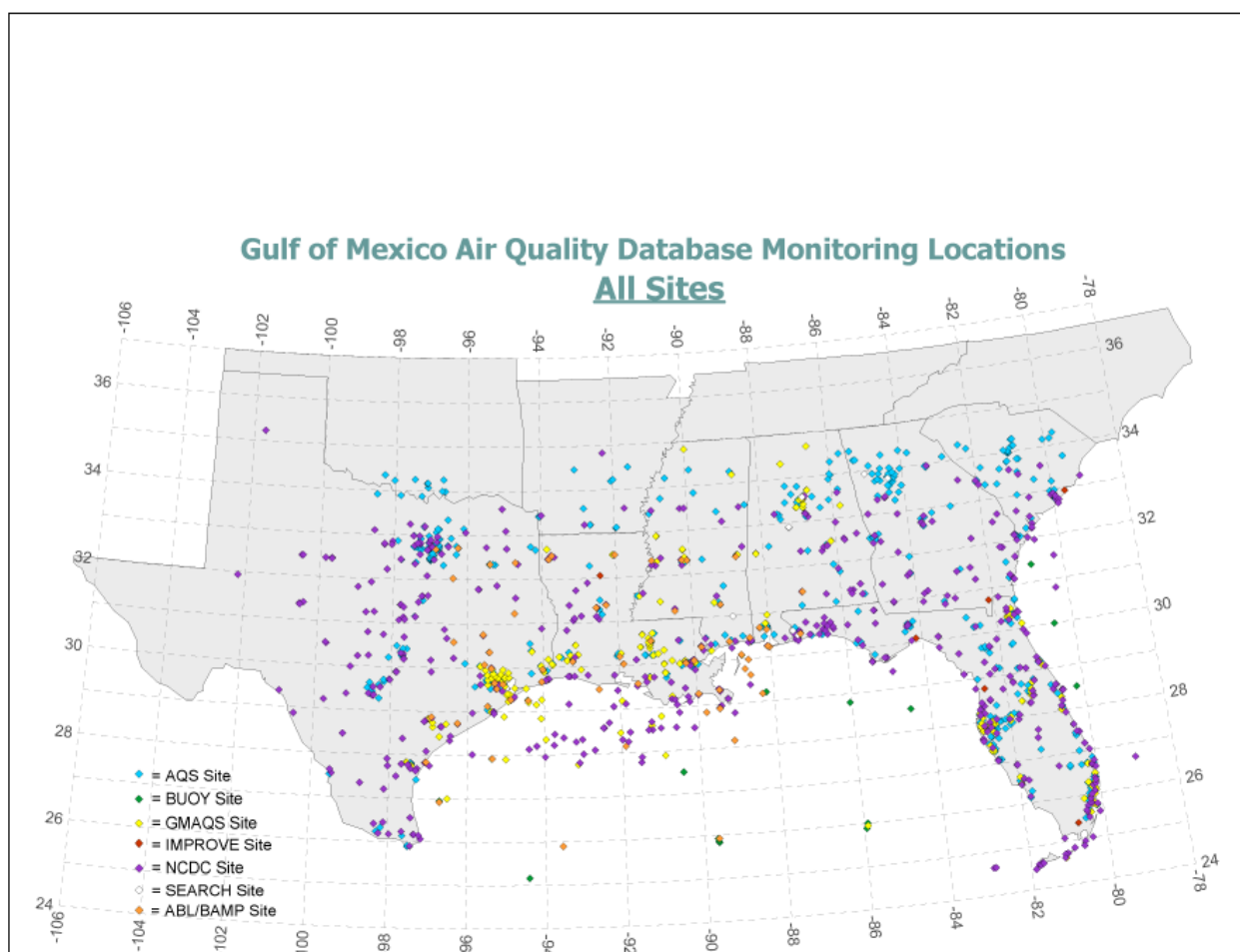




Synthesis, Analysis, and Integration of Meteorological and Air Quality Data for the Gulf of Mexico Region

Volume I: User's Manual for the Gulf of Mexico Air Quality Database (Version 1.0)



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ABOUT THE COVER

The graphic on the cover depicts the locations of the air quality and meteorological monitoring sites that are included in the Gulf of Mexico Air Quality Database tool.

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1.0 INTRODUCTION

The Gulf of Mexico Air Quality Database (GMAQDB) has been developed by ICF International and Air Resource Specialists, Inc. (ARS) under MMS Contract No. 0106CT39773—Synthesis, Analysis, and Integration of Meteorological and Air Quality Data Study. The GMAQDB is comprised of two primary components: an Oracle database containing meteorological, air quality, and emissions data from the Gulf of Mexico and Gulf Coast areas; and a custom interactive database tool developed with Microsoft Access 2003. In addition to this manual, the GMAQDB documentation set includes

- *The Gulf of Mexico Air Quality Database (Version 1.0) Technical Reference Manual* (Volume II of this report)
- *The Gulf of Mexico Air Quality Database Online Help* (a PDF version of this manual)

This manual provides instructions for using the database tool in several sections. This section and Sections 2 through 6 are intended for general users and cover general data information, step-by-step instructions for retrieving data, and details regarding the various output products available. Section 7 provides detailed instructions to the Oracle database administrator (DBA) or other technical users for using the database tool to add data to the system.

1.1. HISTORY AND PURPOSE

The GMAQDB was developed to provide the MMS with a synthesized and integrated database containing meteorology and air quality data collected during both routine and special study monitoring periods by MMS, the oil and gas industry, EPA, states, and various other agencies. The resulting database contains hundreds of millions of data points collected in the region from 1988 through 2004. In addition, the database contains offshore emissions inventories from the Gulfwide inventories developed for the Central and Western planning areas for 2002 and 2005. See Appendix A for a summary of the monitoring data contained in the GMAQDB.

Quality assurance procedures were followed to ensure data were correctly loaded into the GMAQDB from the source files. In addition, suspect data were noted through visual review of time-line series, range checks, and rate of change checks.

1.2. INTERFACE FEATURES

The interactive database tool has been designed to provide users with easy-to-use query capabilities to retrieve specific subsets of the data based on a variety of criteria such as date range, location, and parameter type. The graphical user interface (GUI) consists of menus, forms, and reports developed with Microsoft Access 2003. The form controls, such as list views, drop-down list boxes, command buttons, etc., are standard controls used in many Microsoft Windows applications and should be familiar to most users.

1.3. NOTATION AND CONVENTIONS OF THE MANUAL

The following notation and conventions are followed throughout this manual:

- Instructions are given for users using a mouse with standard settings. Although all procedures can be carried out via key presses, instructions for doing so have not been provided. Left-handed users or others with re-programmed mice will need to adjust the instructions accordingly.
- *Click* refers to pressing the left mouse button once and releasing it. *Right-click* refers to pressing the right mouse button once and releasing it.
- *Select* when referring to a check box means to *click* on an unchecked check box. A check box with a check means the item is selected.
- *Clear* refers to clicking on a checked check box. A check box without a check means the item is not selected.
- *Select* when referring to a drop-down list means to *click* on one of the items in the list to select the item.
- Procedures are presented by a bold heading following an arrow bullet. For example:
 - To enter the date range
- References to interface controls, such as command buttons, check boxes, etc., are in bold print. For example:
 - *Click* the **Start Date** box.
- **NOTE:** indicates exceptions or special conditions regarding the interface.

1.4. ONLINE HELP AND SUSPECT DATA SUMMARIES

Online help is available through the interface by clicking the **GMAQDB User's Manual** button on the GMAQDB Reference Toolbar. Online help is an Adobe PDF version of this manual.

Suspect data summaries compiled from quality assurance procedures are available from the interface by clicking the **Suspect Data** button on the GMAQDB Reference Toolbar.

2.0 MAIN MENU

The main menu (Figure 1) is displayed at the left side of the window within Microsoft Access when the GMAQDB database tool is opened. When clicked, each menu button opens a separate interface in the center of the window:

- The **Monitoring Data Products** button (see Section 3) provides an interface for retrieving a specific subset of data. Several output products are available such as Microsoft Excel files and line graphs displaying data points for several different parameters.
- The **Monitoring Location Maps** button (see Section 4) provides a series of maps for visual reference to the many monitoring locations.
- The **Emissions Data Products** button (see Section 5) provides an interface for retrieving a specific subset of data from the emissions inventories contained in the database.
- The **Emissions Data Maps** button (see Section 6) provides a series of maps summarizing annual emissions by pollutant.
- The **Load Data** button (see Section 7) provides an interface for inserting new data into the system and should only be used by an Oracle DBA or other technical user.
- The **Data Sets** button (see Section 8) provides general information about the monitoring programs of the various data sets used to populate the database. In addition, it contains interfaces for configuring source data formats and adding or modifying monitoring location and parameter information.

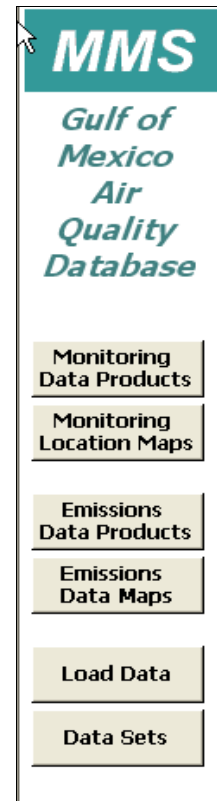


Figure 1. GMAQDB main menu.

3.0 MONITORING DATA PRODUCTS

The **Monitoring Data Products** interface is accessed by clicking the **Monitoring Data Products** button on the **Main Menu**. It is designed to help you select a specific subset of monitoring data based on your criteria. In addition, it provides several options for either exporting the retrieved data or presenting the retrieved data in a tabular or graphical output product. The interface is subdivided by a series of tabs that you step through to make your selections as described in the following subsections. When you are finished with the interface, click the **Close** link in the upper-right corner.

3.1. SELECT PRODUCT AND DATE RANGE

The **Select Product and Date Range** tab (Figure 2) of the **Monitoring Data Products** interface asks you two questions; what type of output do you want and what period of time are you interested in? The interface lists the output products with a brief description of each. See Appendix B for detailed descriptions and examples of each.

- To select an output product
- *Click to select* the box to the left of the product name. In Figure 2 the *Diurnal plot* is selected.

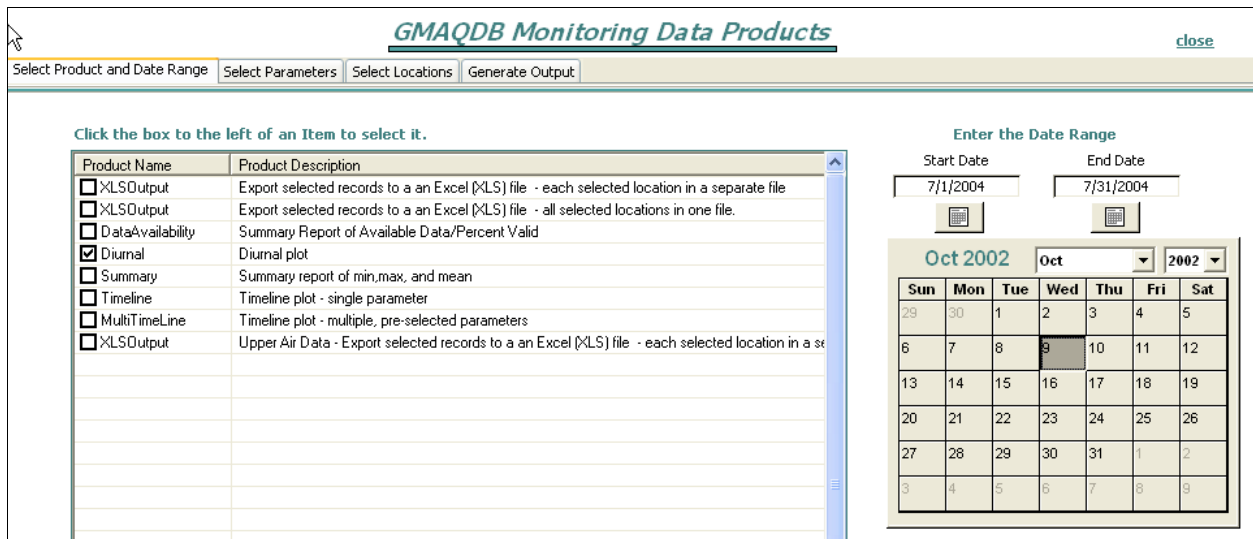


Figure 2. The select product and date range tab of the monitoring data products interface.

- **To enter the date range**
 1. *Click* the **Start Date** box and type the date.
 2. *Click* the **End Date** box and type the date.

Make sure to enter dates in the month/day/year format.
- **To select the date range from the calendar control**
 1. *Click* the arrow on the month drop-down list box (in Figure 2, *Oct* is shown).
 2. *Click* a month to select it.
 3. *Click* the arrow on the year drop-down list box (in Figure 2, *2002* is shown).
 4. *Click* a year to select it.
 5. The calendar control will change to display the selected month/year. *Click* a day to select it (in Figure 2, *Oct 9* is selected).
 6. *Click* the calendar icon beneath the **Start Date** box. The month/day/year selected in the calendar control will appear in the **Start Date** box (in Figure 2, the calendar icon has not been clicked yet).
 7. Repeat steps 1 through 5 then *click* the calendar icon beneath the **End Date** box. The month/day/year selected in the calendar control will appear in the **End Date** box.

3.2. SELECT PARAMETERS

NOTE: This tab is not visible if the Multi Timeline plot is selected on the **Select Product and Date Range** tab. If you have selected this output product, proceed to Section 3.3.

The **Select Parameters** tab (Figure 3) allows you to select the monitoring parameters you are interested in. Parameter information includes the Parameter ID, Type (Gaseous, Meteorology, Speciated PM, Total PM, Visibility, or Misc.), Description, Standard Units (of measure), and AQS Parameter Code (the identifying coded used if the parameter exists within EPA's Air Quality System). The type "Misc" refers to miscellaneous parameters.

