10200401	VOC	16	0.024	19	0.028	20	0.029	20	0.029	20	0.029
2885 BELGIUM RD		10200401	NOx	2726	3.957	3221	4.676	3303	4.795	3307	4.801	3309	4.803
BALDWINSVILLE, NY 13027		10200401	CO	290	0.421	343	0.497	351	0.510	352	0.511	352	0.511
		10200601	VOC	5726	14.936	5993	15.635	6038	15.751	6142	16.023	6194	16.159
		10200601	NOx	572550	1493.609	599340	1563.496	603805	1575.143	614212	1602.293	619416	1615.868
		10200601	CO	41640	108.626	43588	113.709	43913	114.556	44670	116.530	45048	117.518
		10200602	VOC	2	0.000	2	0.000	2	0.000	2	0.000	3	0.000
		10200602	NOx	59	0.000	62	0.000	62	0.000	63	0.000	64	0.000
		10200602	CO	35	0.000	37	0.000	37	0.000	38	0.000	38	0.000
		10200799	NOx	144754	423.950	150740	441.481	151738	444.403	152243	445.882	152495	446.622
		10200799	CO	10580	30.833	11018	32.108	11090	32.320	11127	32.428	11146	32.482
		10500106	VOC	317	0.453	332	0.474	334	0.477	340	0.486	343	0.490
		10500106	NOx	5760	8.229	6030	8.614	6074	8.678	6179	8.827	6231	8.902
		10500106	CO	4838	6.912	5065	7.235	5103	7.289	5190	7.415	5234	7.478
		20200102	VOC	40	2.213	41	2.233	41	2.236	40	2.209	40	2.196
		20200102	VOC	41	2.237	41	2.257	41	2.260	41	2.233	40	2.219

		20200102	NOx	499	27.397	503	27.644	504	27.685	498	27.354	495	27.188
		20200102	CO	107	5.902	108	5.955	109	5.964	107	5.892	107	5.857
		30200903	VOC	118152	346.750	119171	349.740	119340	350.238	119755	351.456	119963	352.065
		30200911	VOC	72893	213.925	73521	215.769	73626	216.077	73882	216.828	74010	217.204
		30200912	VOC	16	0.209	16	0.211	16	0.211	16	0.212	16	0.212
		30200999	VOC	32114	92.980	32391	93.782	32437	93.915	32550	94.242	32606	94.405
		39999994	VOC	5973	17.361	8557	24.871	8987	26.122	9504	27.623	9762	28.373
		40301097	VOC	15	0.041	17	0.046	17	0.047	18	0.048	18	0.049
		40301099	VOC	1	0.003	1	0.003	1	0.003	1	0.003	1	0.003
L & J G STICKLEY INC	ONONDAGA	10200903	VOC	319	0.000	360	0.000	367	0.000	373	0.000	376	0.000
1 STICKLEY DR		10200903	NOx	3992	0.000	4502	0.000	4587	0.000	4660	0.000	4696	0.000
MANLIUS, NY 13104		10200903	CO	36190	0.000	40819	0.000	41591	0.000	42249	0.000	42578	0.000
		40299995	VOC	253839	803.288	340467	1077.426	354905	1123.116	382170	1209.397	395802	1252.538
ONONDAGA CO RESOURCE RECOVERY FACILITY	ONONDAGA	20300101	VOC	39	7.131	41	7.577	41	7.652	42	7.721	42	7.755
5801 ROCK CUT RD		20300101	NOx	465	86.070	494	91.460	499	92.359	504	93.190	506	93.605
JAMESVILLE, NY 13078-9408		20300101	CO	102	18.817	108	19.996	109	20.192	110	20.374	111	20.465
		39999994	NOx	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		39999994	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		40799997	NOx	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		40799997	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		50100104	VOC	3713	10.897	3923	11.512	3958	11.615	4085	11.989	4149	12.176
		50100104	VOC	7119	20.893	7521	22.072	7588	22.269	7832	22.986	7955	23.345
		50100104	NOx	1634714	4797.530	1727007	5068.391	1742389	5113.534	1798511	5278.239	1826572	5360.592
		50100104	CO	87518	256.846	92459	271.347	93283	273.764	96287	282.582	97790	286.991
		68241008	NOx	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		68241008	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
SYROCO INC	ONONDAGA	39000689	NOx	2816	1.307	2948	1.369	2970	1.379	3021	1.403	3047	1.414
7528 STATE FAIR BLVD		39000689	CO	2365	1.098	2476	1.150	2495	1.158	2538	1.178	2559	1.188
BALDWINSVILLE, NY 13027		40200101	VOC	11581	50.351	15533	67.534	16192	70.398	17436	75.807	18057	78.511
		40200110	VOC	29071	126.395	38992	169.529	40645	176.718	43768	190.294	45329	197.083
		40200110	VOC	25531	111.004	34244	148.887	35696	155.201	38438	167.124	39810	173.085
EXXONMOBIL TED PARK TERMINAL	ONONDAGA	20200102	NOx	7	0.018	7	0.018	7	0.018	7	0.018	7	0.018
2951 ENERGY DR		20200102	CO	2	0.005	2	0.005	2	0.005	2	0.005	2	0.005

WARNERS, NY 13164		40301020	VOC	3365	9.143	3772	10.250	3840	10.434	3976	10.804	4044	10.989
		40400151	VOC	641	1.741	718	1.951	731	1.986	757	2.057	770	2.092
		40400154	VOC	27666	75.179	31016	84.282	31574	85.799	32693	88.840	33253	90.361
		40400160	VOC	87504	237.783	98099	266.572	99864	271.370	103404	280.990	105174	285.800
		40400250	VOC	36170	101.608	40550	113.911	41279	115.961	42743	120.072	43474	122.127
SPEAR USA	OSWEGO	10201002	VOC	0	0.006	0	0.005	0	0.005	0	0.005	0	0.005
6 MORRILL PL		10201002	NOx	19	0.365	18	0.344	18	0.341	18	0.343	18	0.344
FULTON, NY 13069		10201002	CO	3	0.062	3	0.058	3	0.057	3	0.058	3	0.058
		39000689	VOC	638	1.595	668	1.670	673	1.682	684	1.711	690	1.726
		39000689	NOx	11600	29.000	12143	30.357	12233	30.583	12444	31.110	12550	31.374
		39000689	CO	9744	24.360	10200	25.500	10276	25.690	10453	26.133	10542	26.354
		40100399	VOC	483	1.418	617	1.809	639	1.875	674	1.978	691	2.029
		40500311	VOC	3872	10.522	3633	9.873	3593	9.764	3644	9.902	3669	9.971
		40500511	VOC	19481	58.400	18279	54.797	18079	54.196	18334	54.960	18461	55.342
		40500511	VOC	20201	60.590	18955	56.851	18747	56.228	19011	57.021	19143	57.418
		40500597	VOC	56	0.152	53	0.143	52	0.141	53	0.143	53	0.144
		40700809	VOC	23	0.063	22	0.061	22	0.061	23	0.062	23	0.062
		40700810	VOC	23	0.063	22	0.061	22	0.061	23	0.062	23	0.062
		40704405	VOC	85	0.231	83	0.226	83	0.225	84	0.228	85	0.230
		40704406	VOC	144	0.391	141	0.382	140	0.381	142	0.387	144	0.390
		40704497	VOC	3	0.008	3	0.008	3	0.008	3	0.008	3	0.008
		40704498	VOC	6	0.016	6	0.016	6	0.016	6	0.016	6	0.016
FULTON COGENERATION ASSOC PROJECT	OSWEGO	10100601	NOx	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
662 SOUTH 7TH ST (BETWEEN BURT & JOHN STS)		10100601	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
FULTON, NY 13069		10200602	VOC	1112	2.695	1164	2.822	1173	2.843	1193	2.892	1203	2.916
		10200602	NOx	44471	107.794	46552	112.838	46899	113.678	47707	115.638	48111	116.617
		10200602	CO	12971	31.441	13578	32.912	13679	33.157	13915	33.728	14033	34.014
		10500106	NOx	2350	0.000	2460	0.000	2478	0.000	2521	0.000	2542	0.000
		10500106	CO	1974	0.000	2066	0.000	2082	0.000	2118	0.000	2136	0.000
		20200102	VOC	4	0.342	4	0.345	4	0.345	4	0.341	4	0.339
		20200102	NOx	51	4.267	52	4.305	52	4.311	51	4.260	51	4.234
		20200102	CO	11	0.917	11	0.925	11	0.926	11	0.915	11	0.910
		20200203	VOC	1822	41.965	1907	43.928	1921	44.256	1955	45.018	1971	45.400

		20200203	VOC	1822	41.959	1907	43.922	1921	44.249	1954	45.012	1971	45.393
		20200203	NOx	32914	758.084	34454	793.555	34711	799.467	35309	813.247	35608	820.137
		20200203	CO	56711	1306.182	59365	1367.299	59807	1377.486	60838	1401.228	61353	1413.100
INDECK-OSWEGO LIMITED PARTNERSHIP	OSWEGO	20200203	VOC	2081	22.116	2178	23.150	2195	23.323	2232	23.725	2251	23.926
105 MITCHELL ST		20200203	NOx	108933	1138.815	114030	1192.101	114880	1200.982	116860	1221.682	117850	1232.033
OSWEGO, NY 13126		20200203	CO	7948	83.235	8320	87.129	8382	87.778	8526	89.291	8599	90.048
OSWEGO HARBOR POWER	OSWEGO	10100401	VOC	24657	1041.908	36753	1553.061	38769	1638.253	38278	1617.517	38033	1607.149
261 WASHINGTON BLVD		10100401	VOC	23335	986.065	34783	1469.822	36691	1550.448	36227	1530.824	35995	1521.011
OSWEGO, NY 13126		10100401	NOx	1052739	44008.842	1569206	65599.294	1655284	69197.699	1634332	68321.836	1623856	67883.903
		10100401	CO	162215	6854.657	241797	10217.507	255060	10777.981	251832	10641.560	250218	10573.349
		10100601	VOC	495	18.373	542	20.112	550	20.401	607	22.539	636	23.608
		10100601	CO	7560	280.603	8275	307.158	8395	311.584	9274	344.238	9714	360.566
		10101302	VOC	1	0.023	2	0.037	2	0.040	2	0.036	1	0.035
		10101302	CO	5	0.116	8	0.187	9	0.199	8	0.182	7	0.174
		10200601	VOC	1584	2.083	1658	2.181	1671	2.197	1699	2.235	1714	2.254
		10200601	VOC	2057	2.705	2153	2.832	2169	2.853	2207	2.902	2225	2.927
		10200601	NOx	71060	93.459	74385	97.832	74939	98.561	76231	100.260	76877	101.109
		10200601	CO	31416	41.319	32886	43.252	33131	43.574	33702	44.325	33988	44.701
		10200602	VOC	1582	4.300	1656	4.501	1669	4.534	1697	4.613	1712	4.652
		10200602	VOC	2055	5.583	2151	5.844	2167	5.888	2204	5.990	2223	6.040
		10200602	NOx	37357	101.514	39105	106.263	39396	107.055	40075	108.900	40415	109.823
		10200602	CO	31380	85.271	32848	89.261	33093	89.926	33663	91.476	33948	92.251
		20200102	VOC	41	0.068	41	0.068	41	0.069	40	0.068	40	0.067
		20200102	NOx	496	0.831	501	0.839	501	0.840	495	0.830	492	0.825
		20200102	CO	107	0.179	108	0.181	108	0.181	107	0.179	106	0.178
		39090006	VOC	224	0.609	265	0.719	271	0.738	272	0.738	272	0.739
		39999994	VOC	2000	5.435	2865	7.786	3009	8.177	3182	8.647	3269	8.882
SOUTH OSWEGO TERMINAL	OSWEGO	10300501	VOC	14	1.181	15	1.255	15	1.267	15	1.279	15	1.285
RIDGE RD & CO RTE 20		10300501	VOC	17	1.388	18	1.475	18	1.490	18	1.503	18	1.510
OSWEGO, NY 13126		10300501	NOx	980	81.667	1041	86.781	1052	87.634	1061	88.422	1066	88.816
		10300501	CO	245	20.417	260	21.695	263	21.908	265	22.106	266	22.204
		39090003	VOC	175	0.476	177	0.480	177	0.481	175	0.475	174	0.472

		39090005	VOC	261	0.709	308	0.838	316	0.859	317	0.860	317	0.861
		40301099	VOC	67	0.182	75	0.204	76	0.208	79	0.215	81	0.219
FELIX SCHOELLER TECHNICAL PAPERS	OSWEGO	10200602	VOC	1059	2.353	1108	2.463	1117	2.482	1136	2.524	1146	2.546
179 CO RTE 2A		10200602	VOC	1375	3.056	1439	3.199	1450	3.222	1475	3.278	1488	3.306
PULASKI, NY 13142-0250		10200602	NOx	25000	55.556	26170	58.155	26365	58.588	26819	59.598	27046	60.103
		10200602	CO	21000	46.667	21983	48.850	22146	49.214	22528	50.062	22719	50.487
		30701399	VOC	119	0.000	133	0.000	135	0.000	140	0.000	143	0.000
		39999994	VOC	40	0.000	57	0.000	60	0.000	64	0.000	65	0.000
		40201301	VOC	46845	260.250	52160	289.775	53045	294.696	55221	306.785	56309	312.830
		40201303	VOC	13973	37.039	15558	41.241	15822	41.941	16472	43.662	16796	44.522
		40201399	VOC	23479	130.340	26143	145.127	26587	147.591	27677	153.646	28223	156.673
		40202299	VOC	2550	7.084	3195	8.874	3302	9.173	3493	9.702	3588	9.967
		40204330	VOC	4648	15.932	5035	17.257	5099	17.478	5259	18.025	5338	18.299
		40204340	VOC	55244	153.456	59839	166.218	60604	168.345	62500	173.612	63449	176.246
		50300702	VOC	6341	17.231	8277	22.492	8600	23.369	9208	25.020	9511	25.846
		50300702	VOC	6287	17.084	8207	22.301	8527	23.170	9129	24.807	9430	25.626
NOVELIS CORPORATION	OSWEGO	10201302	VOC	594	2.461	614	2.546	618	2.560	622	2.577	624	2.585
448 CO RTE 1A		10201302	NOx	11286	46.756	11674	48.366	11739	48.634	11817	48.956	11856	49.117
OSWEGO, NY 13126-0028		10201302	CO	2970	12.304	3072	12.728	3089	12.798	3110	12.883	3120	12.926
		10500106	VOC	62	0.164	64	0.172	65	0.173	66	0.176	67	0.177
		10500106	NOx	1120	2.983	1172	3.122	1181	3.145	1201	3.200	1212	3.227
		10500106	CO	941	2.505	985	2.623	992	2.642	1009	2.688	1018	2.710
		30400131	VOC	10838	38.053	14488	50.870	15097	53.006	16117	56.590	16628	58.382
		39000689	VOC	14487	39.367	15165	41.209	15278	41.516	15541	42.231	15673	42.589
		39000689	NOx	263400	715.761	275725	749.252	277779	754.834	282567	767.844	284961	774.349
		39000689	CO	221256	601.239	231609	629.371	233334	634.060	237356	644.989	239367	650.454
		39000699	VOC	194	0.523	203	0.548	205	0.552	208	0.561	210	0.566
		39000699	NOx	3530	9.516	3695	9.961	3723	10.035	3787	10.208	3819	10.295
		39000699	CO	2965	7.993	3104	8.367	3127	8.429	3181	8.575	3208	8.647
INDEPENDENCE STATION	OSWEGO	10200601	VOC	83	0.398	86	0.417	87	0.420	89	0.427	89	0.431
76 INDEPENDENCE HWY		10200601	NOx	60465	291.331	63294	304.963	63766	307.234	64865	312.530	65414	315.178
SCRIBA, NY 13126		10200601	CO	27207	131.090	28480	137.224	28693	138.246	29187	140.629	29434	141.821
		10500106	NOx	4032	10.955	4220	11.468	4252	11.553	4325	11.752	4361	11.852

		10500106	CO	3386	9.202	3545	9.633	3571	9.705	3633	9.872	3664	9.956
		20200101	VOC	26	1.591	26	1.605	26	1.607	26	1.588	26	1.579
		20200101	NOx	559	34.575	565	34.887	565	34.939	559	34.520	555	34.311
		20200101	CO	1	0.035	1	0.035	1	0.035	1	0.035	1	0.034
		20200102	VOC	55	1.503	56	1.516	56	1.519	55	1.500	55	1.491
		20200102	VOC	55	1.503	56	1.516	56	1.518	55	1.500	55	1.491
		20200102	NOx	679	18.408	685	18.574	686	18.602	678	18.379	674	18.268
		20200102	CO	146	3.966	148	4.001	148	4.007	146	3.959	145	3.935
		20200201	VOC	12715	30.129	13310	31.539	13409	31.774	13640	32.322	13756	32.596
		20200201	NOx	544800	1290.939	570292	1351.343	574540	1361.410	584443	1384.876	589395	1396.609
		20200201	CO	2627871	6226.912	2750831	6518.272	2771324	6566.832	2819091	6680.021	2842975	6736.615
INTERFACE SOLUTIONS INC	OSWEGO	10200401	VOC	76	0.220	90	0.260	92	0.267	92	0.267	92	0.267
2885 ST RTE 481		10200401	VOC	97	0.281	115	0.332	118	0.340	118	0.340	118	0.341
FULTON, NY 13069		10200401	NOx	16302	47.096	19263	55.647	19756	57.073	19778	57.137	19789	57.169
		10200401	CO	1734	5.010	2049	5.920	2102	6.072	2104	6.078	2105	6.082
		10200601	VOC	377	0.447	394	0.468	397	0.471	404	0.479	407	0.483
		10200601	NOx	7805	9.262	8170	9.695	8231	9.768	8373	9.936	8444	10.020
		10200601	CO	5751	6.825	6021	7.144	6065	7.198	6170	7.322	6222	7.384
		10300501	VOC	4	0.012	4	0.012	4	0.012	5	0.013	5	0.013
		10300501	NOx	296	0.816	314	0.868	318	0.876	320	0.884	322	0.888
		10300501	CO	62	0.170	66	0.181	66	0.183	67	0.184	67	0.185
		10500106	NOx	49	1.475	51	1.544	52	1.556	53	1.583	53	1.596
		10500106	CO	41	1.239	43	1.297	43	1.307	44	1.330	45	1.341
		20100102	VOC	0	0.029	1	0.057	1	0.062	1	0.046	0	0.039
		20100102	VOC	0	0.029	1	0.057	1	0.062	1	0.047	0	0.039
		20100102	NOx	7	0.543	13	1.081	14	1.170	11	0.877	9	0.730
		20100102	CO	1	0.117	3	0.233	3	0.252	2	0.189	2	0.157
		20200102	VOC	2	0.050	2	0.050	2	0.050	2	0.050	2	0.050
		20200102	VOC	1	0.049	2	0.050	2	0.050	1	0.049	1	0.049
		20200102	NOx	19	0.611	19	0.617	19	0.618	18	0.610	18	0.607
		20200102	CO	4	0.132	4	0.133	4	0.133	4	0.131	4	0.131
		30701399	VOC	42912	180.223	47780	200.669	48592	204.077	50585	212.449	51582	216.635
		30701399	VOC	58436	245.408	65066	273.250	66170	277.890	68885	289.290	70242	294.990

