

2. Point Sources

2.1 Introduction and scope

This inventory of ozone precursors (VOC, NO_x, and CO) is one of a number of emission inventory reports being prepared to meet U.S. EPA reporting requirements. In addition to preparing periodic emissions inventories for the ozone nonattainment area (NAA) as a commitment under the current ozone State Implementation Plan (SIP), the federal Consolidated Emission Reporting Rule (CERR) requires that state and local agencies prepare emissions estimates on a county basis, and submit data electronically to the U.S. EPA for inclusion in the National Emission Inventory (NEI) for 2002. This inventory is being developed concurrently with similar inventories for CO and for PM (including PM₁₀, PM_{2.5}, NO_x, SO_x, and NH₃), as part of Maricopa County's requirements under the respective SIPs.

In order to provide consistency among all these inventories, it was decided to standardize the definition of a "point source". While EPA has defined minimum point source reporting thresholds for various pollutants, EPA guidance also notes that:

... we encourage organizations to provide facility-specific emissions data for all point sources, regardless of size, where they are already included in the S/L/T [state/local/tribal] emission inventory. (US EPA, 2003a)

As Maricopa County has an established annual reporting program for sources with air quality permits, the thresholds for defining a point source are lower than the minimums required by EPA. For the purposes of this inventory, a point source is a stationary operation within Maricopa County or within 25 miles of the ozone nonattainment area, which in 2002 emitted:

- 25 English (short) tons or more of carbon monoxide (CO); or
- 10 tons or more of volatile organic compounds (VOC), oxides of nitrogen (NO_x), or sulfur oxides (SO_x); or
- 5 tons or more of particulate matter less than 10 microns (PM₁₀) or ammonia compounds (NH_x).

While the above approach results in some anomalies (e.g., a facility treated as a point source may have very low, or no, emissions of a certain pollutant), a uniform definition of "point source" ensures that all data sets, which are prepared for a variety of purposes, will be comparable.

This point source inventory includes actual emissions for the year 2002 and a typical day during the ozone season (defined as July through September). A description and map of the nonattainment area are provided in Chapter 1. Questions concerning point source emissions may be directed to Bob Downing of MCESD at (602) 506-6790.

Several tables have been constructed to provide the point source emissions and category totals. Table 2.2-1 summarizes all point sources by location and permitting authority. Table 2.2-2 provides an alphabetical list of all point sources and their location, while Table 2.3-1 summarizes the results of the rule effectiveness study conducted for individual industrial processes. Table 2.4-1 shows the 2002 annual and average ozone season-day emissions of VOC, NO_x and

CO for those point sources which reported emissions of any of these pollutants broken out by facility, while Table 2.4–2 lists the 2002 annual and ozone season-day emissions broken out by individual process types. Table 2.6–1 summarizes point source emissions by source category. Note that totals shown in the tables may not equal the sum of individual values due to independent rounding.

2.2 Identification of point sources

Maricopa County Environmental Services Department (MCESD) identified point sources within Maricopa County through its permit system database and the 2002 annual emissions reports submitted to the department. In addition, the permit system was reviewed to locate new facilities that were not included in the previous emission inventory, and to identify sources that have ceased operations since the 1999 periodic inventory was compiled.

A total of 172 point sources were identified using the emission thresholds described in Section 2.1. (To ensure consistency in calculation methodologies, 13 retail gasoline stations which met the point source emission thresholds described above, are instead treated as part of the area source category “vehicle refueling” in Chapter 3.) Of the 172 stationary point sources, 165 MCESD-permitted sources reported emissions of VOC, NO_x and/or CO – 149 within the ozone nonattainment area, and 16 outside the ozone NAA. There are 2 additional point sources (Hex-cel Corp. and SRP Desert Basin Generating Station) within the 25-mile boundary around the ozone nonattainment area, with permits issued by the Pinal County Air Quality Control District (PCAQCD). While the Arizona Department of Environmental Quality (ADEQ) retains permitting authority for a limited number of industrial source categories in Maricopa County, no ADEQ-permitted facilities are considered stationary point sources, and are addressed instead as area sources.

Table 2.2–1. Number of point sources by location and permitting authority.

Location	Total no. of facilities	Facilities reporting emissions of ozone precursors
Within the ozone nonattainment area:		
– Maricopa County-permitted sites	153	149
Outside the ozone nonattainment area:		
– Maricopa County-permitted sites	17	16
– Pinal County-permitted sites	2	2
Total outside NAA:	19	18
Grand total:	172	167

Table 2.2–2 contains an alphabetical list of all point sources, including a unique business identification number, NAICS industry classification code, business name (including any changes from the 1999 periodic inventory), and physical address.

Table 2.2–2. Name and location of all point sources.

Within the ozone nonattainment area:

ID #	NAICS	Business name	Address	City	ZIP
1074	22132	23rd Ave. Wastewater Treatment Plant (formerly <i>City of Phoenix 23rd Ave. WWTP</i>)	2470 S. 22nd Ave.	Phoenix	85009
1075	22132	91st Ave. Wastewater Treatment Plant	5615 S. 91st Ave.	Tolleson	85353
245	337122	A. F. Lorts Company Inc.	8120 W. Harrison St.	Tolleson	85353
1952	811121	Adesa Phoenix LLC	400 N. Beck Ave.	Chandler	85226
1239	332321	AG Products	2525 W. Broadway Rd.	Phoenix	85041
35541	33121	Allied Tube & Conduit Corp.	2525 N. 27th Ave.	Phoenix	85009
199	327332	Ameron Intl. Water Transmission Group (formerly <i>Ameron Pipe</i>)	2325 S. 7th St.	Phoenix	85034
292	325412	Anabolic Laboratories Inc. (formerly <i>Health Factors International Inc.</i>)	429 S. Siesta Ln.	Tempe	85281
3313	221112	APS West Phoenix Power Plant	4606 W. Hadley St.	Phoenix	85043
3938	332812	Arizona Galvanizing Inc.	15775 Elwood St.	Goodyear	85338
4364	61131	Arizona State University	1551 S. Rural Rd.	Tempe	85287
36485	54185	Billboard Poster Company Inc.	3940 W. Montecito Ave.	Phoenix	85019
43124	313230	Bonded Logic Inc.	411 E. Ray Rd.	Chandler	85225
3441	42471	BP West Coast Products LLC	5333 W. Van Buren St.	Phoenix	85043
458	32191	Bryant Industries Inc.	788 W. Illini St.	Phoenix	85041
217	327123	Building Products Co.	4850 W. Buckeye Rd	Phoenix	85043
3442	493190	Caljet (formerly <i>Caljet/Williams</i>)	125 N. 53rd Ave.	Phoenix	85043
60598	337211	Case Furniture & Design LLC	4645 W. Polk St.	Phoenix	85043
1317	321991	Cavco Industries LLC (35th Ave.)	2602 S. 35th Ave.	Phoenix	85009
1318	321991	Cavco Industries LLC (Litchfield Rd.)	1366 S. Litchfield Rd.	Goodyear	85338
1316	321991	Cavco Industries LLC (Durango Plant)	2502 W. Durango St.	Phoenix	85009
4145	61111	Cave Creek School District	33606 N. 60th St.	Cave Creek	85331
1267	32732	Cemex Mesa Plants #61 & #71	1901 N. Alma School Rd.	Mesa	85201
1266	212321	Cemex USA (Phoenix)	11701 W. Indian School	Phoenix	85063
1268	212321	Cemex USA (Sun City)	24004 N. 107th Ave.	Sun City	85373
1310	32311	Century Graphics LLC	2960 Grand Ave.	Phoenix	85017
1426	32311	Cesar Color Inc.	3433 E. Wood St.	Phoenix	85040
4401	32732	Chandler Ready Mix Inc.	6500 N. 115th Ave.	Glendale	85323
51073	52312	Charles Schwab & Co. Inc.	2121 S. Price Rd.	Chandler	85248
3297	42471	Chevron USA Inc.	5110 W. Madison St.	Phoenix	85043
3976	33711	Cholla Custom Cabinets Inc.	1727 E. Deer Valley Dr.	Phoenix	85024
4083	32191	Chris Fischer Productions Inc.	4741 W. Polk St.	Phoenix	85043
399	32739	Coreslab Structures (Ariz) Inc.	5026 S. 43rd Ave.	Phoenix	85041
1198	32311	Courier Graphics Corp.	2621 S. 37th St.	Phoenix	85034
4368	32191	Craftsmen in Wood Mfg.	5441 W. Hadley St.	Phoenix	85043
4023	321918	Creative Shutters Inc.	2009 W. Ironwood Dr.	Phoenix	85021
3744	325991	Desert Sun Fiberglass	21412 N. 14th Ave.	Phoenix	85027
130	331512	Dolphin Inc.	740 S. 59th Ave.	Phoenix	85043
508	337122	Eagle Industries LLC (formerly <i>Samuel Lawrence Furniture Co.</i>)	601 S. 65th Ave.	Phoenix	85043
45493	811121	Earnhardt Ford	7300 W. Orchid Ln.	Chandler	85226
3305	311812	Earthgrains Baking Companies Inc.	738 W. Van Buren St.	Phoenix	85007
26	423810	Empire Machinery Co.	1725 S. Country Club Dr.	Mesa	85210
1505	32191	Executive Door	3939 W. Clarendon Ave.	Phoenix	85019
544	321991	Fleetwood Homes of Arizona Inc. #21	6112 N. 56th Ave.	Glendale	85311
27728	334413	FlipChip International LLC (formerly <i>Flip Chip Technologies</i>)	3701 E. University Dr.	Phoenix	85034
41751	326212	GCR Truck Tire Center	2815 N. 32nd Ave.	Phoenix	85009

Table 2.2–2. Name and location of all point sources (continued).

ID #	NAICS	Business name	Address	City	ZIP
4050	311812	General Mills (formerly <i>Pillsbury Bakeries & Food Service</i>)	1120 W. Fairmont Dr.	Tempe	85282
4173	562212	Glendale Municipal Sanitary Landfill	11480 W. Glendale Ave.	Glendale	85301
781	62211	Good Samaritan Regional Medical Center	1111 E. McDowell Rd.	Phoenix	85006
1418	326299	Goodrich Aircraft Interior Products (formerly <i>BF Goodrich Aircraft Evacuation Sys.</i>)	3414 S. 5th St.	Phoenix	85040
36772	212321	GTI Capital Holdings LLC	3636 S. 43rd Ave.	Phoenix	85009
699	212321	Hanson Aggregates of Arizona	4002 S. 51st Ave.	Phoenix	85043
31565	32614	Henry Products Inc.	302 S. 23rd Ave.	Phoenix	85009
529	32614	Highland Products Inc.	43 N. 48th Ave.	Phoenix	85043
4543	32311	Hogue Printing Inc.	159 W. 1st Ave.	Mesa	85210
3536	311812	Holsum Bakery Inc.	2322 W. Lincoln St.	Phoenix	85009
3802	311812	Holsum Bakery Tempe	710 W. Geneva Dr.	Tempe	85252
1059	336412	Honeywell Engines Systems & Service (formerly <i>Honeywell Aerospace Services</i>)	1944 E. Sky Harbor Cir.	Phoenix	85034
355	336412	Honeywell International Inc.	111 S. 34th St.	Phoenix	85034
354	331314	Imsamet of Arizona	3829 S. Estrella Pkwy.	Goodyear	85338
777	32614	Insulfoam	3401 W. Cocopah St.	Phoenix	85009
3966	334413	Intel Corp. Ocotillo Campus (Fab 12 & 22) (formerly <i>Intel Corp. Ocotillo Campus Fab 12</i>)	4500 S. Dobson Rd.	Chandler	85248
983	334419	Isola Laminate Systems Corp.	165 S. Price Rd.	Chandler	85224
3317	221112	Kyrene Generating Station (formerly <i>SRP Kyrene Steam Plant</i>)	7005 S. Kyrene Rd.	Tempe	85283
341	325991	L & M Laminates & Marble	813 E. University Dr.	Phoenix	85034
4182	337122	Legends Furniture Inc.	5555 N. 51st Ave.	Glendale	85301
857	334412	Litton Electro-Optical Systems	1215 S. 52nd St.	Tempe	85281
3300	92811	Luke Air Force Base	14002 W. Marauder St.	Glendale	85309
744	3325	M. E. Global Inc. (formerly <i>M. E. West Castings Inc.</i>)	5857 S. Kyrene Rd.	Tempe	85283
1248	325991	Maax Spas	25605 S. Arizona Ave.	Chandler	85248
31261	21231	Madison Granite Supplies	30600 N. 23rd Ave.	Phoenix	85027
4111	337121	Magic Woods Inc.	4210 N. 39th Ave.	Phoenix	85019
205	322232	Mail-Well Envelope	221 N. 48th Ave.	Phoenix	85043
353	326199	Marlam Industries Inc.	834 E. Hammond Ln.	Phoenix	85034
61268	327390	Master Block Inc.	12620 W. Butler Dr.	El Mirage	85335
62	33711	Mastercraft Cabinets Inc.	305 S. Brooks	Mesa	85202
3326	352991	Mesa Fully Formed Inc.	1111 S. Serrine St.	Mesa	85210
1414	212321	Mesa Materials Inc. (Mesa)	3410 N. Higley Rd.	Mesa	85205
1415	212321	Mesa Materials Inc. (Phoenix)	7845 W. Broadway Rd.	Phoenix	85043
29474	423930	Metal Management Arizona Inc.	3640 S. 35th Ave.	Phoenix	85009
1203	334413	Microchip Technology Inc. (Chandler)	2355 W. Chandler Blvd.	Chandler	85224
1875	334413	Microchip Technology Inc. (Tempe)	1200 S. 52nd St.	Tempe	85281
226	32739	Monier Lifetile LLC	1832 S. 51st Ave.	Phoenix	85043
882	311942	Morton Salt Glendale Facility	13000 W. Glendale Ave.	Glendale	85307
881	334413	Motorola Inc.	1300 N. Alma School Rd.	Chandler	85224
223	333112	MTD Southwest Inc.	550 N. 54th St.	Chandler	85226
693	333415	Munters Corp.	802 S. 59th Ave.	Phoenix	85043
34197	327420	National Gypsum Co.	1414 E. Hadley St.	Phoenix	85034
948	32614	Nesco Manufacturing Inc.	1510 W. Drake Dr.	Tempe	85283
1309	337122	New Directions Inc.	2940 W. Willetta St.	Phoenix	85009
1331	337122	Oak Canyon Manufacturing Inc. (formerly <i>Aspen II</i>)	3021 N. 29th Dr.	Phoenix	85017
3953	33711	Oakcraft Inc.	7733 W. Olive Ave.	Peoria	85345
27925	337122	Oasis Bedroom Co.	2022 N. 22nd Ave.	Phoenix	85009