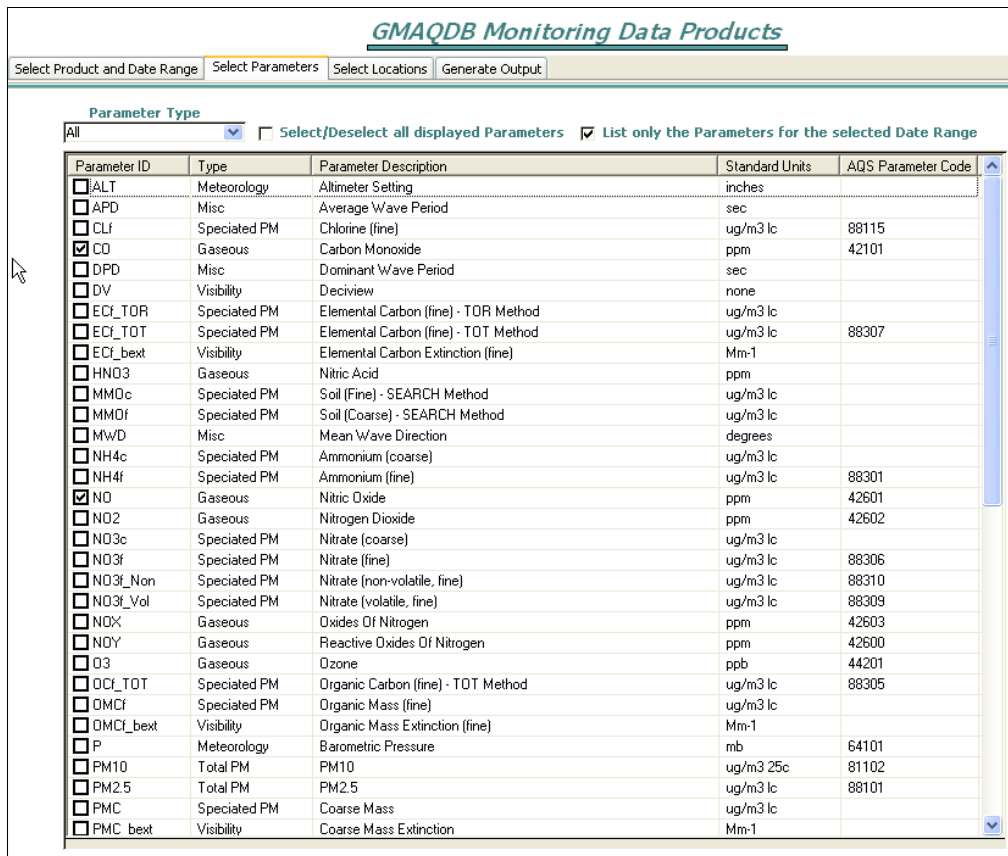


Figure 3. The select parameters tab of the monitoring data products interface.

- **To see a list of parameters with values available for the selected date range**
 - *Select* the List only the Parameters for the selected Date Range box (as shown in Figure 3 above).
- **To see a complete list of parameters contained in the database**
 - *Clear* the List only the Parameters for the selected Date Range box.
- **To see a list of parameters of a particular type**
 - *Click* the arrow on the **Parameter Type** drop-down list box then *click* one of the parameter types to select it.
- **To sort the list by other than the Parameter ID**
 - *Click* a column heading. For example, to sort the list by AQS code, *click* the AQS Parameter Code column heading. The parameters with no AQS code will be listed first and those with a code will follow in ascending order. *Click* the column heading again to sort the list in descending order.

- **To select a parameter to include in your query**
 - *Select* the box to the left of the Parameter ID. In Figure 3, CO (Carbon Monoxide) and NO (Nitric Oxide) are selected.
- **To deselect a parameter**
 - *Clear* the checked box to the left of the Parameter ID.
- **To quickly select all listed parameters**
 - *Select* the **Select/Deselect all displayed Parameters** box. A check will appear in the box and also in every box to the left of the Parameter ID of each displayed parameter.
- **To quickly deselect all listed parameters**
 - *Clear* the **Select/Deselect all displayed Parameters** box. The check will disappear from the box and also from every box to the left of the Parameter ID of each displayed parameter.

3.3. SELECT LOCATIONS

The **Select Locations** tab (Figure 4) allows you to select the monitoring locations you are interested in. Location information includes the Location ID, Data Set (an abbreviation for the data source prior to inclusion in this database) State, Description, Latitude, Longitude, and Elevation. Since there are many monitoring locations to choose from, there are a variety of ways to sort and filter the list.

GMAQDB Monitoring Data Products

Select Product and Date Range | Select Parameters | **Select Locations** | Generate Output

Sort Options
Sort by Location ID

Filter Options
 Show only Locations with Data for the Selected Date Range and Parameters
 Filter by Data Set
 Select/deselect all displayed locations

Filter By Latitude/Longitude Boundaries
 Enter as degrees, minutes, seconds
 Minimum Maximum
 Latitude: 24.46 Latitude: 35.23
 Longitude: -79.00 Longitude: -102.20
 Display Locations within Boundaries

Data Set

Location ID	Data Set	State	Location Description	Lat (deg)	Lon (deg)	Elev (m)
<input type="checkbox"/> 010030010	AQS	AL	FAIRHOPE HIGH SCHOOL, FAIRHOPE, BALDWIN CO., AL	30.497778	87.881389	37.19
<input type="checkbox"/> 010270001	AQS	AL	ROUTE 1, BOX 351A, ASHLAND, AL, CLAY CO., AL	33.281111	85.802222	344.42
<input type="checkbox"/> 010491003	AQS	AL	13112 HWY.68, CROSSVILLE AL, 35962, DEKALB CO., AL	34.2875	85.968333	500
<input type="checkbox"/> 010510001	AQS	AL	DEWBERRY TRAIL, ELMORE CO., WETUMPKA, ALABAMA, ELMORE CO., AL	32.498333	86.136667	53.95
<input type="checkbox"/> 010530002	AQS	AL	BELLVILLE AVE, BREWTON, ESCAMBIA CO., AL	31.106389	87.071111	50
<input type="checkbox"/> 010550008	AQS	AL	3200 WALNUT ST, ETOWAH CO., AL	34.015	86.012222	0
<input type="checkbox"/> 010550010	AQS	AL	1001 WALLACE DRIVE, GADSDEN, AL 35902, ETOWAH CO., AL	33.993611	85.991111	50
<input type="checkbox"/> 010550011	AQS	AL	1450 PARKER ANDERSON LANE, SOUTHSIDE, AL 35907, ETOWAH CO., AL	33.9039	86.0539	152.4
<input type="checkbox"/> 010690002	AQS	AL	EAST HIGHLAND ST., BOARD OF ED. BLDG., HOUSTON CO., AL	31.228611	85.375556	102
<input checked="" type="checkbox"/> 010730002	AQS	AL	1500 1ST AVE N., BESSEMER, AL, JEFFERSON CO., AL	33.3975	86.955278	168
<input type="checkbox"/> 010730023	AQS	AL	NO. B'HAM, SOU R.R., 3009 28TH ST. NO., JEFFERSON CO., AL	33.553056	86.815	177
<input type="checkbox"/> 010730028	AQS	AL	EAST THOMAS, FINLEY, 841 FINLEY AVE. BP., JEFFERSON CO., AL	33.529444	86.850278	166
<input checked="" type="checkbox"/> 010730034	AQS	AL	2301 11TH AVE NORTH, BIRMINGHAM, JEFFERSON CO., AL	33.5275	86.807778	185
<input type="checkbox"/> 010731003	AQS	AL	FAIRFIELD, PFD, 5229 COURT B, JEFFERSON CO., AL	33.485556	86.915	180
<input type="checkbox"/> 010731005	AQS	AL	ROUTE 8 MCADORY, JEFFERSON CO., AL	33.331111	87.003611	163
<input type="checkbox"/> 010731008	AQS	AL	3822 WILLIAMSON DRIVE, JEFFERSON CO., AL	33.451389	86.967222	164
<input type="checkbox"/> 010731009	AQS	AL	1801 BRUCE SHAW ROAD, JEFFERSON CO., AL	33.459722	87.305556	226
<input type="checkbox"/> 010731010	AQS	AL	201 ASHVILLE ROAD, JEFFERSON CO., AL	33.545278	86.549167	195
<input type="checkbox"/> 010732003	AQS	AL	1242 JERSEY ST WYLAM AL, JEFFERSON CO., AL	33.499722	86.924167	191
<input type="checkbox"/> 010732006	AQS	AL	3425 TAMASSEE LANE, HOOVER, AL 35226, JEFFERSON CO., AL	33.386389	86.816667	180
<input type="checkbox"/> 010735002	AQS	AL	PINSON, HIGH SCH., BOX 360 HWY 75 NORTH, JEFFERSON CO., AL	33.704722	86.669167	204
<input type="checkbox"/> 010735003	AQS	AL	10005 CORNER SCHOOL ROAD, JEFFERSON CO., AL	33.801667	86.9425	212
<input type="checkbox"/> 010736002	AQS	AL	TARRANT, ELEM. SCH., 1269 PORTLAND STREE, JEFFERSON CO., AL	33.578333	86.773889	173
<input type="checkbox"/> 010736004	AQS	AL	4113 SHUTTLESWORTH DRIVE, JEFFERSON CO., AL	33.565278	86.796389	179
<input type="checkbox"/> 010790002	AQS	AL	US FOREST SERVICE RANGER STA., (SIPSEY) HWY 33, LAWRENCE CO., ...	34.342778	87.339722	301

Figure 4. The select locations tab of the monitoring data products interface.

Sort Options

- **To sort by Location ID**
 - *Click* the arrow on the **Sort Options** drop-down list box then *click* Sort by Location ID or
 - *Click* the Location ID column heading in the Locations list. This is the default sort.
- **To sort by Data Set ID/Location ID**
 - *Click* the arrow on the **Sort Options** drop-down list box then *click* Sort by Data Set ID/Location ID. The list will be sorted first by Data Set then by Location ID in descending order.
- **To sort by Latitude/Longitude**
 - *Click* the arrow on the **Sort Options** drop-down list box then *click* Sort by Latitude/Longitude. The list will be sorted first by latitude then by longitude in descending order.
- **To sort by any other column**
 - *Click* a column heading once to sort the list in ascending order of the column value. Click the column heading a second time to sort the list in descending order of the column value. Note: all values are sorted as text and not as numeric values.

Filter Options

- **To display only those locations that have data during the selected date range for any of the selected parameters**
 - *Select* the Show only Locations with Data for the Selected Date Range and Parameters check box.

NOTE: if the Multi Timeline plot is selected on the **Select Product and Date Range** tab, parameter selection is disabled and, therefore, this check box will be labeled **Show only Locations with Data for the Selected Date Range**.
- **To display only those locations from one of the data sets**
 1. *Select* the **Filter by Data Set** check box to enable the Data Set drop-down list box.
 2. *Click* the arrow on the **Data Set** drop-down list box and select one of the data sets.
- **Filter by Latitude/Longitude Boundaries:**
 1. *Select* the **Enter as degrees, minutes, seconds** check box to enter boundaries in this way or *clear* the check box to enter boundaries as decimal degrees.

2. *Click* in the **Minimum Latitude** text boxes then enter the farthest south latitude of the boundary.
3. *Click* in the **Maximum Latitude** text boxes then enter the farthest north latitude of the boundary.
4. *Click* in the **Minimum Longitude** text boxes then enter the farthest east longitude of the boundary. Enter longitude degrees as a negative number.
5. *Click* in the **Maximum Longitude** text boxes then enter the farthest west longitude of the boundary. Enter longitude degrees as a negative number.
6. *Click* the **Display Locations within Boundaries** button.

NOTE: This filter works in combination with the other filters but will need to be re-applied by clicking the **Display Locations within Boundaries** button if changes to other filters are made.

- **To select a location to include in your query**
 - Select the check box to the left of a Location ID. In Figure 4, 01073002 and 010730034 are selected.
- **To deselect a location**
 - *Clear* the check box to the left of a Location ID.
- **To quickly select all displayed locations**
 - *Select* the **Select/Deselect all displayed Locations** check box. A check will appear in the box and also in every box to the left of the Location ID of each displayed location.
- **To quickly deselect all displayed locations**
 - *Clear* the **Select/Deselect all displayed Locations** check box. The check will disappear from the box and also from every box to the left of the Location ID of each displayed location.

3.4. GENERATE OUTPUT

The Generate Output tab (Figure 5) allows you to set output options, run a query based on your selections from the previous tabs, and generate your selected output product.