OSWEGO CO ENERGY RECOVERY FAC	OSWEGO	10200603	VOC	6	0.000	7	0.000	7	0.000	7	0.000	7	0.000
2801 ST RTE 481		10200603	NOx	115	0.000	120	0.000	121	0.000	123	0.000	124	0.000
FULTON, NY 13069		10200603	CO	24	0.000	25	0.000	25	0.000	26	0.000	26	0.000
		20200102	VOC	8	0.163	9	0.164	9	0.165	8	0.163	8	0.162
		20200102	VOC	9	0.165	9	0.166	9	0.167	9	0.165	9	0.164
		20200102	NOx	105	2.018	106	2.037	106	2.040	105	2.015	104	2.003
		20200102	CO	23	0.435	23	0.439	23	0.439	23	0.434	22	0.431
		20200202	VOC	12	0.236	13	0.247	13	0.249	13	0.253	13	0.255
		20200202	NOx	102	1.958	107	2.050	107	2.065	109	2.101	110	2.118
		20200202	CO	88	1.691	92	1.770	93	1.783	94	1.814	95	1.829
		50100103	VOC	8	0.022	8	0.022	8	0.022	8	0.022	8	0.022
		50100103	NOx	343620	952.425	342042	948.051	341779	947.322	341779	947.322	341779	947.322
		50100103	CO	1494	4.141	1487	4.122	1486	4.119	1486	4.119	1486	4.119
CORNELL UNIVERSITY MAIN CAMPUS	TOMPKINS	10200204	NOx	270437	912.725	282431	953.205	284430	959.952	285119	962.278	285464	963.441
COLLEGE AVE		10200204	CO	111065	374.844	115991	391.469	116812	394.240	117095	395.195	117236	395.673
ITHACA, NY 14853		10200205	VOC	2300	4.600	2402	4.804	2419	4.838	2425	4.850	2428	4.856
		10200205	NOx	411807	823.614	430071	860.142	433115	866.230	434165	868.329	434689	869.379
		10200205	CO	275964	551.928	288203	576.407	290243	580.486	290947	581.893	291298	582.596
		10200401	VOC	10	0.000	12	0.000	13	0.000	13	0.000	13	0.000
		10200401	VOC	8	0.000	10	0.000	10	0.000	10	0.000	10	0.000
		10200401	NOx	1446	0.000	1709	0.000	1753	0.000	1755	0.000	1756	0.000
		10200401	CO	22	0.000	26	0.000	27	0.000	27	0.000	27	0.000
		10200503	VOC	0	0.002	0	0.002	0	0.002	0	0.002	0	0.002
		10200503	NOx	49	0.193	50	0.194	50	0.195	49	0.192	49	0.191
		10200503	CO	12	0.048	12	0.049	12	0.049	12	0.048	12	0.048
		10200601	VOC	335	3.554	351	3.720	353	3.748	359	3.812	362	3.845
		10200601	VOC	435	4.615	455	4.831	459	4.867	467	4.951	470	4.992
		10200601	NOx	7576	80.256	7930	84.011	7990	84.637	8127	86.096	8196	86.825
		10200601	CO	99	0.693	104	0.726	105	0.731	107	0.744	108	0.750
		10300603	VOC	671	2.625	677	2.649	678	2.653	689	2.697	695	2.718
		10300603	VOC	871	3.409	879	3.440	880	3.445	895	3.502	902	3.530
		10300603	NOx	15840	61.983	15983	62.543	16007	62.637	16270	63.666	16402	64.181
		10300603	CO	13306	52.065	13426	52.536	13446	52.615	13667	53.480	13778	53.912

		20200252	VOC	50	0.195	52	0.204	53	0.206	54	0.209	54	0.211
		20200252	NOx	1221	4.779	1278	5.002	1288	5.039	1310	5.126	1321	5.170
		20200252	CO	172	0.671	180	0.703	181	0.708	184	0.720	186	0.726
		20200401	VOC	138	2.934	139	2.960	139	2.965	137	2.929	136	2.912
		20200401	NOx	5971	130.320	6025	131.493	6033	131.689	5961	130.112	5925	129.323
		20200401	CO	1424	30.388	1437	30.661	1439	30.707	1422	30.339	1414	30.156
		20300101	VOC	135	0.530	144	0.563	145	0.568	147	0.573	147	0.576
		20300101	NOx	1661	6.500	1765	6.907	1782	6.974	1798	7.037	1806	7.069
		20300101	CO	357	1.397	379	1.485	383	1.500	387	1.513	388	1.520
		20300301	NOx	4	0.016	4	0.017	4	0.017	4	0.017	4	0.017
		20300301	CO	157	0.614	166	0.650	168	0.656	166	0.650	165	0.647
		30600701	VOC	793	2.327	889	2.609	905	2.656	937	2.750	953	2.797
		40299998	VOC	825	3.143	1107	4.215	1153	4.394	1242	4.732	1286	4.901
		50100505	NOx	842	3.295	869	3.400	873	3.417	872	3.414	872	3.412
		50100505	CO	698	2.731	720	2.818	724	2.833	723	2.830	723	2.828
BORGER STATION	TOMPKINS	10300603	VOC	70	0.139	70	0.141	70	0.141	72	0.143	72	0.144
219 ELLIS HOLLOW CK RD		10300603	NOx	1163	2.325	1173	2.346	1175	2.350	1194	2.388	1204	2.407
ITHACA, NY 14850		10300603	CO	246	0.493	249	0.497	249	0.498	253	0.506	255	0.510
		10500206	VOC	459	1.246	463	1.258	464	1.260	471	1.280	475	1.291
		10500206	NOx	7487	20.346	7555	20.530	7566	20.560	7691	20.898	7753	21.067
		10500206	CO	1692	4.599	1708	4.641	1710	4.647	1738	4.724	1752	4.762
		20300202	VOC	2750	0.000	2775	0.000	2779	0.000	2825	0.000	2847	0.000
		20300202	NOx	124186	0.000	125309	0.000	125496	0.000	127559	0.000	128591	0.000
		20300202	CO	47013	0.000	47438	0.000	47509	0.000	48290	0.000	48681	0.000
		31088801	VOC	29609	80.459	32789	89.102	33319	90.542	34697	94.284	35385	96.155
BORG WARNER MORSE TEC INC	TOMPKINS	10200603	VOC	1322	2.644	1384	2.768	1394	2.788	1418	2.836	1430	2.860
800 WARREN RD		10200603	NOx	24185	48.369	25316	50.632	25505	51.010	25944	51.889	26164	52.328
ITHACA, NY 14850		10200603	CO	5111	10.222	5350	10.700	5390	10.780	5483	10.966	5529	11.059
		20200102	VOC	1	0.003	1	0.003	1	0.003	1	0.003	1	0.003
		20200102	NOx	1710	5.151	1725	5.197	1728	5.205	1707	5.142	1697	5.111
		20200102	CO	330	0.994	333	1.003	333	1.004	329	0.992	327	0.986
		20200301	VOC	5619	16.925	5618	16.922	5618	16.922	5646	17.007	5661	17.050
		20200301	NOx	7752	23.349	7750	23.345	7750	23.344	7789	23.462	7809	23.521

		20200301	CO	115562	348.078	115539	348.009	115535	347.998	116119	349.757	116411	350.636
		30402201	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		30402211	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		30900201	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		39001089	VOC	22	0.064	21	0.060	20	0.060	20	0.060	21	0.060
		39001089	NOx	1019	2.996	959	2.822	950	2.793	955	2.810	958	2.819
		39001089	CO	138	0.407	130	0.383	129	0.379	130	0.381	130	0.383
		39999994	VOC	6695	21.409	9591	30.669	10074	32.212	10652	34.063	10942	34.988
		40202599	VOC	384	1.477	560	2.152	589	2.265	640	2.463	666	2.562
		40301098	VOC	2683	8.599	3008	9.641	3062	9.814	3171	10.162	3225	10.336
AES CAYUGA	TOMPKINS	10100202	VOC	51429	143.627	57827	161.495	58893	164.473	60094	167.828	60695	169.506
228 CAYUGA DR		10100202	NOx	7219259	20091.755	8117345	22591.198	8267026	23007.771	8435687	23477.168	8520018	23711.867
LANSING, NY 14882		10100202	CO	428573	1196.893	481888	1345.788	490773	1370.604	500786	1398.567	505792	1412.548
		10100501	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		10100501	NOx	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		10100501	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
NYS ELMIRA CORRECTIONAL FACILITY	CHEMUNG	10300402	VOC	23	0.000	21	0.000	21	0.000	21	0.000	21	0.000
DAVIS ST		10300402	NOx	1103	0.000	1026	0.000	1013	0.000	1028	0.000	1036	0.000
ELMIRA, NY 14902		10300402	CO	100	0.000	93	0.000	92	0.000	93	0.000	94	0.000
		10300602	VOC	1045	1.703	1054	1.719	1056	1.721	1073	1.749	1082	1.764
		10300602	VOC	804	1.312	812	1.323	813	1.325	826	1.347	833	1.358
		10300602	NOx	18993	30.967	19165	31.247	19193	31.294	19509	31.808	19667	32.065
		10300602	CO	15954	26.012	16098	26.247	16122	26.287	16387	26.719	16520	26.935
		30400102	NOx	134	0.557	179	0.745	186	0.777	199	0.829	205	0.855
ANCHOR GLASS CONTAINER CORP	CHEMUNG	10200602	VOC	13	0.000	13	0.000	13	0.000	14	0.000	14	0.000
151 EAST MCCANNS BLVD		10200602	VOC	16	0.000	17	0.000	17	0.000	18	0.000	18	0.000
ELMIRA HEIGHTS, NY 14903		10200602	NOx	300	0.000	314	0.000	316	0.000	322	0.000	324	0.000
		10200602	CO	252	0.000	264	0.000	266	0.000	270	0.000	272	0.000
		10500106	NOx	1101	0.000	1153	0.000	1161	0.000	1181	0.000	1191	0.000
		10500106	CO	925	0.000	968	0.000	975	0.000	992	0.000	1001	0.000
		30501402	VOC	46231	125.628	51135	138.953	51952	141.174	53843	146.313	54789	148.883
		30501402	NOx	1091889	2967.090	1207700	3281.793	1227002	3334.243	1271674	3455.635	1294010	3516.331
		30501402	CO	46231	125.628	51135	138.953	51952	141.174	53843	146.313	54789	148.883

		30501406	VOC	10479	28.476	11590	31.496	11776	31.999	12204	33.164	12419	33.747
		30501406	CO	578	1.571	640	1.738	650	1.766	673	1.830	685	1.862
		40299995	VOC	482	1.310	647	1.757	674	1.832	726	1.973	752	2.043
CHEMUNG COUNTY LANDFILL	CHEMUNG	50100402	VOC	23124	88.939	24430	93.960	24647	94.797	25441	97.850	25838	99.377
4349 CO RTE 60		50100410	VOC	33	0.089	33	0.089	33	0.089	33	0.089	33	0.089
ELMIRA, NY 14901		50100410	NOx	75	0.202	74	0.202	74	0.201	74	0.201	74	0.201
		50100410	CO	3130	8.505	3116	8.466	3113	8.460	3113	8.460	3113	8.460
VULCRAFT OF NEW YORK INC	CHEMUNG	40200210	VOC	56090	219.483	75232	294.386	78422	306.869	84447	330.444	87459	342.231
5362 RAILROAD ST		40200210	VOC	55930	218.857	75017	293.546	78198	305.994	84206	329.501	87210	341.255
CHEMUNG, NY 14825													
BATAVIA POWER PLANT	GENESEE	20200102	VOC	5	0.106	5	0.107	5	0.108	5	0.106	5	0.106
163 CEDAR ST		20200102	NOx	229	4.966	231	5.011	231	5.018	228	4.958	227	4.928
BATAVIA, NY 14020		20200102	CO	18	0.390	18	0.393	18	0.394	18	0.389	18	0.387
		20300102	VOC	119	1.434	126	1.524	128	1.539	129	1.552	129	1.559
		20300102	NOx	2140	25.805	2274	27.421	2296	27.690	2317	27.939	2327	28.064
		20300102	CO	350	4.217	372	4.481	375	4.525	379	4.566	380	4.586
		20300203	VOC	10551	186.269	10647	187.953	10662	188.234	10838	191.328	10925	192.875
		20300203	NOx	49789	885.908	50239	893.919	50314	895.254	51141	909.970	51554	917.328
		20300203	CO	10008	188.620	10099	190.326	10114	190.610	10280	193.743	10363	195.310
LAPP INSULATOR	GENESEE	10200603	NOx	4663	12.671	4881	13.264	4918	13.363	5002	13.593	5045	13.708
130 GILBERT ST		10200603	CO	3917	10.644	4100	11.142	4131	11.225	4202	11.418	4238	11.515
LEROY, NY 14482		10500106	NOx	4653	0.000	4871	0.000	4907	0.000	4992	0.000	5034	0.000
		10500106	CO	3909	0.000	4091	0.000	4122	0.000	4193	0.000	4228	0.000
		39000489	NOx	21424	171.390	25314	202.511	25962	207.697	25991	207.932	26006	208.049
		39000489	CO	4615	36.921	5453	43.625	5593	44.742	5599	44.793	5602	44.818
		39000689	VOC	1654	4.710	1731	4.930	1744	4.967	1774	5.053	1789	5.096
		39000689	NOx	30065	85.637	31472	89.644	31706	90.312	32253	91.868	32526	92.647
		39000689	CO	25255	71.935	26436	75.301	26633	75.862	27092	77.169	27322	77.823
		40202599	VOC	757	2.912	1015	3.906	1059	4.071	1140	4.384	1181	4.540
		40202599	VOC	816	3.138	1094	4.209	1141	4.387	1228	4.725	1272	4.893
U S GYPSUM CO OAKFIELD PLANT	GENESEE	10200602	VOC	1341	3.672	1403	3.843	1414	3.872	1438	3.939	1450	3.972
2750 MAPLE AVE		10200602	VOC	1741	4.768	1823	4.991	1836	5.028	1868	5.115	1884	5.158

OAKFIELD, NY 14125		10200602	NOx	31656	86.688	33137	90.744	33384	91.420	33959	92.995	34247	93.783
		10200602	CO	26591	72.818	27835	76.225	28043	76.793	28526	78.116	28768	78.778
		10500106	VOC	35	0.000	37	0.000	37	0.000	37	0.000	38	0.000
		10500106	NOx	635	0.000	665	0.000	670	0.000	681	0.000	687	0.000
		10500106	CO	533	0.000	558	0.000	563	0.000	572	0.000	577	0.000
		20200203	VOC	698	1.984	731	2.077	737	2.093	749	2.129	756	2.147
		20200203	NOx	108767	308.997	113856	323.455	114704	325.865	116682	331.482	117670	334.290
		20200203	CO	27298	77.552	28576	81.181	28789	81.786	29285	83.196	29533	83.900
		30701399	VOC	2993	8.133	3333	9.056	3389	9.210	3528	9.587	3598	9.776
STATE UNIVERSITY OF NEW YORK AT GENESEO	LIVINGSTON	10200501	VOC	54	0.000	55	0.000	55	0.000	54	0.000	54	0.000
1 COLLEGE CIR		10200501	NOx	6523	0.000	6582	0.000	6592	0.000	6513	0.000	6473	0.000
GENESEO, NY 14454		10200501	CO	1359	0.000	1371	0.000	1373	0.000	1357	0.000	1349	0.000
		10200602	VOC	217	0.000	227	0.000	229	0.000	232	0.000	234	0.000
		10200602	NOx	3940	0.000	4124	0.000	4155	0.000	4227	0.000	4263	0.000
		10200602	CO	3310	0.000	3464	0.000	3490	0.000	3550	0.000	3581	0.000
		10300603	VOC	536	0.175	541	0.176	542	0.177	551	0.180	555	0.181
		10300603	NOx	9750	3.179	9838	3.208	9853	3.213	10015	3.266	10096	3.292
		10300603	CO	8190	2.671	8264	2.695	8276	2.699	8412	2.743	8480	2.765
COMBUSTION & ENVIRONMENTAL TEST FACILITY	LIVINGSTON	10200802	VOC	4	0.000	4	0.000	4	0.000	4	0.000	4	0.000
9431 FOSTER WHEELER ROAD		10200802	NOx	108	0.000	112	0.000	112	0.000	113	0.000	113	0.000
DANSVILLE, NY 14437-9178		10200802	CO	15	0.000	15	0.000	15	0.000	15	0.000	15	0.000
		10300206	NOx	404	0.000	421	0.000	423	0.000	422	0.000	421	0.000
		10300206	CO	55	0.000	57	0.000	57	0.000	57	0.000	57	0.000
		10300602	VOC	16	0.000	16	0.000	16	0.000	16	0.000	16	0.000
		10300602	VOC	12	0.000	12	0.000	12	0.000	12	0.000	12	0.000
		10300602	NOx	74	0.000	75	0.000	75	0.000	76	0.000	77	0.000
		10300602	CO	10	0.000	10	0.000	10	0.000	10	0.000	10	0.000
ARKEMA INC	LIVINGSTON	10500106	NOx	5280	14.348	5527	15.019	5568	15.131	5664	15.392	5712	15.522
ST RTE 63 - N SIDE - W OF RIVER		10500106	CO	4435	12.052	4643	12.616	4677	12.710	4758	12.929	4798	13.039
PIFFARD, NY 14533		39999992	VOC	21160	61.240	30313	87.729	31838	92.144	33668	97.437	34582	100.084
		39999994	VOC	120735	328.085	172959	469.998	181663	493.650	192100	522.010	197318	536.191
		39999994	VOC	120737	328.090	172962	470.005	181666	493.657	192103	522.018	197321	536.199
TGP COMPRESSOR STATION 233	LIVINGSTON	10500106	VOC	55	1.146	58	1.199	58	1.208	59	1.229	60	1.240

2262 DOW ROAD		10500106	NOx	1000	20.833	1047	21.808	1055	21.971	1073	22.349	1082	22.539
PIFFARD, NY 14533		10500106	CO	840	17.500	879	18.319	886	18.455	901	18.773	909	18.932
		20200201	VOC	354	1.771	371	1.854	374	1.868	380	1.900	383	1.916
		20200201	VOC	684	3.419	716	3.579	721	3.605	734	3.668	740	3.699
		20200201	NOx	104192	520.960	109067	545.336	109880	549.399	111774	558.868	112721	563.603
		20200201	CO	26699	133.496	27948	139.742	28157	140.783	28642	143.210	28885	144.423
		20200202	NOx	284	71.000	297	74.322	300	74.876	305	76.166	307	76.812
		20200202	CO	40	9.975	42	10.442	42	10.520	43	10.701	43	10.792
		40799997	VOC	0	0.001	0	0.001	0	0.001	0	0.001	0	0.001
HIGH ACRES LANDFILL & RECYCLING CENTER	WAYNE	39999994	VOC	80	0.305	115	0.436	121	0.458	128	0.485	131	0.498
425 PERINTON PKWY													
FAIRPORT, NY 14450													
AMERICAN PACKAGING CORP	MONROE	10500106	VOC	187	0.000	196	0.000	197	0.000	201	0.000	202	0.000
777 DRIVING PARK AVE		10500106	NOx	3400	0.000	3559	0.000	3586	0.000	3647	0.000	3678	0.000
ROCHESTER, NY 14613		10500106	CO	2856	0.000	2990	0.000	3012	0.000	3064	0.000	3090	0.000
		40201301	VOC	740385	2373.029	824381	2642.248	838381	2687.118	872773	2797.350	889969	2852.466
		40201301	VOC	731517	2344.606	814507	2610.601	828339	2654.933	862320	2763.845	879310	2818.301
		40500311	VOC	75400	241.667	70748	226.756	69973	224.271	70959	227.434	71453	229.015
SUNOCO PARTNERS M & T ROCHESTER TERMINAL	MONROE	40400151	VOC	458	1.244	513	1.394	522	1.419	541	1.470	550	1.495
1840 LYELL AVE		40400160	VOC	29679	87.233	33273	97.794	33871	99.555	35072	103.084	35673	104.848
ROCHESTER, NY 14606		40400199	VOC	260	0.764	292	0.857	297	0.872	308	0.903	313	0.918
		40400250	VOC	15066	41.235	16890	46.228	17194	47.060	17803	48.728	18108	49.563
		40400498	VOC	78	0.213	88	0.239	89	0.243	93	0.252	94	0.256
KODAK PARK DIVISION	MONROE	10200202	VOC	11547	33.889	12060	35.392	12145	35.643	12174	35.729	12189	35.772
1669 LAKE AVE		10200202	NOx	2035821	5974.692	2126112	6239.677	2141160	6283.841	2146349	6299.068	2148943	6306.682
ROCHESTER, NY 14650		10200202	CO	96229	282.411	100497	294.936	101208	297.024	101453	297.744	101576	298.104
		10200203	NOx	6244607	22711.867	6521563	23719.165	6567722	23887.048	6583637	23944.933	6591595	23973.875
		10200203	CO	190942	699.216	199410	730.227	200822	735.395	201309	737.177	201552	738.068
		10200206	VOC	132445	374.302	138319	390.903	139298	393.669	139636	394.623	139805	395.100
		10200206	NOx	1355017	3829.396	1415114	3999.234	1425130	4027.540	1428583	4037.300	1430310	4042.180
		10200206	CO	1120691	3167.170	1170395	3307.638	1178679	3331.049	1181535	3339.121	1182963	3343.157
		10200401	VOC	794	1.518	938	1.794	962	1.840	963	1.842	964	1.843