Table 2.2–2. Name and location of all point sources (continued).

ID #	NAICS	Business name	Address	City	ZIP
52382	221112	Ocotillo Power Plant	1500 E. University Dr.	Tempe	85281
3982	32311	O'Neil Printing Inc.	366 N. 2nd Ave.	Phoenix	85003
3970	337122	Pacific Designs	2425 W. Sherman St.	Phoenix	85043
1344	321991	Palm Harbor Homes Inc.	309 S. Perry Ln.	Tempe	85281
733	811412	Pan-Glo West	2401 W. Sherman St.	Phoenix	85009
419	336412	Parker Hannifin GTFSD	7777 N. Glen Harbor Bd.	Glendale	85307
1341	33992	Penn Racquet Sports Inc.	306 S. 45th Ave.	Phoenix	85043
1014	327121	Phoenix Brick Yard	1814 S. 7th Ave.	Phoenix	85007
562	51111	Phoenix Newspapers Inc.	22600 N. 19th Ave.	Phoenix	85027
148	331528	Presto Casting Co.	5440 W. Missouri Ave.	Glendale	85301
60889	326212	Purcell's Western States Tire	420 S. 35th Ave.	Phoenix	85009
1030	32311	Quebecor World Phoenix Division	1850 E. Watkins St.	Phoenix	85034
537	327999	Red Mountain Mining Inc.	4250 N. Bush Hwy.	Mesa	85215
1503	321991	Redman Homes Inc.	400 E. Ray Rd.	Chandler	85225
303	332431	Rexam Beverage Can Company	211 N. 51st Ave.	Phoenix	85043
4318	32732	River Ranch Plant	5159 N. El Mirage Rd.	Litchfield Pk	85340
759	32613	Rogers Corp. Advanced Circuit Materials	100 S. Roosevelt Ave.	Chandler	85226
1437	334412	Sanmina Phoenix Division (formerly <i>Hadco Phoenix Inc./Sanmina Phx. Div.</i>)	5020 S. 36th St.	Phoenix	85040
3315	221112	Santan Generating Station (formerly <i>Santan Generating Plant</i>)	1005 S. Val Vista Rd.	Gilbert	85296
266	332312	Schuff Steel Co.	420 S. 19th Ave.	Phoenix	85009
42636	62211	Scottsdale Health Care Hospital	7400 E. Osborn Rd.	Scottsdale	85251
4175	493190	SFPP LP	49 N. 53rd Ave.	Phoenix	85043
70634	42471	Shell Oil Phoenix Terminal (formerly <i>Texaco Phoenix Terminal</i>)	5325 W. Van Buren St.	Phoenix	85043
27933	562212	Skunk Creek Landfill	3165 W. Happy Valley Rd	Phoenix	85027
4471	332311	Skyline Steel Inc.	631 W. Commerce Ave.	Gilbert	85233
31627	115111	South Mountain Gin	6411 S. 51st Ave.	Laveen	85339
3316	221112	SRP Agua Fria	7302 W. Northern Ave.	Glendale	85303
4131	334413	ST Microelectronics	1000 E. Bell Rd.	Phoenix	85022
1444	327123	Staco Architectural Roof Tile	3530 E. Elwood St.	Phoenix	85040
582	337122	Stone Creek Inc.	4221 E. Raymond St.	Phoenix	85040
281	212321	Sun State Rock & Materials	11500 W. Beardsley Rd.	Sun City	85373
101	31161	Sunland Beef Co.	651 S. 91st Ave.	Tolleson	85353
52471	325188	Superior Lime & Chemical	320 S. 27th Ave.	Phoenix	85009
3978	337122	Team Two Design Assoc. Inc.	310 S. 43rd Ave.	Phoenix	85009
249	336411	The Boeing Company	5000 E. McDowell Rd.	Mesa	85215
937	336211	The Heil Company	1500 S. 7th St.	Phoenix	85034
232	72111	The Phoenician Resort	6000 E. Camelback Rd.	Scottsdale	85251
1102	325412	The Procter & Gamble Mfg. Co.	2050 S. 35th Ave.	Phoenix	85009
552	337122	Thornwood Furniture Mfg.	5125 E. Madison St.	Phoenix	85034
363	337122	Thunderbird Furniture	7501 E. Redfield Rd.	Scottsdale	85260
56	32739	TPAC Division of Kiewit Western Co.	3052 S. 19th Ave.	Phoenix	85009
1210	337122	Trendwood Inc. (15th Ave.)	2402 S. 15th Ave.	Phoenix	85007
1211	337122	Trendwood Inc. (University Dr.)	261 E. University Dr.	Phoenix	85004
819	336399	TRW Vehicle Safety Systems Inc.	11202 E. Germann Rd.	Queen Creek	85242
169	811111	U Haul Intl. Technical Center	11298 S. Priest Dr.	Tempe	85284
1228	325991	Ultra Installations Inc.	245 S. Mulberry	Mesa	85202
234	311514	United Dairymen of Arizona	2008 S. Hardy Dr.	Tempe	85282
260	212321	United Metro Plant #11	3640 S. 19th Ave.	Phoenix	85009
213	212321	United Metro Plant #12	11920 W. Glendale Ave.	Glendale	85307
403	331316	VAW of America	249 S. 51st Ave.	Phoenix	85043
2	32412	Vulcan Materials Co. (El Mirage)	14521 N. 115th Ave.	El Mirage	85335
90	32732	Vulcan Materials Co. (Phoenix)	4830 S. 43rd Ave.	Phoenix	85041

Table 2.2–2. Name and location of all point sources (continued).

ID #	NAICS	Business name	Address	City	ZIP
174	325998	W. R. Meadows of Arizona Inc.	2636 S. Sarival Ave.	Goodyear	85338
141	424910	Western Organics Inc.	2807 S. 27th Ave.	Phoenix	85009
4384	321918	Western Shutter LLC	4038 E. Madison St.	Phoenix	85034
2703	42471	Western States Petroleum	450 S. 15th Ave.	Phoenix	85007
20706	32614	Wincup Holdings Inc.	7980 W. Buckeye Rd.	Phoenix	85043
1382	33711	Woodcase Fine Cabinetry Inc. (formerly <i>McCarthy Cabinet Co.</i>)	3255 W. Osborn Rd.	Phoenix	85017
72	337122	Woodstuff Manufacturing Inc.	1635 S. 43rd Ave.	Phoenix	85009

The following point sources are **outside** the ozone nonattainment area:

ID #	NAICS	Business name	Address	City	ZIP
31606	115111	Acme Gin Co. Inc.	7401 S. Wilson Rd.	Buckeye	85326
1874	212321	Alleco Stone LLC	10401 S. Miller Rd.	Buckeye	85326
31643	562212	Allied Waste Industries Inc. Southwest Regional Facility	24427 S. Hwy 85	Buckeye	85326
31637	115111	Anderson Clayton Corp. Valencia Gin	25500 W. Southern Ave.	Buckeye	85326
1218	562212	Butterfield Station	40404 S. 99th Ave.	Mobile	85239
1389	541380	DaimlerChrysler AZ Proving Grounds	33040 N. 203rd Ave.	Wittmann	85361
43063	221112	Duke Energy Arlington Valley LLC	39027 W. Elliot Rd.	Arlington	85322
1488	115111	Farmers Gin Inc.	8400 S. Turner St.	Buckeye	85326
10211		Hexcel Corp. †	1214 W. Gila Bend Hwy.	Casa Grande	85222
725	212321	Kilauea Crushers Inc.	Hwy 74	Wickenburg	85358
1879	562212	Northwest Regional Landfill	19401 W. Deer Valley Rd	Surprise	85374
98	221113	Palo Verde Nuclear Generating Station	5801 S. Wintersburg Rd.	Tonopah	85354
428	115111	Paloma Gin Properties LLC	I-8	GilaBend	85337
289	115111	Phoenix Agro Invest Inc.	51040 W. Valley Rd.	Aguila	85320
42956	221112	Pinnacle West Energy Corp.	11600 S. 363rd Ave.	Arlington	85322
44182	332312	Quincy Joist Company	22253 W. Southern Ave.	Buckeye	85326
246	321991	Schult Homes	231 N. Apache Rd.	Buckeye	85326
10469	221112	SRP Desert Basin Generating Station †	1872 N. Burris Rd.	Casa Grande	85222
398	212321	Wickenburg Facility	44605 Grand Ave.	Wickenburg	85390

† Source is located in Pinal County.

2.3 Procedures for estimating emissions from point sources

2.3.1 Sources with air quality permits issued by Maricopa County Environmental Services Department (MCESD)

Both annual and average ozone season-day emissions were estimated from annual source emission reports, MCESD investigation reports, permit files and logs, or telephone contacts with sources. For most of the sources, material balance methods were used for determining emissions. Emissions were estimated using the emission factors from AP-42, source tests, engineering calculations, or manufacturers' specifications.

MCESD distributes annual emissions survey forms to nearly all facilities for which MCESD has issued an operating permit. Facilities are required to report detailed information on stacks, control devices, operating schedules, and process-level information concerning their annual activities. (See Appendix 2.1 for a copy of the instructions to complete the emissions inventory.) These instructions include examples and explanations on how to complete the annual emissions reporting forms that facilities must submit to MCESD. Activity data reported for the June–August summer season is presumed to be representative of the July–September ozone season.

After a facility has submitted an annual emissions report to MCESD, emissions inventory staff check all reports for missing and questionable data, and check the accuracy and reasonableness of all emissions calculations with AP-42, the Factor Information and REtrieval (FIRE) software, and other EPA documentation. Control efficiencies are determined by source tests when available, or by AP-42 factors, engineering calculations, or manufacturers' specifications. MCESD has conducted annual emissions surveys for permitted facilities since 1988, and the department's database system, EMS, contains numerous automated quality assurance/quality control checks for data input and processing.

2.3.1.1 Application of rule effectiveness

Rule effectiveness reflects the actual ability of a regulatory program to achieve the emission reductions required by regulation. The concept of applying rule effectiveness in a SIP emission inventory has evolved from the observation that regulatory programs may be less than 100 percent effective for some source categories. Rule effectiveness (RE) is applied to those sources affected by a regulation and for which emissions are determined by means of emission factors and control efficiency estimates. As a default, a rule effectiveness of 80 percent has been applied to those sources that calculated emissions using control device capture and control estimates.