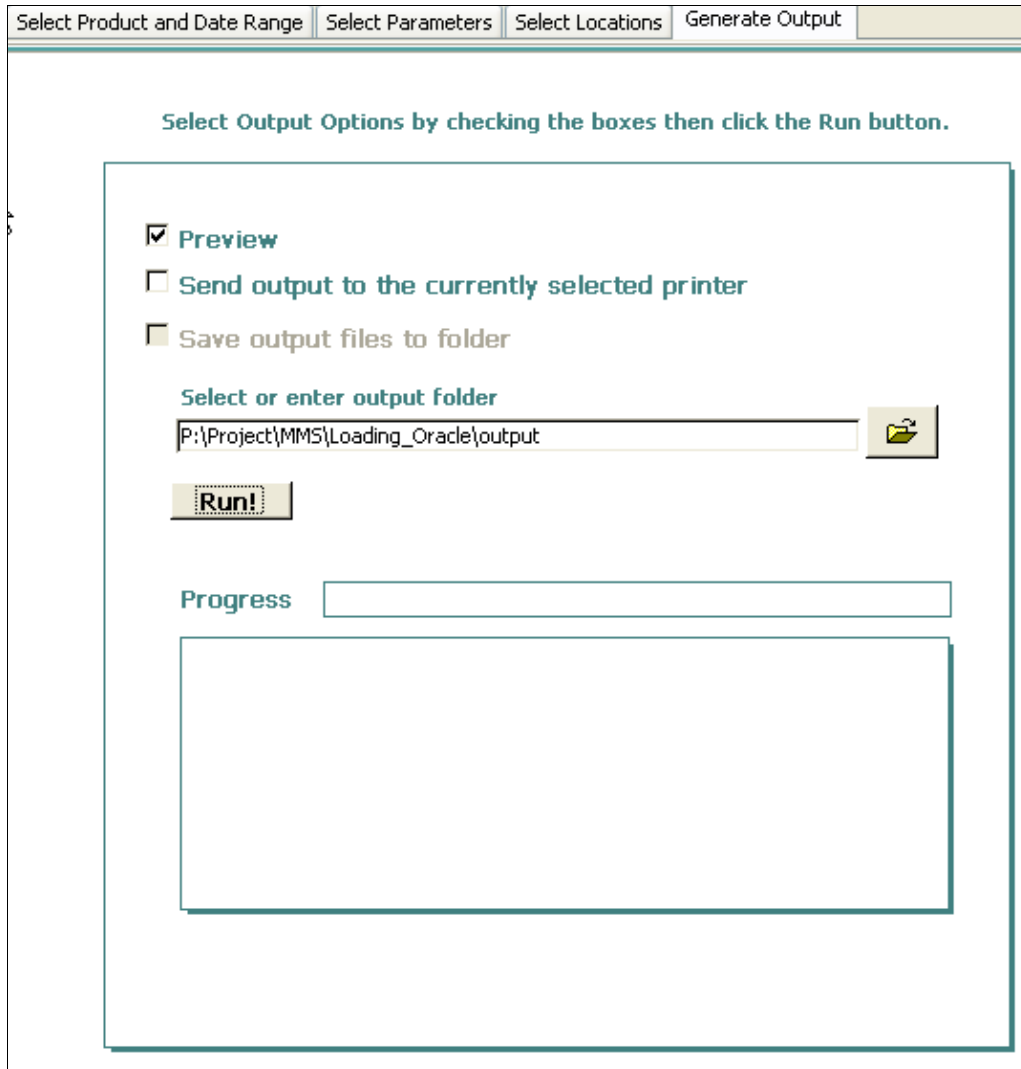


Figure 5. The generate output tab of the monitoring data products interface.

NOTE: If you have selected the Multi Timeline Plot product, additional instructions are provided in Section 3.5. If you have selected Upper Air Data output, see Section 3.6.

Output Options

Preview is available and is the default option for tabular and graphical output products. It is not enabled if a file type output product is selected.

- **To preview an output product on screen**
 1. *Select* the **Preview** box.
 2. *Click* the **Run!** Button.
 3. If data meeting your query criteria are found, the selected output product is displayed on screen (see Figure 6). If no data are found, a message will display in the **Progress** box.

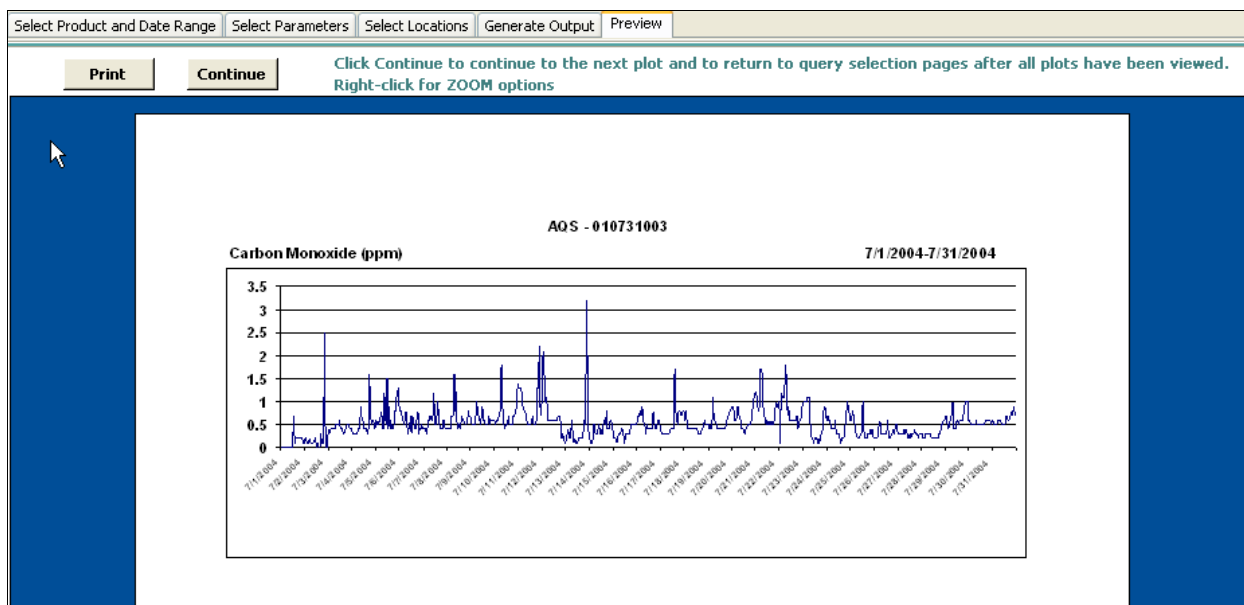


Figure 6. The preview screen of the monitoring data products interface.

From the Preview screen, you can:

- **Zoom** in and out. *Click* on the graph or *right-click* to select a zoom percentage.
- *Click* the **Print** button to send the product to the currently selected printing device.
- *Click* the **Continue** button to close the preview and continue with the next task.

If additional locations and/or parameters have been selected, the program will loop through them, displaying each in the preview screen.

When all selections have been previewed, the **Generate Output** tab will be displayed again. You can either re-run the selected queries or click on any of the previous tabs.

Print is available for tabular and graphical output products. It is not enabled if a file type output product is selected.

- **To print an output product to the currently selected printer device**

1. *Select* the **Print** checkbox.
2. *Click* the **Run!** Button.
3. If data meeting your query criteria are found, the selected output product is sent to the currently selected printer device. If no data are found, a message will display in the **Progress** box.

If additional locations and/or parameters have been selected, the program will loop through them, sending each to the printer device.

When all selections have been printed, the **Generate Output** tab will be displayed again. You can either re-run the selected queries or click on any of the previous tabs.

NOTE about PDF documents: If the correct software is installed on your computer, you can create PDF (Portable Document Format) files using this process by setting the currently selected printer to a PDF printer device.

Save Output Files to Folder is the only option for output files. It is not enabled for tabular and graphical output products.

- **To save output files to a folder**

1. The **Select or enter output folder** text box is initially set to the default output folder. To choose a different folder, *click* in the text box and type the path or *click* the open folder icon to display a **Browse for Folder** dialog box and select a folder. Files are automatically named by the program.
2. *Click* the **Run!** Button.
3. If data meeting your query criteria are found, a Microsoft Excel file is created. If no data are found, a message will display in the **Progress** box.

If the selected output file product is one designed to generate a separate file for each selected location and if additional locations have been selected, the program will loop through them, creating a file for each.

When all files have been created, the **Generate Output** tab will be displayed again. You can either re-run the selected queries or click on any of the previous tabs.

3.5. MULTI-TIMELINE PLOT

The Multi Timeline Plot output product allows you to see timeline graphs of several monitoring parameters from one location on a single graph. When the Multi Timeline Plot is the selected output product, the Monitoring Data Products Interface functions differently in the following ways:

- The **Parameters** tab is not visible because the parameter selection is pre-defined by the report definition.
- The pre-defined parameters are based on the most commonly monitored parameters at the locations associated with each Data Set. Not all locations within a dataset have monitoring data for each parameter and date range. Therefore, some graphs might contain no data.
- Two plots have been developed for data sets with a large number of commonly monitored parameters. In this case, the program will generate two plots for each selected location.
- When an AQS location is selected, you are also given the option to plot meteorological data from a nearby National Climatic Data Center (NCDC) location.
 - To plot data from an AQS location along with a NCDC location (refer to Figure 7)
 1. *Click Yes* in response to the displayed message box that asks “Do you want to plot Met data from a nearby met site with the AQS data?”
 2. *Click* the arrow on the drop-down list box in the **Select a nearby Met Site** dialog box and *select* one of the locations from the list then *click* the **Plot AQS and Met** button (or if you’ve changed your mind, click the **Plot AQS data only** button).

NOTE: The NCDC locations listed are within +/- 1^o latitude and +/- 1^o longitude of the selected AQS location.

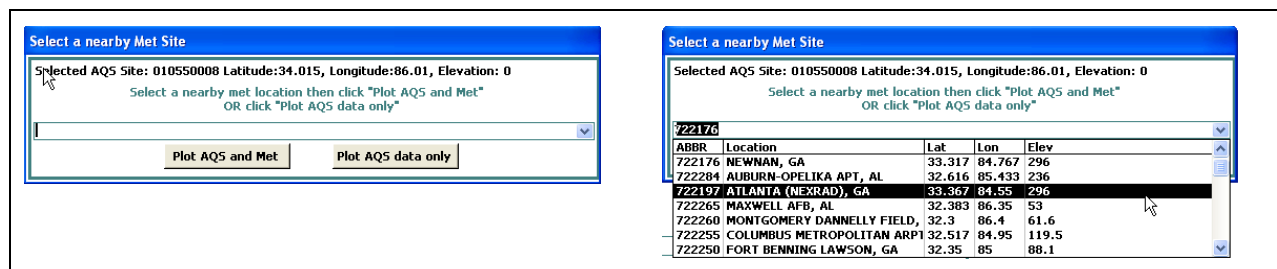


Figure 7. The select a nearby Met Site dialog window.

3.6. UPPER AIR DATA

The Upper Air Data Export output product is the only way to retrieve upper air data. No other products provide display of these data or information about these data.

4.0 MONITORING LOCATION MAPS

The **Monitoring Location Maps** interface is accessed by clicking the **Monitoring Location Maps** button on the **Main Menu**. It is simply a reference tool that provides a graphical display of the monitoring locations represented in the GMAQDB. The first map displayed shows all locations from all data sets. The remaining maps show the locations from each network or study data set. To scroll through the maps, use the record scroll buttons at the bottom of the interface. When you are finished with the interface, click the **Close** link in the upper-right corner.

5.0 EMISSIONS DATA PRODUCTS

The **Emissions Data Products** interface is accessed by clicking the **Emissions Data Products** button on the **Main Menu**. It is similar to the Monitoring Data Products interface and is also designed to help you export specific subsets of emissions data or to compare reported emissions values from year to year based on your criteria. Again, the interface is subdivided by a series of tabs that you step through to make your selections as described in the following subsections. When you are finished with the interface, click the **close** link in the upper-right corner.

5.1. SELECT PRODUCT AND YEAR

The **Select Product and Year** tab (Figure 8) of the **Emissions Data Products** interface asks which export file do you want and what emissions year are you interested in? The interface lists the output products with a brief description of each. See Appendix B for detailed descriptions and examples of each.

- **To select an emissions data output product**
 1. *Select* the check box to the left of a product name.
 2. *Click* the arrow on the **Select the Year** drop-down box to *select* an emissions year. **NOTE:** the comparison export product will use data from both years.

The screenshot shows the 'GMAQDB Emissions Data Products' interface. At the top, there are four tabs: 'Select Product and Year' (active), 'Select Pollutants', 'Select Sources', and 'Generate Output'. A 'close' link is in the top right. Below the tabs, there is a table with two columns: 'Product Name' and 'Product Description'. The first row has a checked checkbox, 'XLSOutput', and the description 'Export selected records to a an Excel (XLS) - all selected sources and pollutants in one file.'. The second row has an unchecked checkbox, 'XLSOutputComp', and the description 'Export selected records for all emissions years to a an Excel (XLS) file for comparison'. Above the table, there is a 'Select the Year' dropdown menu with '2000' selected. A message above the table says 'Click the box to the left of an Item to select it.'

Product Name	Product Description
<input checked="" type="checkbox"/> XLSOutput	Export selected records to a an Excel (XLS) - all selected sources and pollutants in one file.
<input type="checkbox"/> XLSOutputComp	Export selected records for all emissions years to a an Excel (XLS) file for comparison

Figure 8. The select product and year tab of the emissions data products interface.

5.2. SELECT POLLUTANTS

The **Select Pollutants** tab of the **Emissions Data Products** interface lists all pollutants available in the emissions inventories.

- **To select a pollutant to include in your query**
 - *Select* the check box to the left of the pollutant abbreviation.
- **To deselect a pollutant**
 - *Clear* the check box to the left of the pollutant abbreviation.

- **To quickly select all listed pollutants**
 - *Select* the **Select/Deselect all displayed pollutants** check box. A check will appear in the box and also in every box to the left of each pollutant abbreviation.
- **To quickly deselect all displayed pollutants**
 - Clear the **Select/Deselect all displayed Pollutants** check box. The check will disappear from the box and also from every box to the left of each pollutant name.

5.3. SELECT SOURCES

The **Select Sources** tab of the **Emissions Data Products** interface provides options for selecting emissions sources. Two main emissions source types are available from the GMAQDB: Non-platform and Platform. Controls on the interface are available depending on which type is selected (see Figures 9 and 10).

- **To select an emissions source type**
 - *Click* the arrow on the **Select Source Type** drop-down list box then *select* a source type.

Both non-platform and platform data can be queried by area either by selecting specific Area Codes or by latitude/longitude boundaries.

- **To query Non-Platform or Platform emissions data by Area Code**
 1. *Click* the **By Area Code** radio button to enable the Area Code list.
 2. *Select* the check box next to the left of the Area Codes to include in the query (in Figure 9, area codes BA and CA are selected).

GMAQDB Emissions Data Products close

Select Product and Year | Select Pollutants | **Select Sources** | Generate Output

Select Source Type: **Non-Platform**

Non-Platform data can be queried by selecting Area (by Area Code or Latitude/Longitude) AND/OR selecting NonPlatform Names/SCC.