10200401	NOx	201654	365.359	238269	431.699	244372	442.756	244648	443.256	244786	443.506
10200401	CO	14180	27.114	16755	32.038	17184	32.858	17203	32.895	17213	32.914
10200501	VOC	24	0.069	24	0.070	24	0.070	24	0.069	23	0.069
10200501	NOx	1276	3.745	1287	3.779	1289	3.784	1274	3.739	1266	3.716
10200501	CO	590	1.732	595	1.747	596	1.750	589	1.729	585	1.718
10200602	VOC	6969	25.730	7295	26.934	7349	27.134	7476	27.602	7539	27.836
10200602	NOx	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
10200602	CO	106428	392.965	111408	411.352	112238	414.416	114172	421.560	115140	425.131
30182002	VOC	757	2.057	945	2.567	976	2.652	1034	2.811	1064	2.890
31306599	VOC	782	2.793	1165	4.161	1229	4.389	1360	4.858	1426	5.093
31306599	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
31603001	VOC	153954	549.153	146897	523.982	145721	519.787	145207	517.952	144950	517.034
31603002	VOC	138517	390.202	132168	372.317	131110	369.336	130647	368.032	130415	367.380
31603002	NOx	182	0.722	174	0.689	172	0.684	172	0.681	171	0.680
31604001	VOC	340104	924.200	324515	881.838	321917	874.778	320780	871.689	320212	870.145
31604002	VOC	2137	7.225	2039	6.894	2023	6.839	2016	6.814	2012	6.802
31604002	NOx	2	0.006	2	0.006	2	0.006	2	0.006	2	0.006
31604003	VOC	5796	22.301	5530	21.279	5486	21.108	5467	21.034	5457	20.997
31604003	NOx	53	0.210	51	0.201	50	0.199	50	0.198	50	0.198
31604003	CO	66	0.262	63	0.250	62	0.248	62	0.247	62	0.247
31605001	VOC	243387	822.163	232231	784.478	230372	778.198	229558	775.450	229152	774.076
31605001	NOx	91762	315.383	87556	300.928	86855	298.518	86548	297.464	86395	296.937
31605001	CO	56218	221.257	53641	211.116	53212	209.425	53024	208.686	52930	208.316
31605002	VOC	210	0.750	200	0.716	199	0.710	198	0.707	198	0.706
31605002	NOx	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
31605003	VOC	170	0.000	162	0.000	161	0.000	160	0.000	160	0.000
31605003	NOx	9001	26.397	8588	25.187	8520	24.985	8490	24.897	8475	24.853
31605004	VOC	1742	7.258	1662	6.926	1649	6.870	1643	6.846	1640	6.834
31605004	VOC	1742	7.258	1662	6.926	1649	6.870	1643	6.846	1640	6.834
31605004	VOC	1742	7.258	1662	6.926	1649	6.870	1643	6.846	1640	6.834
31605004	VOC	1742	7.258	1662	6.926	1649	6.870	1643	6.846	1640	6.834
31612001	VOC	486	1.427	464	1.362	460	1.351	458	1.346	458	1.344
31612001	VOC	321	0.946	306	0.903	304	0.895	303	0.892	302	0.891

31612001	NOx	7126	80.977	6799	77.266	6745	76.647	6721	76.376	6709	76.241
31612002	VOC	406	1.482	387	1.414	384	1.403	383	1.398	382	1.395
31612002	NOx	80	0.317	76	0.303	76	0.300	75	0.299	75	0.299
31612002	CO	99	0.393	94	0.375	94	0.372	93	0.371	93	0.370
31612003	VOC	3412	9.914	3256	9.460	3230	9.384	3218	9.351	3212	9.334
31612003	VOC	39	0.000	37	0.000	37	0.000	37	0.000	37	0.000
31613001	VOC	2634	7.201	2513	6.871	2493	6.816	2484	6.792	2480	6.780
31613001	VOC	3011	8.781	2873	8.378	2850	8.311	2840	8.282	2835	8.267
31613002	VOC	583	1.801	556	1.719	552	1.705	550	1.699	549	1.696
31613002	VOC	976	3.201	931	3.055	924	3.030	921	3.019	919	3.014
31613004	VOC	154	0.494	147	0.471	146	0.467	145	0.466	145	0.465
31613004	VOC	24	0.071	23	0.068	23	0.068	23	0.067	23	0.067
31614001	VOC	112	0.359	107	0.343	106	0.340	106	0.339	105	0.338
31614001	VOC	96	0.308	92	0.294	91	0.291	91	0.290	90	0.290
31614002	VOC	61	0.166	58	0.158	58	0.157	58	0.156	57	0.156
31614002	VOC	28	0.076	27	0.073	27	0.072	26	0.072	26	0.072
31615001	VOC	54343	178.025	51852	169.865	51437	168.505	51255	167.910	51165	167.612
31615001	NOx	55132	153.144	52605	146.125	52184	144.955	52000	144.443	51907	144.187
31615001	CO	306259	850.719	292221	811.726	289882	805.227	288858	802.384	288347	800.963
31615003	VOC	43283	120.113	41299	114.607	40968	113.689	40824	113.288	40751	113.087
31616002	VOC	3044	8.749	2904	8.348	2881	8.281	2871	8.252	2866	8.237
31616002	NOx	11890	33.028	11345	31.514	11254	31.262	11214	31.151	11195	31.096
31616003	VOC	100152	317.581	95561	303.024	94796	300.598	94462	299.537	94294	299.006
31616003	NOx	100	0.357	95	0.341	95	0.338	94	0.337	94	0.336
31616003	CO	138	0.885	132	0.844	131	0.837	130	0.834	130	0.833
31616004	VOC	82	0.315	78	0.301	78	0.299	77	0.297	77	0.297
31616004	NOx	1	0.004	1	0.004	1	0.004	1	0.004	1	0.004
39999994	NOx	8894	24.547	12741	35.165	13382	36.935	14151	39.056	14535	40.117
39999994	CO	6065	16.564	8688	23.729	9126	24.923	9650	26.355	9912	27.071
40200701	VOC	452	1.569	606	2.105	632	2.194	681	2.363	705	2.447
40500311	VOC	453	4.924	425	4.620	420	4.569	426	4.634	429	4.666
50300501	NOx	133113	511.972	173756	668.291	180529	694.344	193288	743.414	199667	767.949
50300501	CO	25323	97.396	33055	127.134	34343	132.090	36771	141.425	37984	146.093

		50300506	NOx	86960	234.123	113511	305.607	117936	317.521	126271	339.961	130439	351.181
		50300506	CO	28089	75.624	36665	98.714	38095	102.563	40787	109.811	42133	113.435
		50300702	VOC	3199	8.693	4176	11.347	4339	11.789	4645	12.623	4798	13.039
ECONO PRODUCTS	MONROE	10200603	VOC	6	0.002	6	0.002	6	0.002	6	0.002	6	0.002
132 HUMBOLDT ST		10200603	NOx	109	0.036	114	0.037	115	0.037	117	0.038	118	0.038
ROCHESTER, NY 14610		10200603	CO	92	0.030	96	0.031	97	0.031	98	0.032	99	0.032
		30800722	VOC	193	2.359	242	2.955	250	3.054	264	3.231	272	3.319
		39000689	VOC	3	0.019	3	0.020	3	0.020	3	0.021	3	0.021
		39000689	NOx	57	0.353	60	0.370	60	0.373	61	0.379	62	0.382
		39000689	CO	48	0.297	50	0.311	51	0.313	51	0.318	52	0.321
		40200803	VOC	28274	166.744	37923	223.649	39531	233.133	42568	251.043	44087	259.998
		40202230	VOC	11225	137.194	14062	171.871	14535	177.650	15374	187.907	15794	193.035
		40288805	VOC	14005	38.057	18784	51.045	19581	53.209	21085	57.297	21837	59.341
		40299999	VOC	106	1.296	142	1.738	148	1.811	160	1.951	165	2.020
BUCKEYE ROCHESTER SOUTH TERMINAL	MONROE	39001099	NOx	6637	18.035	6251	16.987	6187	16.812	6225	16.916	6244	16.969
675 BROOKS AVE		39001099	CO	16592	45.087	15628	42.466	15467	42.030	15563	42.290	15611	42.420
ROCHESTER, NY 14619		40400151	VOC	425	1.155	477	1.295	485	1.318	502	1.365	511	1.389
		40400154	VOC	12442	33.810	13948	37.903	14199	38.586	14703	39.953	14955	40.637
		40400160	VOC	55922	151.962	62693	170.361	63821	173.427	66084	179.575	67215	182.649
		40400199	VOC	1164	3.163	1305	3.546	1328	3.609	1375	3.737	1399	3.801
		40400250	VOC	12800	34.783	14350	38.994	14608	39.696	15126	41.103	15385	41.807
FRANK E VAN LARE WASTEWATER TREATMENT	MONROE	10500106	NOx	3189	0.000	3338	0.000	3363	0.000	3421	0.000	3450	0.000
1574 LAKE SHORE BLVD		10500106	CO	2679	0.000	2804	0.000	2825	0.000	2874	0.000	2898	0.000
ROCHESTER, NY 14617		50100515	NOx	83588	317.870	88307	335.816	89094	338.807	91963	349.720	93398	355.177
		50100515	CO	941852	3581.691	995027	3783.907	1003890	3817.610	1036225	3940.574	1052392	4002.056
NU-KOTE INTERNATIONAL	MONROE	10500106	VOC	133	0.442	139	0.463	140	0.466	142	0.474	143	0.478
1227 RIDGEWAY AVE		10500106	NOx	2410	8.033	2523	8.409	2542	8.472	2585	8.618	2607	8.691
ROCHESTER, NY 14615		10500106	CO	2024	6.748	2119	7.064	2135	7.116	2172	7.239	2190	7.300
		40202201	VOC	9678	26.299	12124	32.946	12532	34.054	13255	36.020	13617	37.003
		40202203	VOC	1006	3.353	1260	4.201	1303	4.342	1378	4.593	1415	4.718
		40202203	VOC	1910	6.367	2393	7.976	2473	8.244	2616	8.720	2687	8.958
ARCH CHEMICALS INC	MONROE	30180001	VOC	1011	2.840	1262	3.544	1303	3.661	1382	3.881	1421	3.990
100 MCKEE RD		30183001	VOC	1463	4.109	1828	5.136	1889	5.307	2000	5.617	2055	5.772

ROCHESTER, NY 14611		30183001	VOC	2588	7.270	3235	9.086	3342	9.389	3538	9.938	3635	10.212
		30184001	VOC	690	1.937	862	2.421	891	2.501	943	2.648	969	2.721
		30199999	VOC	7769	21.809	9695	27.215	10016	28.116	10616	29.801	10916	30.643
		30199999	VOC	7097	19.921	8856	24.860	9149	25.683	9697	27.222	9972	27.991
ROCHESTER DISTRICT HEATING COOPERATIVE	MONROE	10200602	VOC	600	5.904	628	6.180	633	6.226	644	6.333	649	6.387
15 - 17 LAWN ST		10200602	NOx	10910	107.340	11420	112.363	11506	113.200	11704	115.151	11803	116.127
ROCHESTER, NY 14604		10200602	CO	9164	90.166	9593	94.385	9665	95.088	9831	96.727	9915	97.546
		10300601	VOC	2428	4.737	2450	4.780	2454	4.787	2494	4.866	2514	4.905
		10300601	NOx	83885	163.638	84644	165.117	84770	165.364	86163	168.082	86860	169.441
		10300601	CO	37086	72.345	37421	72.999	37477	73.108	38093	74.310	38401	74.911
IOLA POWERHOUSE & COGEN FACILITY	MONROE	10300209	NOx	86694	352.194	90269	366.720	90865	369.141	90473	367.545	90276	366.748
444 EAST HENRIETTA RD|FLEET MAINTENANCE GARAGE		10300209	CO	30962	125.783	32239	130.971	32452	131.835	32312	131.266	32241	130.981
ROCHESTER, NY 14620-4643		10300501	VOC	45	0.340	48	0.362	48	0.365	49	0.369	49	0.370
		10300501	NOx	2650	20.022	2816	21.276	2844	21.485	2869	21.678	2882	21.775
		10300501	CO	662	5.005	704	5.319	711	5.371	717	5.419	720	5.444
		10300602	VOC	906	3.348	914	3.379	916	3.384	931	3.439	938	3.467
		10300602	VOC	208	0.770	210	0.777	210	0.778	214	0.791	216	0.797
		10300602	NOx	23063	85.232	23271	86.003	23306	86.131	23689	87.547	23881	88.255
		10300602	CO	5766	21.308	5818	21.501	5827	21.533	5922	21.887	5970	22.064
AVANTI CASE-HOYT CORPORATION	MONROE	10500106	VOC	65	0.249	68	0.260	68	0.262	69	0.267	70	0.269
100 BEAVER RD		10500106	NOx	1176	4.523	1231	4.735	1240	4.770	1262	4.852	1272	4.893
CHILI, NY 14624		10500106	CO	989	3.804	1035	3.982	1043	4.011	1061	4.081	1070	4.115
		39000689	VOC	194	0.747	203	0.782	205	0.788	208	0.802	210	0.808
		39000689	NOx	3532	13.585	3697	14.220	3725	14.326	3789	14.573	3821	14.697
		39000689	CO	2967	11.411	3106	11.945	3129	12.034	3183	12.241	3210	12.345
		40500401	VOC	20404	78.477	19145	73.635	18935	72.828	19202	73.855	19336	74.369
		40500401	VOC	20972	80.663	19678	75.686	19463	74.857	19737	75.912	19874	76.440
		40500401	NOx	2	0.007	2	0.006	2	0.006	2	0.006	2	0.006
		40588801	VOC	53512	205.814	53657	206.375	53682	206.468	54925	211.250	55547	213.641
CRYOVAC INC	MONROE	10200603	VOC	13	0.000	13	0.000	13	0.000	14	0.000	14	0.000
1525 BROOKS AVE		10200603	NOx	230	0.000	241	0.000	243	0.000	247	0.000	249	0.000
ROCHESTER, NY 14624		10200603	CO	193	0.000	202	0.000	204	0.000	207	0.000	209	0.000
		10500106	VOC	63	0.116	66	0.121	67	0.122	68	0.124	68	0.125

		10500106	NOx	1150	2.106	1204	2.204	1213	2.221	1234	2.259	1244	2.278
		10500106	CO	966	1.769	1011	1.851	1019	1.865	1036	1.897	1045	1.914
		39000689	VOC	134	0.558	140	0.584	142	0.588	144	0.598	145	0.603
		39000689	NOx	2440	10.140	2554	10.615	2573	10.694	2618	10.878	2640	10.970
		39000689	CO	2050	8.518	2146	8.916	2161	8.983	2199	9.138	2217	9.215
		39999992	VOC	114	0.317	163	0.454	172	0.476	181	0.504	186	0.518
		39999994	VOC	350	0.951	501	1.362	527	1.431	557	1.513	572	1.554
		40204435	VOC	16563	60.468	17941	65.497	18170	66.335	18739	68.411	19023	69.449
		40204435	VOC	16563	60.468	17941	65.497	18170	66.335	18739	68.411	19023	69.449
		40500301	VOC	259350	541.835	260057	543.312	260174	543.558	266200	556.147	269213	562.442
ROCHESTER TECHNOLOGY PARK	MONROE	10200602	VOC	1472	10.051	1541	10.522	1552	10.600	1579	10.783	1592	10.874
789 ELMGROVE RD		10200602	VOC	1133	7.741	1186	8.103	1195	8.163	1216	8.304	1226	8.374
ROCHESTER, NY 14624		10200602	NOx	26760	182.751	28012	191.302	28221	192.727	28707	196.049	28950	197.710
		10200602	CO	22478	153.511	23530	160.694	23705	161.891	24114	164.681	24318	166.077
		39000689	NOx	140	0.380	147	0.398	148	0.401	150	0.408	151	0.412
		39000689	CO	118	0.320	123	0.335	124	0.337	126	0.343	127	0.346
R G & E RUSSELL STATION	MONROE	10100212	VOC	36161	110.525	40660	124.275	41410	126.566	42255	129.149	42677	130.440
1101 BEACH AVE		10100212	NOx	6032313	18331.239	6782741	20611.672	6907813	20991.744	7048744	21420.010	7119209	21634.144
GREECE, NY 14612		10100212	CO	301345	921.044	338833	1035.623	345081	1054.720	352121	1076.238	355641	1086.997
		10100501	VOC	20	0.040	40	0.080	44	0.087	33	0.065	27	0.054
		10100501	VOC	27	0.053	53	0.106	58	0.115	43	0.086	36	0.072
		10100501	NOx	3209	6.393	6386	12.722	6916	13.777	5182	10.324	4316	8.598
		10100501	CO	669	1.332	1330	2.650	1441	2.870	1080	2.151	899	1.791
		10101302	NOx	71	23.513	115	37.853	122	40.243	112	36.853	107	35.158
		10101302	CO	19	6.188	30	9.961	32	10.590	29	9.698	28	9.252
		10200603	VOC	67	0.000	71	0.000	71	0.000	72	0.000	73	0.000
		10200603	NOx	1227	0.000	1284	0.000	1294	0.000	1316	0.000	1327	0.000
		10200603	CO	1031	0.000	1079	0.000	1087	0.000	1106	0.000	1115	0.000
RIGA/MILL SEAT LANDFILL	MONROE	40100295	VOC	47	0.178	60	0.227	62	0.235	65	0.248	67	0.254
303 BREW RD		50100402	VOC	70267	190.943	74234	201.723	74895	203.520	77308	210.075	78514	213.353
BERGEN, NY 14416		50100410	VOC	1471	1.932	1464	1.923	1463	1.921	1463	1.921	1463	1.921
		50100410	NOx	16185	13.799	16111	13.736	16099	13.725	16099	13.725	16099	13.725
		50100410	CO	138698	258.730	138061	257.541	137954	257.343	137954	257.343	137954	257.343

XEROX JOSEPH C WILSON CTR FOR TECHNOLOGY	MONROE	10200602	VOC	3687	0.000	3860	0.000	3888	0.000	3956	0.000	3989	0.000
800 PHILLIPS RD		10200602	NOx	67040	0.000	70177	0.000	70700	0.000	71918	0.000	72528	0.000
WEBSTER, NY 14580		10200602	CO	56314	0.000	58949	0.000	59388	0.000	60411	0.000	60923	0.000
		31603001	VOC	4904	22.291	4679	21.269	4642	21.099	4625	21.024	4617	20.987
		40200101	VOC	6074	27.609	8147	37.031	8492	38.602	9145	41.567	9471	43.050
		40200810	VOC	30	0.136	40	0.183	42	0.191	45	0.205	47	0.213
		40200810	VOC	193	0.877	259	1.177	270	1.227	291	1.321	301	1.368
		40201301	VOC	45418	301.890	50571	336.139	51429	341.847	53539	355.871	54594	362.882
		40202201	VOC	3656	16.618	4580	20.818	4734	21.519	5007	22.761	5144	23.382
		40202501	VOC	7740	37.398	11278	54.494	11868	57.344	12907	62.365	13427	64.875
MONROE LIVINGSTON SANITARY LANDFILL	MONROE	50100421	VOC	22059	60.742	21958	60.464	21941	60.417	21941	60.417	21941	60.417
1241 SOUTH RD		50100421	NOx	90135	248.196	89721	247.056	89652	246.866	89652	246.866	89652	246.866
SCOTTSVILLE, NY 14546		50100421	CO	170385	469.173	169602	467.018	169472	466.659	169472	466.659	169472	466.659
UNIVERSITY OF ROCHESTER	MONROE	10300501	VOC	0	0.005	0	0.005	0	0.005	0	0.005	0	0.005
390 ELMWOOD AVE		10300501	NOx	1	0.234	2	0.248	2	0.251	2	0.253	2	0.254
ROCHESTER, NY 14627		10300501	CO	0	0.062	0	0.066	0	0.067	0	0.067	0	0.068
		10300502	NOx	5657	82.835	6011	88.022	6070	88.887	6125	89.687	6152	90.087
		10300502	CO	1057	15.478	1123	16.447	1134	16.608	1144	16.758	1150	16.833
		10300601	VOC	8188	36.407	8262	36.737	8275	36.791	8411	37.396	8479	37.699
		10300601	NOx	121425	522.816	122523	527.544	122706	528.332	124723	537.016	125732	541.359
		10300601	CO	31755	140.395	32042	141.665	32090	141.877	32618	144.209	32881	145.375
		10300603	VOC	391	0.000	394	0.000	395	0.000	401	0.000	404	0.000
		10300603	VOC	301	0.000	304	0.000	304	0.000	309	0.000	311	0.000
		10300603	NOx	7101	0.000	7166	0.000	7176	0.000	7294	0.000	7353	0.000
		10300603	CO	5965	0.000	6019	0.000	6028	0.000	6127	0.000	6177	0.000
		10301002	VOC	2	0.000	2	0.000	2	0.000	2	0.000	2	0.000
		10301002	NOx	89	0.000	92	0.000	93	0.000	94	0.000	94	0.000
		10301002	CO	12	0.000	13	0.000	13	0.000	13	0.000	13	0.000
		20300101	VOC	316	26.357	336	28.008	339	28.283	342	28.537	344	28.665
		20300101	VOC	316	26.355	336	28.006	339	28.281	342	28.535	344	28.662
		20300101	NOx	3874	322.875	4117	343.096	4158	346.466	4195	349.583	4214	351.142
		20300101	CO	835	69.554	887	73.909	896	74.635	904	75.307	908	75.643