In certain circumstances (i.e., where control efficiencies approach 100 percent), the application of the default assumption of 80% rule effectiveness can increase emissions estimates for a single process by 100-fold or more. After the RE calculation described above was performed for all industrial processes with control devices for VOC, CO or NO_x, further review was made of a limited number of processes for which using the 80% default value increased estimated emissions by 10 tons or more. It was determined that the large emissions increases in these individual processes required further review.

For these processes, the approach outlined in EPA's "Guidelines for Estimating and Applying Rule Effectiveness for Ozone/CO State Implementation Plan Base Year Inventories" (US EPA, 1992) was applied. For each process, a "Rule Effectiveness Questionnaire" was completed in order to assign a point value to the regulatory, compliance, inspection, and recordkeeping procedures for the particular facility and process under review. A total of 18 processes were reviewed, in consultation with County air quality planning, compliance and field inspection staff. (An example of a completed questionnaire is contained in Appendix 2.2.) The resultant rule effectiveness estimates ranged from 83 to 94 percent, as shown in Table 2.3-1. These calculated rule effectiveness estimates were substituted for the default 80% rule effectiveness, as illustrated by the example described in Section 2.3.1.3.

Table 2.3–1. Process-specific rule effectiveness (RE) determinations using questionnaires.

ID	Business name	Process Description	Control device *	Pollutant	RE (%)
POINT SOURCES:					
983	Isola Laminate Systems Corp.	Resin coating (treater #2)	Thermal oxidizer	VOC	93
983	Isola Laminate Systems Corp.	Resin coating (treater #3)	Thermal oxidizer	VOC	93
744	M. E. Global Inc.	Casting shakeout	Thermal oxidizer	VOC	90
205	Mail-Well Envelope	Heatset lithographic printing	RTO	VOC	91
1203	Microchip Technology Inc.	Photolithography	RTO	VOC	93
1203	Microchip Technology Inc.	Isopropanol use	RTO	VOC	93
303	Rexam Beverage Can Company	Coating aluminum cans (line 2)	Thermal oxidizer	VOC	93
303	Rexam Beverage Can Company	Coating aluminum cans (line 3)	Thermal oxidizer	VOC	93
759	Rogers Corp.	Surface coating (xylene use)	Thermal oxidizer	VOC	94
4175	SFPP LP	Gasoline loading losses (800)	Thermal oxidizer	VOC	93
4175	SFPP LP	Gasoline loading losses (900)	Thermal oxidizer	VOC	93
70634	Shell Oil Phoenix Terminal	Gasoline loading losses	CAVR	VOC	92
70634	Shell Oil Phoenix Terminal	Gasoline fugitive losses	CAVR	VOC	92
70634	Shell Oil Phoenix Terminal	Internal floating roof tank	CAVR	VOC	92
AREA SOURCES: (addressed in Chapter 3, but listed here for consistency.)					
55468	City of Mesa Kellwood Substation	Natural gas engines	3-way catalyst	CO	92
696	Desert Fire Industries Inc.	Heat treating furnaces	Quench bath	VOC	83
1118	Gannon & Scott	Incineration	Venturi scrubber	NO _x	92
1109	Motorola Inc.	Photolithography	Thermal oxidizer	VOC	94

* RTO = Regenerative thermal oxidizer; CAVR = Carbon adsorption vapor recovery.

The following sections illustrate how emission estimates were obtained for the Maricopa County-permitted sources listed in Table 2.2–2.

2.3.1.2 Example 1: Ocotillo Power Plant

Arizona Public Service (APS) operates a peaking electric generating plant with two steam units (gas/oil-fired boilers) and two natural-gas turbines. APS provided its total annual fuel consumption for each unit, as well as daily and seasonal operating activity. Total annual emissions from boilers and turbines are summed to obtain the facility's total annual emissions. The Ocotillo power plant provided the following data which were used to calculate CO emissions from boilers and turbines:

SCC	Source type	Annual fuel consumption	CO emission factor	CO emissions (lbs/yr)
10100604	Natural gas boilers	3,406.56 MMCF	24 lb/ MMCF	81,757.0
20100201	Natural gas turbines	673.59 MMCF	83.64 lb/ MMCF	56,339.0

Calculation of annual CO emissions:

Annual emissions (lbs) = Annual fuel consumption × emission factor

$$\begin{aligned} \text{CO emissions from natural-gas boilers} &= 3,406.56 \text{ MMCF} \times 24 \text{ lb CO/MMCF} \\ &= 81,757 \text{ lbs CO/yr} \end{aligned}$$

$$\begin{aligned} \text{CO emissions from natural-gas turbines} &= 673.59 \text{ MMCF} \times 83.64 \text{ lb CO/MMCF} \\ &= 56,339 \text{ lbs CO/yr} \end{aligned}$$

$$\begin{aligned} \text{Total CO emissions} &= 81,757 \text{ lbs} + 56,339 \text{ lbs} \\ &= 138,096 \text{ lbs/yr} \\ &= 69.05 \text{ tons CO/yr} \end{aligned}$$

Calculation of ozone season-day emissions:

APS provided seasonal operating data for each boiler and turbine. The seasonal activity reported for the June–August time period ranged from 19 to 37 percent among the four units. The average season-day emissions were calculated individually, as illustrated in the following example, and then summed to derive daily totals.

$$\begin{aligned} \text{Season-day emissions} &= \text{annual emissions} \times \text{seasonal activity factor} \div (\text{days/week} \times \text{weeks/season}) \\ \text{from steam unit \#2} &= 30,771 \text{ lb} \quad \times 23\% \quad \div (7 \text{ days/wk} \times 13 \text{ wks/season}) \\ &= 77.8 \text{ lbs CO/season day} \end{aligned}$$

2.3.1.3 Example 2: Rogers Corp. Advanced Circuit Materials

This facility produces components of electronic circuit boards. One step in this operation is the production of “prepreg”, or the lamination of fabric components with a xylene-containing resin. The example below demonstrates the steps involved in calculating emissions, emissions reductions from material recycling/disposal and pollution control equipment, and the application of rule effectiveness.

$$\begin{aligned} \text{Uncontrolled annual} &= \text{Material usage} \times \text{VOC emission factor} \\ \text{VOC emissions (lbs)} &= 471,783 \text{ lb xylene/yr} \times 1 \text{ lb/lb} \\ &= 471,783 \text{ lb/yr} \end{aligned}$$

Uncontrolled emissions from many processes can be reduced in a number of ways, including: (1) capture of the pollutant-containing input material for offsite recycling or disposal, and (2) use of a control device to capture and control pollutants. The amount of pollutant captured for recycling/disposal from one or more waste streams is calculated as:

$$\begin{aligned} \text{Pollutant recaptured} &= \sum (\text{Quantity of waste stream } n \times \text{average pollutant content in waste stream } n) \\ \text{for recycling/disposal} & \end{aligned}$$

The xylene used in this process was captured in three different waste streams, as follows:

$$\begin{aligned} \text{Material recaptured} &= (43,617 \text{ lbs/yr} \times 95\% \text{ VOC}) + (49,942 \text{ lbs/yr} \times 38\% \text{ VOC}) + (9,045 \text{ lbs/yr} \times 3.25\% \text{ VOC}) \\ &= 41,436 + 18,978 + 294 \text{ lbs/yr} \\ &= 60,708 \text{ lbs VOC/yr captured for off-site recycling disposal} \end{aligned}$$

Since this material is captured before emissions from this process are vented to a control device, this off-site disposal “credit” is subtracted from the uncontrolled emissions before calculating the control device effectiveness:

$$\begin{aligned} \text{Controlled} &= \text{uncontrolled} - \text{pollutant captured for} \times [1 - (\text{capture efficiency} \times \text{control device effectiveness})] \\ \text{emissions} & \quad \text{emissions} \quad \text{off-site disposal} \end{aligned}$$

From the data calculated above, and the reported specifications of the control device (including source testing of the control device efficiency), total VOC controlled emissions are calculated as:

$$\begin{aligned} \text{Controlled emissions} &= 471,783 \text{ lb/yr} - 60,708 \text{ lb/yr} \times [1 - (99\% \text{ capture} \times 97.8\% \text{ control})] \\ &= 411,075 \times [1 - (0.96822)] \\ &= 13,064 \text{ lbs VOC/yr} \end{aligned}$$

This total was reported on the facility's annual emissions inventory as actual VOC emissions from this process. In developing the SIP inventory, rule effectiveness (RE) is applied to the reported control device efficiency (97.8%), following EPA guidelines. As described in Section 2.3.1.1, application of the EPA default 80% RE increased estimated emissions from this single process by more than 10 tons/yr; thus the process was selected for the application of a source-specific rule effectiveness study, which identified a RE of 94% for this process. (Appendix 2.2 shows an example of a completed RE survey form.) Thus the total annual emissions including RE was calculated as:

$$\begin{aligned}
 \text{Annual controlled VOC emissions reflecting RE} &= \text{Net uncontrolled emissions} \times [1 - (\text{RE \%} \times \text{capture efficiency} \times \text{control efficiency})] \\
 &= 411,075 \text{ lbs/yr} \times [1 - (94\% \times 99\% \times 97.8\%)] \\
 &= 36,945 \text{ lbs VOC/yr}
 \end{aligned}$$

Calculation of ozone season-day emissions:

$$\begin{aligned}
 \text{Season-day emissions (lbs/day)} &= \text{Annual emissions} \times \text{seasonal activity factor} \div (\text{days/week} \times \text{weeks/season}) \\
 &= 36,945 \text{ lbs/yr} \times 25\% \div (5 \text{ days/wk} \times 13 \text{ wks/season}) \\
 &= 142.1 \text{ lbs VOC/day}
 \end{aligned}$$

2.3.2 Sources with air quality permits issued by Pinal County Air Quality Control District

Air quality officials from the Arizona Dept. of Environmental Quality and the Pinal Count Air Quality Control District were contacted to determine if there were any point sources operating within a 25-mile boundary of the ozone nonattainment area. ADEQ representatives confirmed that there were no point sources operating in the Yavapai and Gila county portions of this 25-mile boundary, while Pinal County provided annual emissions data for two facilities (included in Table 2.2–2) that met the point source definition.

2.4 Detailed overview of point source emissions

2.4.1 Point source emissions by geographic location

Table 2.4–1 provides a summary of annual and ozone season-day emissions from all point sources, within and outside the ozone nonattainment area. Sources for which rule effectiveness has been applied are noted. Values of “0.00” and “0.0” for annual and daily emissions denote a value below the level of significance (0.005 tons/yr and 0.05 lbs/day, respectively). Note that totals shown in the tables may not equal the sum of individual values due to independent rounding.

Table 2.4-1. Annual and ozone season-day point source emissions, by facility.

Facilities inside the ozone nonattainment area:

ID #	Business name	Annual (tons/yr)			Ozone season day (lbs/day)		
		VOC	NO _x	CO	VOC	NO _x	CO
1074	23rd Ave. Wastewater Treatment Plant *	3.67	9.89	50.91	19.0	53.9	284.9
1075	91st Ave. Wastewater Treatment Plant	1.42	12.02	4.03	11.0	139.7	33.8
245	A. F. Lorts Company Inc.	54.37	0.01	0.01	522.8	0.1	0.1
1952	Adesa Phoenix LLC	10.65	0.01	0.01	81.9	0.1	0.0
1239	AG Products	11.89			91.5		
35541	Allied Tube & Conduit Corp.	21.51	0.39	0.33	198.5	3.1	2.6
199	Ameron Intl. Water Transmission Group	20.39	1.24	0.53	160.0	47.1	10.9
292	Anabolic Laboratories Inc.	21.00	0.14	0.12	161.5	1.1	0.9
3313	APS West Phoenix Power Plant	16.35	1,041.12	116.58	117.8	8,282.6	929.7
3938	Arizona Galvanizing Inc.	0.40	5.84	2.98	2.8	38.9	17.8
4364	Arizona State University	2.03	13.55	15.14	10.7	38.0	47.0
36485	Billboard Poster Company Inc	19.65			181.4		
43124	Bonded Logic Inc.	0.01	0.20	0.16	0.1	1.5	1.3
3441	BP West Coast Products LLC	31.98			167.0		
458	Bryant Industries Inc.	22.65			174.2		
217	Building Products Co.	3.68	5.03	16.73	27.6	28.1	92.3
3442	Caljet	16.60	0.86	4.30	91.2	4.7	23.6
60598	Case Furniture & Design LLC	16.95			108.7		
1318	Cavco Industries LLC (Goodyear)	22.74			174.9		
1317	Cavco Industries LLC (Phoenix)	10.86			83.5		
1316	Cavco Industries LLC (Durango Plant)	13.44			103.4		
4145	Cave Creek School District	1.02	22.73	3.21	7.7	173.2	24.3
1267	Cemex Mesa Plants #61 & #71	0.63	31.25	2.14	3.9	192.3	13.2
1268	Cemex USA	0.08			0.4		
1310	Century Graphics LLC *	15.29	0.04	0.04	117.6	0.3	0.3
1426	Cesar Color Inc.	11.24	0.48	0.41	86.5	3.7	3.1
51073	Charles Schwab & Co. Inc.	0.17	12.67	0.92	1.0	69.6	5.0
3297	Chevron USA Inc. *	36.45			179.5		
3976	Cholla Custom Cabinets Inc.	18.19	0.09	0.01	139.9	0.7	0.1
4083	Chris Fischer Productions Inc.	14.44			133.3		
399	Coreslab Structures (Ariz) Inc.	5.39			40.4		
1198	Courier Graphics Corp. *	10.16	0.24	0.20	70.3	1.6	1.4
4368	Craftsmen in Wood Mfg.	12.27	0.08	0.06	94.4	0.6	0.5
4023	Creative Shutters Inc.	12.63			77.7		
3744	Desert Sun Fiberglass	33.57			258.2		
130	Dolphin Inc. *	7.71	2.05	1.71	62.4	17.1	14.2
508	Eagle Industries LLC	41.77	0.03	0.02	321.3	0.2	0.2
45493	Earnhardt Ford	11.40			71.8		
3305	Earthgrains Baking Companies Inc. *	34.15	1.82	1.53	219.4	11.6	9.8
26	Empire Machinery Co.	11.75	39.28	21.16	91.6	241.2	158.5
1505	Executive Door	16.45			126.5		
544	Fleetwood Homes of Arizona Inc #21	10.92			84.0		
27728	FlipChip International LLC	11.94	0.33	0.28	65.6	1.8	1.5
41751	GCR Truck Tire Center *	16.30			125.4		
4050	General Mills	16.97	0.80	0.67	104.4	4.9	4.1
4173	Glendale Municipal Sanitary Landfill *	8.96	4.77	1.67	62.0	33.0	11.6
781	Good Samaritan Regional Medical Ctr. *	2.16	26.97	8.24	30.7	371.1	91.7
1418	Goodrich Aircraft Interior Products *	56.05	0.59	1.51	430.9	0.4	8.9
699	Hanson Aggregates of AZ	0.07			0.5		
31565	Henry Products Inc. *	56.12	0.58	0.49	518.0	5.3	4.5

* = Source for which rule effectiveness has been applied.

Table 2.4-1. Annual and ozone season-day point source emissions, by facility (continued).

ID #	Business name	Annual (tons/yr)			Ozone season day (lbs/day)		
		VOC	NO _x	CO	VOC	NO _x	CO
529	Highland Products Inc. *	23.43	1.37	1.15	128.9	10.5	8.9
4543	Hogue Printing Inc.	11.18			76.4		
3536	Holsum Bakery Inc. *	10.89	3.30	2.77	84.9	24.3	20.4
3802	Holsum Bakery Tempe	19.32	1.06	0.89	140.0	7.5	6.3
1059	Honeywell Engines Systems & Service	20.31	1.48	1.99	129.8	3.4	7.6
355	Honeywell International Inc.	33.12	56.23	20.13	207.5	309.0	110.6
354	Imsamet of Arizona	0.36	15.76	80.66	2.3	83.1	425.4
777	Insulfoam *	58.39	1.11	0.94	344.4	7.1	6.0
3966	Intel Corp. Ocotillo (Fab 12 & 22) *	26.31	21.49	14.69	158.8	295.3	118.9
983	Isola Laminate Systems Corp. *	46.99	22.03	9.14	301.2	141.2	58.6
3317	Kyrene Generating Station	3.58	119.15	39.17	36.6	1,278.9	443.3
341	L & M Laminates & Marble	35.68			274.5		
4182	Legends Furniture Inc.	77.00			592.3		
857	Litton Electro-Optical Systems *	22.38			172.1		
3300	Luke Air Force Base *	32.07	11.10	10.75	234.2	56.4	58.4
744	M. E. Global Inc. *	42.60	40.96	56.22	329.9	311.7	430.4
1248	Maax Spas	46.73			503.2		
31261	Madison Granite Supplies	1.99	23.65	14.59	15.3	181.9	112.3
4111	Magic Woods Inc.	12.78			98.3		
205	Mail-Well Envelope *	28.65	0.85	0.71	220.4	6.5	5.5
353	Marlam Industries Inc.	42.55	0.03	0.02	327.3	0.2	0.2
61268	Master Block Inc.	0.01	0.26	0.22	0.1	1.7	1.4
62	Mastercraft Cabinets Inc.	121.89	0.15	0.13	1,228.1	1.1	0.9
3326	Mesa Fully Formed Inc.	33.44			257.3		
1414	Mesa Materials Inc. (Mesa)	3.09	5.96	16.28	28.6	55.1	150.3
1415	Mesa Materials Inc. (Phoenix)	2.13	4.11	11.22	19.7	37.9	103.5
29474	Metal Management Arizona Inc. *	20.03	0.74	0.16	128.4	4.7	1.0
1203	Microchip Technology Inc. (Chandler) *	11.03	2.37	1.94	60.7	14.1	10.9
1875	Microchip Technology Inc (Tempe) *	48.37	4.30	3.60	266.1	27.2	20.6
226	Monier Lifetile LLC	19.19	0.94	0.79	123.0	6.0	5.0
882	Morton Salt Glendale Facility	0.82	10.21	3.82	6.3	78.6	29.4
881	Motorola Inc. *	47.39	5.68	1.85	262.7	97.6	25.2
223	MTD Southwest Inc.	4.14	1.53	46.12	27.6	9.4	354.3
693	Munters Corp. *	18.83	0.17	0.15	144.8	1.3	1.1
34197	National Gypsum Co.	1.07	19.53	16.15	6.9	127.6	103.9
948	Nesco Mfg. Inc.	14.22			109.4		
1309	New Directions Inc.	20.58			158.3		
1331	Oak Canyon Manufacturing Inc.	87.44			591.9		
3953	Oakcraft Inc.	54.38	0.08	0.07	348.6	0.6	0.5
27925	Oasis Bedroom Co.	15.92			122.5		
52382	Ocotillo Power Plant	10.13	260.57	69.05	99.1	2,187.9	589.2
3982	O'Neil Printing Inc.	12.69			97.7		
3970	Pacific Designs	29.17			224.4		
1344	Palm Harbor Homes Inc.	23.16			222.7		
733	Pan-Glo West *	16.12	0.75	0.63	88.6	5.7	4.8
419	Parker Hannifin GTFSD	29.57			189.5		
1341	Penn Racquet Sports Inc.	82.06	4.62	3.88	631.2	34.7	29.1
1014	Phoenix Brick Yard	10.28	10.17	34.27	76.4	55.9	188.3
562	Phoenix Newspapers Inc.	10.73	0.61	0.27	59.4	15.0	3.3
148	Presto Casting Co.	16.59	1.18	0.95	127.6	9.1	7.3
60889	Purcell's Western States Tire	5.25	0.18	0.15	56.5	1.4	1.2
1030	Quebecor World Phoenix Division *	18.92	1.76	39.99	92.2	8.6	194.8

* = Source for which rule effectiveness has been applied.

Table 2.4-1. Annual and ozone season-day point source emissions, by facility (continued).

ID #	Business name	Annual (tons/yr)			Ozone season day (lbs/day)		
		VOC	NO _x	CO	VOC	NO _x	CO
537	Red Mountain Mining Inc.	0.54	6.64	1.43	4.2	51.1	11.0
1503	Redman Homes Inc	28.15			216.5		
303	Rexam Beverage Can Co. *	120.76	5.11	4.29	663.5	28.1	23.6
4318	River Ranch Plant	0.12			0.9		
759	Rogers Corp. Advanced Circuit Matls. *	23.08	9.07	35.74	172.7	49.9	197.0
1437	Sanmina Phoenix Division *	20.16	1.83	1.53	129.2	11.7	9.8
3315	Santan Generating Station	9.31	333.00	339.66	57.0	2,052.3	2,093.4
266	Schuff Steel Co.	10.33	3.42	0.74	66.2	21.9	4.7
42636	Scottsdale Health Care Hospital	18.14	3.11	1.38	99.5	13.7	5.9
4175	SFPP LP *	297.91	5.41	8.96	1,636.9	29.7	49.2
70634	Shell Oil Phoenix Terminal *	157.84	0.34	0.28	820.8	1.8	1.6
27933	Skunk Creek Landfill *	11.91	1.78	0.59	65.4	9.8	3.2
4471	Skyline Steel Inc.	12.71			97.8		
31627	South Mountain Gin	0.01	0.15	0.12	0.0	0.0	0.0
3316	SRP Agua Fria	21.17	806.46	330.15	144.6	5,793.6	2,323.6
4131	ST Microelectronics *	26.48	5.31	4.46	145.5	29.2	24.5
1444	Staco Architectural Roof Tile	12.86	0.06	0.05	98.9	0.6	0.5
582	Stone Creek Inc.	21.13			162.5		
281	Sun State Rock & Materials	0.31	24.58	0.73	2.0	157.6	4.7
101	Sunland Beef Co. *	19.78	12.15	10.21	140.9	62.6	52.6
3978	Team Two Design Assoc. Inc.	16.14			124.2		
249	The Boeing Company	17.94	1.34	1.50	138.0	10.3	11.5
937	The Heil Company	12.00			92.3		
232	The Phoenician Resort	2.41	12.44	9.98	17.5	74.8	59.6
1102	The Procter & Gamble Mfg. Co.	1.64	0.84	0.70	12.6	6.4	5.4
552	Thornwood Furniture Mfg.	59.19			455.3		
363	Thunderbird Furniture	22.15			170.4		
56	TPAC Division of Kiewit Western Co.	0.05	0.96	0.80	0.4	7.4	6.2
1210	Trendwood Inc. (15th Ave.)	51.84			398.8		
1211	Trendwood Inc. (University Dr.)	56.41			433.9		
819	TRW Vehicle Safety Systems Inc. *	1.68	2.24	3.18	11.2	10.9	16.8
169	U Haul Intl. Technical Center	16.51			105.8		
1228	Ultra Installations Inc.	18.81			144.7		
234	United Dairymen of Arizona	2.23	17.78	27.51	11.8	89.2	144.0
260	United Metro Plant #11	1.29	5.37	16.52	10.1	42.3	146.8
213	United Metro Plant #12	7.86	7.70	30.45	57.9	56.5	226.2
403	VAW of America Inc. *	50.16	11.21	10.65	321.5	71.9	68.3
2	Vulcan Materials Co. (El Mirage)	1.90	8.13	2.03	15.0	62.5	15.5
90	Vulcan Materials Co. (Phoenix)	0.27			2.9		
174	W. R. Meadows of AZ Inc.	166.62	0.19	0.16	2,982.7	2.4	2.0
141	Western Organics Inc.	0.35			2.2		
4384	Western Shutter LLC	14.21			109.3		
2703	Western States Petroleum	11.47			63.0		
20706	Wincup Holdings Inc. *	107.36	13.32	11.19	660.7	82.0	68.8
1382	Woodcase Fine Cabinetry Inc.	34.67			266.7		
72	Woodstuff Manufacturing Inc.	200.54	0.08	0.07	1,542.6	0.6	0.5
Ozone Non-Attainment Area Totals:		3,869.81	3,190.56	1,616.64	29,126.1	24,096.6	11,013.6

* = Source for which rule effectiveness has been applied.

Table 2.4-1. Annual and ozone season-day point source emissions, by facility (continued).