Select Areas

By Area Code **By Latitude/Longitude Boundaries**

Area Code	Description
<input type="checkbox"/> AC	Alaminos Canyon
<input type="checkbox"/> AM	Amery Terrace
<input type="checkbox"/> AT	Atwater
<input checked="" type="checkbox"/> BA	Brazos
<input type="checkbox"/> BM	Bay Marchand
<input type="checkbox"/> BS	Breton Sound
<input checked="" type="checkbox"/> CA	Chandeleur
<input type="checkbox"/> CC	Corpus Christi
<input type="checkbox"/> EB	East Breaks
<input type="checkbox"/> EC	East Cameron
<input type="checkbox"/> EI	Eugene Island
<input type="checkbox"/> FW	Fwinn Rank

Enter as Degrees, Minutes, Seconds

Minimum

Latitude: 25.59 [] [] []

Longitude: -97.11 [] [] []

Maximum

Latitude: 30.17 [] [] []

Longitude: -87.75 [] [] []

Select Complex ID Numbers

Complex ID	Company Name
<input type="checkbox"/> 100	Unocal
<input type="checkbox"/> 10003	ENERGY RESOURCE TECH...
<input type="checkbox"/> 10003	Sterling Energy, Inc.
<input type="checkbox"/> 10006	Shell Offshore Inc.
<input type="checkbox"/> 10007	Shell Offshore Inc.
<input type="checkbox"/> 1001	BP Exploration & Production Inc.
<input type="checkbox"/> 10011	Devon Energy Corp.
<input type="checkbox"/> 10012	Devon Energy Corp.
<input type="checkbox"/> 10012	Nippon Oil Exploration U.S.A. ...
<input type="checkbox"/> 10015	Shell Offshore Inc.
<input type="checkbox"/> 10023	Bellwether Exploration Company
<input type="checkbox"/> 10028	Shell Offshore Inc.
<input type="checkbox"/> 10031	ConocoPhillips Company
<input type="checkbox"/> 10031	Shell Offshore Inc.
<input type="checkbox"/> 10039	W & T Offshore, Inc.
<input type="checkbox"/> 10039	W&T Offshore, Inc.
<input type="checkbox"/> 10050	Coastal Oil & Gas

Select Non-Platform Names/SCC

Non-Platform Name	SCC Code	SCC Description
<input type="checkbox"/> Bio/Geogenic	2740040000	Natural Sources: Misc
<input type="checkbox"/> CMV	2280002200	Mobile Sources: Commercial Marine Vessels: Diesel: Underway
<input type="checkbox"/> CMV_steam	2280003200	Mobile Sources: Commercial Marine Vessels: Residual: Underway
<input type="checkbox"/> DrillingRigs	2280002200	Mobile Sources: Commercial Marine Vessels: Diesel: Underway
<input type="checkbox"/> Fishing	2280002200	Mobile Sources: Commercial Marine Vessels: Diesel: Underway
<input type="checkbox"/> Helicopters	2275050000	Mobile Sources:Aircraft:General Aviation:Total
<input type="checkbox"/> LOOP	2280002200	Mobile Sources: Commercial Marine Vessels: Diesel: Underway
<input type="checkbox"/> LOOP_Approach	2280002200	Mobile Sources: Commercial Marine Vessels: Diesel: Underway
<input type="checkbox"/> LOOP_CMV_Platform	2280002200	Mobile Sources: Commercial Marine Vessels: Diesel: Underway
<input type="checkbox"/> LOOP_Platform	2020010200	Combustion engine Diesel
<input type="checkbox"/> Lightering	2280002200	Mobile Sources: Commercial Marine Vessels: Diesel: Underway
<input type="checkbox"/> MilitaryVessels	2280002200	Mobile Sources: Commercial Marine Vessels: Diesel: Underway
<input type="checkbox"/> Pipelaying	2280002200	Mobile Sources: Commercial Marine Vessels: Diesel: Underway
<input type="checkbox"/> PlatformConstRemove	2280002200	Mobile Sources: Commercial Marine Vessels: Diesel: Underway
<input type="checkbox"/> SupportVessels	2280002200	Mobile Sources: Commercial Marine Vessels: Diesel: Underway
<input type="checkbox"/> SurveyVessels	2280002200	Mobile Sources: Commercial Marine Vessels: Diesel: Underway

Figure 9. The select sources tab of the emissions data products interface with the non-platform source type selected.

- **To query Non-Platform or Platform emissions data by Area Code**
 1. *Click the **By Latitude/Longitude Boundaries** radio button to enable the latitude/longitude text boxes.*
 2. *Select the **Enter as degrees, minutes, seconds** check box to enter boundaries in this way or *clear* the check box to enter boundaries as decimal degrees.*
 3. *Click in the **Minimum Latitude** text boxes and enter the farthest south latitude of the boundary.*
 4. *Click in the **Maximum Latitude** text boxes and enter the farthest north latitude of the boundary.*
 5. *Click in the **Minimum Longitude** text boxes and enter the farthest east longitude of the boundary. Enter longitude degrees as a negative number.*
 6. *Click in the **Maximum Longitude** text boxes and enter the farthest west longitude of the boundary. Enter longitude degrees as a negative number.*

NOTE: If no Area Codes are selected and no boundaries are entered, data from all areas will be included in the query criteria.

5.3.1. Non-Platform Source Type

Non-platform data can be queried by a non-platform name, as well as Area Code, which is essentially a source description. The SCC (Source Classification Code) is also listed with each Non-Platform Name for reference.

NOTE: If no selections are made (as shown in Figure 9) data for all Non-platform Names will be included in the query criteria. If no Area Codes, no Latitude/Longitude boundaries, nor Non-platform Names are selected, all Non-Platform data will be included in the output results.

5.3.2. Platform Source Type

Platform data can be queried by Complex ID Number, as well as Area Code. When no Area Codes or Latitude/Longitude Boundaries are selected, the Select Complex ID Numbers list is available as shown in Figure 10. Initially, the list is sorted by Complex ID number.

- **To sort the Complex ID list by Company Name**
 - *Click* on the Company Name column header (as shown in Figure 10).
- **To select a Complex ID to include in your query**
 - *Click* the check box to the left of the **Complex ID** in the **Complex ID Numbers** list.

NOTE: If no Area Codes, no Latitude/Longitude boundaries, nor Complex ID numbers are selected, all platform data will be included in the output results.

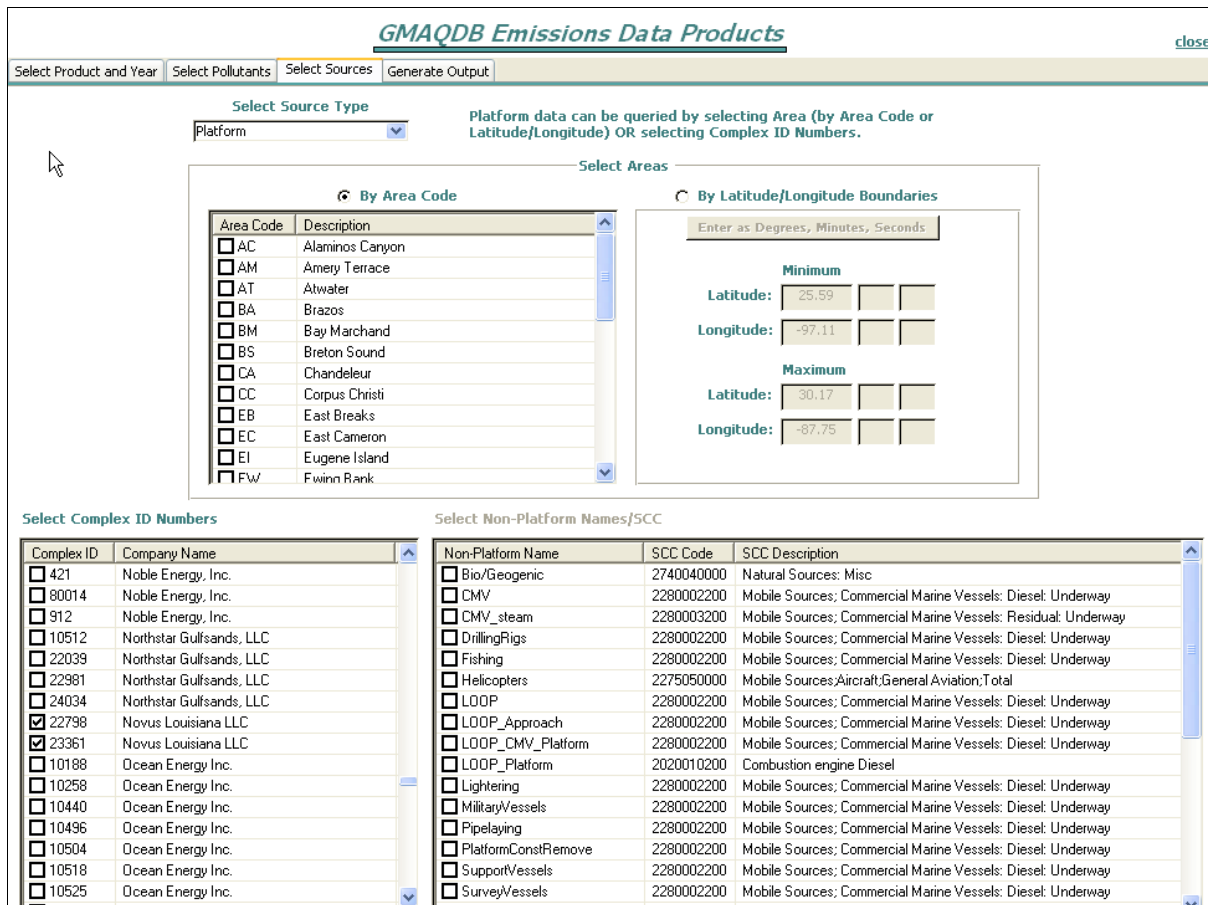


Figure 10. The select sources tab of the emissions data products interface with the platform source type selected.

5.4. GENERATE OUTPUT

The **Generate Output** tab allows you to set output options, run a query based on your selections from the previous tabs, and generate your selected output product. **Save Output Files to Folder** is enabled and is the only option for emissions data output.

- **To save output files to a folder**
 1. The **Select or enter output folder** text box is initially set to the default output folder. To choose a different folder, *click* in the text box and type the path or *click* the open folder icon to display a **Browse for Folder** dialog box and select a folder. Files are automatically named by the program.
 2. *Click* the **Run!** Button.
 3. If data meeting your query criteria are found, a Microsoft Excel file is created. If no data are found, a message will display in the **Progress** box.

6.0 EMISSIONS DATA MAPS

The **Emissions Data Maps** interface is accessed by clicking the **Emissions Data Maps** button on the **Main Menu**. Three sets of maps are included. When you are finished with the interface, click the **Close** link in the upper-right corner.

- **To select a map set to view**
 - Click the arrow on **Select Map Set** drop-down box to *select* one of following:
 - **2002**: A series of maps summarizing annual tons of emissions by pollutant from the 2002 emissions inventory.
 - **2005**: A series of maps summarizing annual tons of emissions by pollutant from the 2005 emissions inventory.
 - **Differences**: A series of maps summarizing the difference in annual tons of emissions by pollutant between the 2002 and 2005 inventories (calculated as 2005 values minus 2002 values)
- **To scroll through a map set**
 - Click the record scroll buttons at the bottom of the interface.

7.0 LOAD DATA

The **Load Data** interface (Figure 11) is accessed by clicking the **Load Data** button from the **Main Menu** and can be used to add monitoring data to the system from several types of source files. See Appendix C for a list of standard data formats and examples of each.

NOTE: Emissions inventory data cannot be loaded through this interface. See the GMAQDB Technical Reference for more information.

Although the interface is simple, successful data loading is contingent on the following requirements:

- The selected data format configuration must match the source data file. See Section 8.2 for details.
- Some data formats require the source file to have a specific file extension such as .txt or .csv. In addition, the SEARCH data format requires spread sheets to have specific names. See Section 8.2 for details.
- The data loading programs require various Active Data Objects (ADO) drivers in order to work. See Section 4.3.2 of the *GMAQDB Technical Reference Manual* for details.
- Any new monitoring locations contained in a source data file must be added to the system prior to loading the data file. See Section 8.3 for details.
- Any new monitoring parameters contained in a source data file must be added to the system prior to loading the data file. See Section 8.4 for details.
- The data loading program must have read, create, write and delete privileges to the folder containing the source files.

Load Data into the GMAQDB

close

Select Data Format

Select Files to Load

Selected Folder: Files Selected from

Selected Files

Load Data

Loading records from:

No. of Lines Processed: **Of**

Figure 11. The load data interface.

- **To load monitoring data**
 4. Click the arrow on the **Select Data Format** drop-down box and *select* the data format matching the file(s) to be loaded.
 5. Click the Select Files to Load button.
 6. *Select* the files to be loaded from the dialog box. Multiple files can be selected by pressing the **Ctrl** key while clicking on a file name. All files must be of the format selected in Step 1.
 7. Click the **Open** button. The files selected will be listed in the **Selected Files** list box.
 8. Click the **Load Data** button beneath the **Selected Files** list box.
 - The data loading program will loop through each selected file.

- The file currently being processed will be listed in the Loading records from text box.
- Progress on the file currently being processed can be seen in the No. of Lines Processed boxes.
- Overall success or failure will be noted next to the file name in the Selected Files box after processing on the file is complete.
- Records that cannot be loaded will be written to a file named with the source data file name and a prefix of ERR_. A data loading error log named ERR_LOADING.txt will be created in the folder containing the source data file and used to store error messages encountered during the loading process. Critical errors will cause loading of a file to be suspended while other errors, such as undefined parameters, will simply prevent loading of individual records.

8.0 DATA SETS

The **Data Sets** interface is accessed by clicking the **Data Sets** button on the **Main Menu**. This interface contains a series of tabs providing access to general data set information, data format configurations, monitoring location information, and monitoring parameters information. If you have insert and/or update privileges to the database use this interface cautiously.

8.1. DATA SETS TAB

The **Data Sets** tab (Figure 12) contains general information about each Data Set and the associated source Data Set Formats. To scroll through the Data Sets, use the record scroll buttons at the bottom of the interface.

The screenshot shows the 'GMAQDB Data Set Information and Configuration' window with the 'Data Sets' tab selected. The window title is 'GMAQDB Data Set Information and Configuration' and there is a 'close' button in the top right corner. The interface has a navigation bar with tabs for 'Data Sets', 'Data Formats', 'Monitoring Locations', and 'Parameters'. The main content area is divided into several sections:

- Data Set ID:** A text input field containing 'ABL_BAMP'.
- Description:** A text area containing 'Breton Island Aerometric Monitoring Program'.
- QA Information:** A text area containing 'Meteorological data. January 1998 - December 2001.'
- Contact:** A dropdown menu.
- Data Set Formats:** A table with two columns: 'Format ID' and 'Format Description'.