		39000689	VOC	28	0.209	29	0.219	30	0.221	30	0.225	30	0.227
		39000689	NOx	511	3.807	535	3.985	539	4.015	548	4.084	553	4.119
		39000689	CO	429	3.198	449	3.347	453	3.372	460	3.431	464	3.460
		40301097	VOC	43	0.117	48	0.132	49	0.134	51	0.139	52	0.141
		40301099	VOC	859	2.335	963	2.617	981	2.664	1015	2.759	1033	2.806
		50100505	VOC	15	0.115	15	0.119	15	0.119	15	0.119	15	0.119
		50100505	NOx	175	1.368	180	1.412	181	1.419	181	1.418	181	1.417
		50100505	CO	146	1.141	151	1.177	151	1.183	151	1.182	151	1.181
GUARDIAN GENEVA FLOAT GLASS FACILITY	ONTARIO	10200603	NOx	11165	14.563	11687	15.244	11774	15.358	11977	15.623	12079	15.755
GENEVA INDUSTRIAL PARK		10200603	CO	9379	12.233	9817	12.805	9890	12.901	10061	13.123	10146	13.234
GENEVA, NY 14456		10201002	VOC	4	0.004	4	0.004	4	0.004	4	0.004	4	0.004
		10201002	NOx	258	0.252	243	0.237	240	0.235	242	0.236	242	0.237
		10201002	CO	43	0.042	41	0.040	40	0.040	41	0.040	41	0.040
		20100102	VOC	20	1.200	40	2.388	43	2.586	32	1.938	27	1.614
		20100102	VOC	21	1.244	41	2.476	45	2.681	33	2.009	28	1.673
		20100102	NOx	1063	63.780	2115	126.927	2291	137.451	1717	103.004	1430	85.780
		20100102	CO	103	6.180	205	12.299	222	13.318	166	9.981	139	8.312
		20200102	VOC	1	0.055	1	0.056	1	0.056	1	0.055	1	0.055
		20200102	NOx	6	0.480	6	0.484	6	0.485	6	0.479	6	0.476
		20200102	CO	1	0.080	1	0.081	1	0.081	1	0.080	1	0.079
		30501403	VOC	8539	24.132	9445	26.692	9596	27.118	9945	28.105	10120	28.599
		30501403	NOx	1547532	4373.460	1711670	4837.329	1739027	4914.641	1802340	5093.570	1833997	5183.036
		30501403	CO	55957	158.139	61892	174.912	62881	177.708	65171	184.178	66315	187.413
		39000689	VOC	8539	23.204	8938	24.289	9005	24.470	9160	24.892	9238	25.103
		40100335	VOC	384	1.043	490	1.332	508	1.380	536	1.456	550	1.494
PACTIV CORPORATION	ONTARIO	10500106	NOx	3549	0.000	3715	0.000	3743	0.000	3807	0.000	3840	0.000
5250 NORTH ST		10500106	CO	2981	0.000	3121	0.000	3144	0.000	3198	0.000	3225	0.000
CANANDAIGUA, NY 14424-1095		20200102	VOC	20	0.056	20	0.057	21	0.057	20	0.056	20	0.056
		20200102	NOx	249	0.691	251	0.697	251	0.698	248	0.690	247	0.686
		20200102	CO	54	0.149	54	0.150	54	0.150	54	0.149	53	0.148
		30101814	VOC	6979	20.016	8723	25.018	9014	25.851	9540	27.362	9804	28.117
		30101814	NOx	36	0.141	45	0.176	46	0.182	49	0.192	51	0.198
		30101814	CO	177	0.498	221	0.622	229	0.643	242	0.681	249	0.699

		30801002	VOC	141000	391.667	176638	490.661	182578	507.160	193119	536.441	198389	551.082
		30801005	VOC	126006	350.015	157854	438.482	163162	453.227	172582	479.394	177292	492.477
		30801005	CO	25	0.069	31	0.086	32	0.089	34	0.094	35	0.097
		30899999	VOC	282730	785.494	354191	984.029	366101	1017.118	387238	1075.841	397806	1105.203
		30899999	VOC	282101	783.739	353403	981.831	365287	1014.846	386376	1073.438	396921	1102.735
		39000689	VOC	146	0.407	153	0.426	154	0.429	157	0.436	158	0.440
		39000689	NOx	2661	7.392	2786	7.738	2806	7.795	2855	7.930	2879	7.997
		39000689	CO	2235	6.209	2340	6.500	2357	6.548	2398	6.661	2418	6.717
		39990013	VOC	59	0.164	64	0.178	65	0.180	67	0.186	68	0.188
		39990013	NOx	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		39990013	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		39999994	VOC	167	0.464	240	0.665	252	0.699	266	0.739	273	0.759
		40202201	VOC	188	0.522	252	0.700	263	0.730	283	0.786	293	0.814
		40299996	VOC	15	0.042	18	0.051	19	0.053	20	0.056	21	0.057
		40701607	VOC	11000	30.556	10741	29.837	10698	29.717	10877	30.213	10966	30.460
TGP COMPRESSOR STATION 237	ONTARIO	10500106	VOC	44	0.917	46	0.960	46	0.967	47	0.983	48	0.992
2001 ARCHER RD		10500106	NOx	800	16.667	837	17.447	844	17.576	858	17.879	865	18.031
CLIFTON SPRINGS, NY 14432-9349		10500106	CO	672	14.000	703	14.655	709	14.764	721	15.019	727	15.146
		20200202	VOC	49540	121.942	51858	127.648	52244	128.599	53145	130.815	53595	131.924
		20200202	NOx	280620	762.995	293750	798.696	295939	804.646	301040	818.515	303590	825.450
		20200202	CO	188309	733.927	197120	768.268	198588	773.991	202011	787.332	203723	794.003
		40400301	VOC	474	1.288	543	1.476	555	1.507	580	1.575	592	1.610
		40799997	VOC	4	0.011	4	0.011	4	0.011	4	0.011	4	0.011
ONTARIO CO LANDFILL	ONTARIO	50200602	VOC	454	1.235	528	1.435	540	1.468	562	1.527	573	1.556
1879 ST RTE 5 & 20		50200610	VOC	844	2.294	840	2.283	840	2.281	840	2.281	840	2.281
STANLEY, NY													
MERIDIAN AUTOMOTIVE SYSTEMS	ONTARIO	30800736	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
203 NORTH ST		30800736	VOC	518	2.355	649	2.950	671	3.049	709	3.225	729	3.313
CANANDAIGUA, NY 14424													
SAINT-GOBAIN TECHNICAL FABRICS GROUP	ORLEANS	10200402	NOx	619	7.219	731	8.529	750	8.748	751	8.758	751	8.763
14770 EAST AVE		10200402	CO	56	0.656	66	0.775	68	0.795	68	0.796	68	0.797

ALBION, NY 14411		10200602	VOC	425	1.156	445	1.210	448	1.219	456	1.240	460	1.250
		10200602	VOC	552	1.501	578	1.571	582	1.582	592	1.610	597	1.623
		10200602	NOx	10040	27.283	10510	28.559	10588	28.772	10771	29.268	10862	29.516
		10200602	CO	8434	22.917	8828	23.990	8894	24.168	9047	24.585	9124	24.793
		40204340	VOC	200569	895.397	217250	969.866	220030	982.278	226914	1013.011	230357	1028.377
CARGILL SALT CO- WATKINS GLEN PLANT	SCHUYLER	10200602	VOC	263	7.355	276	7.699	278	7.757	282	7.891	285	7.957
518 E 4TH ST		10200602	NOx	2102	67.853	2200	71.028	2217	71.557	2255	72.791	2274	73.407
WATKINS GLEN, NY 14891		10200602	CO	3948	110.569	4133	115.742	4164	116.605	4236	118.614	4271	119.619
		10200603	NOx	250	0.694	262	0.727	264	0.732	268	0.745	270	0.751
		10200603	CO	210	0.583	220	0.611	221	0.615	225	0.626	227	0.631
		10300209	NOx	255528	738.192	266067	768.637	267823	773.711	266666	770.367	266087	768.696
		10300209	CO	34557	99.831	35982	103.949	36220	104.635	36063	104.183	35985	103.957
U S SALT - WATKINS GLEN REFINERY	SCHUYLER	10200601	VOC	3224	8.761	3375	9.171	3400	9.239	3459	9.399	3488	9.478
SALT PT RD		10200601	VOC	4187	11.377	4382	11.909	4415	11.998	4491	12.204	4529	12.308
WATKINS GLEN, NY 14891		10200601	NOx	144628	393.011	151395	411.400	152523	414.465	155152	421.609	156467	425.181
		10200601	CO	63941	173.752	66933	181.882	67431	183.237	68594	186.395	69175	187.975
		10200602	VOC	1747	3.987	1829	4.174	1842	4.205	1874	4.277	1890	4.314
		10200602	NOx	31760	72.496	33246	75.888	33494	76.453	34071	77.771	34360	78.430
		10200602	CO	26678	60.896	27927	63.746	28135	64.221	28620	65.328	28862	65.881
		20100102	VOC	2771	5.221	5515	10.390	5973	11.252	4476	8.432	3727	7.022
		20100102	NOx	50894	94.805	101282	188.669	109680	204.313	82193	153.109	68449	127.507
		20100102	CO	11279	21.287	22445	42.363	24306	45.876	18215	34.379	15169	28.630
		20200301	VOC	36	0.458	36	0.458	36	0.458	37	0.460	37	0.462
		20200301	NOx	30	0.579	30	0.579	30	0.579	30	0.582	30	0.583
		20200301	CO	1185	22.383	1185	22.379	1185	22.378	1191	22.491	1194	22.548
SENECA MEADOWS SWMF	SENECA	10500110	NOx	134	0.000	126	0.000	125	0.000	125	0.000	126	0.000
1786 SALCMAN RD		10500110	CO	22	0.000	21	0.000	21	0.000	21	0.000	21	0.000
WATERLOO, NY 13165		10500214	VOC	7	0.000	7	0.000	7	0.000	7	0.000	7	0.000
		10500214	VOC	6	0.000	7	0.000	7	0.000	7	0.000	7	0.000
		10500214	NOx	72	0.000	75	0.000	75	0.000	76	0.000	76	0.000
		10500214	CO	11	0.000	12	0.000	12	0.000	12	0.000	12	0.000
		39999994	VOC	956	3.741	1370	5.359	1439	5.629	1521	5.953	1563	6.114
		40301099	VOC	21	0.058	24	0.065	24	0.066	25	0.068	26	0.070

		40400301	VOC	75	0.204	86	0.233	88	0.238	92	0.249	94	0.255
		40400302	VOC	133	0.360	152	0.413	155	0.421	162	0.440	166	0.450
		50200601	NOx	6281	17.068	6252	16.990	6248	16.977	6248	16.977	6248	16.977
		50200601	CO	15292	41.554	15222	41.364	15210	41.332	15210	41.332	15210	41.332
		50200602	VOC	53958	146.624	62681	170.328	64134	174.278	66697	181.241	67978	184.722
		50200602	VOC	39879	108.367	46326	125.886	47401	128.806	49294	133.952	50241	136.524
		50300820	VOC	850	30.348	1109	39.614	1152	41.159	1234	44.067	1275	45.522
SENECA ENERGY LFGTE FACILITY	SENECA	20300807	VOC	32228	85.334	32080	84.942	32055	84.877	32055	84.877	32055	84.877
ST RTE 414|RENEWABLE RESOURCES PARK		20300807	NOx	89246	237.341	88836	236.251	88768	236.070	88768	236.070	88768	236.070
SENECA FALLS, NY 13165		20300807	CO	530391	1413.131	527955	1406.641	527549	1405.560	527549	1405.560	527549	1405.560
		40301097	VOC	10	0.027	11	0.030	11	0.031	12	0.032	12	0.033
EVANS CHEMETICS	SENECA	10200601	VOC	846	2.215	885	2.319	892	2.336	907	2.377	915	2.397
228 E MAIN ST		10200601	NOx	29222	76.534	30589	80.115	30817	80.712	31348	82.103	31614	82.798
WATERLOO, NY 13165		10200601	CO	12919	33.836	13524	35.419	13624	35.683	13859	36.298	13977	36.606
		39999993	VOC	12000	34.667	17191	49.662	18056	52.161	19093	55.157	19612	56.656
		39999993	VOC	67516	195.046	96720	279.413	101587	293.474	107423	310.334	110342	318.764
CORNING INC - FALLBROOK PLANT	STEUBEN	10200603	VOC	110	0.809	115	0.847	116	0.853	118	0.868	119	0.875
TIOGA AVE		10200603	NOx	2000	14.706	2094	15.394	2109	15.509	2146	15.776	2164	15.910
CORNING, NY 14831		10200603	CO	1680	12.353	1759	12.931	1772	13.027	1802	13.252	1818	13.364
		30501416	NOx	110469	264.166	122186	292.185	124139	296.854	128659	307.662	130918	313.066
		39000689	VOC	1344	3.213	1406	3.363	1417	3.388	1441	3.447	1454	3.476
		39000689	NOx	1593	3.809	1668	3.988	1680	4.017	1709	4.087	1723	4.121
		39000689	CO	2594	6.203	2715	6.493	2736	6.542	2783	6.654	2806	6.711
ALSTOM - HORNELL CAR SHOP	STEUBEN	10200603	VOC	173	0.072	181	0.076	183	0.076	186	0.077	187	0.078
1 TRANSIT DR		10200603	NOx	3150	1.313	3297	1.374	3322	1.384	3379	1.408	3408	1.420
HORNELL, NY 14843		10200603	CO	2646	1.103	2770	1.154	2790	1.163	2839	1.183	2863	1.193
		40202501	VOC	14479	39.345	21098	57.331	22201	60.329	24145	65.612	25117	68.253
ERWIN MANUFACTURING COMPLEX	STEUBEN	20200102	VOC	256	0.696	259	0.702	259	0.704	256	0.695	254	0.691
ADDISON - SOUTH HAMILTON RD		20200102	NOx	3216	8.738	3245	8.817	3249	8.830	3211	8.724	3191	8.671
ERWIN, NY 14870		20200102	CO	693	1.883	699	1.900	700	1.903	692	1.880	688	1.869
		30500899	VOC	20372	63.180	20087	62.295	20039	62.147	20342	63.086	20493	63.555
		30500899	NOx	19805	58.943	19528	58.118	19481	57.980	19776	58.856	19923	59.294
		30500899	CO	16636	49.512	16403	48.818	16364	48.703	16611	49.438	16735	49.806

GUNLOCKE CO	STEUBEN	10200602	VOC	170	0.265	178	0.277	179	0.279	182	0.284	184	0.286
1 GUNLOCKE DR		10200602	VOC	131	0.204	137	0.213	138	0.215	141	0.219	142	0.220
WAYLAND, NY 14572		10200602	NOx	8506	13.232	8904	13.851	8971	13.955	9125	14.195	9203	14.315
		10200602	CO	2127	3.308	2226	3.463	2243	3.489	2281	3.549	2301	3.579
		10200906	VOC	7000	19.444	7895	21.932	8045	22.346	8172	22.700	8236	22.877
		10200906	NOx	3400	9.444	3835	10.653	3907	10.854	3969	11.026	4000	11.112
		10200906	CO	20000	55.556	22559	62.663	22985	63.847	23349	64.858	23531	65.363
		10500106	NOx	2127	24.810	2226	25.971	2243	26.165	2281	26.616	2301	26.841
		10500106	CO	532	6.203	557	6.493	561	6.542	570	6.655	575	6.711
		10500110	NOx	3	0.000	2	0.000	2	0.000	2	0.000	2	0.000
		10500110	CO	1	0.000	1	0.000	1	0.000	1	0.000	1	0.000
		40201901	VOC	221740	852.846	246266	947.179	250354	962.901	264064	1015.629	270918	1041.993
		40201901	VOC	221740	852.846	246266	947.179	250354	962.901	264064	1015.629	270918	1041.993
WOODHULL STATION	STEUBEN	10200602	VOC	528	0.000	553	0.000	557	0.000	566	0.000	571	0.000
974 CO RTE 99		10200602	VOC	685	0.000	717	0.000	723	0.000	735	0.000	742	0.000
WOODHULL, NY 14898		10200602	NOx	32987	0.000	34530	0.000	34788	0.000	35387	0.000	35687	0.000
		10200602	CO	8225	0.000	8610	0.000	8674	0.000	8824	0.000	8899	0.000
		10300603	VOC	5	0.013	5	0.013	5	0.013	5	0.014	5	0.014
		10300603	VOC	6	0.016	6	0.016	6	0.016	6	0.016	6	0.016
		10300603	NOx	50	0.136	50	0.137	51	0.137	51	0.140	52	0.141
		10300603	CO	21	0.057	21	0.058	21	0.058	22	0.059	22	0.059
		10500206	NOx	4380	11.902	4420	12.010	4426	12.028	4499	12.225	4535	12.324
		10500206	CO	963	2.617	972	2.641	973	2.644	989	2.688	997	2.710
		20200202	NOx	312694	3741.151	327325	3916.201	329763	3945.376	335447	4013.380	338289	4047.382
		20200202	CO	83237	977.402	87132	1023.136	87781	1030.758	89294	1048.524	90051	1057.408
SILGAN CONTAINERS CORP - LYONS PLANT	WAYNE	10500106	VOC	91	0.326	96	0.341	96	0.344	98	0.350	99	0.353
8673 LYONS MARENGO RD		10500106	NOx	1660	5.929	1738	6.206	1751	6.252	1781	6.360	1796	6.414
LYONS, NY 14489-9726		10500106	CO	1394	4.980	1460	5.213	1471	5.252	1496	5.342	1509	5.388
		39000689	VOC	139	0.480	145	0.503	146	0.506	149	0.515	150	0.519
		39000689	NOx	2520	8.728	2638	9.137	2658	9.205	2703	9.363	2726	9.443
		39000689	CO	2117	7.332	2216	7.675	2232	7.732	2271	7.865	2290	7.932
		40201725	VOC	33344	145.491	40512	176.767	41707	181.979	43753	190.909	44776	195.373
		40201725	VOC	29020	127.136	35259	154.466	36298	159.021	38080	166.824	38970	170.725

		40201799	VOC	63985	205.080	78453	251.452	80864	259.181	85703	274.688	88122	282.441
		40201799	VOC	53825	172.517	65996	211.526	68025	218.028	72095	231.073	74130	237.595
PLIANT CORPORATION	WAYNE	10500106	NOx	1740	3.593	1821	3.762	1835	3.790	1867	3.855	1882	3.888
200 EAST MAIN ST		10500106	CO	1462	3.019	1530	3.160	1541	3.183	1568	3.238	1581	3.266
MACEDON, NY 14502		39000689	NOx	8020	16.563	8395	17.338	8458	17.467	8604	17.768	8676	17.919
		39000689	CO	6737	13.913	7052	14.564	7105	14.672	7227	14.925	7288	15.052
		40100335	VOC	548	1.489	699	1.901	725	1.969	765	2.078	784	2.132
		40201301	VOC	2419	6.573	2939	7.986	3026	8.222	3174	8.625	3248	8.827
		40500301	VOC	15035	40.856	15076	40.968	15083	40.986	15432	41.935	15607	42.410
		40500301	VOC	15032	40.847	15073	40.958	15079	40.977	15429	41.926	15603	42.400
		40500301	CO	64890	176.332	65067	176.812	65096	176.892	66604	180.989	67358	183.038
		40500311	VOC	1474	4.005	1383	3.758	1368	3.717	1387	3.770	1397	3.796
		40500311	VOC	1474	4.005	1383	3.758	1368	3.717	1387	3.770	1397	3.796
		40500311	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		49000201	VOC	59	0.160	58	0.157	57	0.156	58	0.159	59	0.160
TYCO PLASTICS/ADHESIVES	WAYNE	10200602	VOC	32	0.000	33	0.000	34	0.000	34	0.000	35	0.000
112 EAST MAIN ST		10200602	NOx	1160	0.000	1214	0.000	1223	0.000	1244	0.000	1255	0.000
MACEDON, NY 14502		10200602	CO	243	0.000	254	0.000	256	0.000	261	0.000	263	0.000
		10500106	NOx	652	0.000	683	0.000	688	0.000	699	0.000	705	0.000
		10500106	CO	548	0.000	573	0.000	578	0.000	588	0.000	593	0.000
		30101860	VOC	2773	7.535	3466	9.418	3581	9.732	3791	10.301	3895	10.585
		30101860	CO	306	0.832	382	1.039	395	1.074	418	1.137	430	1.168
		30899999	VOC	168	0.455	210	0.570	217	0.589	229	0.623	236	0.640
		39000689	VOC	15	0.043	16	0.045	16	0.045	16	0.046	17	0.046
		39000689	NOx	279	0.775	292	0.811	294	0.817	299	0.831	302	0.838
		39000689	CO	234	0.651	245	0.681	247	0.687	251	0.698	254	0.704
		40500101	VOC	4357	12.967	4088	12.167	4043	12.034	4100	12.204	4129	12.288
		40500101	VOC	4319	12.854	4053	12.061	4008	11.929	4065	12.097	4093	12.181
SENECA FOODS MARION PLANT	WAYNE	10500106	NOx	2115	3.172	2214	3.321	2230	3.346	2269	3.403	2288	3.432
3736 S MAIN ST		10500106	CO	1777	2.665	1860	2.789	1873	2.810	1906	2.859	1922	2.883
MARION, NY 14505		20200402	VOC	91100	1002.100	91100	1002.100	91100	1002.100	91100	1002.100	91100	1002.100
		20200402	NOx	5770	63.470	5770	63.470	5770	63.470	5770	63.470	5770	63.470
		20200402	CO	4840	53.240	4840	53.240	4840	53.240	4840	53.240	4840	53.240