Facilities outside the ozone NAA:

ID #	Business name	Annual (tons/yr)			Ozone season day (lbs/day)		
		VOC	NO _x	CO	VOC	NO _x	CO
31606	Acme Gin Co. Inc.	0.00	0.10	0.02			
1874	Alleco Stone LLC	1.48	18.07	3.89	9.5	115.8	24.9
31643	Allied Waste Industries Inc.	7.84	4.11	0.90	43.4	26.3	5.8
31637	Anderson Clayton Corp. Valencia Gin	0.01	0.41	0.07	0.0	0.0	0.0
1218	Butterfield Station *	5.93	2.49	8.25	32.9	14.8	45.6
1389	DaimlerChrysler AZ Proving Grounds	0.83	0.10	0.06	6.4	0.7	0.6
43063	Duke Energy Arlington Valley LLC	1.56	17.69	23.74	10.0	113.2	148.9
1488	Farmers Gin Inc.	0.02	0.75	0.13	0.0	0.0	0.0
10211	Hexcel Corp. †	87.72	12.89	10.13	674.8	99.2	77.9
1879	Northwest Regional Landfill	0.53	6.59	1.42	3.4	42.2	9.1
98	Palo Verde Nuclear Generating Station	29.26	55.26	16.13	157.3	303.6	88.6
428	Paloma Gin Properties LLC	0.01	0.09	0.07	0.0	0.0	0.0
289	Phoenix Agro Invest Inc.	1.86	0.02	0.01	12.7	0.0	0.0
42956	Pinnacle West Energy Corp.	3.68	69.80	89.70	16.5	326.2	427.5
44182	Quincy Joist Company	65.38			502.9		
246	Schult Homes	8.56			68.5		
10469	SRP Desert Basin Generating Station †	10.70	135.40	50.20	58.8	744.0	275.8
398	Wickenburg Facility	0.59	7.25	1.56	4.6	55.8	12.0
Other Than NAA Totals:		225.96	330.99	206.27	1,601.7	1,841.8	1,116.7
Total Point Source Emissions:		4,095.77	3,521.55	1,822.90	30,727.8	25,938.4	12,130.3

* Source for which rule effectiveness has been applied.

† Source located in Pinal County.

2.4.2 Point source emissions by process type

Table 2.4–2 lists annual and ozone season-day emissions from all point sources addressed in this chapter, listed by process type.

Table 2.4–2. Annual and ozone season-day point source emissions, by process type.

CATEGORY		Annual (tons/yr)			Ozone season day (lbs/day)		
ID #	Business name	VOC	NO _x	CO	VOC	NO _x	CO
ELECTRICITY GENERATION:							
Fuel Combustion: Fuel Oil:							
3313	APS West Phoenix Power Plant	0.00	0.64	0.00	0.0	0.0	0.0
43063	Duke Energy Arlington Valley LLC †	0.02	0.18	0.11	0.6	5.4	3.5
3317	Kyrene Generating Station	0.00	0.52	0.00	0.0	0.0	0.0
98	Palo Verde Nuclear Generating Station†	0.00	0.00	0.00	0.0	0.0	0.0
3316	SRP Agua Fria	0.00	2.49	0.01	0.0	13.3	0.1
Total Fuel Combustion: Fuel Oil:		0.02	3.83	0.13	0.6	18.7	3.5
Fuel Combustion: Natural Gas:							
3313	APS West Phoenix Power Plant	11.72	1,040.48	116.58	89.0	8,282.6	929.7
43063	Duke Energy Arlington Valley LLC †	1.54	17.51	23.63	9.5	107.8	145.4
3317	Kyrene Generating Station	2.78	118.63	39.17	32.2	1,278.9	443.3
52382	Ocotillo Power Plant	10.09	260.57	69.05	98.8	2,187.9	589.2
42956	Pinnacle West Energy Corp. †	3.31	69.80	89.70	13.9	326.2	427.5
3315	Santan Generating Station	8.69	333.00	339.66	53.6	2,052.3	2,093.4
3316	SRP Agua Fria	20.22	803.97	330.13	139.4	5,780.3	2,323.5
10469	SRP Desert Basin Generating Station †	10.70	135.40	50.20	58.8	744.0	275.8
Total Fuel Combustion: Natural Gas:		69.05	2,779.36	1,058.12	495.0	20,759.9	7,227.7
TOTAL: ELECTRICITY GENERATION		69.07	2,783.19	1,058.25	495.6	20,778.6	7,231.3
COMMERCIAL/INSTITUTIONAL FUEL COMBUSTION:							
Fuel Oil:							
1074	23rd Ave. Wastewater Treatment Plant	0.00	0.12	0.03	0.1	2.4	0.5
1075	91st Ave. Wastewater Treatment Plant	0.06	1.97	0.45	2.5	85.3	19.5
4364	Arizona State University	0.00	0.09	0.02	0.0	1.5	0.4
4145	Cave Creek School District	0.02	0.23	0.05	0.0	0.1	0.0
51073	Charles Schwab & Co. Inc.	0.17	12.67	0.92	1.0	69.6	5.0
781	Good Samaritan Regional Medical Center	1.83	23.07	4.96	28.8	352.2	75.8
3300	Luke Air Force Base	0.21	3.11	0.71	1.6	23.9	5.5
42636	Scottsdale Health Care Hospital	0.14	1.99	0.44	0.7	9.0	1.9
Total Comm./Inst. Fuel Oil:		2.44	43.26	7.58	34.7	543.9	108.7
Natural Gas:							
1074	23rd Ave. Wastewater Treatment Plant	0.09	1.69	0.76	0.5	11.5	2.0
4364	Arizona State University	0.99	13.46	15.12	3.1	36.6	46.7
4145	Cave Creek School District	0.92	22.51	3.16	7.1	173.1	24.3
781	Good Samaritan Regional Medical Center	0.21	3.90	3.28	1.0	18.9	15.8
3300	Luke Air Force Base	0.27	5.00	4.20	0.6	11.0	9.2
42636	Scottsdale Health Care Hospital	0.06	1.12	0.94	0.3	4.7	3.9
232	The Phoenician Resort	2.00	12.44	9.98	14.8	74.8	59.6
Total Comm./Inst. Natural Gas:		4.54	60.12	37.44	27.3	330.6	161.6
Other:							
3300	Luke Air Force Base	0.01	0.52	0.61	0.0	2.9	3.6
TOTAL: COMMERCIAL/INSTITUTIONAL FUEL COMBUSTION:		6.99	103.90	45.63	62.0	877.3	273.9

† Source is outside the ozone nonattainment area.

Table 2.4-2. Annual and ozone season-day point source emissions, by process type (continued).

CATEGORY		Annual (tons/yr)			Ozone season day (lbs/day)		
ID #	Business name	VOC	NO _x	CO	VOC	NO _x	CO
INDUSTRIAL FUEL COMBUSTION:							
Industrial Fuel Oil:							
1874	Alleco Stone LLC †	1.48	18.07	3.89	9.5	115.8	24.9
199	Ameron Intl. Water Transmission Group	0.07	0.82	0.18	3.7	46.0	9.9
3938	Arizona Galvanizing Inc.	0.25	3.08	0.66	1.9	23.7	5.1
1218	Butterfield Station †	0.10	1.21	0.26	0.6	7.7	1.7
1267	Cemex Mesa Plants #61 & #71	0.63	31.25	2.14	3.9	192.3	13.2
26	Empire Machinery Co.	0.44	14.08	2.25	3.1	37.7	8.1
1418	Goodrich Aircraft Interior Products	0.01	0.10	0.02	0.0	0.0	0.0
3966	Intel Corp. Ocotillo (Fab 12 & 22)	0.43	5.39	1.16	16.7	206.9	44.6
31261	Madison Granite Supplies	1.99	23.65	14.59	15.3	181.9	112.3
1414	Mesa Materials Inc. (Mesa)	3.09	5.96	16.28	28.6	55.1	150.3
1415	Mesa Materials Inc. (Phoenix)	2.13	4.11	11.22	19.7	37.9	103.5
29474	Metal Management Arizona Inc.	0.06	0.74	0.16	0.4	4.7	1.0
1203	Microchip Technology Inc. (Chandler)	0.00	0.03	0.01	0.1	1.3	0.3
1875	Microchip Technology Inc. (Tempe)	0.01	0.11	0.02	0.3	4.2	0.9
882	Morton Salt Glendale Facility	0.64	9.51	2.37	4.9	73.1	18.3
881	Motorola Inc.	0.06	1.95	0.44	2.2	74.9	17.1
34197	National Gypsum Co.	0.01	0.38	0.06	0.2	4.9	0.8
1879	Northwest Regional Landfill †	0.53	6.59	1.42	3.4	42.2	9.1
98	Palo Verde Nuclear Generating Station †	1.74	55.21	14.27	9.6	303.3	78.4
537	Red Mountain Mining Inc.	0.54	6.64	1.43	4.2	51.1	11.0
266	Schuff Steel Co.	0.28	3.42	0.74	1.8	21.9	4.7
281	Sun State Rock & Materials	0.31	24.58	0.73	2.0	157.6	4.7
260	United Metro Plant #11	0.01	0.65	0.16	0.0	0.0	0.0
213	United Metro Plant #12	0.01	0.77	0.19	0.0	4.9	1.2
2	Vulcan Materials Co. (El Mirage)	1.78	8.08	1.98	13.7	62.1	15.2
398	Wickenburg Facility †	0.59	7.25	1.56	4.6	55.8	12.0
Total Industrial Fuel Oil:		17.18	233.62	78.22	150.2	1,767.1	648.3
Industrial Natural Gas:							
245	A. F. Lorts Company Inc.	0.00	0.01	0.01	0.0	0.1	0.1
1952	Adesa Phoenix LLC	0.00	0.01	0.01	0.0	0.1	0.0
35541	Allied Tube & Conduit Corp.	0.02	0.39	0.33	0.2	3.1	2.6
199	Ameron Intl. Water Transmission Group	0.02	0.41	0.35	0.1	1.1	1.0
292	Anabolic Laboratories	0.01	0.14	0.12	0.1	1.1	0.9
3938	Arizona Galvanizing Inc.	0.15	2.76	2.32	0.8	15.2	12.7
43124	Bonded Logic Inc.	0.01	0.20	0.16	0.1	1.5	1.3
217	Building Products Co.	0.34	5.03	16.73	1.9	28.1	92.3
1310	Century Graphics LLC	0.00	0.04	0.04	0.0	0.3	0.3
1426	Cesar Color Inc.	0.03	0.48	0.41	0.2	3.7	3.1
1198	Courier Graphics Corp.	0.01	0.24	0.20	0.1	1.6	1.4
4368	Craftsmen in Wood Mfg	0.00	0.08	0.06	0.0	0.6	0.5
130	Dolphin Inc.	0.11	2.04	1.71	0.9	16.9	14.2
508	Eagle Industries LLC	0.00	0.03	0.02	0.0	0.2	0.2
3305	Earthgrains Baking Companies Inc.	0.10	1.82	1.53	0.6	11.6	9.8
26	Empire Machinery Co.	6.38	25.20	18.91	50.6	203.5	150.4
27728	FlipChip International LLC	0.02	0.33	0.28	0.1	1.8	1.5
4050	General Mills	0.04	0.80	0.67	0.3	4.9	4.1
1418	Goodrich Aircraft Interior Products	0.03	0.46	0.38	0.0	0.0	0.0
31565	Henry Products Inc.	0.03	0.58	0.49	0.3	5.3	4.5
529	Highland Products Inc.	0.08	1.37	1.15	0.6	10.5	8.9

† Source is outside the ozone nonattainment area.

Table 2.4-2. Annual and ozone season-day point source emissions, by process type (continued).