Format ID	Format Description
1	BAMP surface
2	ABL/BAMP monthly met
*	

At the bottom of the interface, there are two record navigation controls. The first one shows 'Record: 1 of 2' and the second one shows 'Record: 1 of 9'. Both controls include buttons for first, previous, next, and last record, as well as a search icon.

Figure 12. The data sets tab of the data sets interface.

8.2. DATA FORMATS TAB

The **Data Formats** tab of the **Data Sets** interface provides specific information regarding data source file formats required by the data loading programs discussed in Section 7. The information contained in a data format configuration should be changed only if directed technical support or if verified changes have been made to a type of data source since data were initially loaded by ARS using these formats.

8.3. MONITORING LOCATIONS

The **Monitoring Locations** tab of the **Data Sets** interface provides a list of all monitoring locations contained in the database. Monitoring location information can be updated and new monitoring locations added through this interface. Monitoring locations can also be deleted but only if the deletion will not result in orphaned records within the database.

To update information for a monitoring location

1. Find the monitoring location record to update. The list in this interface is displayed using the standard Microsoft Access table view. Therefore the list can be sorted by individual or multiple fields.
2. *Click* in the field of the record to update and modify the contents of the field. Changes will be automatically saved to the database.

To add a new monitoring location

1. *Click* on the add new record button at the bottom of the list. An empty record will be created at the bottom of the list.
2. Enter the monitoring location information. Required fields include the Data Set ID and Data Set Abbr. A unique system identification number will be automatically assigned to the location and the record automatically saved.

NOTE: If a unique constraint error is raised when the program attempts to save the new record, this means a location with the same Data Set ID and Data Set Abbr already exists. If the monitoring location being entered has moved to a new physical location but maintains an existing Data Set Abbr, enter the effective start and end dates for the location's specific physical coordinates. For an example, see BUOY 42001.

8.4. PARAMETERS

The **Data Formats** tab of the **Data Sets** interface provides specific information regarding monitoring parameters contained in the database. Parameter information can be updated and new monitoring parameters added through this interface. Monitoring parameters can also be deleted but only if the deletion will not result in orphaned records within the database.

To update information for a parameter

1. Find the parameter record to update. The list in this interface is displayed using the standard Microsoft Access table view. Therefore the list can be sorted by individual or multiple fields.

2. *Click* in the field of the record to update and modify the contents of the field. Changes will be automatically saved to the database.

To add a new monitoring parameter

1. *Click* on the add new record button at the bottom of the list. An empty record will be created at the bottom of the list.
2. Enter the monitoring parameter information. Required fields include a unique Parameter ID, Parameter Type, Unit ID, and Decimal Precision. An AQS code is required if data for the parameter are to be loaded from an AQS formatted file.

APPENDIX A: MONITORING DATA SUMMARIES

This Appendix presents a summary of the monitoring data contained in the GMAQDB when delivered by ARS. The parameter abbreviations used in this Appendix and throughout the GMAQDB system are defined by parameter type in Tables A-1 through A-6. Tables A-7 through A-16 list the monitoring locations for each source data set, the start and end dates where data exist in the database for each location and the number of valid data points for each parameter from each location.

Table A-1.

Gaseous Parameters.

Abbr	Description
CH4	Methane
CO	Carbon Monoxide
HNO3	Nitric Acid
NH3	Ammonia
NMHC	Nonmethane Organic Compounds
NO	Nitric Oxide
NO2	Nitrogen Dioxide
NOX	Oxides Of Nitrogen
NOY	Reactive Oxides Of Nitrogen
O3	Ozone
SO2	Sulfur Dioxide

Table A-2.

Meteorology Parameters.

Abbr	Description
ALT	Altimeter Setting
CEIL	Ceiling Height
CLDC	Cloud Cover
HTT	Sounding Height (temp)
HTV	Sounding Ht. (tv)
HTW	Sounding Height (wind)
P	Barometric Pressure
PWS	Peak Wind Speed
Q	Specific Humidity
RH	Relative Humidity
RNF	Precipitation
RWD	Resultant Wind Direction
RWS	Resultand Wind Speed
SD	Snow Depth
SLP	Sea Level Pressure
SR	Solar Radiation
SST	Sea Surface Temperature
SWS	Scalar Wind Speed
T	Temperature
TD	Dew Point
TV	Virtual Temperature
Tc	Corrected Rass Temperature Consensus
U	U Component Of Wind
V	V Component Of Wind
VERT	Vertical Wind Speed
W	W Component Of Wind
WD	Wind Direction

Table A-3.

Speciated Parameters.

Abbr	Description
ammNO3f	Ammonium Nitrate (fine)
ammSO4f	Ammonium Sulfate (fine)
CHLf	Chloride (fine)
CLf	Chlorine (fine)
ECf_TOR	Elemental Carbon (fine) - TOR Method
ECf_TOT	Elemental Carbon (fine) - TOT Method
MMOc	Soil (Fine) - SEARCH Method
MMOf	Soil (Coarse) - SEARCH Method
NH4c	Ammonium (coarse)
NH4f	Ammonium (fine)
NO3c	Nitrate (coarse)
NO3f	Nitrate (fine)
NO3f_Non	Nitrate (non-volatile, fine)
NO3f_Vol	Nitrate (volatile, fine)
OCf_TOR	Organic Carbon (fine) - TOR Method
OCf_TOT	Organic Carbon (fine) - TOT Method
OMCf	Organic Mass (fine)
PMC	Coarse Mass
SO4c	Sulfate (coarse)
SO4f	Sulfate (fine)
SOILf	Soil (fine) - IMPROVE Method
SSf	Sea Salt (fine)
Sf	Sulfur (fine)

Table A-4.

Miscellaneous Parameters.

Abbr	Description
APD	Average Wave Period
DPD	Dominant Wave Period
MWD	Mean Wave Direction
TIDE	Water Level
WVHT	Significant Wave Height
Zi	Mixing Height

Table A-5.

Total PM Parameters

Abbr	Description
PM10	PM10
PM2.5	PM2.5
RCFM	PM2.5 Reconstructed Mass
UNIF	PM2.5 Unidentified Mass

Table A-6.

Visibility Parameters.

Abbr	Description
aerosol_bext	Aerosol Extinction
ammNO3f_bext	Ammonium Nitrate Extinction (fine)
ammSO4f_bext	Ammonium Sulfate Extinction (fine)
DV	Deciview
ECf_bext	Elemental Carbon Extinction (fine)
OMCf_bext	Organic Mass Extinction (fine)
PMC_bext	Coarse Mass Extinction
SOILf_bext	Soil Extinction (fine)
SSf_bext	Sea Salt Extinction (fine)
SVR	Standard Visual Range
total_bext	Total Extinction
VR	Station Visibility

Table A-7.

ABL BAMP Summary of Locations, Parameters, and Number of Data Points.

LOCATION ABBR	START DATE	END DATE	METEOROLOGY														
			P	RH	RNF	RWD	RWS	SR	SST	T	TD	TV	VERT	WD	WS		
42001	12/31/97	12/31/01	35032	35032							35032					34520	35032
42002	12/31/97	12/31/01	35033	35033							34840					24225	35033
42007	12/31/97	12/31/01	35033	35033							35026					31294	35033
42019	12/31/97	12/31/01	35034	35034							34817					27775	35034
42020	12/31/97	12/31/01	35032	35032							34870					30689	35032
42035	12/31/97	12/31/01	35034	35034							35034					33932	35034
42040	12/31/97	12/31/01	35032	35032							35032					30710	35032
AEX	06/30/99	12/31/01	21487	21228							20849	20788				27319	27319
ARA	05/03/98	12/31/01	31924	31835							31739	31727				42834	42834
ASD	06/24/98	12/31/01	29893	28739							28638	28634				38312	38328
BFM	04/30/98	12/31/01	31913	31884							31673	31654				39785	39785
BIP	09/01/00	09/30/01	9306	9307	9306	8035	8035	9305	9300	9308			9279	9279	8035	8035	
BPT	04/30/98	12/31/01	32109	31992							32030	31959				43359	43361
BTR	04/30/98	12/31/01	32090	32076							32064	32064				39172	39172
BURL1	12/31/97	12/31/01	35032	35032							35032					34532	35032
BVE	07/31/00	12/31/01	12226	11540							11550	11542				14916	14916
CLL	04/30/98	12/31/01	32090	32037							31875	31844				41910	41910
CRS	04/30/98	12/31/01	32111	31979							31896	31892				39178	39178
CXO	04/30/98	12/31/01	32089	31929							31777	31744				42024	42024
DPIA1	12/31/97	12/31/01	35032	35032							35016					34563	35032
DTN	04/30/98	12/31/01	32131	32017							31982	31959				40210	40210
DWH	04/30/98	12/31/01	32132	31966							31712	31684				43993	43995
DWP	09/01/00	09/30/01	8187	6832	8911	7015	7015	8181	7144	8201			8882	8882	7015	7015	
ESF	04/30/98	12/31/01	32011	31879							31865	31829				42623	42623
FTM	09/01/00	09/30/01	9263	9264	8866	8722	8722	8698		9264			9236	9236	8722	8722	
GDIL1	12/31/97	12/31/01	35033	35033							35014					31240	35033
GGG	05/17/98	12/31/01	30237	30080							29930	29913				37432	37432
GLS	04/30/98	12/31/01	30644	30461							30352	30283				38261	38261
GPT	08/11/98	12/31/01	29592	29517							29478	29453				37410	37409
GZH	04/30/98	12/31/01	31976	31903							31641	31593				42433	42433
HBG	05/07/00	12/31/01	14060	13936							13982	13937				18334	18334
HKS	07/16/00	12/31/01	12759	12564							12568	12564				15585	15585
HOU	08/11/98	12/31/01	29664	29630							29576	29573				35869	35868
IAH	04/30/98	12/31/01	31428	31413							31414	31411				38563	38563
JAN	04/30/98	12/31/01	32149	32126							32119	32117				41127	41127
LBX	05/10/98	12/31/01	31733	31498							31331	31242				43126	43126
LCH	04/30/98	12/31/01	32136	32110							32102	32099				44161	44161
LFK	04/30/98	12/31/01	31369	11775							11782	11780				35559	35559
LFT	08/25/98	12/31/01	29254	29166							29179	29053				37373	37373
LVJ	04/30/98	12/31/01	29518	29369							29211	29177				38505	38505
MBP	09/01/00	09/30/01	7677	7670	7700	7683	7683	7680	7654	7681				7702	7683	7683	
MCB	08/31/00	12/31/01	11535	10897							10914	10914				15841	15841
MEI	04/30/98	12/31/01	31978	31957							31950	31944				40789	40789
MLU	06/24/98	12/31/01	30698	30617							30569	30567				37695	37695
MOB	04/30/98	12/31/01	32140	32134							32109	32103				41681	41681

Table A-7.
 ABL BAMP Summary of Locations, Parameters, and Number of Data Points
 (continued).

LOCATION ABBR	START DATE	END DATE	METEOROLOGY													
			P	RH	RNF	RWD	RWS	SR	SST	T	TD	TV	VERT	WD	WS	
MSY	04/30/98	12/31/01	32135	32087							32044	32042			38878	38878
NEW	08/11/98	12/31/01	29590	29360							29269	29266			36362	36362
P92	05/03/98	12/31/01	31756	31373							31419	31107			31608	31608
PNS	04/30/98	12/31/01	31971	31400							31441	31416			38637	38637
PQL	04/30/98	12/31/01	31991	31802							31543	31362			47975	47975
PSX	09/30/00	12/31/01	10587	10006							10210	10206			13253	13253
PTAT2	12/31/97	12/31/01	35032	35032							35013				33628	35032
RBD	04/30/98	12/31/01	32107	32098							32092	32085			38312	38312
SGR	11/30/00	12/31/01	9437	9426							9430	9430			12715	12715
SHV	04/30/98	12/31/01	32068	32052							32052	32041			39932	39932
SMI	12/31/97	10/02/01	31675	31623		26185	26185		5403	31649		31598		26185	31675	
SRST2	12/31/97	12/31/01	35032	35032							35004				32621	35032
SWP	09/01/00	09/30/01	7218	7236	7238	7247	7247	7216	3418	7216			7221	7247	7247	7247
TRL	04/30/98	12/31/01	32082	31996							31842	31836			38292	38292
TVR	04/30/98	12/31/01	32106	32015							31854	31807			40271	40271
TYR	05/17/98	12/31/01	31664	31643							31500	31364			38590	38589
UTS	04/30/98	12/31/01	32100	32086							31918	31916			40733	40733
VCT	04/30/98	12/31/01	32129	31994							31989	31988			43459	43459
VRM	12/31/97	10/02/01	32634	32634		25844	25844		6362	32634		32634		25844	32634	32634
WDP	09/02/00	09/30/01	8287	8308	8239	8309	8309	8268	5867	8288		8280	8281	8309	8309	8309

Table A-8.

ABL BAMP Upper Air Data Summary of Locations, Parameters, and Number of Data Points.

LOCATION ABBR	START DATE	END DATE	UPPER AIR METEOROLOGY									
			P	T	TD	TV	U	V	W	WD	WS	
BIP	09/01/00	09/30/01		81854				197500	197555	591660	197480	197480
DWP	09/01/00	09/30/01		130333				248450	248455	619087	248434	248434
FTM	09/01/00	09/30/01		101281				191748	191778	596027	191678	191678
LCH	05/01/98	10/31/01	184769	112439	112376						110549	111350
SIL	05/01/98	10/31/01	185169	111874	111846						111148	112003
SMI	06/03/98	10/03/01				244343				514621	557822	557822
VRM	06/03/98	10/03/01				265246				523040	667298	667297
WDP	09/02/00	09/30/01		105182				225869	225863	637875	225803	225803

Table A-9.

AQS Summary of Locations, Parameters, and Number of Data Points.