		40202599	VOC	4670	12.690	5726	15.560	5902	16.038	6255	16.997	6432	17.477
		40204004	VOC	30908	83.989	37897	102.981	39062	106.146	41399	112.496	42567	115.672
		40204004	VOC	25005	67.948	30659	83.313	31601	85.873	33492	91.011	34437	93.580
GARLOCK SEALING TECHNOLOGIES	WAYNE	10200602	VOC	3555	8.501	3721	8.899	3749	8.965	3814	9.120	3846	9.197
1666 DIVISION ST		10200602	NOx	96249	230.161	100753	240.930	101503	242.725	103253	246.909	104127	249.000
PALMYRA, NY 14522		10200602	CO	37388	89.406	39137	93.589	39429	94.287	40109	95.912	40448	96.724
		30800699	VOC	648376	9712.236	812254	12167.021	839567	12576.151	888040	13302.237	912276	13665.281
		40200701	VOC	21093	80.690	28292	108.227	29492	112.817	31757	121.484	32890	125.817
AES GREENIDGE LLC	YATES	10100202	VOC	40971	125.465	46068	141.073	46918	143.674	47875	146.605	48353	148.071
590 PLANT RD		10100202	NOx	6375107	20590.577	7168180	23152.074	7300358	23578.990	7449298	24060.040	7523767	24300.566
DRESDEN, NY 14441		10100202	CO	218964	686.721	246203	772.150	250743	786.389	255859	802.432	258417	810.454
		10100501	VOC	19	0.087	38	0.172	41	0.187	31	0.140	26	0.117
		10100501	VOC	25	0.114	50	0.227	54	0.246	41	0.185	34	0.154
		10100501	NOx	3020	13.713	6011	27.290	6509	29.553	4878	22.147	4062	18.443
		10100501	CO	629	2.857	1252	5.685	1356	6.157	1016	4.614	846	3.842
		10101201	NOx	43514	138.670	58709	187.095	61242	195.166	61242	195.166	61242	195.166
		10101201	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
RG&E ALLEGANY STATION #133	ALLEGANY	10200603	VOC	22	0.073	23	0.077	23	0.077	24	0.079	24	0.079
11537 ST RTE 19A		10200603	NOx	400	1.333	419	1.396	422	1.406	429	1.430	433	1.442
FILLMORE, NY 14735		10200603	CO	336	1.120	352	1.172	354	1.181	360	1.201	364	1.212
		20200102	VOC	383	4.050	386	4.087	387	4.093	382	4.044	380	4.019
		20200102	NOx	4692	49.617	4734	50.063	4742	50.138	4685	49.537	4656	49.237
		20200102	CO	1011	10.688	1020	10.785	1021	10.801	1009	10.671	1003	10.607
		20200201	VOC	4153	22.206	4347	23.245	4380	23.418	4455	23.822	4493	24.024
		20200201	NOx	57457	307.605	60145	321.998	60594	324.397	61638	329.989	62160	332.784
		20200201	CO	32977	184.967	34520	193.622	34777	195.064	35377	198.427	35676	200.108
INDEPENDENCE STATION	ALLEGANY	10200603	VOC	529	1.438	554	1.506	558	1.517	568	1.543	573	1.556
CO RTE 22 BETW FULMER VALLEY RD & CO RTE 22A		10200603	NOx	9624	26.152	10074	27.376	10149	27.580	10324	28.055	10412	28.293
ANDOVER, NY 14806		10200603	CO	8084	21.968	8462	22.996	8525	23.167	8672	23.566	8746	23.766
		20200202	NOx	47013	266.292	49213	278.752	49580	280.828	50434	285.669	50861	288.089
		20200202	CO	77441	441.866	81064	462.541	81668	465.987	83076	474.019	83780	478.035
		39000689	VOC	1	0.004	1	0.004	2	0.004	2	0.004	2	0.004
		39000689	NOx	26	0.071	27	0.074	27	0.075	28	0.076	28	0.076

		39000689	CO	22	0.059	23	0.062	23	0.063	23	0.064	24	0.064
BEECH HILL COMPRESSOR STATION	ALLEGANY	20200202	NOx	42158	176.998	44131	185.279	44459	186.660	45226	189.877	45609	191.486
PEET RD BETWEEN GRAVES & BEECH HILL RDS		20200202	CO	87278	400.667	91362	419.414	92042	422.539	93629	429.822	94422	433.463
WILLING, NY 14895													
INDECK OLEAN ENERGY CENTER	CATTARAUGUS	10500206	NOx	200	0.000	202	0.000	202	0.000	205	0.000	207	0.000
140 MOORE AVE		10500206	CO	40	0.000	40	0.000	40	0.000	41	0.000	41	0.000
OLEAN, NY 14760		20200103	VOC	1	0.054	1	0.054	1	0.054	1	0.054	1	0.053
		20200103	NOx	963	68.970	972	69.591	973	69.695	961	68.860	956	68.443
		20200103	CO	175	11.970	177	12.078	177	12.096	175	11.951	174	11.879
		20200203	NOx	28449	370.324	29780	387.652	30002	390.540	30519	397.272	30778	400.637
		20200203	CO	4502	58.585	4713	61.326	4748	61.783	4830	62.848	4871	63.380
LAIDLAW ENERGY AND ENVIRONMENTAL INC	CATTARAUGUS	20100201	VOC	641	1.741	701	1.906	711	1.933	786	2.136	823	2.237
6662 US RTE 219		20100201	NOx	110000	298.913	120410	327.202	122145	331.916	134946	366.701	141346	384.094
ELLICOTTVILLE, NY 14731-0500		20100201	CO	25018	67.984	27386	74.418	27780	75.490	30692	83.402	32148	87.358
		20200204	VOC	2	0.580	2	0.607	2	0.612	2	0.622	3	0.627
		20200204	NOx	57	14.200	59	14.864	60	14.975	61	15.233	61	15.362
		20200204	CO	8	1.995	8	2.088	8	2.104	9	2.140	9	2.158
DUNKIRK SPECIALTY STEEL LLC	CHAUTAUQUA	10300603	VOC	27	0.167	27	0.169	27	0.169	27	0.172	28	0.173
830 BRIGHAM RD		10300603	VOC	21	0.129	21	0.130	21	0.130	21	0.132	21	0.133
DUNKIRK, NY 14048		10300603	NOx	486	3.038	490	3.065	491	3.070	499	3.120	503	3.145
		10300603	CO	408	2.552	412	2.575	413	2.578	419	2.621	423	2.642
		20100102	VOC	5	0.018	11	0.036	12	0.039	9	0.029	7	0.024
		20100102	VOC	5	0.018	11	0.036	12	0.039	9	0.029	7	0.024
		20100102	NOx	66	0.221	132	0.441	143	0.477	107	0.358	89	0.298
		20100102	CO	14	0.048	28	0.095	31	0.103	23	0.077	19	0.064
		30300910	VOC	204	0.680	197	0.656	196	0.652	201	0.669	203	0.677
		30300910	NOx	23214	77.380	22396	74.653	22260	74.199	22837	76.122	23125	77.084
		30300998	NOx	53	0.177	51	0.170	51	0.169	52	0.174	53	0.176
		39000689	VOC	728	1.618	762	1.694	768	1.707	781	1.736	788	1.751
		39000689	NOx	13242	29.427	13862	30.804	13965	31.033	14206	31.568	14326	31.835
		39000689	CO	11123	24.718	11644	25.875	11730	26.068	11933	26.517	12034	26.742
		39000798	VOC	10	0.000	10	0.000	10	0.000	11	0.000	11	0.000

		39000798	NOx	273	0.000	284	0.000	286	0.000	287	0.000	288	0.000
		40701613	VOC	10	0.027	10	0.027	10	0.026	10	0.027	10	0.027
DUNKIRK STEAM GENERATING STATION	CHAUTAUQUA	10100212	VOC	81558	274.729	91704	308.906	93395	314.602	95300	321.021	96253	324.230
106 POINT DR NORTH		10100212	NOx	11476000	38618.108	12903631	43422.256	13141569	44222.947	13409679	45125.168	13543734	45576.280
DUNKIRK, NY 14048		10100212	CO	679649	2289.412	764198	2574.218	778290	2621.685	794168	2675.172	802107	2701.916
		10100501	VOC	76	4.346	151	8.649	164	9.366	123	7.019	102	5.845
		10100501	VOC	100	5.731	199	11.405	216	12.351	162	9.255	135	7.708
		10100501	NOx	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		10100501	CO	2505	143.274	4985	285.125	5398	308.767	4046	231.385	3369	192.694
		10101301	VOC	11	0.393	18	0.655	20	0.698	20	0.728	21	0.742
		10101301	NOx	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		10101301	CO	24	0.857	40	1.429	43	1.524	44	1.587	45	1.619
		20200102	VOC	37	9.250	37	9.333	37	9.347	37	9.235	37	9.179
		20200102	NOx	581	145.250	586	146.558	587	146.776	580	145.019	577	144.140
		20200102	CO	125	31.250	126	31.531	126	31.578	125	31.200	124	31.011
		40400413	VOC	5	0.014	5	0.014	5	0.014	5	0.014	5	0.014
		40400414	VOC	7	0.019	7	0.020	7	0.020	7	0.020	7	0.019
CHAUTAUQUA HARDWARE CORP	CHAUTAUQUA	10200603	VOC	53	0.288	56	0.302	56	0.304	57	0.309	57	0.312
31-33 WATER ST		10200603	NOx	964	5.239	1009	5.484	1017	5.525	1034	5.620	1043	5.668
JAMESTOWN, NY 14701		10200603	CO	810	4.401	848	4.607	854	4.641	869	4.721	876	4.761
		10300602	VOC	127	0.020	128	0.020	128	0.020	131	0.020	132	0.020
		10300602	NOx	2310	0.355	2331	0.359	2334	0.359	2373	0.365	2392	0.368
		10300602	CO	1940	0.299	1958	0.301	1961	0.302	1993	0.307	2009	0.309
		30901102	VOC	326	1.755	475	2.558	500	2.692	544	2.927	566	3.045
		40202599	VOC	12556	57.951	18296	84.443	19253	88.858	20938	96.638	21781	100.528
		40202599	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
CRAWFORD FURNITURE MFG CORP	CHAUTAUQUA	10300903	VOC	137	0.297	137	0.295	137	0.295	137	0.295	137	0.295
1061 ALLEN ST		10300903	NOx	5174	11.186	5150	11.134	5146	11.126	5146	11.126	5146	11.126
JAMESTOWN, NY 14702-0668		10300903	CO	6335	13.697	6306	13.634	6301	13.623	6301	13.623	6301	13.623
		40201901	VOC	113916	425.058	126516	472.074	128616	479.910	135659	506.189	139180	519.329
SAMUEL A CARLSON GENERATING STATION	CHAUTAUQUA	10100202	NOx	1191000	3036.446	1339162	3414.184	1363856	3477.140	1391681	3548.080	1405593	3583.549
136 STEELE ST		10100202	CO	51706	134.246	58138	150.947	59210	153.730	60418	156.866	61022	158.435
JAMESTOWN, NY 14701-6438		10100501	VOC	10	0.020	20	0.040	22	0.043	16	0.033	13	0.027

		10100501	NOx	1199	2.422	2386	4.820	2584	5.219	1936	3.911	1613	3.257
		10100501	CO	250	0.505	497	1.004	538	1.087	403	0.815	336	0.679
		20200203	VOC	1527	10.203	1599	10.680	1611	10.759	1638	10.945	1652	11.038
		20200203	NOx	106400	710.764	111379	744.021	112208	749.563	114142	762.483	115109	768.943
		20200203	CO	15703	96.014	16438	100.506	16561	101.255	16846	103.001	16989	103.873
		20200401	VOC	3	0.058	3	0.058	3	0.058	3	0.058	3	0.057
		20200401	VOC	3	0.059	3	0.059	3	0.059	3	0.059	3	0.058
		20200401	NOx	110	2.300	111	2.320	112	2.324	110	2.296	110	2.282
		20200401	CO	29	0.609	29	0.614	30	0.615	29	0.608	29	0.604
WOMEN'S CHRISTIAN ASSOC HOSPITAL	CHAUTAUQUA	10300603	VOC	113	0.308	114	0.311	114	0.311	116	0.316	117	0.319
207 FOOTE AVE		10300603	NOx	2060	5.598	2079	5.648	2082	5.657	2116	5.750	2133	5.796
JAMESTOWN, NY 14701		10300603	CO	1730	4.702	1746	4.745	1749	4.752	1777	4.830	1792	4.869
		20300101	VOC	40	0.830	42	0.882	43	0.891	43	0.899	43	0.903
		20300101	NOx	478	9.953	508	10.577	513	10.681	517	10.777	520	10.825
		20300101	CO	105	2.191	112	2.328	113	2.351	114	2.372	114	2.382
		31502001	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		50200504	VOC	124	0.397	128	0.409	128	0.411	128	0.411	128	0.411
		50200504	NOx	1166	3.737	1203	3.856	1209	3.876	1208	3.872	1207	3.870
		50200504	CO	9	0.030	10	0.031	10	0.031	10	0.031	10	0.031
		50290006	NOx	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		50290006	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
CUMMINS INC - JAMESTOWN ENGINE PLANT	CHAUTAUQUA	10300602	VOC	281	0.152	283	0.154	283	0.154	288	0.157	290	0.158
4720 BAKER ST EXT		10300602	VOC	216	0.117	218	0.118	218	0.119	222	0.121	224	0.122
LAKEWOOD, NY 14750		10300602	NOx	5100	2.772	5146	2.797	5154	2.801	5239	2.847	5281	2.870
		10300602	CO	4284	2.328	4323	2.349	4329	2.353	4400	2.391	4436	2.411
		20200102	VOC	1466	4.875	1479	4.919	1481	4.926	1464	4.867	1455	4.838
		20200102	VOC	1176	3.922	1187	3.957	1189	3.963	1174	3.916	1167	3.892
		20200102	NOx	206177	689.847	208034	696.059	208343	697.095	205848	688.747	204601	684.574
		20200102	CO	23628	78.900	23841	79.611	23876	79.729	23590	78.775	23447	78.297
		20200106	VOC	31	0.084	31	0.085	31	0.085	31	0.084	31	0.084
		30402201	VOC	180	0.804	241	1.074	251	1.119	268	1.195	276	1.233
		30402201	NOx	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		30402201	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000

		30982599	VOC	28	0.077	34	0.093	35	0.095	37	0.100	38	0.103
		39000689	NOx	5020	6.589	5255	6.898	5294	6.949	5385	7.069	5431	7.129
		39000689	CO	4217	5.535	4414	5.794	4447	5.837	4524	5.938	4562	5.988
		40202501	VOC	16539	66.690	24100	97.176	25360	102.257	27580	111.211	28691	115.688
ETHAN ALLEN INC - MAYVILLE DIVISION	CHAUTAUQUA	10200602	VOC	16	0.000	17	0.000	17	0.000	18	0.000	18	0.000
8 BARTON ST		10200602	NOx	299	0.000	313	0.000	316	0.000	321	0.000	324	0.000
MAYVILLE, NY 14757		10200602	CO	251	0.000	263	0.000	265	0.000	270	0.000	272	0.000
		10300901	VOC	73	0.094	73	0.093	73	0.093	73	0.093	73	0.093
		10300901	NOx	34800	44.615	34640	44.410	34614	44.376	34614	44.376	34614	44.376
		10300901	CO	20200	25.897	20107	25.779	20092	25.759	20092	25.759	20092	25.759
		10300903	VOC	507	0.641	504	0.638	504	0.638	504	0.638	504	0.638
		10300903	NOx	19095	24.171	19008	24.060	18993	24.042	18993	24.042	18993	24.042
		10300903	CO	23382	29.597	23275	29.462	23257	29.439	23257	29.439	23257	29.439
		40201901	VOC	140584	536.775	156134	596.147	158725	606.043	167417	639.229	171763	655.823
CHAUTAUQUA COUNTY LANDFILL	CHAUTAUQUA	10500106	NOx	110	0.299	115	0.313	116	0.315	118	0.321	119	0.323
3889 TOWERVILLE RD		10500106	CO	92	0.251	97	0.263	97	0.265	99	0.269	100	0.272
ELLERY CENTER, NY 14701		50100410	NOx	5724	15.554	5698	15.483	5693	15.471	5693	15.471	5693	15.471
		50100410	CO	107325	291.644	106832	290.305	106750	290.081	106750	290.081	106750	290.081
TENNESSEE GAS PIPELINE CO COMPRESSOR STATION 224	CHAUTAUQUA	10500106	VOC	133	2.780	140	2.910	141	2.932	143	2.982	144	3.007
9766 RAVLIN HILL RD		10500106	NOx	2426	50.542	2540	52.907	2558	53.301	2603	54.219	2625	54.679
CLYMER, NY 14724		10500106	CO	2038	42.455	2133	44.441	2149	44.773	2186	45.544	2205	45.930
		20200202	VOC	110	0.364	116	0.381	117	0.384	119	0.391	120	0.394
		20200202	NOx	69540	229.166	72794	239.889	73336	241.676	74600	245.841	75232	247.924
		20200202	CO	31340	103.280	32806	108.112	33051	108.917	33620	110.795	33905	111.733
		20200254	VOC	40	0.000	42	0.000	42	0.000	43	0.000	43	0.000
		20200254	VOC	20	0.000	21	0.000	21	0.000	22	0.000	22	0.000
		20200254	NOx	240	0.000	251	0.000	253	0.000	257	0.000	260	0.000
		20200254	CO	240	0.000	251	0.000	253	0.000	257	0.000	260	0.000
		40400301	VOC	2	0.004	2	0.005	2	0.005	2	0.005	2	0.005
		40400302	VOC	3	0.008	3	0.009	3	0.010	4	0.010	4	0.010
		40799997	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		40799998	VOC	3	0.008	3	0.008	3	0.008	3	0.008	3	0.008
NASHVILLE COMPRESSOR STATION	CHAUTAUQUA	20200202	VOC	3010	17.952	3151	18.792	3174	18.932	3229	19.258	3256	19.421

11413 ALLEGANY RD		20200202	NOx	36815	162.571	38538	170.177	38825	171.445	39494	174.400	39828	175.878
FORESTVILLE, NY 14062		20200202	CO	39238	198.645	41074	207.940	41380	209.489	42093	213.099	42450	214.905
VALEO INC ENGINE COOLING TRUCK DIVISION	CHAUTAUQUA	30400299	VOC	1379	4.536	1843	6.064	1921	6.319	2051	6.746	2116	6.959
2258 ALLEN ST		30400299	VOC	1543	5.076	2063	6.785	2149	7.070	2295	7.548	2367	7.787
JAMESTOWN, NY 14701		30903007	VOC	56374	180.686	67898	217.622	69819	223.778	73617	235.952	75516	242.039
		30904200	VOC	2623	8.407	3159	10.126	3249	10.412	3425	10.979	3514	11.262
		39000689	NOx	9140	27.279	9568	28.556	9639	28.769	9805	29.265	9888	29.512
		39000689	CO	7678	22.915	8037	23.987	8097	24.166	8236	24.582	8306	24.790
		40200201	VOC	20084	66.066	26938	88.612	28080	92.370	30238	99.466	31316	103.014
LUVATA BUFFALO INC	ERIE	10200602	VOC	433	0.000	453	0.000	456	0.000	464	0.000	468	0.000
70 SAYRE ST		10200602	VOC	456	0.000	477	0.000	481	0.000	489	0.000	493	0.000
BUFFALO, NY 14207-2299		10200602	NOx	2991	0.000	3131	0.000	3154	0.000	3208	0.000	3235	0.000
		10200602	CO	1054	0.000	1103	0.000	1111	0.000	1130	0.000	1140	0.000
		10500106	VOC	1248	0.000	1306	0.000	1316	0.000	1339	0.000	1350	0.000
		10500106	NOx	22690	0.000	23752	0.000	23929	0.000	24341	0.000	24547	0.000
		10500106	CO	19060	0.000	19951	0.000	20100	0.000	20446	0.000	20620	0.000
		30300934	VOC	681	1.851	657	1.786	653	1.775	670	1.821	678	1.844
		30300934	NOx	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		30300934	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		30390003	VOC	48	0.130	46	0.126	46	0.125	45	0.122	45	0.121
		30390003	NOx	5650	15.354	5463	14.845	5432	14.760	5317	14.449	5260	14.293
		30390003	CO	178704	485.609	172781	469.513	171794	466.830	168172	456.990	166361	452.069
		39000689	NOx	5778	15.700	6048	16.435	6093	16.557	6198	16.842	6251	16.985
		39000689	CO	1513983	4114.084	1584823	4306.584	1596630	4338.667	1624150	4413.450	1637910	4450.842
		39990003	VOC	1053	2.861	1141	3.100	1156	3.140	1191	3.237	1209	3.285
		39990003	NOx	1409	3.828	1527	4.149	1546	4.202	1594	4.331	1618	4.396
		39990003	CO	5283	14.355	5725	15.558	5799	15.758	5977	16.242	6066	16.483
BUFFALO COLOR CORP - LEE ST PLANT	ERIE	10200401	VOC	817	1.839	966	2.173	990	2.228	991	2.231	992	2.232
100 LEE ST		10200401	VOC	1042	2.344	1231	2.769	1262	2.840	1264	2.843	1264	2.845
BUFFALO, NY 14210		10200401	NOx	135072	303.912	159598	359.095	163685	368.292	163870	368.708	163963	368.916
		10200401	CO	370518	833.666	437795	985.039	449008	1010.268	449515	1011.409	449768	1011.979
		10200602	VOC	223	0.286	234	0.300	235	0.302	240	0.307	242	0.310