CATEGORY		Annual (tons/yr)			Ozone season day (lbs/day)		
ID #	Business name	VOC	NO _x	CO	VOC	NO _x	CO
Industrial Fuel Combustion: Natural Gas (cont'd.)							
3536	Holsum Bakery Inc.	0.18	3.30	2.77	1.3	24.3	20.4
3802	Holsum Bakery Tempe	0.06	1.06	0.89	0.4	7.5	6.3
1059	Honeywell Engines Systems & Service	0.05	0.95	0.80	0.0	0.0	0.0
355	Honeywell International Inc.	0.25	4.47	3.76	1.4	24.6	20.6
777	Insulfoam	0.06	1.11	0.94	0.4	7.1	6.0
3966	Intel Corp. Ocotillo (Fab 12 & 22)	0.89	16.11	13.53	4.9	88.5	74.3
983	Isola Laminate Systems Corp.	0.17	22.03	9.14	1.1	141.2	58.6
744	M. E. Global Inc.	0.26	4.75	3.99	1.7	31.0	26.0
205	Mail-Well Envelope	0.05	0.85	0.71	0.4	6.5	5.5
353	Marlam Industries Inc.	0.00	0.03	0.02	0.0	0.2	0.2
61268	Master Block Inc.	0.01	0.26	0.22	0.1	1.7	1.4
62	Mastercraft Cabinets Inc.	0.01	0.15	0.13	0.1	1.1	0.9
1203	Microchip Technology Inc. (Chandler)	0.13	2.30	1.93	0.7	12.6	10.6
1875	Microchip Technology Inc. (Tempe)	0.23	4.19	3.52	1.3	23.0	19.3
226	Monier Lifetile LLC	0.05	0.94	0.79	0.3	6.0	5.0
882	Morton Salt Glendale Facility	0.04	0.68	0.57	0.3	5.2	4.4
881	Motorola Inc.	0.51	3.73	1.40	3.2	22.7	8.1
223	MTD Southwest Inc.	0.02	0.34	0.08	0.0	0.3	0.2
693	Munters Corp.	0.01	0.17	0.15	0.1	1.3	1.1
34197	National Gypsum Co.	1.05	19.15	16.09	6.8	122.7	103.1
3953	Oakcraft Inc.	0.00	0.08	0.07	0.0	0.6	0.5
428	Paloma Gin Properties LLC †	0.01	0.09	0.07	0.0	0.0	0.0
733	Pan-Glo West	0.04	0.75	0.63	0.3	5.7	4.8
1341	Penn Racquet Sports Inc.	0.25	4.62	3.88	1.9	34.7	29.1
289	Phoenix Agro Invest Inc. †	0.00	0.02	0.01	0.0	0.0	0.0
1014	Phoenix Brick Yard	1.23	10.17	34.27	6.7	55.9	188.3
562	Phoenix Newspapers Inc.	0.03	0.61	0.27	0.6	15.0	3.3
148	Presto Casting Co.	0.06	1.14	0.95	0.5	8.7	7.3
60889	Purcell's Western States Tire	0.01	0.18	0.15	0.1	1.4	1.2
1030	Quebecor World Phoenix Division	0.09	1.76	39.99	0.5	8.6	194.8
303	Rexam Beverage Can Company	0.28	5.11	4.29	1.5	28.1	23.6
759	Rogers Corp. Advanced Circuit Materials	0.09	9.07	35.74	0.5	49.9	197.0
1437	Sanmina Phoenix Division	0.10	1.83	1.53	0.6	11.7	9.8
70634	Shell Oil Phoenix Terminal	0.02	0.34	0.28	0.1	1.8	1.6
31627	South Mountain Gin	0.01	0.15	0.12	0.0	0.0	0.0
4131	ST Microelectronics	0.29	5.31	4.46	1.6	29.2	24.5
1444	Staco Architectural Roof Tile	0.00	0.06	0.05	0.0	0.6	0.5
101	Sunland Beef Co.	0.67	12.15	10.21	3.4	62.6	52.6
249	The Boeing Company	0.07	1.26	1.05	0.5	9.7	8.1
1102	The Procter & Gamble Mfg. Co.	0.05	0.84	0.70	0.4	6.4	5.4
56	TPAC Division of Kiewit Western Co.	0.05	0.96	0.80	0.4	7.4	6.2
819	TRW Vehicle Safety Systems Inc.	0.18	2.24	2.77	0.9	10.8	13.4
234	United Dairymen of Arizona	1.80	17.78	27.51	9.4	89.2	144.0
260	United Metro Plant #11	0.72	4.72	16.36	6.4	42.3	146.8
213	United Metro Plant #12	7.32	6.93	30.25	54.4	51.5	225.0
403	VAW of America Inc.	0.69	11.04	8.03	4.4	70.8	51.5
2	Vulcan Materials Co. (El Mirage)	0.00	0.06	0.05	0.0	0.4	0.3
174	W. R. Meadows of AZ Inc.	0.01	0.19	0.16	0.1	2.4	2.0
20706	Wincup Holdings Inc.	0.73	13.32	11.19	4.5	82.0	68.8
72	Woodstuff Manufacturing Inc.	0.00	0.08	0.07	0.0	0.6	0.5
Total Industrial Natural Gas:		26.22	241.80	343.21	181.3	1,527.2	2,092.9

† Source is outside the ozone nonattainment area.

Table 2.4-2. Annual and ozone season-day point source emissions, by process type (continued).

CATEGORY		Annual (tons/yr)			Ozone season day (lbs/day)		
ID #	Business name	VOC	NO _x	CO	VOC	NO _x	CO
Industrial Fuel Combustion: (cont'd.)							
Industrial Fuel Combustion: Gasoline:							
31643	Allied Waste Industries Inc. †	0.33	4.11	0.90	2.1	26.3	5.8
1418	Goodrich Aircraft Interior Products	0.02	0.01	0.46	0.1	0.1	2.4
882	Morton Salt Glendale Facility	0.04	0.02	0.87	0.3	0.2	6.7
98	Palo Verde Nuclear Generating Station †	0.09	0.05	1.85	0.5	0.3	10.2
Total Industrial Gasoline:		0.49	4.19	4.08	3.1	26.8	25.1
Industrial Fuel Combustion: LPG:							
31606	Acme Gin Co Inc. †	0.00	0.10	0.02	0.0	0.0	0.0
31637	Anderson Clayton Corp. Valencia Gin †	0.01	0.41	0.07	0.0	0.0	0.0
3976	Cholla Custom Cabinets Inc.	0.00	0.09	0.01	0.0	0.7	0.1
1389	DaimlerChrysler AZ Proving Grounds †	0.03	0.10	0.06	0.4	0.7	0.6
1488	Farmers Gin Inc. †	0.02	0.75	0.13	0.0	0.0	0.0
1418	Goodrich Aircraft Interior Products	0.03	0.03	0.64	0.3	0.3	6.5
Total Industrial LPG:		0.11	1.48	0.93	0.7	1.7	7.3
TOTAL INDUSTRIAL FUEL COMBUSTION:		43.99	481.08	426.44	335.3	3,322.8	2,773.6
FOOD/AGRICULTURE:							
Bakeries:							
3305	Earthgrains Baking Companies Inc.	32.92			211.0		
4050	General Mills	16.92			104.1		
3536	Holsum Bakery Inc.	10.71			83.5		
3802	Holsum Bakery Tempe	19.26			139.6		
Total Bakeries:		79.81			538.3		
Dairies:							
234	United Dairymen of Arizona	0.03			0.2		
Rendering:							
101	Sunland Beef Co.	18.92			136.2		
TOTAL FOOD/AGRICULTURE:		98.76			674.7		
INDUSTRIAL PROCESSES:							
Cooling Towers:							
98	Palo Verde Nuclear Generating Station †	11.14			61.2		
Engine Testing:							
1059	Honeywell Engines Systems & Service	1.67	0.53	1.19	10.7	3.4	7.6
355	Honeywell International Inc.	4.81	51.76	16.37	26.4	284.4	90.0
3300	Luke Air Force Base	7.21	2.29	5.12	55.4	17.6	39.4
223	MTD Southwest Inc.	1.73	1.19	46.04	13.3	9.2	354.1
249	The Boeing Company	0.00	0.08	0.29	0.0	0.6	2.3
Total Engine Testing:		15.42	55.85	69.01	105.9	315.2	493.3
Other Industrial Processes:							
3442	Caljet	5.16	0.86	4.30	28.3	4.7	23.6
98	Palo Verde Nuclear Generating Station †	1.25			3.4		
759	Rogers Corp. Advanced Circuit Materials	2.10			11.5		
4175	SFPP LP		4.03	8.62		22.1	47.3
101	Sunland Beef Co.	0.15			0.9		
249	The Boeing Company			0.15			1.2
Total Other Industrial Processes:		8.65	4.89	13.06	44.2	26.8	72.1
TOTAL INDUSTRIAL PROCESSES:		35.21	60.74	82.07	211.3	342.0	565.5

† Source is outside the ozone nonattainment area.

Table 2.4-2. Annual and ozone season-day point source emissions, by process type (continued).

CATEGORY		Annual (tons/yr)			Ozone season day (lbs/day)		
ID #	Business name	VOC	NO _x	CO	VOC	NO _x	CO
MANUFACTURING PROCESSES:							
Asphalt, Concrete & Tile:							
544	Fleetwood Homes of Arizona Inc. #21	0.27			2.1		
1444	Staco Architectural Roof Tile	12.85			98.9		
Total Asphalt, Concrete & Tile:		13.12			100.9		
Electrical Equipment:							
27728	FlipChip International LLC	11.92			65.5		
1059	Honeywell Engines Systems & Service	0.10			0.6		
3966	Intel Corp. Ocotillo (Fab 12 & 22)	24.99			137.3		
983	Isola Laminate Systems Corp.	46.07			295.3		
1203	Microchip Technology Inc. (Chandler)	10.90	0.04		59.9	0.2	
1875	Microchip Technology Inc. (Tempe)	48.13		0.06	264.5		0.3
881	Motorola Inc.	46.82			257.3		
759	Rogers Corp. Advanced Circuit Materials	2.37			18.2		
1437	Sanmina Phoenix Division	18.90			121.2		
4131	ST Microelectronics	25.91			142.4		
Total Electrical Equipment:		236.11	0.04	0.06	1,362.1	0.2	0.3
Fabricated Metal Products:							
199	Ameron Intl. Water Transmission Group	4.73			36.4		
10211	Hexcel Corp. †	87.72	12.89	10.13	674.8	99.2	77.9
Total, Fabricated Metal Products:		92.45	12.89	10.13	711.1	99.2	77.9
Paper Products:							
693	Munters Corp.	18.82			144.7		
Pharmaceuticals:							
292	Anabolic Laboratories	20.99			161.5		
1102	The Procter & Gamble Mfg. Co.	0.98			7.5		
Total Pharmaceuticals:		21.97			169.0		
Rubber/Plastic Products:							
3744	Desert Sun Fiberglass	33.57			258.2		
41751	GCR Truck Tire Center	16.30			125.4		
31565	Henry Products Inc.	55.85			515.6		
529	Highland Products Inc.	22.90			125.8		
777	Insulfoam	58.33			344.0		
341	L & M Laminates & Marble	35.68			274.5		
1248	Maax Spas	40.54			436.6		
353	Marlam Industries Inc.	42.55			327.3		
3326	Mesa Fully Formed Inc.	33.35			256.6		
1341	Penn Racquet Sports Inc.	81.81			629.3		
60889	Purcell's Western States Tire	4.58			49.3		
1228	Ultra Installations Inc.	18.81			144.7		
20706	Wincup Holdings Inc.	103.18			635.0		
Total Rubber/Plastic Products:		547.47			4,122.3		

† Source is outside the ozone nonattainment area.

Table 2.4-2. Annual and ozone season-day point source emissions, by process type (continued).

CATEGORY		Annual (tons/yr)			Ozone season day (lbs/day)		
ID #	Business name	VOC	NO _x	CO	VOC	NO _x	CO
Secondary Metal Products:							
130	Dolphin Inc.	6.10	0.01		51.9	0.1	
354	Imsamet of Arizona	0.36	15.76	80.66	2.3	83.1	425.4
744	M. E. Global Inc.	42.29	36.22	52.24	327.9	280.7	404.4
29474	Metal Management Arizona Inc.	19.10			122.4		
148	Presto Casting Co.	7.43	0.05		57.1	0.3	
403	VAW of America Inc.	2.40	0.17	2.62	15.4	1.1	16.8
Total Secondary Metal Products:		77.68	52.20	135.51	577.2	365.4	846.6
Other Manufacturing:							
60598	Case Furniture & Design LLC	5.97			38.3		
819	TRW Vehicle Safety Systems Inc.	0.04	0.00	0.41	0.2	0.0	3.4
Total Other Manufacturing:		6.01	0.00	0.41	38.5	0.0	3.4
TOTAL MANUFACTURING PROCESSES:		1,013.62	65.13	146.12	7,225.9	464.8	928.3
PETROLEUM PRODUCT STORAGE:							
Fuel Oil Storage:							
3313	APS West Phoenix Power Plant	2.50			13.7		
3297	Chevron USA Inc.	0.09			0.5		
Total Fuel Oil Storage:		2.59			14.2		
Gasoline Storage:							
1075	91st Ave. Wastewater Treatment Plant	0.16			0.7		
199	Ameron Intl. Water Transmission Group	0.17			1.3		
3313	APS West Phoenix Power Plant	0.36			2.0		
4364	Arizona State University	0.17			0.9		
1218	Butterfield Station †	0.11			0.7		
4145	Cave Creek School District	0.08			0.6		
1268	Cemex USA	0.08			0.4		
399	Coreslab Structures (Ariz) Inc.	0.50			2.7		
1389	DaimlerChrysler AZ Proving Grounds †	0.54			4.3		
781	Good Samaritan Regional Medical Center	0.03			0.2		
699	Hanson Aggregates of Arizona Inc.	0.07			0.5		
3317	Kyrene Generating Station	0.02			0.1		
3300	Luke Air Force Base	3.59			27.6		
744	M. E. Global Inc.	0.05			0.3		
882	Morton Salt Glendale Facility	0.04			0.2		
223	MTD Southwest Inc.	0.47			2.2		
98	Palo Verde Nuclear Generating Station †	3.96			21.7		
289	Phoenix Agro Invest Inc. †	1.86			12.7		
1014	Phoenix Brick Yard	0.17			1.3		
4318	River Ranch Plant	0.12			0.9		
3315	Santan Generating Station	0.04			0.2		
266	Schuff Steel Co.	0.16			1.0		
27933	Skunk Creek Landfill	0.89			4.9		
3316	SRP Agua Fria	0.03			0.2		
249	The Boeing Company	0.37			2.9		
232	The Phoenician Resort	0.41			2.6		
169	U Haul Intl. Technical Center	0.72			4.6		
260	United Metro Plant #11	0.55			3.5		
213	United Metro Plant #12	0.51			3.3		
2	Vulcan Materials Co. (El Mirage)	0.12			1.3		
90	Vulcan Materials Co. (Phoenix)	0.27			2.9		
141	Western Organics Inc.	0.35			2.2		
Total Gasoline Storage:		16.96			111.0		

† Source is outside the ozone nonattainment area.