LOCATION ABBR	START DATE	END DATE	GASEOUS		NOX	NOY	O3	SO2	SPECIATED PM					TOTAL PM			
			CO	NO2					CLF	ECF_TOT	NH4f	NO3f	NO3f_Non	NO3f_Vol	OCf_TOT	SO4f	PM10
010010003	03/01/90	11/30/90					6198										
010030010	01/16/00	12/29/04					27315										539
010150001	01/05/90	10/02/98														493	
010270001	03/25/91	12/29/04					81006										653
010491002	01/05/90	02/19/02														643	
010491003	01/09/99	12/29/04															644
010510001	03/01/90	10/31/04					86078										
010530002	01/05/90	12/29/04														873	572
010550008	01/05/90	12/29/04														847	
010550010	02/06/00	12/29/04															515
010550011	04/26/02	10/31/04					15518										
010610001	03/01/94	09/28/98					28172										
010690002	01/05/90	08/31/04														769	536
010730002	01/05/90	12/29/04														900	
010730023	01/01/90	12/31/04					40331		472	472	472	472		472	472	96150	2133
010730025	01/01/90	07/08/93	29156														
010730026	01/05/90	02/27/97														429	
010730028	01/01/90	12/31/04	129918														
010730032	01/01/90	03/31/97	62880														
010730033	01/01/90	06/15/96	55508														
010730034	01/05/90	12/29/04														908	
010731003	01/01/90	12/31/04	128779				90074	128836								357	
010731005	03/01/90	12/29/04					89647										725
010731008	01/30/99	12/29/04														343	
010731009	01/01/00	12/29/04					29005		186	182	183	183		182	183		597
010731010	01/05/90	12/29/04					23270									892	61
010732003	01/01/90	12/31/04							192	191	191	191		191	191	95144	2139
010732006	03/01/90	12/29/04					87045										718
010735002	03/01/90	12/29/04					89569										711
010735003	01/01/00	12/29/04					29233										594
010736002	01/05/90	12/29/04					90095									902	
010736003	01/01/99	04/30/03														23682	
010736004	10/01/96	12/31/04	70571													42637	
010790002	06/01/92	10/31/04					73945										
010910003	01/05/90	12/29/04														817	
010970002	01/05/90	12/29/04														652	664
010970003	03/01/90	12/31/04					85256		173	173	173	173		173	173	33244	286
010970015	01/05/90	12/09/01														663	
010970016	01/05/90	12/29/04														849	
010970028	02/02/90	12/31/99					60685	80915									
010970030	07/20/96	12/29/04														479	
010970031	10/24/96	03/15/02														262	
010971002	03/31/91	09/24/95														262	
010972005	01/03/99	12/31/04					31546	36937								339	654
010973101	08/01/02	08/31/03	9358														
011010007	01/05/90	12/29/04														729	687
011011001	01/05/90	10/16/93					11068									211	
011011002	06/02/93	12/29/04	20581	13581	2265		68446	26262	169	171	171	171		171	171	46596	
011090003	01/05/90	12/29/04														854	
011130001	01/05/90	12/29/04														822	635
011130002	03/01/03	10/31/04					11010										
011170003	01/05/90	05/20/02														673	
011170004	03/01/90	10/31/04		46987	8209		88132										
011170006	04/09/99	12/29/04															652
011190002	10/16/91	12/29/04					74097										664
011210002	01/05/90	12/29/04														822	651
011210003	03/01/04	10/31/04					5539										
011211002	01/05/90	12/29/04														828	
011250003	01/05/90	02/21/01														628	228

Table A-9.
AQS Summary of Locations, Parameters, and Number of Data Points
(continued).

LOCATION ABBR	START DATE	END DATE	GASEOUS		NOX	NOY	O3	SO2	SPECIATED PM					TOTAL PM			
			CO	NO2					CLF	ECF_TOT	NH4F	NO3F	NO3F_Non	NO3F_Vol	Ocf_TOT	SO4F	PM10
011250004	11/28/02	12/29/04															230
011250010	03/16/01	10/31/04					21448										
011270002	01/05/90	12/29/04														582	402
011270003	03/01/02	10/31/02					5575										
050010001	01/05/90	09/09/00														466	106
050030003	01/05/90	08/13/00														483	91
050030004	08/16/00	09/28/01															111
050030005	10/01/01	12/30/04								135	141	139	139		141	139	374
050510003	02/05/03	12/29/04															204
050690005	01/05/90	09/25/01														451	138
050690006	09/28/01	12/29/03															262
050910001	01/05/90	12/24/97														479	
050910004	07/05/99	07/17/03															318
050910096	04/01/98	03/31/99						8673									
050910097	04/01/98	03/31/99						8433									
050910098	04/01/98	03/31/99						8501									
050910099	04/01/98	03/31/99						8629									
051030001	01/05/90	12/30/97														472	
051130003	10/20/04	12/31/04					1671										
051390004	01/05/90	06/12/01														456	158
051390005	06/15/01	03/31/03															135
051390006	01/01/90	12/31/04						121430									243
120010023	03/26/93	12/31/04														22605	699
120010024	09/12/99	12/29/04															622
120010025	03/11/03	12/31/04					14923										
120011003	04/19/93	03/31/00														411	
120013011	09/01/97	12/31/04					62827										
120030002	01/01/96	12/31/04					76598										
120050006	07/13/00	12/31/04					38441										
120051004	08/04/92	12/31/04														13421	433
120090002	01/25/92	12/30/97														357	
120090004	01/25/92	12/31/04														33430	
120090007	03/28/00	12/31/04					40241										558
120091002	01/25/92	03/27/94														133	
120093001	01/25/92	06/05/00														498	
120094001	01/01/90	12/31/04															
120095001	01/01/90	02/29/00					127574										
120110003	01/01/90	02/29/00					86821										
120110008	01/01/90	02/04/98		62581			70030										
120110008	01/01/90	01/25/91	9332														
120110009	03/01/91	06/11/99	71378														
120110010	05/01/92	12/31/04	107709					106353								407	
120110011	03/05/97	12/29/04														586	
120110031	02/26/98	12/31/04		56151			58746									446	
120111002	01/13/92	12/31/04														745	2061
120111003	01/01/90	07/13/92	20345													86	
120111004	01/11/90	07/13/94														265	
120111102	01/01/92	06/20/96														257	
120111201	01/01/90	12/31/04	128004														
120112003	01/01/90	12/31/04					128574										
120112004	01/01/90	12/31/04	127232													12005	1909
120113002	01/01/90	12/31/04	126776													11270	646
120114002	01/01/92	12/05/95														227	
120115001	01/01/90	09/30/04	125991													20	
120115002	11/02/91	05/26/02														626	
120115005	04/03/96	12/29/04														438	
120116002	07/17/91	03/02/01														523	
120117002	01/01/92	03/31/00														458	
120118002	01/01/90	12/31/04		121102			128272										
120170005	02/05/99	12/29/04															658
120210003	01/03/95	08/16/00														328	

Table A-9.
AQS Summary of Locations, Parameters, and Number of Data Points
(continued).

LOCATION ABBR	START DATE	END DATE	GASEOUS		NOX	NOY	O3	SO2	SPECIATED PM						TOTAL PM		
			CO	NO2					CLF	ECF_TOT	NH4F	NO3F	NO3F_Non	NO3F_Vol	Ocf_TOT	SO4F	PM10
120210004	09/01/01	12/31/04					28334										
120230002	11/01/00	12/31/04					36006										
120310004	01/05/90	11/17/96														416	
120310032	01/01/90	12/31/04		116993			123928									889	
120310053	01/05/90	12/29/04															
120310070	01/01/90	06/30/99					77232										
120310077	01/01/90	12/31/04					124614										
120310079	01/01/90	03/19/90					1689										
120310080	01/01/90	12/31/04	125669				122898										
120310081	01/01/90	12/31/04					122434										
120310082	01/01/90	10/23/96	57769														
120310083	01/01/90	12/31/04	123702														
120310084	01/01/90	12/31/04	125861													902	
120310089	04/06/99	12/29/04														338	
120310095	01/09/90	03/31/98	69312														
120310097	10/01/91	12/31/04					108669										
120310098	06/30/99	12/31/04															1802
120310099	06/30/99	12/31/04															1663
120310100	09/01/02	12/31/04					19200										
120311003	04/01/00	05/16/02					16703										
120330003	01/01/93	08/31/04														683	
120330004	01/01/90	12/31/04		48887			129774	129843	159	160	160	160		160	160	707	694
120330016	07/05/92	03/27/94														90	
120330018	01/01/90	12/31/04					128224										
120330021	08/04/92	03/27/94														78	
120330022	09/20/91	12/31/04						112164									
120330024	08/27/97	12/31/04					62941										
120330025	01/01/04	12/31/04															294
120330026	01/01/04	12/31/04															343
120451003	07/05/92	09/27/99														400	
120470015	01/01/92	12/31/04					112094									25710	
120550003	06/14/01	12/31/04					29645										
120570021	01/01/90	12/28/99					85595										
120570030	05/03/95	12/31/04														465	2008
120570053	01/01/90	12/31/04					129528										
120570063	01/01/90	03/29/00	89081														
120570066	04/11/90	12/29/04														871	
120570081	01/01/90	12/31/04		73893			128251	110952									
120570083	04/15/95	12/31/04														18684	
120570085	04/09/95	12/29/04														569	
120570095	01/01/90	12/31/04					129510									20723	
120570108	01/01/92	06/20/96					38183										
120570109	07/01/96	12/31/04					73334										
120570110	07/01/01	12/31/04					30121										
120571002	04/11/90	12/29/04														884	
120571035	01/01/90	12/31/04	86689				130143	130070								69596	
120571045	01/01/90	12/31/97	68893														
120571055	01/01/90	04/02/90					2136										
120571060	01/01/90	02/04/93	26659													186	
120571065	04/01/90	12/31/04		122737			127071	9310									
120571068	11/05/95	03/10/03														438	
120571069	05/13/93	12/29/04														692	
120571070	02/09/93	12/31/04	101071													34122	
120571075	01/20/99	12/31/03							437	436	439	439	50	50	436	439	1699
120572002	04/21/95	12/29/04														567	
120573002	01/01/04	12/31/04					8650		116	115	116	116		115	116		339
120574004	04/01/98	12/31/04	54664				58498	54809									
120590004	09/01/96	12/31/04					71663										
120690001	01/01/97	09/08/03														55899	
120690002	10/01/00	12/31/04					36237										

Table A-9.
AQS Summary of Locations, Parameters, and Number of Data Points
(continued).

LOCATION ABBR	START DATE	END DATE	GASEOUS					SPECIATED PM					TOTAL PM					
			CO	NO2	NOX	NOY	O3	SO2	CLf	ECf_TOT	NH4f	NO3f	NO3f_Non	NO3f_Vol	OCf_TOT	SO4f	PM10	PM2.5
120710005	10/29/94	12/31/04															31239	691
120712001	01/01/90	05/10/01						96545										
120712002	05/11/01	12/31/04						31650										
120713001	01/01/90	10/31/95						47564										
120713002	10/31/95	12/31/04						79286										
120730003	04/01/95	03/18/97						13219										
120730012	06/13/98	12/31/04						56470	174	175	175	175		175	175		679	
120730013	09/15/00	12/31/04						36644										
120731004	12/07/91	07/26/92						5499										
120731005	08/01/96	07/31/03															56751	
120810004	04/01/93	11/06/97															277	
120810008	04/11/98	12/29/04															386	
120810014	04/01/93	12/31/98															338	
120813002	04/02/92	12/31/04						108540	52930									
120814010	05/01/90	02/16/99						75518										
120814012	01/01/99	12/31/04		44962				46552										622
120814013	01/01/99	12/31/04						51034										
120830003	05/27/98	12/31/04						56721										675
120830004	11/09/00	12/31/04						34796										
120851004	07/02/96	02/04/98															97	
120860019	06/15/90	12/31/04							117424									
120860020	03/18/90	06/26/03															765	
120860021	01/01/90	05/16/03						111272										
120860027	01/01/90	12/31/04		118284				122644										
120860029	01/01/90	12/31/04						125644										
120860030	01/01/90	12/31/04						107518										
120860031	07/02/91	12/31/04	97959															
120861016	01/05/90	12/31/04							364	363	362	362		363	362		879	1875
120861018	01/01/90	11/09/90	6380															
120861019	01/01/90	12/31/04	126801															
120863001	01/05/90	02/14/03															726	
120864002	01/01/90	12/31/04	128063	121486														
120866001	01/01/92	12/31/04															638	1550
120871002	04/11/98	10/10/01															189	
120872002	12/06/97	09/27/00															134	
120890005	01/01/90	12/31/04							128125								38924	
120890009	01/01/90	01/14/98						69556									295	
120911001	08/04/92	03/27/94															81	
120950003	01/01/92	06/26/96															269	
120950004	01/01/92	12/29/04															777	
120950007	01/05/90	12/17/03															854	
120950008	01/01/90	12/31/04						126357										
120951003	01/06/90	05/29/98															496	
120951004	06/10/90	12/31/04															877	2052
120951005	01/01/90	12/31/04	127692															
120951006	01/01/92	06/26/96															271	
120952002	01/01/90	12/31/04	127536	123578				128261	128239								814	2069
120972002	09/01/93	12/31/04						96490										
120990006	01/01/92	08/29/93															95	
120990007	01/01/90	08/25/99						79380										
120990008	05/27/95	12/31/04															544	827
120990009	11/15/99	12/31/04						40480										1599
120990020	08/11/04	12/31/04						2921										
120991002	01/07/92	08/29/93															97	
120991004	01/01/90	12/31/04	124252	113846													360	
120991005	07/16/93	06/12/97	31642															
120991006	11/25/97	10/26/00	24952															
120991007	01/05/90	05/15/95															307	
120991008	02/12/03	12/31/04	16406															
120991201	02/16/90	03/30/98															464	

Table A-9.
AQS Summary of Locations, Parameters, and Number of Data Points
(continued).