		10200602	NOx	5932	7.608	6210	7.964	6256	8.024	6364	8.162	6418	8.231
		10200602	CO	5038	6.462	5274	6.764	5313	6.815	5405	6.932	5450	6.991
		30103499	VOC	2670	16.119	2607	15.740	2597	15.676	2640	15.938	2662	16.068
		30103499	NOx	3059	0.000	2987	0.000	2975	0.000	3025	0.000	3049	0.000
		30103499	CO	1253	0.000	1224	0.000	1219	0.000	1239	0.000	1249	0.000
		30112199	VOC	14721	60.780	14375	59.351	14317	59.113	14556	60.098	14675	60.591
		30113299	VOC	1251	2.898	1222	2.830	1217	2.819	1237	2.866	1247	2.889
		39000689	NOx	6891	19.924	7213	20.856	7267	21.012	7392	21.374	7455	21.555
		39000689	CO	5646	16.324	5910	17.088	5954	17.215	6057	17.512	6108	17.661
BUFFALO GENERAL HOSPITAL	ERIE	10300401	VOC	421	0.000	391	0.000	386	0.000	392	0.000	395	0.000
100 HIGH ST		10300401	NOx	17503	0.000	16276	0.000	16071	0.000	16318	0.000	16442	0.000
BUFFALO, NY 14203		10300401	CO	1862	0.000	1731	0.000	1710	0.000	1736	0.000	1749	0.000
		10300602	VOC	433	1.361	437	1.374	438	1.376	445	1.398	449	1.410
		10300602	NOx	7880	24.753	7951	24.977	7963	25.015	8094	25.426	8159	25.631
		10300602	CO	6619	20.793	6679	20.981	6689	21.012	6799	21.358	6854	21.530
		39000689	NOx	5550	4.135	5810	4.328	5853	4.360	5954	4.435	6004	4.473
		39000689	CO	4662	3.473	4880	3.636	4916	3.663	5001	3.726	5044	3.757
		50200504	VOC	1	0.002	1	0.002	1	0.002	1	0.002	1	0.002
		50200504	NOx	4041	11.420	4170	11.785	4191	11.845	4187	11.832	4184	11.825
		50200504	CO	3348	9.462	3455	9.764	3473	9.814	3469	9.803	3467	9.797
		50290006	NOx	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		50290006	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
BIRD ISLAND STP	ERIE	10300602	VOC	1012	2.750	1021	2.775	1023	2.779	1039	2.825	1048	2.848
90 WEST FERRY ST		10300602	NOx	9200	25.000	9283	25.226	9297	25.264	9450	25.679	9526	25.887
BUFFALO, NY 14213-7999		10300602	CO	15456	42.000	15596	42.380	15619	42.443	15876	43.141	16004	43.490
		39000689	VOC	36662	99.625	38377	104.287	38663	105.063	39330	106.874	39663	107.780
		39000689	VOC	38471	104.540	40271	109.432	40571	110.247	41270	112.147	41620	113.097
		39000689	NOx	157806	428.821	165190	448.885	166420	452.230	169289	460.024	170723	463.922
		39000689	CO	709330	1927.527	742520	2017.717	748052	2032.749	760945	2067.786	767392	2085.305
HENKEL CORP	ERIE	10200603	NOx	1600	5.833	1675	6.106	1687	6.152	1716	6.258	1731	6.311
710 OHIO ST-MAIN-22 BUILDING		10200603	CO	1344	4.900	1407	5.129	1417	5.167	1442	5.257	1454	5.301
BUFFALO, NY 14203		30101401	VOC	66289	1024.935	80310	1241.712	82646	1277.841	86992	1345.029	89165	1378.623
		49000201	VOC	700	2.917	684	2.848	681	2.837	692	2.884	698	2.908

		49000201	VOC	1075	4.479	1050	4.374	1046	4.356	1063	4.429	1072	4.465
PVS CHEMICALS	ERIE	10200602	VOC	217	0.047	227	0.049	229	0.050	232	0.051	234	0.051
55 LEE ST		10200602	VOC	167	0.036	175	0.038	176	0.038	179	0.039	181	0.039
BUFFALO, NY 14210		10200602	NOx	3940	0.857	4124	0.897	4155	0.903	4227	0.919	4263	0.927
		10200602	CO	3310	0.719	3464	0.753	3490	0.759	3550	0.772	3581	0.778
		39000689	NOx	5580	15.770	5841	16.507	5885	16.630	5986	16.917	6037	17.060
		39000689	CO	4687	13.246	4907	13.866	4943	13.970	5028	14.210	5071	14.331
		39999994	VOC	20	0.096	29	0.138	30	0.145	32	0.153	33	0.157
SISTERS OF CHARITY HOSPITAL	ERIE	10300203	NOx	4698	0.000	4892	0.000	4924	0.000	4903	0.000	4892	0.000
2157 MAIN ST		10300203	CO	70	0.000	72	0.000	73	0.000	73	0.000	72	0.000
BUFFALO, NY 14214		10300502	NOx	43	0.491	45	0.521	46	0.527	46	0.531	46	0.534
		10300502	CO	11	0.123	11	0.130	11	0.132	12	0.133	12	0.133
		10300602	VOC	454	0.821	458	0.828	459	0.829	466	0.843	470	0.850
		10300602	NOx	8251	14.924	8325	15.059	8338	15.081	8475	15.329	8543	15.453
		10300602	CO	6930	12.536	6993	12.649	7004	12.668	7119	12.877	7176	12.981
		20200301	NOx	4244	11.658	4243	11.656	4243	11.655	4264	11.714	4275	11.744
		20200301	CO	163530	449.258	163498	449.169	163492	449.154	164319	451.425	164732	452.560
		39999994	VOC	1235	3.356	1769	4.808	1858	5.050	1965	5.340	2018	5.485
		50200504	VOC	1553	6.472	1603	6.678	1611	6.713	1609	6.705	1608	6.701
		50200504	NOx	77	0.321	79	0.331	80	0.333	80	0.332	80	0.332
		50200504	CO	45	0.188	47	0.194	47	0.195	47	0.195	47	0.195
GENERAL MILLS OPERATIONS INC	ERIE	10200602	VOC	356	0.673	372	0.704	375	0.710	382	0.722	385	0.728
54 SOUTH MICHIGAN AVE		10200602	VOC	462	0.874	484	0.915	487	0.921	496	0.937	500	0.945
BUFFALO, NY 14203		10200602	NOx	8400	15.887	8793	16.630	8859	16.754	9011	17.043	9088	17.187
		10200602	CO	7056	13.345	7386	13.969	7441	14.074	7569	14.316	7634	14.437
		20200203	VOC	513	1.287	537	1.348	541	1.358	550	1.381	555	1.393
		20200203	VOC	1002	2.515	1049	2.633	1056	2.652	1075	2.698	1084	2.721
		20200203	NOx	152640	383.259	159782	401.192	160972	404.181	163747	411.147	165134	414.631
		20200203	CO	39114	98.210	40944	102.805	41249	103.571	41960	105.357	42316	106.249
		30299998	VOC	21740	59.076	22452	61.011	22571	61.333	23051	62.639	23292	63.292
		39000689	VOC	308	1.220	322	1.277	325	1.287	330	1.309	333	1.320
		39000689	NOx	5600	22.187	5862	23.226	5906	23.399	6007	23.802	6058	24.003
		39000689	CO	4704	18.637	4924	19.509	4961	19.655	5046	19.994	5089	20.163

		39999994	VOC	100	0.272	143	0.389	150	0.409	159	0.432	163	0.444
		40200110	VOC	100	0.272	134	0.364	140	0.380	151	0.409	156	0.424
		40200210	VOC	100	0.272	134	0.364	140	0.380	151	0.409	156	0.424
BUFFALO STATE COLLEGE	ERIE	10300402	VOC	1450	0.000	1349	0.000	1332	0.000	1352	0.000	1363	0.000
1300 ELMWOOD AVE		10300402	NOx	85210	0.000	79237	0.000	78241	0.000	79443	0.000	80044	0.000
BUFFALO, NY 14222		10300402	CO	6418	0.000	5968	0.000	5893	0.000	5984	0.000	6029	0.000
		10300602	VOC	511	1.216	515	1.227	516	1.229	525	1.249	529	1.259
		10300602	VOC	663	1.579	669	1.593	670	1.596	681	1.622	687	1.635
		10300602	NOx	10820	20.080	10918	20.262	10934	20.292	11114	20.626	11204	20.793
		10300602	CO	10130	24.113	10222	24.332	10237	24.368	10406	24.768	10490	24.969
		10300603	VOC	38	0.004	38	0.004	39	0.004	39	0.004	39	0.004
		10300603	VOC	50	0.005	50	0.005	50	0.005	51	0.006	51	0.006
		10300603	NOx	900	0.098	908	0.099	909	0.099	924	0.100	932	0.101
		10300603	CO	756	0.082	763	0.083	764	0.083	777	0.084	783	0.085
		20100202	NOx	400	26.696	438	29.222	445	29.644	491	32.750	515	34.304
		20100202	CO	56	3.751	62	4.106	62	4.165	69	4.601	72	4.819
		20200102	VOC	8	0.130	8	0.131	8	0.132	8	0.130	8	0.129
		20200102	VOC	8	0.129	8	0.130	8	0.130	8	0.129	8	0.128
		20200102	NOx	96	1.595	97	1.609	97	1.612	96	1.592	95	1.583
		20200102	CO	21	0.344	21	0.347	21	0.347	21	0.343	20	0.341
		40200101	VOC	141	2.357	190	3.161	198	3.295	213	3.548	220	3.675
		40400404	VOC	233	0.612	232	0.609	232	0.609	230	0.604	229	0.602
BUFFALO TERMINAL	ERIE	40301019	VOC	1249	3.394	1400	3.805	1425	3.873	1476	4.011	1501	4.079
625 ELK ST		40301099	VOC	104	0.283	117	0.317	119	0.323	123	0.334	125	0.340
BUFFALO, NY 14210		40400151	VOC	933	2.535	1046	2.842	1065	2.893	1103	2.996	1121	3.047
		40400154	VOC	13907	37.791	15591	42.366	15871	43.129	16434	44.658	16715	45.422
		40400160	VOC	76433	207.698	85687	232.845	87229	237.037	90322	245.439	91868	249.641
		40400250	VOC	4572	12.424	5126	13.928	5218	14.179	5403	14.681	5495	14.933
UNICELL BODY COMPANY INC	ERIE	10500106	NOx	330	0.052	345	0.054	348	0.054	354	0.055	357	0.056
575 HOWARD ST		10500106	CO	277	0.043	290	0.045	292	0.046	297	0.046	300	0.047
BUFFALO, NY 14206		30800704	VOC	432	1.689	542	2.116	560	2.188	592	2.314	609	2.377
		30800721	VOC	1596	6.234	1999	7.810	2067	8.072	2186	8.539	2246	8.772
		30800722	VOC	9237	36.081	11571	45.201	11960	46.721	12651	49.418	12996	50.767

		30800723	VOC	1988	7.766	2490	9.728	2574	10.055	2723	10.636	2797	10.926
		30800724	VOC	22040	86.095	27611	107.856	28540	111.483	30187	117.919	31011	121.138
		30800724	VOC	22040	86.095	27611	107.856	28540	111.483	30187	117.919	31011	121.138
		40201607	VOC	4271	16.683	5237	20.456	5398	21.084	5721	22.346	5882	22.977
		40201620	VOC	84	0.330	104	0.404	107	0.417	113	0.442	116	0.454
		40201699	VOC	974	3.804	1194	4.664	1231	4.807	1304	5.095	1341	5.239
INTERNATIONAL IMAGING	ERIE	10300602	VOC	444	1.206	448	1.217	449	1.219	456	1.239	460	1.249
310 COMMERCE DR		10300602	NOx	5700	15.489	5752	15.629	5760	15.653	5855	15.910	5902	16.038
AMHERST, NY 14228		10300602	CO	3900	10.598	3935	10.694	3941	10.710	4006	10.886	4038	10.974
		39000689	VOC	12	0.000	12	0.000	12	0.000	12	0.000	12	0.000
		39000689	NOx	34170	95.793	35769	100.276	36035	101.023	36656	102.764	36967	103.635
		39000689	CO	83784	227.862	87704	238.524	88358	240.301	89881	244.443	90642	246.513
		39999994	VOC	133117	373.931	190696	535.674	200293	562.631	211800	594.954	217553	611.116
		40500701	VOC	1370	3.723	1374	3.733	1374	3.735	1406	3.821	1422	3.864
		40500701	VOC	1166	3.168	1169	3.177	1170	3.179	1197	3.252	1210	3.289
DINAIRE LLC	ERIE	10500106	NOx	937	3.113	981	3.258	988	3.282	1005	3.339	1014	3.367
145 GRUNER ROAD		10500106	CO	787	2.615	824	2.737	830	2.757	844	2.805	852	2.829
BUFFALO, NY 14227		40201901	VOC	92150	359.961	112987	441.354	116460	454.920	123427	482.138	126911	495.747
		40201901	VOC	71816	280.531	88055	343.964	90761	354.537	96192	375.748	98907	386.354
CELLO-PACK CORPORATION OF BUFFALO	ERIE	39000689	VOC	110	0.443	115	0.463	116	0.467	118	0.475	119	0.479
55 INNSBRUCK DR		39000689	NOx	1996	8.050	2090	8.427	2105	8.489	2142	8.636	2160	8.709
CHEEKTOWAGA, NY 14227		39000689	CO	1677	6.762	1755	7.078	1769	7.131	1799	7.254	1814	7.316
		40500301	VOC	12737	45.489	12772	45.613	12777	45.634	13073	46.691	13221	47.219
		40500301	NOx	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		40500301	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
QUEBECOR WORLD BUFFALO INC	ERIE	10200402	VOC	192	0.798	226	0.943	232	0.967	232	0.968	232	0.969
2475 GEORGE URBAN BLVD		10200402	NOx	37620	156.750	44451	185.212	45589	189.956	45641	190.170	45667	190.277
DEPEW, NY 14043-2098		10200402	CO	3420	14.250	4041	16.837	4144	17.269	4149	17.288	4152	17.298
		10200602	VOC	4	0.026	4	0.028	4	0.028	5	0.028	5	0.029
		10200602	VOC	6	0.034	6	0.036	6	0.036	6	0.037	6	0.037
		10200602	NOx	100	0.625	105	0.654	105	0.659	107	0.670	108	0.676
		10200602	CO	84	0.525	88	0.550	89	0.554	90	0.563	91	0.568
		10300602	VOC	330	16.500	333	16.649	333	16.674	339	16.948	342	17.085

		10300602	VOC	254	12.707	256	12.822	257	12.841	261	13.052	263	13.157
		10300602	NOx	6000	300.000	6054	302.713	6063	303.165	6163	308.148	6213	310.640
		10300602	CO	5040	252.000	5086	254.279	5093	254.659	5177	258.845	5219	260.938
		30700727	VOC	480	1.600	528	1.760	536	1.786	551	1.837	559	1.862
		40500301	VOC	14425	50.087	14464	50.223	14471	50.246	14806	51.410	14974	51.992
		40500431	VOC	3	0.011	3	0.010	3	0.010	3	0.010	3	0.010
		40500511	VOC	792860	2202.389	743942	2066.506	735789	2043.859	746166	2072.682	751354	2087.094
		40715812	VOC	9829	27.303	9598	26.661	9559	26.554	9719	26.996	9798	27.218
CONCORD COMPRESSOR STATION	ERIE	20200202	VOC	31414	97.457	32884	102.017	33129	102.777	33700	104.548	33985	105.434
5510 GENESEE RD		20200202	NOx	109029	364.654	114131	381.716	114981	384.560	116963	391.189	117954	394.503
SPRINGVILLE, NY 14141		20200202	CO	156802	493.824	164139	516.930	165362	520.781	168212	529.757	169637	534.245
TENNESSEE GAS PIPELINE CO COMPRESSOR STATION 229	ERIE	10500106	VOC	121	1.315	127	1.377	128	1.387	130	1.411	131	1.423
7586 EAST EDEN RD		10500106	NOx	2200	23.913	2303	25.032	2320	25.218	2360	25.653	2380	25.870
EDEN, NY 14057		10500106	CO	1848	20.087	1934	21.027	1949	21.183	1982	21.549	1999	21.731
		20200202	VOC	23560	233.819	24662	244.760	24846	246.583	25274	250.833	25489	252.958
		20200202	NOx	259900	2540.648	272061	2659.526	274088	2679.339	278812	2725.521	281174	2748.612
		20200202	CO	223940	2181.467	234418	2283.539	236165	2300.551	240235	2340.204	242271	2360.031
		31000227	VOC	729	21.870	807	24.219	820	24.611	854	25.628	871	26.137
		31000227	VOC	1077	32.310	1193	35.781	1212	36.359	1262	37.862	1287	38.613
		40301008	VOC	0	0.001	0	0.001	0	0.001	0	0.001	0	0.001
		40301019	VOC	9	0.025	10	0.028	11	0.029	11	0.030	11	0.031
		40301021	VOC	1	0.002	1	0.002	1	0.002	1	0.002	1	0.002
		40799997	VOC	0	0.001	0	0.001	0	0.001	0	0.001	0	0.001
LACKAWANNA PLANT- REPUBLIC ENG PROD INC	ERIE	10200601	VOC	2232	4.731	2337	4.953	2354	4.990	2395	5.076	2415	5.119
3049 LAKESHORE RD		10200601	NOx	113638	240.863	118955	252.133	119841	254.011	121907	258.389	122940	260.578
HAMBURG, NY 14219-1447		10200601	CO	34091	72.259	35686	75.640	35952	76.203	36572	77.517	36882	78.174
		30300933	VOC	615	1.591	593	1.535	590	1.526	605	1.565	613	1.585
		30300933	NOx	147332	381.141	142141	367.711	141275	365.473	144938	374.947	146769	379.684
		30300933	CO	55763	144.256	53798	139.173	53471	138.326	54857	141.912	55550	143.705
		39000689	NOx	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		39000689	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
WHITING DOOR MANUFACTURING CORP	ERIE	10200603	VOC	97	0.000	102	0.000	103	0.000	104	0.000	105	0.000