Table 2.4-2. Annual and ozone season-day point source emissions, by process type (continued).

CATEGORY		Annual (tons/yr)			Ozone season day (lbs/day)		
ID #	Business name	VOC	NO _x	CO	VOC	NO _x	CO
Other Organic Chemical Storage:							
1389	DaimlerChrysler AZ Proving Grounds †	0.06			0.5		
130	Dolphin Inc.	0.00			0.0		
355	Honeywell International Inc.	0.12			0.7		
1341	Penn Racquet Sports Inc.	0.00			0.0		
759	Rogers Corp. Advanced Circuit Materials	0.02			0.1		
Total Other Organic Chemical Storage:		0.20			1.3		
TOTAL PETROLEUM PROD. STORAGE:		19.74			126.4		
PETROLEUM TRANSPORTATION/MARKETING:							
Avgas:							
3313	APS West Phoenix Power Plant	0.22			1.2		
3300	Luke Air Force Base	0.01			0.0		
Total Avgas:		0.22			1.2		
Bulk Plants:							
3300	Luke Air Force Base	3.40			19.4		
2703	Western States Petroleum	5.10			28.0		
Total Bulk Plants:		8.50			47.4		
Bulk Terminals:							
3441	BP West Coast Products LLC	31.98			167.0		
3442	Caljet	11.44			62.9		
3297	Chevron USA Inc.	36.36			179.0		
4175	SFPP LP	297.65			1,635.4		
70634	Shell Oil Phoenix Terminal	157.82			820.7		
2703	Western States Petroleum	6.37			35.0		
Total Bulk Terminals:		541.61			2,900.1		
TOTAL PETROLEUM TRANSPORTATION/MARKETING:		550.34			2,948.7		
WASTE DISPOSAL:							
Landfills:							
31643	Allied Waste Industries Inc. †	7.51			41.3		
1218	Butterfield Station †	5.58	1.28	7.98	30.7	7.0	43.9
4173	Glendale Municipal Sanitary Landfill	8.96	4.77	1.67	62.0	33.0	11.6
27933	Skunk Creek Landfill	11.01	1.78	0.59	60.5	9.8	3.2
Total Landfills:		33.06	7.83	10.24	194.5	49.8	58.7
Publicly Owned Treatment Works (POTWs):							
1074	23rd Ave. Wastewater Treatment Plant	3.07	8.08	50.12	14.5	39.9	282.4
1075	91st Ave. Wastewater Treatment Plant	1.20	10.04	3.58	7.9	54.5	14.2
Total POTWs:		4.27	18.12	53.70	22.4	94.4	296.6
Site Remediation:							
1218	Butterfield Station †	0.05			0.3		
130	Dolphin Inc.	1.22			7.2		
3300	Luke Air Force Base	1.92	0.18	0.11	10.5	1.0	0.6
1879	Northwest Regional Landfill †	0.00			0.0		
4175	SFPP LP	0.26	1.38	0.34	1.4	7.6	1.9
Total Site Remediation:		3.45	1.56	0.46	19.5	8.6	2.5
Other Waste Disposal:							
983	Isola Laminate Systems Corp.	0.01			0.1		
TOTAL WASTE DISPOSAL:		40.79	27.51	64.40	236.4	152.8	357.8

† Source is outside the ozone nonattainment area.

Table 2.4-2. Annual and ozone season-day point source emissions, by process type (continued).

CATEGORY		Annual (tons/yr)			Ozone season day (lbs/day)		
ID #	Business name	VOC	NO _x	CO	VOC	NO _x	CO
HEALTH SERVICES:							
781	Good Samaritan Regional Medical Center	0.00			0.0		
42636	Scottsdale Health Care Hospital	17.94			98.6		
TOTAL HEALTH SERVICES:		17.94			98.6		
SOLVENT USE:							
Cold Cleaning:							
199	Ameron Intl. Water Transmission Group	3.05			23.4		
3313	APS West Phoenix Power Plant	0.38			2.9		
4364	Arizona State University	0.16			1.3		
1316	Cavco Industries LLC (Durango Plant)	0.22			1.7		
1318	Cavco Industries LLC (Goodyear)	0.31			2.4		
1317	Cavco Industries LLC (Phoenix)	0.59			4.5		
4083	Chris Fischer Productions Inc.	0.29			2.7		
399	Coreslab Structures (Ariz) Inc.	1.26			9.7		
1389	DaimlerChrysler AZ Proving Grounds †	0.15			1.0		
130	Dolphin Inc.	0.28			2.3		
3305	Earthgrains Baking Companies Inc.	0.40			3.1		
26	Empire Machinery Co.	4.37			33.6		
544	Fleetwood Homes of Arizona Inc. #21	0.52			4.0		
31565	Henry Products Inc.	0.06			0.6		
1059	Honeywell Engines Systems & Service	6.78			43.4		
355	Honeywell International Inc.	27.42			175.7		
983	Isola Laminate Systems Corp.	0.71			4.6		
857	Litton Electro-Optical Systems	22.38			172.1		
3300	Luke Air Force Base	1.15			8.8		
1248	Maax Spas	0.81			8.8		
3326	Mesa Fully Formed Inc.	0.09			0.7		
29474	Metal Management Arizona Inc.	0.86			5.5		
882	Morton Salt Glendale Facility	0.07			0.6		
223	MTD Southwest Inc.	1.92			12.1		
52382	Ocotillo Power Plant	0.05			0.3		
1344	Palm Harbor Homes Inc.	0.41			3.9		
733	Pan-Glo West	8.41			46.2		
419	Parker Hannifin GTFSD	29.57			189.5		
1014	Phoenix Brick Yard	8.89			68.4		
42956	Pinnacle West Energy Corp. †	0.37			2.7		
44182	Quincy Joist Company †	0.18			1.4		
1503	Redman Homes Inc.	1.11			8.5		
1437	Sanmina Phoenix Division	0.05			0.3		
249	The Boeing Company	12.76			98.1		
819	TRW Vehicle Safety Systems Inc.	0.67			4.0		
169	U Haul Intl. Technical Center	7.96			51.0		
234	United Dairymen of Arizona	0.40			2.2		
260	United Metro Plant #11	0.02			0.2		
20706	Wincup Holdings Inc.	3.44			21.2		
Total Cold Cleaning:		148.50			1,023.6		

† Source is outside the ozone nonattainment area.

Table 2.4-2. Annual and ozone season-day point source emissions, by process type (continued).

CATEGORY		Annual (tons/yr)			Ozone season day (lbs/day)		
ID #	Business name	VOC	NO _x	CO	VOC	NO _x	CO
SOLVENT USE: Degreasing:							
1074	23rd Ave. Wastewater Treatment Plant	0.51			3.9		
1218	Butterfield Station †	0.08			0.5		
1389	DaimlerChrysler AZ Proving Grounds †	0.05			0.3		
1059	Honeywell Engines Systems & Service	9.29			59.5		
3317	Kyrene Generating Station	0.10			0.5		
98	Palo Verde Nuclear Generating Station †	2.83			15.6		
562	Phoenix Newspapers Inc.	0.26			1.4		
3315	Santan Generating Station	0.17			0.9		
3316	SRP Agua Fria	0.74			4.1		
101	Sunland Beef Co.	0.05			0.3		
213	United Metro Plant #12	0.02			0.1		
403	VAW of America Inc.	47.07			301.8		
Total Degreasing:		61.17			389.0		
Printing/publishing:							
36485	Billboard Poster Company Inc.	19.65			181.4		
1310	Century Graphics LLC	15.29			117.6		
1426	Cesar Color Inc.	11.21			86.2		
1198	Courier Graphics Corp.	10.14			70.2		
3305	Earthgrains Baking Companies Inc.	0.74			4.7		
31565	Henry Products Inc.	0.17			1.6		
529	Highland Products Inc.	0.45			2.5		
4543	Hogue Printing Inc.	11.18			76.4		
205	Mail-Well Envelope	28.60			220.0		
3982	O'Neil Printing Inc.	12.69			97.7		
562	Phoenix Newspapers Inc.	10.17			55.9		
1030	Quebecor World Phoenix Division	18.83			91.7		
1102	The Procter & Gamble Mfg. Co.	0.62			4.7		
819	TRW Vehicle Safety Systems Inc.	0.75			5.7		
Total Printing/publishing:		140.49			1,016.3		
Miscellaneous Solvent Use:							
1316	Cavco Industries LLC (Durango Plant)	0.39			3.0		
1318	Cavco Industries LLC (Goodyear)	0.03			0.3		
1505	Executive Door	0.12			0.9		
226	Monier Lifetile LLC	13.43			86.1		
98	Palo Verde Nuclear Generating Station †	2.67			14.7		
60889	Purcell's Western States Tire	0.66			7.1		
Total Miscellaneous Solvent Use:		17.31			112.1		
TOTAL SOLVENT USE:		367.47			2,541.0		
SURFACE COATING:							
Aircraft/parts:							
3300	Luke Air Force Base	14.32			110.2		
249	The Boeing Company	3.21			24.7		
Total Aircraft/parts:		17.53			134.9		
Auto Body:							
1952	Adesa Phoenix LLC	10.65			81.9		
45493	Earnhardt Ford	11.40			71.8		
937	The Heil Company	12.00			92.3		
Total Auto Body:		34.05			246.1		

† Source is outside the ozone nonattainment area.

Table 2.4-2. Annual and ozone season-day point source emissions, by process type (continued).

CATEGORY		Annual (tons/yr)			Ozone season day (lbs/day)		
ID #	Business name	VOC	NO _x	CO	VOC	NO _x	CO
SURFACE COATING: Flatwood:							
458	Bryant Industries Inc.	22.65			174.2		
4083	Chris Fischer Productions Inc.	9.64			89.0		
4023	Creative Shutters Inc.	12.63			77.7		
1505	Executive Door	16.33			125.6		
1248	Maax Spas	1.69			18.2		
62	Mastercraft Cabinets Inc.	121.88			1,228.1		
4384	Western Shutter LLC	14.21			109.3		
1382	Woodcase Fine Cabinetry Inc.	34.67			266.7		
Total Flatwood:		233.70			2,088.8		
Metal Cans:							
303	Rexam Beverage Can Company	120.48			662.0		
Misc. Metal Parts:							
1239	AG Products	11.89			91.5		
35541	Allied Tube & Conduit Corp.	21.49			198.4		
26	Empire Machinery Co.	0.56			4.3		
355	Honeywell International Inc.	0.54			3.3		
733	Pan-Glo West	7.67			42.1		
44182	Quincy Joist Company †	65.20			501.5		
759	Rogers Corp. Advanced Circuit Materials	18.50			142.3		
4471	Skyline Steel Inc.	12.71			97.8		
Total Misc. Metal Parts:		138.56			1,081.3		
Wood Furniture:							
245	A. F. Lorts Company Inc.	54.37			522.8		
60598	Case Furniture & Design LLC	10.98			70.4		
3976	Cholla Custom Cabinets Inc.	18.19			139.9		
4083	Chris Fischer Productions Inc.	4.50			41.6		
4368	Craftsmen in Wood Mfg	12.26			94.3		
508	Eagle Industries LLC	41.77			321.3		
4182	Legends Furniture Inc.	77.00			592.3		
4111	Magic Woods Inc.	12.78			98.3		
1309	New Directions Inc.	20.58			158.3		
1331	Oak Canyon Manufacturing Inc.	87.44			591.9		
3953	Oakcraft Inc.	54.38			348.6		
27925	Oasis Bedroom Co.	15.92			122.5		
3970	Pacific Designs	29.17			224.4		
582	Stone Creek Inc.	21.13			162.5		
3978	Team Two Design Assoc Inc.	16.14			124.2		
552	Thornwood Furniture Mfg	59.19			455.3		
363	Thunderbird Furniture	22.15			170.4		
1210	Trendwood Inc. (15th Ave.)	51.84			398.8		
1211	Trendwood Inc. (University Dr.)	56.41			433.9		
72	Woodstuff Manufacturing Inc.	200.54			1,542.6		
Total, Wood Furniture:		866.75			6,614.2		
Miscellaneous Surface Coating:							
199	Ameron Intl. Water Transmission Group	12.36			95.1		
3313	APS West Phoenix Power Plant	1.17			9.0		
4364	Arizona State University	0.71			5.4		
217	Building Products Co.	3.34			25.7		
1316	Cavco Industries LLC (Durango Plant)	12.83			98.7		
1318	Cavco Industries LLC (Goodyear)	22.39			172.3		
1317	Cavco Industries LLC (Phoenix)	10.27			79.0		
399	Coreslab Structures (Ariz) Inc.	3.63			28.0		

† Source is outside the ozone nonattainment area.