LOCATION ABBR	START DATE	END DATE	GASEOUS		NOX	NOY	O3	SO2	SPECIATED PM					TOTAL PM				
			CO	NO2					CLF	ECF_TOT	NH4F	NO3F	NO3F_Non	NO3F_Vol	OcF_TOT	SO4F	PM10	PM2.5
120992003	01/05/90	06/04/01														650	806	
120992004	01/02/90	07/31/04					117630											
120992005	07/01/01	12/31/04														204	1151	
120993004	01/01/90	08/25/04						121134										
120994003	03/13/92	08/29/93														92		
121010005	09/07/00	12/31/04					36775											
121012001	01/17/92	12/31/04					111493											
121030004	01/01/90	12/31/04					128099											
121030012	10/15/92	12/29/04														678		
121030018	01/01/90	12/31/04	128530	122733			127772									691	2088	
121030023	01/01/90	12/31/04						126905										
121030024	01/01/90	12/31/04	129051															
121031002	01/01/90	11/04/98	74436															
121031008	01/27/99	07/22/02															400	
121031009	09/12/03	12/29/04															144	
121032006	12/10/92	12/31/04	104463															
121032008	04/14/93	12/31/04	100655															
121033002	01/01/90	12/31/04						127563										
121033004	01/05/90	12/29/04														907		
121035002	01/01/90	12/31/04					128684	129104								748		
121035003	10/23/98	12/31/04						52799										
121037001	01/01/90	10/14/96						58370										
121050010	01/01/90	12/31/04						127462								35250		
121052006	02/13/91	12/31/04						104012								55773		
121055001	01/15/95	05/03/96														76		
121056004	01/01/90	01/11/91						8935										
121056005	06/18/92	12/31/04					107913											
121056006	06/17/92	12/31/04					107781										637	
121056007	01/21/95	05/03/96														75		
121071001	05/01/93	03/27/94														54		
121071008	01/01/90	12/31/04						128789								20722		
121091003	09/01/92	01/20/98																
121110012	01/04/97	12/28/02					45891									358		
121111002	07/01/95	12/31/04		45867			79172									9530	671	
121130014	07/01/00	09/01/04					36326										277	
121150013	02/04/90	12/29/04														880	683	
121150014	07/01/96	05/06/01	41079															
121151002	01/01/90	03/31/99	40013				78429	74244										
121151003	01/23/90	12/29/04														865		
121151004	01/01/90	12/31/04	120240													46076		
121151005	01/01/90	12/31/04					128374	61172										
121151006	10/01/99	12/31/04		31454			43468	43702								18271		
121152001	01/05/90	12/29/04														814		
121152002	09/01/03	12/31/04																
121170003	02/06/92	03/31/99					11499									426		
121171002	01/01/90	12/31/04					126225									32343	700	
121172001	02/06/92	12/18/97														344		
121272001	01/01/92	12/31/04					111946											
121273001	04/06/92	06/30/93														76		
121274001	04/06/92	12/30/97														350		
121275002	01/01/92	12/31/04					111779									53930	686	
121275003	01/02/94	03/31/00														376		
121290001	04/16/01	12/31/04					31730											
130090001	01/10/92	12/31/03						40912										
130150002	01/01/90	12/31/04						116433										
130210001	01/10/91	12/31/94						16346										
130210007	09/18/96	12/29/04								145	143	146	146		143	146	438	625
130210012	05/07/97	12/29/04					43018	29905										648
130510013	01/01/93	12/28/93						8454										
130510014	01/04/97	12/29/04															432	

Table A-9.
AQS Summary of Locations, Parameters, and Number of Data Points
(continued).

LOCATION ABBR	START DATE	END DATE	GASEOUS		NOX	NOY	O3	SO2	SPECIATED PM					TOTAL PM				
			CO	NO2					CLF	ECF_TOT	NH4F	NO3F	NO3F_Non	NO3F_Vol	Ocf_TOT	SO4F	PM10	PM2.5
130510017	01/21/99	12/29/04							161	119	161	161			119	161		643
130510019	01/01/90	08/31/02						100154										
130510021	04/01/95	12/31/04					53335	78277										
130510091	01/21/99	12/29/04																630
130511002	01/05/90	12/31/04						21609									62348	
130550001	08/27/90	12/29/04					5738										680	
130570001	08/01/99	10/31/02					19092											
130590001	01/30/99	12/29/04							144	159	157	157			159	157		612
130590002	05/16/02	10/31/04					14676											
130630091	01/09/99	12/29/04																645
130670003	02/07/99	12/29/04					30504											651
130670004	02/05/03	12/29/04																225
130690002	03/03/02	12/29/04							146	117	155	155			117	155		
130770002	05/18/99	10/31/04					31874											
130850001	03/01/90	10/31/04					87441											
130890002	01/01/90	12/31/04	13387	116484	78986	42068	85447		434	434	430	430		434	430		1866	
130891002	01/01/90	06/30/03	107383															
130892001	01/05/90	12/31/04															846	1889
130893001	03/27/95	12/31/04		73719	73715	49834	52288											
130950006	01/10/92	12/31/01						32897										
130950007	11/05/96	12/29/04															427	639
130970002	03/01/90	11/30/95					37844											
130970003	02/26/95	12/29/04															568	
130970004	08/15/97	10/31/04					40776											
131050001	09/17/94	12/29/96															106	
131130001	04/01/98	10/31/04					38946											
131150003	01/01/90	12/31/04						126981										
131150005	01/04/97	12/29/04							157	147	158	158		147	158	428	624	
131210001	05/01/93	12/29/04															673	
131210032	08/07/96	12/31/04														415	1867	
131210039	01/05/90	12/29/04														866	663	
131210048	01/01/90	12/31/04		119514	56063			122451								54211		
131210052	01/01/90	04/19/91	8972															
131210053	01/01/90	06/30/91					9258	12723										
131210054	01/01/90	12/16/92	23137															
131210055	10/04/91	12/31/04					76135	110634										
131210099	08/04/94	12/31/04	89435															
131211001	01/01/99	12/09/01																304
131270004	09/06/96	12/29/04														444	35	
131270006	01/10/90	12/29/04					52476	47522									542	
131350002	03/17/95	12/29/04					52063										270	
131390003	02/14/99	12/29/04															648	
131510002	06/07/99	10/31/04					32237											
131530001	07/05/00	12/29/04															240	
131850003	01/01/00	12/29/04															255	
131910002	03/01/92	11/30/92					6324											
132150001	03/04/99	12/29/04															663	
132150008	01/10/90	12/29/04					78227	38079									82	
132150011	08/07/95	12/29/04							144	137	140	140		137	140	523	678	
132151003	03/01/90	10/31/04					85103											
132230002	03/05/90	11/30/95					37666											
132230003	01/25/96	12/31/04	21203	69750	67091		48994										661	
132450003	01/01/91	07/24/04						44568										
132450005	01/21/99	12/29/04															602	
132450091	03/01/90	12/29/04					87630		152	136	151	151		136	151	432	613	
132470001	03/01/90	12/31/04		89340	85509	5039	88210											
132550002	07/28/90	12/29/04															798	
132611001	03/01/91	10/31/04					74861											
133030001	04/06/91	12/29/04														775	327	
133190001	04/12/99	12/29/04															629	

Table A-9.
AQS Summary of Locations, Parameters, and Number of Data Points
(continued).

LOCATION ABBR	START DATE	END DATE	GASEOUS			NOY	O3	SO2	SPECIATED PM						TOTAL PM			
			CO	NO2	NOX				CLF	ECF_TOT	NH4F	NO3F	NO3F_Non	NO3F_Vol	Ocf_TOT	SO4F	PM10	PM2.5
220050004	01/01/93	12/31/04					100242											
220110002	01/01/90	12/31/04		58179	57439		127275											
220150008	01/01/90	12/31/04		12354	12354		125916	125576	115	109	115	115	115	115	109	115	470	
220170001	01/01/90	12/31/04					127948											
220171001	01/05/90	01/31/93															180	
220171002	02/06/93	12/29/04															634	728
220190002	01/01/90	12/31/04					125484											
220190006	02/01/91	09/29/92					13801											
220190007	02/01/91	12/31/97		42475	42325		51948											
220190008	10/01/92	12/31/04					104236	104146										
220190009	10/01/92	12/31/04		101029	101015		103818											622
220190010	02/21/97	12/29/04															53	695
220191002	01/05/90	02/15/97															403	
220191003	01/01/90	09/30/92					22555	22930										
220290002	01/03/99	12/27/01																152
220290003	09/16/01	12/29/04																186
220330002	01/05/90	12/23/03															745	538
220330003	01/01/90	12/31/04	33049	98564	98737		125990											
220330006	01/08/90	07/31/92	21718	21027	21006		21556	21707										
220330007	01/31/90	12/31/91		15987	15968													
220330008	01/01/92	05/26/95		27847	27565		28258											
220330009	08/03/92	12/31/04	103545	102805	103329		104229	103961	302	310	302	302	302	306	310	302		2138
220330013	06/01/95	12/31/04		79101	79483		80106											
220331001	01/01/90	12/31/04		98582	98933		126072											343
220430001	01/01/90	12/31/04					107009											
220470002	01/02/90	12/31/99		56622	57020		82946											
220470005	01/11/90	12/26/04															457	542
220470006	01/01/92	12/10/92		7691	7465		7492											
220470007	01/01/92	12/31/04		105198	105522		105909											
220470009	07/01/93	12/31/04		94447	94996		96399											568
220470012	01/01/00	12/31/04		39505	39608		41749											
220490001	07/06/93	05/27/95																114
220510003	01/05/90	06/19/94																267
220511001	01/01/90	12/31/04		124523	123069		126801											2068
220512001	01/06/99	12/29/04																356
220550003	01/01/90	06/05/92					20002											
220550004	06/11/92	12/31/93					13266											
220550005	01/01/94	12/31/04					93206										238	711
220550006	01/01/00	12/29/04																541
220570002	01/01/90	09/30/99					80875											
220570004	01/03/00	12/31/04					41772											
220630002	01/01/92	12/31/04		104180	104545		103634											
220710010	01/05/90	12/29/04															812	696
220710012	01/01/90	12/31/04	124589	122347	122610		125010										535	1746
220710017	01/01/90	12/31/04	127585															
220730002	01/05/90	09/25/96		15228	15183		39695	39667									390	
220730004	01/01/97	12/31/04					66949	66215									46	714
220770001	01/01/90	12/31/04		57180	57650		125365											
220790001	01/05/90	04/06/03															455	440
220790002	06/08/03	12/29/04																151
220870002	01/01/90	12/31/04					126936	125936										
220870004	01/01/90	12/23/04					58590											571
220890003	03/01/91	12/31/04					116783											
220890004	09/10/93	12/30/97															272	
220890005	09/10/93	12/29/04															619	
220930002	01/01/90	12/30/04		56475	56732		125388											
220950002	01/01/90	12/31/04					127439											
221010003	01/01/90	12/31/04		22850	22722		124764											
221050001	01/06/99	12/29/04																647
221090001	01/13/00	12/29/04																584

Table A-9.
AQS Summary of Locations, Parameters, and Number of Data Points
(continued).

LOCATION ABBR	START DATE	END DATE	GASEOUS					SPECIATED PM						TOTAL PM				
			CO	NO2	NOX	NOY	O3	SO2	CLF	ECF_TOT	NH4F	NO3F	NO3F_Non	NO3F_Vol	Ocf_TOT	SO4F	PM10	PM2.5
221210001	01/01/90	12/31/04		123398	123647		126642	126220									804	2018
280010004	03/01/91	12/29/04					77657											642
280010734	03/01/90	11/30/90					6243											
280110001	05/18/99	12/26/04					31279											644
280190001	10/12/96	10/31/97	8081	8521	8521		8910	9000									61	
280270001	04/06/91	03/31/99															447	
280350004	03/07/99	12/29/04							165	165	165	165		165	165			686
280370001	03/01/93	11/30/95					18635											
280430001	03/03/02	11/23/04							153	153	152	152		153	152			
280450001	03/01/91	12/31/04		53874	53873		78283											681
280450002	05/03/01	10/31/04					20477											
280450719	03/01/90	11/30/90					6113											
280470007	01/01/90	12/31/04						122272										
280470008	04/01/99	12/29/04					30811		353	353	352	352		353	352			665
280470009	08/03/01	10/31/04					18598											
280490003	01/05/90	12/26/91																118
280490007	06/11/91	03/31/99																458
280490010	03/01/90	12/29/04	49708				86963											645
280490016	01/01/90	03/26/91	10066															
280490017	01/01/91	12/31/91	6190					8285										
280490018	02/01/92	12/31/04	106614					106590	172	172	171	171		172	171	67498	640	
280590005	01/03/90	05/31/92					14194	19458										
280590006	08/14/92	12/31/04		5992	5990		68843	97992										658
280590007	05/10/01	10/30/04					19653											
280670002	04/06/91	12/29/04							156	158	159	159		158	159	473	677	
280730002	03/01/91	06/21/93					15077											
280730720	03/01/90	11/30/90					6231											
280750002	03/01/91	11/30/96					36815											
280750003	04/16/97	12/29/04					41135											646
280750733	03/01/90	11/30/90					6240											
280810003	03/05/91	10/31/97					41303											
280810004	01/01/97	12/31/97		8363	2063		8676	8732										55
280810005	01/05/98	12/29/04					37588											397
280810738	03/01/90	11/30/90					6141											681
280870001	03/07/99	12/26/04																653
280890002	03/01/90	10/15/04					84218											
281070001	04/02/98	03/26/99		6812	6854		8318	8157										54
281090001	04/06/00	12/29/04																
281210001	03/07/99	12/29/04																545
281230001	08/22/99	12/29/04																656
281250001	03/01/93	10/31/97					29802											590
281490004	03/01/91	12/29/04					75723											454
281490721	03/01/90	11/27/90					6174											640
281510003	04/06/91	03/13/99																388
400190292	01/05/90	07/21/97																385
400190294	04/24/99	11/02/99																20
400190295	12/20/99	12/29/04																579
400190296	05/03/01	11/30/02					11345											
400190297	04/09/03	11/30/04					11398											
400330680	04/01/03	11/05/04					11616											
400670670	05/05/99	11/30/00					10512											
400670671	05/03/01	11/30/02					11240											
400690323	04/17/03	11/16/04					11589											
400850300	03/01/99	11/30/00					12409											
400950311	03/12/99	11/30/00					11998											
400950312	06/07/01	11/30/02					10358											
450010001	04/03/91	11/03/04					83615											
450030003	01/01/90	12/31/04		91103			89399	70752										811
450030004	09/01/00	11/01/02					18632											74
450110001	01/01/90	12/31/04		102290			109825	123342										850

Table A-9.
AQS Summary of Locations, Parameters, and Number of Data Points
(continued).