113 CEDAR ST		10200603	NOx	1770	0.000	1853	0.000	1867	0.000	1899	0.000	1915	0.000
AKRON, NY 14001		10200603	CO	1487	0.000	1556	0.000	1568	0.000	1595	0.000	1609	0.000
		10500106	NOx	20	0.054	21	0.057	21	0.057	21	0.058	22	0.059
		10500106	CO	17	0.046	18	0.048	18	0.048	18	0.049	18	0.049
		30901101	VOC	376	1.469	548	2.140	577	2.252	627	2.449	652	2.548
		39000689	NOx	1830	7.038	1916	7.368	1930	7.423	1963	7.551	1980	7.615
		39000689	CO	1537	5.912	1609	6.189	1621	6.235	1649	6.343	1663	6.396
		40200501	VOC	25504	99.625	34208	133.624	35658	139.291	38398	149.991	39767	155.342
		40200510	VOC	22013	85.988	29525	115.334	30777	120.224	33142	129.460	34324	134.078
		40200601	VOC	15478	60.461	18978	74.132	19561	76.411	20732	80.982	21317	83.268
		40201401	VOC	1874	7.320	2298	8.976	2368	9.251	2510	9.805	2581	10.082
		40201401	VOC	1655	6.465	2029	7.927	2092	8.170	2217	8.659	2279	8.904
		40201432	VOC	13550	52.930	16614	64.898	17125	66.893	18149	70.895	18661	72.896
		40201432	VOC	15449	60.348	18942	73.993	19525	76.268	20693	80.831	21277	83.112
CHAFFEE LANDFILL	ERIE	10500106	VOC	3	0.006	3	0.006	3	0.006	3	0.006	3	0.006
10860 OLEAN RD		10500106	NOx	49	0.106	52	0.111	52	0.112	53	0.114	53	0.115
CHAFFEE, NY 14030-9799		10500106	CO	42	0.089	43	0.093	44	0.094	45	0.095	45	0.096
		40100295	VOC	369	1.003	471	1.280	488	1.326	515	1.399	528	1.435
		40200110	VOC	2558	6.951	3431	9.323	3576	9.719	3851	10.465	3989	10.839
		40301098	VOC	5	0.013	6	0.015	6	0.015	6	0.016	6	0.016
		40301099	VOC	29	0.078	32	0.087	33	0.089	34	0.092	34	0.094
		50200601	VOC	8627	23.640	8587	23.531	8581	23.513	8581	23.513	8581	23.513
		50200601	NOx	3019	8.273	3005	8.235	3003	8.228	3003	8.228	3003	8.228
		50200601	CO	36233	99.286	36067	98.830	36039	98.754	36039	98.754	36039	98.754
		50200602	VOC	40000	108.696	39816	108.196	39786	108.113	39786	108.113	39786	108.113
GOODYEAR DUNLOP TIRES NORTH AMERICA LTD	ERIE	10200402	NOx	138217	240.377	163314	284.024	167497	291.298	167686	291.627	167780	291.792
3333 RIVER RD|10 SHERIDAN DR		10200402	CO	14690	25.548	17357	30.187	17802	30.960	17822	30.995	17832	31.012
TONAWANDA, NY 14150		10200602	VOC	563	1.530	589	1.601	594	1.613	604	1.641	609	1.655
		10200602	VOC	434	1.178	454	1.233	457	1.242	465	1.264	469	1.275
		10200602	NOx	30996	84.228	32446	88.169	32688	88.826	33251	90.357	33533	91.123
		10200602	CO	6630	18.016	6940	18.859	6992	19.000	7112	19.327	7173	19.491
		30102699	VOC	14505	39.416	18129	49.264	18733	50.905	19828	53.880	20375	55.368
		30102699	VOC	11835	32.160	14792	40.196	15285	41.535	16178	43.962	16625	45.176

		30800113	VOC	85398	232.061	107078	290.973	110692	300.792	116494	316.559	119395	324.442
		30800113	VOC	89641	243.590	112398	305.430	116191	315.736	122281	332.286	125326	340.561
		30800114	VOC	4615	12.539	5786	15.723	5981	16.253	6295	17.105	6451	17.531
		30800115	VOC	10059	27.333	12612	34.272	13038	35.429	13721	37.286	14063	38.214
		30800127	VOC	11451	31.116	14358	39.015	14842	40.332	15620	42.446	16009	43.503
		30800131	VOC	8762	23.809	10986	29.854	11357	30.861	11952	32.479	12250	33.287
		30800501	VOC	54279	147.498	68059	184.943	70356	191.183	74043	201.205	75887	206.215
		30801002	VOC	362	0.983	453	1.231	468	1.272	495	1.346	509	1.383
		30801002	VOC	153	0.416	192	0.521	198	0.539	210	0.570	215	0.585
		39000689	NOx	838	3.097	877	3.242	884	3.266	899	3.322	907	3.350
		39000689	CO	800	2.957	837	3.095	844	3.118	858	3.172	865	3.199
E I DUPONT YERKES PLANT	ERIE	30101808	VOC	4044	11.278	5054	14.096	5222	14.565	5527	15.417	5680	15.842
SHERIDAN DR AT RIVER RD		30101809	NOx	0	0.001	0	0.001	0	0.001	0	0.001	0	0.001
TONAWANDA, NY 14150		30101810	VOC	1863	24.840	2328	31.046	2406	32.081	2547	33.956	2617	34.893
		30101817	VOC	1053	6.581	1316	8.226	1360	8.500	1439	8.996	1479	9.245
		30101818	VOC	35040	181.901	43795	227.350	45254	234.925	47899	248.654	49221	255.519
		30101818	VOC	33554	177.863	41938	222.303	43335	229.710	45867	243.134	47134	249.847
		30101822	VOC	14374	39.064	17965	48.824	18563	50.450	19648	53.399	20191	54.873
		30101822	VOC	146329	421.226	182889	526.470	188983	544.011	200027	575.804	205550	591.701
		30801007	VOC	30621	93.353	38360	116.948	39650	120.880	41939	127.859	43084	131.349
		30801007	VOC	295	0.895	369	1.121	381	1.158	403	1.225	414	1.259
GM POWERTRAIN - TONAWANDA ENGINE PLANT	ERIE	10200602	VOC	116	0.484	121	0.506	122	0.510	124	0.519	126	0.523
2995 RIVER RD		10200602	VOC	151	0.628	158	0.657	159	0.662	162	0.674	163	0.679
BUFFALO, NY 14207-1099		10200602	NOx	2740	11.417	2868	11.951	2890	12.040	2939	12.247	2964	12.351
		10200602	CO	2302	9.590	2409	10.039	2427	10.114	2469	10.288	2490	10.375
		10500106	VOC	2677	0.000	2803	0.000	2824	0.000	2872	0.000	2897	0.000
		10500106	NOx	48682	0.000	50960	0.000	51339	0.000	52224	0.000	52667	0.000
		10500106	CO	40893	0.000	42806	0.000	43125	0.000	43868	0.000	44240	0.000
		20200102	VOC	25	0.519	25	0.524	25	0.525	25	0.519	25	0.515
		20200102	VOC	25	0.525	25	0.530	25	0.531	25	0.524	25	0.521
		20200102	NOx	309	6.431	311	6.489	312	6.499	308	6.421	306	6.382
		20200102	CO	67	1.385	67	1.398	67	1.400	66	1.383	66	1.375
		20200202	VOC	122	0.508	127	0.531	128	0.535	131	0.544	132	0.549

		20200202	NOx	2982	12.425	3122	13.006	3145	13.103	3199	13.329	3226	13.442
		20200202	CO	419	1.746	439	1.827	442	1.841	449	1.873	453	1.889
		39090003	VOC	2	0.006	2	0.006	2	0.006	2	0.006	2	0.006
		39090004	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		39090011	VOC	4	0.010	4	0.010	4	0.010	4	0.010	4	0.010
		39090012	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		40600131	VOC	311	1.197	310	1.193	310	1.192	308	1.183	306	1.179
NOCO ENERGY CORP	ERIE	10300501	VOC	6	0.015	6	0.016	6	0.016	6	0.016	6	0.016
700 GRAND ISLAND BLVD		10300501	VOC	6	0.018	7	0.019	7	0.019	7	0.019	7	0.019
TONAWANDA, NY 14150		10300501	NOx	458	1.244	486	1.322	491	1.335	496	1.347	498	1.353
		10300501	CO	95	0.259	101	0.275	102	0.278	103	0.281	104	0.282
		10300603	VOC	20	0.053	20	0.054	20	0.054	20	0.055	20	0.055
		10300603	NOx	356	0.966	359	0.975	359	0.976	365	0.992	368	1.000
		10300603	CO	299	0.811	301	0.819	302	0.820	307	0.834	309	0.840
		10301302	NOx	11529	31.329	11980	32.554	12055	32.759	12171	33.073	12229	33.231
		10301302	CO	3034	8.244	3153	8.567	3172	8.621	3203	8.704	3218	8.745
		30500212	VOC	1782	4.844	2142	5.821	2202	5.983	2334	6.342	2400	6.521
		40400150	VOC	8926	24.256	10007	27.192	10187	27.682	10548	28.663	10729	29.154
		40400150	VOC	8492	23.077	9521	25.871	9692	26.337	10035	27.270	10207	27.737
		40400151	VOC	3591	9.758	4026	10.940	4098	11.137	4244	11.531	4316	11.729
		40400160	VOC	15749	42.795	17655	47.977	17973	48.840	18610	50.571	18929	51.437
		40400179	VOC	51	0.140	58	0.157	59	0.160	61	0.165	62	0.168
		40714697	VOC	0	0.001	0	0.001	0	0.001	0	0.001	0	0.001
		40714698	VOC	1	0.003	1	0.003	1	0.003	1	0.003	1	0.003
TONAWANDA COKE CORP	ERIE	10200602	VOC	616	1.006	645	1.053	650	1.061	661	1.080	667	1.089
3875 RIVER RD		10200602	NOx	11203	18.298	11727	19.154	11814	19.297	12018	19.629	12120	19.796
TONAWANDA, NY 14150		10200602	CO	9410	15.370	9851	16.089	9924	16.209	10095	16.489	10181	16.628
		10200707	NOx	109477	297.492	92387	251.053	89539	243.313	84630	229.973	82176	223.303
		10200707	CO	181	0.492	153	0.415	148	0.402	140	0.380	136	0.369
		30300331	VOC	32039	87.063	30910	83.995	30722	83.483	31518	85.648	31916	86.730
		30300331	NOx	197022	535.386	190080	516.521	188923	513.377	193820	526.685	196269	533.339
		30300331	CO	49255	133.845	47519	129.129	47230	128.343	48454	131.670	49067	133.333
HUNTLEY STEAM GENERATING STATION	ERIE	10100201	VOC	13856	39.459	15579	44.368	15867	45.186	16190	46.108	16352	46.569

3500 RIVER RD		10100201	NOx	6848000	19501.913	7699901	21927.979	7841884	22332.323	8001872	22787.939	8081866	23015.748
TONAWANDA, NY 14150		10100201	CO	173198	493.236	194744	554.596	198335	564.822	202381	576.346	204404	582.107
		10100212	NOx	7790000	22777.283	8759087	25610.810	8920602	26083.064	9102597	26615.201	9193594	26881.271
		10100212	CO	453393	1325.680	509795	1490.597	519196	1518.083	529788	1549.054	535084	1564.540
		10100501	VOC	120	3.738	238	7.438	258	8.055	193	6.036	161	5.027
		10100501	VOC	91	2.834	180	5.640	195	6.108	146	4.577	122	3.812
		10100501	NOx	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		10100501	CO	2990	93.438	5950	185.947	6444	201.365	4829	150.900	4021	125.667
		10101301	NOx	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		10101301	CO	22	0.064	37	0.107	39	0.114	41	0.119	42	0.122
		20100102	VOC	37	0.955	74	1.900	80	2.057	60	1.542	50	1.284
		20100102	NOx	1208	31.166	2404	62.023	2603	67.166	1951	50.333	1625	41.917
		20100102	CO	260	6.708	517	13.349	560	14.456	420	10.833	350	9.022
		40400413	VOC	5	0.014	5	0.014	5	0.014	5	0.014	5	0.014
		40400414	VOC	5	0.014	5	0.014	5	0.014	5	0.014	5	0.014
SUNOCO TONAWANDA TERMINAL	ERIE	40400151	VOC	492	1.505	551	1.688	561	1.718	581	1.779	591	1.809
3733 RIVER RD		40400160	VOC	37105	113.615	41598	127.371	42347	129.664	43848	134.260	44598	136.559
TONAWANDA, NY 14150		40400250	VOC	13545	41.417	15185	46.432	15459	47.268	16006	48.943	16280	49.781
		40400250	VOC	13949	42.623	15638	47.784	15919	48.644	16483	50.368	16766	51.231
		40600131	VOC	15763	0.000	15703	0.000	15693	0.000	15575	0.000	15516	0.000
INDECK-YERKES ENERGY SERVICES	ERIE	10200602	VOC	1768	3.536	1851	3.701	1865	3.729	1897	3.793	1913	3.825
1 SHERIDAN DR		10200602	NOx	15045	30.090	15749	31.498	15866	31.733	16140	32.280	16277	32.553
TONAWANDA, NY 14150		10200602	CO	7898	15.796	8268	16.535	8329	16.658	8473	16.945	8544	17.089
		20100101	VOC	10	0.161	20	0.320	22	0.346	16	0.260	13	0.216
		20100101	NOx	1048	16.843	2086	33.518	2259	36.298	1693	27.201	1409	22.653
		20100101	CO	564	9.064	1122	18.039	1215	19.534	911	14.639	759	12.191
		20100201	VOC	2447	30.117	2679	32.967	2717	33.442	3002	36.947	3144	38.699
		20100201	NOx	37697	463.963	41265	507.872	41859	515.190	46246	569.182	48439	596.178
		20100201	CO	1361	16.751	1490	18.336	1511	18.600	1670	20.550	1749	21.524
		20200203	VOC	2566	31.088	2686	32.543	2706	32.785	2753	33.350	2776	33.633
		20200203	NOx	60338	731.018	63161	765.223	63632	770.924	64729	784.212	65277	790.856
		20200203	CO	1386	16.792	1451	17.578	1462	17.709	1487	18.014	1499	18.166
3M TONAWANDA	ERIE	10200402	NOx	14607	0.000	17259	0.000	17702	0.000	17722	0.000	17732	0.000

305 SAWYER AVE		10200402	CO	1328	0.000	1569	0.000	1609	0.000	1611	0.000	1612	0.000
TONAWANDA, NY 14150		10200602	VOC	1131	2.742	1184	2.870	1193	2.892	1214	2.942	1224	2.966
		10200602	NOx	20568	49.855	21530	52.188	21691	52.576	22065	53.483	22251	53.936
		10200602	CO	17277	41.878	18085	43.838	18220	44.164	18534	44.925	18691	45.306
		10500106	NOx	223	0.065	233	0.068	235	0.069	239	0.070	241	0.071
		10500106	CO	187	0.055	196	0.057	197	0.058	201	0.059	202	0.059
		39000689	NOx	180	0.488	188	0.511	189	0.515	193	0.524	194	0.528
		39000689	CO	151	0.410	158	0.429	159	0.432	162	0.440	163	0.444
		40201310	VOC	59	0.160	72	0.197	75	0.203	79	0.215	81	0.221
ISG LACKAWANNA LLC	ERIE	10200602	VOC	2863	8.090	2997	8.469	3019	8.532	3071	8.679	3097	8.753
3175 LAKESHORE RD		10200602	VOC	2205	6.230	2308	6.522	2325	6.570	2365	6.684	2385	6.740
BLASDELL, NY 14219		10200602	NOx	52050	147.098	54485	153.981	54891	155.128	55837	157.802	56311	159.139
		10200602	CO	43722	123.562	45768	129.344	46109	130.307	46903	132.553	47301	133.676
		10500106	VOC	1207	0.787	1263	0.824	1273	0.830	1295	0.844	1305	0.851
		10500106	NOx	21940	14.309	22967	14.978	23138	15.090	23536	15.350	23736	15.480
		10500106	CO	18430	12.019	19292	12.582	19436	12.675	19771	12.894	19938	13.003
		20100202	VOC	10	0.823	11	0.900	11	0.913	12	1.009	13	1.057
		20100202	NOx	242	20.140	265	22.046	268	22.364	296	24.708	311	25.880
		20100202	CO	34	2.830	37	3.097	38	3.142	42	3.471	44	3.636
		30300936	VOC	24258	65.918	23403	63.596	23261	63.209	23864	64.847	24165	65.666
		30300936	NOx	2109	5.731	2035	5.529	2022	5.495	2075	5.638	2101	5.709
		30300936	CO	7910	21.495	7631	20.737	7585	20.611	7781	21.145	7880	21.412
		30301580	NOx	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		30301580	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		39000689	VOC	20753	56.477	21724	59.120	21886	59.560	22263	60.587	22452	61.100
		39000689	NOx	4770	13.128	4993	13.742	5030	13.845	5117	14.083	5160	14.203
		39000689	CO	40657	110.496	42559	115.666	42876	116.528	43615	118.536	43985	119.541
		39999994	VOC	193	0.524	276	0.751	290	0.789	307	0.834	315	0.857
		40100398	VOC	1	0.003	1	0.003	1	0.004	1	0.004	1	0.004
		40400497	VOC	3	0.008	3	0.009	3	0.009	4	0.010	4	0.010
		40500701	VOC	91	0.247	91	0.248	91	0.248	93	0.254	94	0.257
		40600101	VOC	85	0.231	85	0.230	85	0.230	84	0.228	84	0.227
		40600101	NOx	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000

		40600101	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
DELPHI THERMAL SYSTEMS	NIAGARA	10200602	VOC	9	0.023	9	0.024	9	0.024	9	0.025	9	0.025
200 UPPER MOUNTAIN RD		10200602	NOx	155	0.420	162	0.440	163	0.443	166	0.451	167	0.455
LOCKPORT, NY 14094		10200602	CO	130	0.353	136	0.370	137	0.372	139	0.379	141	0.382
		10500106	VOC	2	0.004	2	0.004	2	0.004	2	0.005	2	0.005
		10500106	NOx	28	0.076	29	0.080	30	0.081	30	0.082	30	0.083
		10500106	CO	24	0.064	25	0.067	25	0.068	25	0.069	26	0.069
		30904200	VOC	69172	294.290	83312	354.449	85669	364.476	90330	384.305	92660	394.219
		30904300	VOC	13790	49.797	16609	59.977	17079	61.673	18008	65.029	18473	66.706
		39000689	VOC	1344	3.651	1407	3.822	1417	3.851	1441	3.917	1454	3.950
		39000689	NOx	24431	66.389	25574	69.495	25765	70.013	26209	71.219	26431	71.823
		39000689	CO	20522	55.766	21482	58.376	21642	58.811	22015	59.824	22202	60.331
		39999992	VOC	25301	116.082	36245	166.292	38069	174.661	40256	184.695	41349	189.712
		39999994	VOC	8821	34.103	12636	48.854	13272	51.312	14035	54.260	14416	55.734
		39999994	NOx	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		40200701	VOC	1083	4.693	1453	6.295	1514	6.562	1631	7.066	1689	7.318
		40200801	VOC	57586	236.308	77238	316.954	80514	330.394	86699	355.776	89792	368.467
		40200801	VOC	86380	354.466	115859	475.435	120772	495.597	130050	533.670	134689	552.707
		40301097	VOC	3370	9.158	3778	10.266	3846	10.451	3982	10.822	4051	11.007
		40301099	VOC	1319	3.584	1479	4.018	1505	4.091	1559	4.236	1585	4.308
VANDEMARK CHEMICAL INC	NIAGARA	10200501	VOC	0	0.008	0	0.008	0	0.008	0	0.008	0	0.008
1 NORTH TRANSIT RD		10200501	NOx	47	0.909	48	0.917	48	0.919	47	0.908	47	0.902
LOCKPORT, NY 14094		10200501	CO	10	0.189	10	0.191	10	0.191	10	0.189	10	0.188
		10500106	NOx	6250	12.228	6542	12.800	6591	12.896	6705	13.118	6762	13.229
		10500106	CO	5250	10.272	5496	10.752	5537	10.832	5632	11.019	5680	11.113
		30183001	VOC	2045	5.557	2552	6.935	2636	7.164	2794	7.594	2873	7.808
		30183001	VOC	710	1.929	886	2.408	915	2.487	970	2.636	998	2.711
		30199999	VOC	2305	6.278	2877	7.835	2972	8.094	3150	8.579	3239	8.822
		30199999	CO	148260	950.385	185016	1185.997	191142	1225.266	202595	1298.683	208321	1335.391
THE CARBIDE/GRAPHITE GROUP INCORPORATED	NIAGARA	10500206	VOC	268	0.029	271	0.029	271	0.029	275	0.030	278	0.030
4861 PACKARD ROAD		10500206	NOx	5060	0.550	5106	0.555	5113	0.556	5197	0.565	5239	0.570
NIAGARA FALLS, NY 14304		10500206	CO	1012	0.110	1021	0.111	1023	0.111	1039	0.113	1048	0.114
		30402005	VOC	42887	120.073	59253	165.894	61981	173.531	67020	187.639	69539	194.693