Table 2.4–2. Annual and ozone season-day point source emissions, by process type (continued).

CATEGORY		Annual (tons/yr)			Ozone season day (lbs/day)		
ID #	Business name	VOC	NO _x	CO	VOC	NO _x	CO
SURFACE COATING: Miscellaneous (cont'd.)							
544	Fleetwood Homes of Arizona Inc. #21	10.13			77.9		
781	Good Samaritan Regional Medical Center	0.09			0.7		
1418	Goodrich Aircraft Interior Products	55.97			430.5		
1059	Honeywell Engines Systems & Service	2.42			15.5		
3966	Intel Corp. Ocotillo (Fab 12 & 22)	0.00			0.0		
983	Isola Laminate Systems Corp.	0.03			0.2		
3317	Kyrene Generating Station	0.69			3.8		
1248	Maax Spas	3.68			39.6		
226	Monier Lifetile LLC	5.70			36.5		
948	Nesco Mfg. Inc.	14.22			109.4		
1344	Palm Harbor Homes Inc.	22.75			218.8		
98	Palo Verde Nuclear Generating Station †	5.58			30.7		
562	Phoenix Newspapers Inc.	0.26			1.4		
148	Presto Casting Co.	9.10			70.0		
1503	Redman Homes Inc.	27.04			208.0		
1437	Sanmina Phoenix Division	1.10			7.1		
3315	Santan Generating Station	0.41			2.2		
266	Schuff Steel Co.	9.89			63.4		
246	Schult Homes †	8.56			68.5		
3316	SRP Agua Fria	0.17			1.0		
4131	ST Microelectronics	0.28			1.5		
249	The Boeing Company	1.52			11.7		
819	TRW Vehicle Safety Systems Inc.	0.05			0.3		
169	U Haul Intl. Technical Center	7.82			50.2		
174	W. R. Meadows of AZ Inc.	166.61			2,982.5		
Total, Miscellaneous Surface Coating:		420.79			4,944.62		
TOTAL SURFACE COATING:		1,831.86			15,771.8		
TOTAL, ALL POINT SOURCES:		4,095.77	3,521.55	1,822.90	30,727.8	25,938.4	12,130.3

2.5 Emission reduction credits

A major source or major modification planned in a nonattainment area must obtain emissions reductions as a condition for approval. These emissions reductions, generally obtained from existing sources located in the vicinity of a proposed source, must offset the emissions increase from the new source or modification. The obvious purpose of acquiring offsetting emissions decreases is to allow an area to move towards attainment of the national ambient air quality standards while still allowing some industrial growth.

Table 2.5–1 provides a list of emission reduction credits for VOC, NO_x, and CO. Two facilities shut down their equipment prior to 2002 and requested that their emissions continue to be listed in the emission inventory for possible future use as emission reduction credits. A third facility shut down operations in 2002 and received a credit generation certificate for their emissions from the Arizona Emissions Bank.

In order for these emission reductions to be available in the future for offsetting, they must be: 1) explicitly included and quantified as growth in projection year inventories required in rate of progress plans or attainment demonstrations that were based on 1990 actual inventories, and 2) meet the requirements outlined in MCESD Rule 240 (Permit Requirements for New Major Sources and Major Modification to Existing Major Sources).

Table 2.5–1. Emission reduction credits.

Facility	Emission reduction credits (tons)		
	VOC	NO _x	CO
Anderson Clayton Oilseed Plant	113.93	6.4	2.28
Motorola (Mesa)	19	12	17
The Scottsdale Princess Cogeneration Partnership	3.99	98.19	12.95
Totals:	136.92	116.59	32.23

2.6 Summary of point source emissions

Table 2.6–1 provides an overview of source category contributions to total point source emissions.

Table 2.6–1. Summary of annual and ozone season-day point source emissions, by source category.

Source category	Annual emissions (tons/yr)			Ozone season-day emissions (lbs/day)		
	VOC	NO _x	CO	VOC	NO _x	CO
Electricity generation	69.07	2,783.19	1,058.25	495.6	20,778.6	7,231.3
Commercial/institutional fuel combustion	6.99	103.90	45.63	62.0	877.3	273.9
Industrial fuel combustion	43.99	481.08	426.44	335.3	3,322.8	2,773.6
Food/agriculture	98.76			674.7		
Industrial processes	35.21	60.74	82.07	211.3	342.0	565.5
Manufacturing processes	1,013.62	65.13	146.12	7,225.9	464.8	928.3
Petroleum product storage	19.74			126.4		
Petroleum product transportation/marketing	550.34			2,948.7		
Waste disposal	40.79	27.51	64.40	236.4	152.8	357.8
Health services	17.94			98.6		
Solvent use	367.47			2,541.0		
Surface coating	1,831.86			15,771.8		
All point sources:	4,095.77	3,521.55	1,822.90	30,727.8	25,938.4	12,130.3

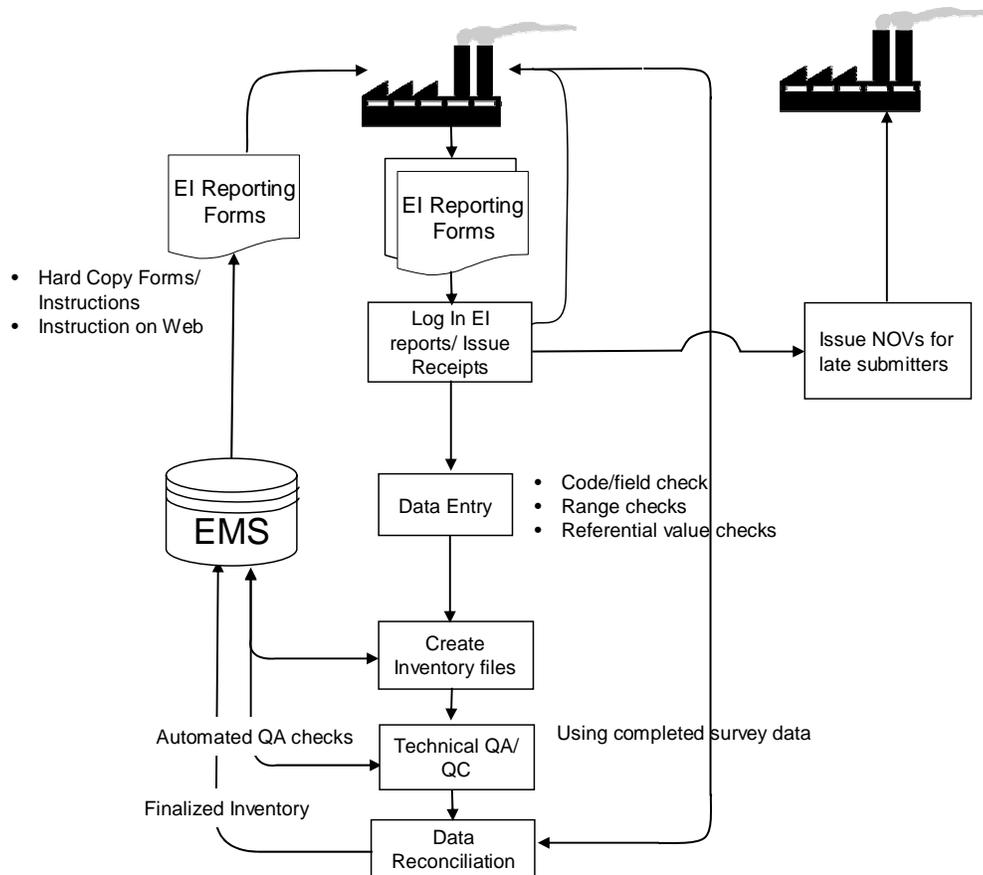
2.7 Quality assurance / quality control procedures

2.7.1 Emission survey preparation and data collection

The MCESD's Emissions Inventory (EI) Unit annually collects point source criteria pollutant emission data from sources in the county. MCESD annually reviews EPA guidance, documents from the Emission Inventory Improvement Program (EIIP), and other source materials to ensure that the most current emission factors and emission calculation methods are used for each year's survey. Each January, the EI Unit prepares a pre-populated hard copy of the preceding year's submissions and mails reporting forms to permitted sources, along with detailed instructions for completing the forms. (A copy of these instructions is included as Appendix 2.1). The EI Unit asks sources to verify and update the data. The EI Unit also holds weekly workshops from January through April to assist businesses in completing EI forms.

The general data flow for data collection and inventory preparation is shown in Figure 2.7–1.

Figure 2.7–1. Data flow for annual point source emission inventory reporting.



2.7.2 Submission processing

Submitted EI reports are logged in as they are received, and receipts are issued for emissions fees paid. The data are input “as received” into the department's data base. During data entry, numerous automated quality control (QC) checks are performed, including:

- pull-down menus to minimize data entry errors (e.g., city, pollutant, emission factor unit, etc.)
- mandatory data field requirement checks (e.g., a warning screen appears if a user tries to save an emission record with a missing emission factor).
- range checks (e.g., were valid SCC, Tier, SIC, and NAICS codes entered?)
- referential value checks (e.g., emission factor units, annual throughput units)
- automatic formatting of date, time, telephone number fields, etc.

Automated quality assurance (QA) checks on the report that has been entered include the following:

- Comparing reported emission factors to SCC reference lists
- Comparing reported emission factors to material name reference list
- Checking the report for calculation errors. This includes annual throughput, emission factors, unit conversion factors (e.g., BTU to therms), capture efficiency, primary / secondary control device efficiency, and any offsite recycling credits claimed.
- Checking the report for completeness of required data.

When data entry is complete, an electronic version of the original data is preserved separately to document changes made during the technical review and QA/QC process.

When errors are flagged, the businesses are contacted and correct information is obtained and input to the EMS. Outstanding reporting issues are documented. Confidential business information (CBI) is identified by a checkbox on the form, and these data elements are flagged during data entry and are not transmitted to the EPA. To prepare the inventory for submittal to the National Emissions Inventory (NEI), the EI Unit runs Microsoft Access queries on the data in the EMS to pull fields for the NEI Input format (NIF) tables.

2.7.3 Analysis of annual point source emissions data for this inventory

Two environmental planners checked inventory accuracy and reasonableness, and assured that all point sources had been identified and that the methodology applied to calculate emissions was appropriate and that the calculations were correct. Other reasonableness checks were conducted by recalculating emissions using methods other than those used to make the initial emissions calculations and then comparing results. QA was conducted by checking all emissions reports submitted to MCESD for the year 2002 for missing and questionable data and by checking the accuracy and reasonableness of all emissions calculations made for such reports. Notes concerning follow-up calls and corrections to calculations were documented on each 2002 annual emissions report.

The QA point source coordinator reviewed checked calculations, identified errors, and performed completeness, reasonableness and accuracy checks.

2.8 References

- US EPA, 1992. Guidelines for Estimating and Applying Rule Effectiveness for Ozone/CO State Implementation Plan Base Year Inventories. USEPA Office of Air Quality Planning and Standards, Research Triangle Park, NC. Rep. EPA-452/R-92-010, November 1992. Available at: http://www.epa.gov/ttn/chief/old/eidocs/454r92010_nov1992.pdf.
- US EPA, 2003a. 2002 National Emission Inventory (NEI) Preparation Plan (draft). USEPA Office of Air Quality Planning and Standards, Research Triangle Park, NC, Dec. 19, 2003. Available at: [http://www.epa.gov/ttn/ chief/net/2002inventory.html](http://www.epa.gov/ttn/chief/net/2002inventory.html).
- US EPA, 2003b. Emissions Inventory Guidance for Implementation of Ozone and Particulate Matter National Ambient Air Quality Standards (NAAQS) and Regional Haze Regulations. USEPA Office of Air Quality Planning and Standards, Research Triangle Park, NC. Draft Rep. June 2003. Available at: [http://www.epa.gov/ttn/chief/ eidocs/eiguid/](http://www.epa.gov/ttn/chief/eidocs/eiguid/).