		30402005	CO	5077097	13827.538	7014565	19104.258	7337476	19983.710	7934018	21608.398	8232289	22420.745
		39000689	NOx	15530	57.393	16257	60.079	16378	60.527	16660	61.570	16801	62.091
		39000689	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		40400121	VOC	5	0.014	6	0.015	6	0.016	6	0.016	6	0.016
		40400122	VOC	268	0.728	300	0.816	306	0.831	317	0.861	322	0.875
		49000405	VOC	5641	15.329	6963	18.920	7183	19.519	7581	20.600	7780	21.140
DUPONT COMPANY	NIAGARA	10200601	VOC	7208	13.799	7545	14.445	7601	14.552	7732	14.803	7798	14.928
BUFFALO AVE & 26TH ST		10200601	VOC	5791	11.279	6062	11.806	6107	11.894	6212	12.099	6265	12.202
NIAGARA FALLS, NY 14302-0787		10200601	NOx	97843	49.677	102421	52.001	103184	52.388	104963	53.291	105852	53.743
		10200601	CO	51314	51.057	53715	53.446	54115	53.844	55048	54.772	55514	55.236
		10200799	NOx	19681	77.013	20495	80.197	20630	80.728	20699	80.997	20734	81.131
		30182003	VOC	18	0.000	23	0.000	24	0.000	25	0.000	26	0.000
		30182003	CO	29000	78.804	36189	98.341	37388	101.597	39628	107.685	40748	110.728
		30187097	VOC	1182	0.000	1475	0.000	1524	0.000	1615	0.000	1661	0.000
		30199999	VOC	19940	0.000	24883	0.000	25707	0.000	27247	0.000	28018	0.000
		30199999	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		39000589	VOC	1	0.006	1	0.006	1	0.006	1	0.006	1	0.005
		39000589	NOx	144	0.554	145	0.559	146	0.560	144	0.553	143	0.550
		39000589	CO	36	0.138	36	0.140	36	0.140	36	0.138	36	0.137
		39000689	VOC	310	0.528	325	0.552	327	0.556	333	0.566	336	0.571
		39000689	NOx	5640	9.592	5904	10.041	5948	10.116	6050	10.290	6102	10.378
		39000689	CO	4738	8.058	4959	8.435	4996	8.497	5082	8.644	5125	8.717
		39999994	VOC	2462	6.690	3527	9.584	3704	10.066	3917	10.645	4024	10.934
		40100299	VOC	1095	2.976	1398	3.798	1448	3.935	1528	4.151	1568	4.260
		40799997	VOC	54860	238.985	53570	233.364	53355	232.427	54244	236.302	54689	238.239
		40799998	VOC	105	0.289	103	0.282	102	0.281	104	0.286	105	0.288
		50410405	VOC	3734	10.147	3945	10.720	3980	10.815	4108	11.163	4172	11.338
GOODYEAR CHEM PLANT	NIAGARA	30199999	VOC	30348	86.113	37872	107.461	39125	111.020	41470	117.672	42642	120.998
5500 GOODYEAR DR		39000689	NOx	4700	11.342	4920	11.873	4957	11.961	5042	12.167	5085	12.270
NIAGARA FALLS, NY 14304		39000689	CO	3948	9.527	4133	9.973	4164	10.047	4236	10.221	4271	10.307
		40301019	VOC	4	0.011	4	0.012	5	0.012	5	0.013	5	0.013
		40301021	VOC	1	0.001	1	0.002	1	0.002	1	0.002	1	0.002
		40301099	VOC	7	0.019	8	0.021	8	0.022	8	0.022	8	0.023

SGL CARBON LLC	NIAGARA	30402003	VOC	3336	185.704	4609	256.570	4821	268.381	5213	290.201	5409	301.111
6200 NIAGARA FALLS BLVD		30402004	VOC	5509	920.003	7611	1271.085	7962	1329.598	8609	1437.696	8933	1491.744
NIAGARA FALLS, NY 14304-0667		30402005	VOC	98695	8423.063	136358	11637.383	142635	12173.103	154231	13162.783	160030	13657.625
		30402005	CO	1742286	145481.132	2407159	200998.112	2517971	210250.932	2722683	227344.462	2825040	235891.254
		39000689	VOC	575	0.837	602	0.877	606	0.883	617	0.898	622	0.906
		39000689	NOx	10454	15.226	10943	15.938	11024	16.057	11214	16.334	11309	16.472
		39000689	CO	8781	12.790	9192	13.388	9260	13.488	9420	13.720	9500	13.837
GLOBE METALLURGICAL INC	NIAGARA	20200102	VOC	917	2.491	925	2.514	926	2.517	915	2.487	910	2.472
3807 HIGHLAND AVE		20200102	VOC	927	2.518	935	2.541	936	2.545	925	2.514	920	2.499
NIAGARA FALLS, NY 14305		20200102	NOx	11351	30.846	11454	31.124	11471	31.170	11333	30.797	11265	30.610
		20200102	CO	2445	6.645	2467	6.705	2471	6.715	2441	6.634	2427	6.594
		30300702	VOC	74980	407.500	72338	393.141	71898	390.748	73761	400.877	74693	405.942
		30300702	NOx	428976	2331.393	413861	2249.243	411342	2235.552	422004	2293.502	427336	2322.478
		30300702	CO	171805	933.721	165751	900.820	164742	895.336	169012	918.545	171148	930.150
		39000689	NOx	3600	9.783	3768	10.240	3797	10.317	3862	10.494	3895	10.583
		39000689	CO	3024	8.217	3165	8.602	3189	8.666	3244	8.815	3272	8.890
DUREZ NIAGARA	NIAGARA	30101805	VOC	11230	42.538	14036	53.166	14504	54.938	15351	58.148	15775	59.754
5000 PACKARD RD		30101811	VOC	5313	14.438	6640	18.045	6862	18.646	7263	19.736	7463	20.281
NIAGARA FALLS, NY 14302-0860		39000689	NOx	10460	28.424	10949	29.754	11031	29.976	11221	30.492	11316	30.751
		39000689	CO	8786	23.876	9198	24.993	9266	25.179	9426	25.613	9506	25.830
		50382501	VOC	123	0.334	161	0.436	167	0.453	179	0.485	185	0.501
OXYCHEM NIAGARA - MAIN PLANT	NIAGARA	10500106	NOx	1048	2.847	1097	2.981	1105	3.003	1124	3.054	1134	3.080
BUFFALO AVE AND 47TH ST		10500106	CO	880	2.392	921	2.504	928	2.522	944	2.566	952	2.587
NIAGARA FALLS, NY 14302-0344		30100899	VOC	6	0.023	7	0.029	8	0.030	8	0.032	8	0.032
		30100899	NOx	112	0.431	140	0.538	145	0.556	153	0.589	157	0.605
		30100899	CO	94	0.362	117	0.452	121	0.467	128	0.494	132	0.508
		30107103	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		30107103	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		30130101	VOC	3213	14.092	4016	17.613	4150	18.200	4392	19.264	4513	19.795
		30183001	VOC	152	0.413	190	0.515	196	0.533	208	0.564	214	0.580
		30188801	VOC	9023	24.519	11277	30.645	11653	31.666	12334	33.517	12675	34.442
		39000689	NOx	976	3.536	1022	3.702	1029	3.729	1047	3.794	1056	3.826
		39000689	CO	820	2.970	858	3.109	865	3.133	879	3.187	887	3.214

		40200101	VOC	47	0.904	63	1.212	66	1.264	71	1.361	73	1.409
		50300503	VOC	16	0.169	21	0.220	22	0.229	23	0.245	24	0.253
		50300503	NOx	4518	47.690	5897	62.251	6127	64.678	6560	69.249	6777	71.534
		50300503	CO	605	6.386	790	8.336	821	8.661	878	9.273	907	9.579
		50410560	VOC	356	0.967	376	1.022	379	1.031	392	1.064	398	1.081
		50410560	NOx	799	2.171	844	2.294	852	2.314	879	2.389	893	2.426
		50410560	CO	671	1.823	709	1.926	715	1.943	738	2.006	750	2.037
COVANTA NIAGARA LP	NIAGARA	10200501	VOC	3	1.066	3	1.076	3	1.078	3	1.065	3	1.058
100 ENERGY BLVD AT 56TH ST		10200501	NOx	400	127.980	404	129.132	404	129.324	399	127.776	397	127.001
NIAGARA FALLS, NY 14304		10200501	CO	83	26.662	84	26.903	84	26.943	83	26.620	83	26.459
		10200601	VOC	2373	27.128	2484	28.397	2503	28.609	2546	29.102	2567	29.348
		10200601	NOx	86213	384.950	90247	402.962	90919	405.964	92486	412.961	93270	416.460
		10200601	CO	5355	16.889	5606	17.679	5647	17.811	5745	18.118	5793	18.272
		10200901	NOx	124298	1021.019	140199	1151.635	142849	1173.404	145111	1191.980	146241	1201.268
		10200901	CO	66084	542.833	74538	612.276	75947	623.850	77149	633.726	77750	638.663
		40400301	VOC	2	0.007	3	0.007	3	0.008	3	0.008	3	0.008
		50100102	VOC	1335	3.628	1410	3.833	1423	3.867	1469	3.991	1492	4.053
		50100102	VOC	1579	4.291	1668	4.533	1683	4.574	1737	4.721	1764	4.795
		50100102	NOx	1880860	5111.033	1987050	5399.593	2004748	5447.686	2069321	5623.154	2101607	5710.889
		50100102	CO	157144	427.022	166016	451.131	167495	455.149	172890	469.809	175587	477.139
NIAGARA GENERATING FACILITY	NIAGARA	10100217	NOx	356269	1526.867	400589	1716.812	407976	1748.469	416299	1784.141	420461	1801.977
5300 FRONTIER AVE		10100217	CO	92862	397.980	104414	447.489	106340	455.741	108509	465.039	109594	469.688
NIAGARA FALLS, NY 14304		10100601	VOC	114	0.288	125	0.315	126	0.320	140	0.353	146	0.370
		10100601	VOC	88	0.222	96	0.243	97	0.246	108	0.272	113	0.285
		10100601	NOx	3933	9.941	4305	10.881	4367	11.038	4825	12.195	5054	12.773
		10100601	CO	1739	4.395	1903	4.811	1931	4.880	2133	5.391	2234	5.647
WASHINGTON MILLS ELECTRO MINERALS	NIAGARA	30500503	NOx	12000	50.000	11832	49.299	11804	49.183	11982	49.926	12071	50.297
1801 BUFFALO AVE		39000689	VOC	408	8.506	427	8.903	431	8.970	438	9.124	442	9.202
NIAGARA FALLS, NY 14302		39000689	NOx	7423	154.646	7770	161.882	7828	163.088	7963	165.899	8031	167.304
		39000689	CO	6235	129.903	6527	135.981	6576	136.994	6689	139.355	6746	140.536
FORTISTAR NORTH TONAWANDA INC	NIAGARA	10200501	VOC	10	2.440	10	2.462	10	2.465	10	2.436	10	2.421
1070 ERIE AVE		10200501	NOx	192	48.230	194	48.664	194	48.736	192	48.153	191	47.861
NORTH TONAWANDA, NY 14120		10200501	CO	2	0.379	2	0.382	2	0.383	2	0.378	1	0.376

		10200602	VOC	183	1.403	192	1.469	193	1.480	196	1.505	198	1.518
		10200602	NOx	3026	23.199	3168	24.285	3191	24.466	3246	24.887	3274	25.098
		10200602	CO	230	1.763	241	1.846	243	1.860	247	1.892	249	1.908
		20100102	VOC	26	0.294	52	0.585	56	0.633	42	0.474	35	0.395
		20100102	NOx	4631	52.364	9216	104.208	9980	112.849	7479	84.567	6228	70.426
		20100102	CO	954	10.921	1899	21.734	2056	23.536	1541	17.637	1283	14.688
		20200101	NOx	256	3.328	258	3.358	259	3.363	256	3.323	254	3.303
		20200101	CO	36	0.468	36	0.472	36	0.473	36	0.467	36	0.464
		20200201	VOC	365	1.472	382	1.540	385	1.552	392	1.579	395	1.592
		20200201	NOx	231914	934.792	242765	978.531	244574	985.821	248790	1002.813	250897	1011.309
		20200201	CO	103444	416.959	108284	436.469	109091	439.720	110971	447.299	111911	451.089
TENNESSEE GAS PIPELINE CO COMPRESSOR STATION 230-C	NIAGARA	10500106	VOC	171	1.853	178	1.940	180	1.954	183	1.988	184	2.005
5186 LOCKPORT JUNCTION RD		10500106	NOx	3100	33.696	3245	35.272	3269	35.535	3326	36.148	3354	36.454
LOCKPORT, NY 14094		10500106	CO	2604	28.304	2726	29.629	2746	29.849	2793	30.364	2817	30.621
		20200201	VOC	2300	8.625	2408	9.029	2426	9.096	2467	9.253	2488	9.331
		20200201	NOx	207620	778.575	217335	815.005	218954	821.077	222728	835.229	224615	842.305
		20200201	CO	288240	1080.900	301727	1131.476	303975	1139.905	309214	1159.553	311834	1169.377
		20200202	VOC	12	2.900	12	3.036	12	3.058	12	3.111	13	3.137
		20200202	NOx	284	71.000	297	74.322	300	74.876	305	76.166	307	76.812
		20200202	CO	40	9.975	42	10.442	42	10.520	43	10.701	43	10.792
MODERN LANDFILL INC	NIAGARA	10500210	NOx	250	0.000	260	0.000	262	0.000	265	0.000	266	0.000
PLETCHER RD		10500210	CO	34	0.000	35	0.000	36	0.000	36	0.000	36	0.000
MODEL CITY, NY 14107		20200102	VOC	531	1.716	536	1.732	537	1.734	530	1.714	527	1.703
		20200102	NOx	6505	21.025	6564	21.214	6574	21.246	6495	20.991	6456	20.864
		20200102	CO	1401	4.529	1414	4.570	1416	4.577	1399	4.522	1391	4.494
		40799998	VOC	38	0.597	37	0.583	37	0.580	37	0.590	37	0.595
		50200602	VOC	12714	34.549	14769	40.134	15112	41.065	15716	42.706	16017	43.526
LOCKPORT COGENERATION FACILITY	NIAGARA	10200501	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
5087 JUNCTION RD		10200501	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
LOCKPORT, NY 14094		10200501	NOx	153	0.416	154	0.420	155	0.420	153	0.415	152	0.413
		10200501	CO	1	0.003	1	0.003	1	0.003	1	0.003	1	0.003
		10200601	VOC	335	0.911	351	0.954	354	0.961	360	0.977	363	0.986
		10200601	VOC	435	1.183	456	1.239	459	1.248	467	1.269	471	1.280

		10200601	NOx	4800	13.043	5025	13.654	5062	13.756	5149	13.993	5193	14.111
		10200601	CO	883	2.399	924	2.512	931	2.530	947	2.574	955	2.596
		10200602	NOx	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		10200602	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		10500106	VOC	22	0.061	23	0.063	24	0.064	24	0.065	24	0.066
		10500106	NOx	406	1.102	425	1.154	428	1.162	435	1.182	439	1.192
		10500106	CO	341	0.926	357	0.969	359	0.976	365	0.993	369	1.002
		20200101	VOC	0	0.001	0	0.001	0	0.001	0	0.001	0	0.001
		20200101	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		20200101	NOx	411	1.117	415	1.127	415	1.129	410	1.115	408	1.108
		20200101	CO	2	0.004	2	0.004	2	0.004	2	0.004	2	0.004
		20200201	VOC	47023	127.780	49223	133.759	49590	134.756	50445	137.078	50872	138.240
		20200201	VOC	47046	127.842	49247	133.824	49614	134.821	50469	137.145	50897	138.307
		20200201	NOx	1602000	4353.261	1676959	4556.952	1689452	4590.901	1718572	4670.032	1733132	4709.597
		20200201	CO	112000	304.348	117241	318.588	118114	320.962	120150	326.494	121168	329.260
AKZO CHEMICALS BURT PLANT	NIAGARA	10200603	VOC	1	0.005	1	0.005	1	0.005	1	0.005	1	0.005
2153 LOCKPORT OLCOTT RD		10200603	NOx	21	0.088	22	0.092	22	0.093	23	0.095	23	0.096
BURT, NY 14028		10200603	CO	18	0.074	19	0.078	19	0.078	19	0.080	19	0.080
		30182002	VOC	6044	16.425	7543	20.497	7793	21.176	8260	22.444	8493	23.079
		30199999	VOC	9983	27.128	12458	33.853	12870	34.974	13642	37.070	14027	38.117
		39999994	VOC	0	0.001	1	0.002	1	0.002	1	0.002	1	0.002
		40701614	VOC	75	0.204	73	0.200	73	0.199	74	0.202	75	0.204
		40799999	VOC	4151	11.279	4053	11.014	4037	10.969	4104	11.152	4138	11.244
TAM CERAMICS LLC	NIAGARA	30515002	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
4511 HYDE PARK BLVD		30515002	NOx	18232	49.988	17977	49.287	17934	49.171	18205	49.913	18340	50.285
NIAGARA FALLS, NY 14305-0067		30515002	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		30515003	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		30515003	NOx	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		30515003	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		30515004	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		30515004	NOx	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		30515004	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		30515005	NOx	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000

		30515005	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		30599999	VOC	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		30599999	NOx	200844	545.772	229472	623.565	234243	636.531	244869	665.405	250182	679.842
		30599999	CO	9577	26.024	10942	29.734	11170	30.352	11676	31.729	11930	32.417
		39000689	NOx	119898	254.132	125508	266.023	126443	268.004	128623	272.624	129712	274.934
		39000689	CO	10947	23.203	11459	24.289	11545	24.470	11744	24.892	11843	25.103
		39999998	VOC	9844	26.750	14102	38.320	14812	40.249	15662	42.561	16088	43.717
		39999998	NOx	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
		39999998	CO	0	0.000	0	0.000	0	0.000	0	0.000	0	0.000
AES SOMERSET LLC	NIAGARA	10100202	NOx	15466000	42027.174	17389993	47255.415	17710658	48126.788	18071985	49108.654	18252648	49599.588
7725 LAKE RD		10100202	CO	625705	1700.285	703544	1911.803	716517	1947.056	731135	1986.779	738444	2006.641
BARKER, NY 14012		10100501	VOC	97	3.138	193	6.246	209	6.763	157	5.068	130	4.221
		10100501	NOx	689	340.920	1371	678.455	1484	734.710	1112	550.580	926	458.515
		10100501	CO	144	71.025	286	141.345	309	153.065	232	114.704	193	95.524
		20100107	VOC	0	0.279	1	0.555	1	0.601	0	0.451	0	0.375
		20100107	VOC	0	0.284	1	0.565	1	0.612	0	0.458	0	0.382
		20100107	NOx	10	10.094	20	20.088	22	21.754	16	16.302	14	13.576
		20100107	CO	3	2.681	5	5.336	6	5.778	4	4.330	4	3.606
PRESTOLITE ELECTRIC NY INC	WYOMING	31303501	VOC	1345	4.311	1908	6.116	2002	6.417	2194	7.033	2290	7.341
400 MAIN ST		39000689	NOx	7830	31.401	8196	32.870	8257	33.115	8400	33.686	8471	33.971
ARCADE, NY 14009		39000689	CO	6577	26.377	6885	27.611	6936	27.817	7056	28.296	7116	28.536
		40200101	VOC	6000	19.231	8048	25.794	8389	26.887	9033	28.953	9356	29.986
		40200101	VOC	11282	36.160	15132	48.501	15774	50.557	16986	54.441	17592	56.383
		40200301	VOC	20230	64.840	27134	86.968	28285	90.656	30457	97.620	31544	101.102
MORTON SALT DIV	WYOMING	10200202	VOC	1531	6.124	1599	6.396	1610	6.441	1614	6.457	1616	6.465
45 RIBAUD AVE EAST		10200202	NOx	335148	1340.592	350012	1400.049	352490	1409.958	353344	1413.375	353771	1415.083
SILVER SPRINGS, NY 14550		10200202	CO	12759	51.036	13325	53.300	13419	53.677	13452	53.807	13468	53.872
		10200601	VOC	50	0.149	52	0.156	52	0.157	53	0.160	54	0.161
		10200601	NOx	904	2.711	946	2.838	953	2.859	970	2.909	978	2.933
		10200601	CO	759	2.278	795	2.384	801	2.402	814	2.443	821	2.464
		20200102	VOC	8	0.158	8	0.160	8	0.160	8	0.158	8	0.157
		20200102	VOC	8	0.160	8	0.161	8	0.162	8	0.160	8	0.159
		20200102	NOx	102	1.959	103	1.977	103	1.980	102	1.956	101	1.944

		20200102	CO	22	0.422	22	0.426	22	0.426	22	0.421	22	0.419
		30101404	VOC	10	0.027	12	0.033	12	0.034	13	0.036	13	0.037
		39000689	VOC	1	0.001	1	0.002	1	0.002	1	0.002	1	0.002
		39000689	NOx	10	0.027	10	0.028	11	0.029	11	0.029	11	0.029
		39000689	CO	8	0.023	9	0.024	9	0.024	9	0.024	9	0.025
INDECK-SILVER SPRINGS COGENERATION	WYOMING	10500206	NOx	960	0.000	969	0.000	970	0.000	986	0.000	994	0.000
1 INDECK DRIVE		10500206	CO	192	0.000	194	0.000	194	0.000	197	0.000	199	0.000
SILVER SPRINGS, NY 14550		20200103	VOC	0	0.003	0	0.003	0	0.003	0	0.003	0	0.003
		20200103	NOx	16	16.000	16	16.144	16	16.168	16	15.975	16	15.878
		20200103	CO	17	17.000	17	17.153	17	17.179	17	16.973	17	16.870
		20200203	VOC	5233	30.851	5478	32.295	5519	32.535	5614	33.096	5662	33.376
		20200203	VOC	7942	46.817	8314	49.008	8376	49.373	8520	50.224	8592	50.650
		20200203	NOx	214626	1264.795	224668	1323.975	226342	1333.838	230244	1356.829	232194	1368.324
		20200203	CO	51213	300.769	53609	314.842	54009	317.188	54940	322.655	55405	325.389