LOCATION ABBR	START DATE	END DATE	GASEOUS		NOX	NOY	O3	SO2	SPECIATED PM					TOTAL PM			
			CO	NO2					CLF	ECF_TOT	NH4F	NO3F	NO3F_Non	NO3F_Vol	Ocf_TOT	SO4F	PM10
450130007	04/03/99	12/29/04															636
450130090	06/11/90	11/30/93					10119										
450150002	01/01/90	12/31/04					116131										
450150005	07/19/02	07/26/04															230
450150042	01/10/90	11/02/04					105931										
450190003	01/05/90	12/31/04		112157				118328									95935
450190005	01/01/90	12/31/04	124962														
450190019	01/05/90	10/19/97															436
450190046	09/15/90	12/31/04	15462	98230		12246	115632	116581									733
450190047	01/05/90	12/29/04															838
450190048	04/15/99	12/31/04															1987
450190049	01/01/99	12/31/04															1986
450290002	03/08/90	11/09/04					93188										79
450310002	04/09/90	11/01/90					4690										
450310003	03/25/93	12/31/04					95547										
450370001	01/01/90	12/31/04					127042										647
450398001	06/05/91	01/01/01															520
450398002	06/05/91	01/01/01															539
450410002	02/23/99	12/29/04															656
450470003	01/09/99	12/29/04															679
450630004	01/05/90	12/30/97															433
450630005	01/05/90	04/27/04															18191
450630008	01/01/90	12/31/04						122363									679
450630009	11/01/91	12/31/04															100936
450750002	01/26/02	05/03/04															229
450750003	09/19/02	11/09/04		17328			5646	17801									
450790007	01/01/90	12/31/04		108048			113958	109915									778
450790013	01/01/90	01/04/99	72627														
450790014	01/23/90	01/25/00															557
450790018	11/04/91	12/31/04															99769
450790019	01/03/99	12/31/04								181	181	182	182		181	182	336
450790020	01/08/99	12/31/04	51018														
450790021	01/19/00	12/31/04		41388			41149	41171									
450791001	01/01/90	12/31/04					35782										
450791002	01/01/90	11/01/01					98343										
450791003	01/01/90	12/31/04						124503									23104
450791006	01/01/90	03/28/01		58158			66512	77412									
450890001	04/29/91	11/04/04					77833										
480270001	10/02/90	12/29/96															365
480290032	01/01/90	12/31/04					120623										
480290034	01/05/90	10/06/99															572
480290036	01/01/90	08/11/98	53652	15838	16742		68153										414
480290042	01/05/90	12/29/96															392
480290046	01/01/90	12/31/04	109225	61278	61883												
480290052	08/13/98	12/31/04		49063	49318		53868										895
480290053	10/06/99	12/31/04															16059
480290059	05/14/98	12/31/04		52154	52364		55299										
480290060	05/18/00	12/29/04															265
480370004	02/17/99	12/26/04															825
480370099	04/01/98	03/31/99						8649									624
480391003	01/05/90	06/11/03					103489										313
480391004	09/01/01	12/31/04		27769	27768		28241										
480391016	06/11/03	12/31/04		11010	11081		12618										
480550062	03/31/99	03/17/03															403
480610004	01/05/90	12/29/96															401
480610006	09/01/93	12/31/04	92066				89276	54489									38568
480612002	01/11/90	12/29/04															860
480670099	04/01/98	03/31/99						8429									572
480850005	05/07/92	12/31/04					103522										387
480850007	01/14/94	06/29/99															324

Table A-9.
 AQS Summary of Locations, Parameters, and Number of Data Points
 (continued).

LOCATION ABBR	START DATE	END DATE	GASEOUS						SPECIATED PM						TOTAL PM			
			CO	NO2	NOX	NOY	O3	SO2	CLF	ECF_TOI	NH4F	NO3F	NO3F_Non	NO3F_Vol	Ocf_TOI	SO4F	PM10	PM2.5
480850010	11/09/99	09/28/04					41123											
480910003	02/17/91	03/19/92																66
480910004	02/17/91	03/19/92																63
481130018	01/01/90	02/20/03																896
481130020	01/05/90	07/02/02																751
481130035	01/05/90	12/29/04																1007
481130045	01/01/90	11/02/98	1743	69451	69822		71023	1734										872
481130050	01/05/90	12/29/04								277	263	277		277		263	277	837
481130053	01/01/90	10/31/98	73232															1209
481130055	01/01/90	07/13/94		33581	33582		36381											
481130057	01/05/90	12/29/04																854
481130069	01/01/90	12/31/04	117787	112228	112029		118138	117512	455	453	455	453	455	455	453	455		1883
481130070	01/01/92	10/18/96																276
481130072	08/07/92	06/29/99																411
481130075	11/12/98	12/31/04		48879	49158		51928											
481130087	04/01/95	12/31/04		77880	77949		82078											612
481133003	11/17/00	12/31/04					35161											
481133004	08/10/02	12/31/04																38
481210002	05/01/92	10/31/92					4081											824
481210033	06/16/93	11/24/97		9633	9463		35415											
481210034	03/22/98	12/31/04		54693	54014		56849											
481210054	01/01/90	12/15/99					81223											
481390004	01/18/91	01/28/93																118
481390005	01/04/92	06/02/92																24
481390006	03/10/92	04/10/93																66
481390007	03/22/92	12/29/96																276
481390008	03/22/92	04/10/93																65
481390011	08/31/92	10/19/93																68
481390012	01/16/96	12/31/98																181
481390013	01/18/91	10/14/94																148
481390014	11/06/93	01/15/95																66
481390015	11/07/94	12/31/04		36052	36116		62967	78157	157	157	157		157		157	157	569	157
481390016	11/07/94	10/20/04		13515	13567			77420										566
481390017	01/01/00	12/31/04		1652	1652			1668										256
481390082	03/01/91	10/31/91					5442											
481390084	01/04/92	10/20/94																168
481570004	01/01/90	12/27/90					7279											
481670004	01/05/90	12/29/04																772
481670005	02/19/04	12/31/04						7439										
481670014	10/22/96	12/31/04		65198	65665		68223		568	562	571	120	452		562	571	297	564
481670053	01/05/90	02/14/03																641
481671002	01/01/90	06/30/04					116158	114471										371
481671005	10/15/99	02/11/03																334
481830001	01/01/90	12/31/04		46440	46417		117568	47490										368
481990002	01/01/90	12/17/93					28307											588
482010004	01/01/90	12/31/96						52846										
482010007	06/01/94	06/26/95																65
482010024	01/01/90	12/31/04	119383	111539	110423		116673		543	557	550	122	428		557	550	810	614
482010026	10/26/99	12/31/04		28199	28267		29623		502	506	500	116	384		506	500		681
482010029	01/01/90	12/31/04		60898	61298		118040											344
482010045	01/05/90	09/26/98																479
482010046	01/01/90	12/31/04																
482010047	01/01/90	12/31/04	121003	111143	110361		120453	120168										363
482010051	01/01/90	12/31/04					120689											363
482010054	02/04/90	10/24/96					119385	119627										386
482010055	03/29/98	12/31/04		53970	54057		57045		566	570	572	126	446		570	572		562
482010058	08/16/99	12/26/04																573
482010059	01/03/90	01/13/98					58729	58136										
482010062	01/01/90	12/31/04					120684	121312										847
482010066	07/01/94	12/31/04					81282											367
																		405

Table A-9.
AQS Summary of Locations, Parameters, and Number of Data Points
(continued).

LOCATION ABBR	START DATE	END DATE	GASEOUS			NOY	O3	SO2	SPECIATED PM						TOTAL PM			
			CO	NO2	NOX				CLF	ECF_TOT	NH4F	NO3F	NO3F_Non	NO3F_Vol	Ocf_TOT	SO4F	PM10	PM2.5
482010070	05/04/00	12/31/04					39840	39042										
482010071	07/17/00	12/23/04																224
482010075	04/01/01	12/31/04	30803	30727	30854		31584										112	229
482011003	01/01/90	10/21/96					47129	49650										
482011015	04/25/03	12/31/04		13821	13821		14420											
482011034	01/01/90	12/31/04	35870	99749	100517		102998	36065	182	185	182		182		185	182	231	181
482011035	01/01/90	12/31/04	119610	111280	110790		120591	122304									1525	1757
482011037	01/01/90	03/27/01	90498	80493	79948		90366	27159									648	167
482011039	01/01/97	12/31/04	65786	61323	61483		66721		437	421	426	425	404	410	421	426	325	110
482011041	08/01/02	04/15/03		5641	5641		6083											
482011050	08/01/01	12/31/04		28451	28451		29563	28240										
482015002	03/07/91	04/22/97																309
482030002	06/30/01	12/31/04		27966	27966		28633		451	452	451		451		452	451	47	451
482090614	04/01/03	10/31/04		9172	9172		9340											
482150042	11/01/96	12/31/04					66580											562
482150043	01/04/96	12/31/04					67498										23866	573
482210001	05/10/00	12/31/04					39720											
482311006	03/21/03	12/31/04		15070	15070		15057											
482450009	01/01/90	12/31/04	56030	116122	116830		123858	122561									383	
482450011	01/01/90	12/31/04					122710	123156										
482450018	01/01/00	12/31/04					42471											
482450020	11/21/97	12/31/04						59912										
482450021	03/11/00	12/31/04																1588
482450022	02/18/00	12/31/04		40302	40355		41745		566	575	572	113	459		575	572		588
482450101	01/03/00	12/31/04					42566											
482450628	11/01/04	12/31/04					1377											
482510002	02/20/90	10/31/90					5348											
482510003	05/10/00	12/31/04					39950											
482570001	03/01/91	10/31/91					5499											
482570005	09/23/00	12/31/04		35250	35323		36348	36089	150	155	150		150		155	150		149
482730314	01/15/03	12/29/04							115	114	115		115		114	115		115
483091002	01/13/00	03/31/03																370
483150050	05/01/98	06/18/01		23373	23371		23849											234
483390078	10/25/01	12/31/04		25403	25458		26915		354	361	356		356		361	356		356
483390089	10/05/99	09/25/01		16216	16216		16595		139	136	136	113	23		136	136		47
483550012	01/05/90	12/29/96																395
483550020	01/03/90	09/29/02																827
483550025	01/01/90	12/31/04					123474	121470										300
483550026	01/01/90	12/31/04					120784	115624										
483550031	04/24/95	06/24/96					8964											
483550032	10/03/97	12/31/04					60617											581
483550034	01/31/01	12/29/04							239	240	237	20	217		240	237	134	238
483611001	01/01/90	12/31/04		114710	115532		120871											531
483611100	01/01/00	12/31/04					42117		496	504	496	18	478		504	496		496
483670081	08/03/00	12/31/04					37744											
483970001	08/08/00	12/31/04					37976											
484230003	04/05/90	07/26/96																360
484230004	08/01/94	05/17/00		7646	7645		46469											
484230006	08/19/96	12/29/96																18
484230007	05/26/00	12/31/04		38832	38831		39600											
484390023	01/05/90	12/29/96																404
484390029	01/05/90	03/07/00																559
484390057	02/19/98	07/10/01	19069	27837	27780		28691											
484390060	01/05/90	12/27/01																684
484390063	01/30/99	12/27/01																275
484390075	06/06/00	12/31/04					39139											
484391002	01/01/90	12/31/04	123222	119495	119191		122961	54472										1873
484391003	01/01/90	03/31/01	51725	7640	7577													491
484391006	04/01/01	12/31/04																1321
484392003	01/03/90	12/31/04					122555											

Table A-9.
AQS Summary of Locations, Parameters, and Number of Data Points
(continued).

LOCATION ABBR	START DATE	END DATE	GASEOUS			NOY	O3	SO2	SPECIATED PM					TOTAL PM			
			CO	NO2	NOX				CLF	ECF_TOI	NH4f	NO3f	NO3f_Non	NO3f_Vol	Ocf_TOI	SO4f	PM10
484393006	01/06/99	12/31/04															1924
484393007	03/13/00	03/28/03															167
484393009	08/23/00	12/31/04		35732	35732		37380										
484393010	01/02/02	12/29/04															179 150
484393011	01/17/02	12/31/04	25539	24939	24939		25398										
484530003	01/03/90	02/28/97					55617										
484530010	01/05/90	12/29/96															404
484530014	01/01/90	12/31/04	72436				124385	9216									
484530016	01/05/90	12/29/96															417
484530017	01/01/90	12/31/96	52689	52448	52568												
484530020	03/13/97	12/31/04		58515	58725		65421										1249
484530021	10/21/99	12/29/04															301 1131
484530613	04/01/03	10/31/04		8815	8837		9400	8646									
484570101	01/01/90	05/31/92					14789	6610									
484690003	01/01/90	12/31/04					110883										
484730001	01/15/90	12/31/90					7663										
484790015	04/05/90	11/17/95															272
484790016	02/15/96	12/31/04	68091				68908										9006 416
484790017	09/22/99	12/31/04	45000														313
484850002	01/05/90	12/29/96															363

Table A-10.

BUOY Summary of Locations, Parameters, and Number of Data Points.

NO.	START DATE	END DATE	METEOROLOGY							MISCELLANEOUS					VIS
			P	PWS	SST	T	TD	WD	WS	APD	DPD	MWD	WVH T	VR	
41008	12/31/89	12/31/04	85718	85700	79236	79341	39528	85403	85750	85311	85310	6848	85311	6848	
41009	12/31/89	12/31/04	127857	123597	125355	126706	13996	123685	123685	126137	126134	20073	126136	20073	
41012	06/25/02	12/31/04	18863	18861	18826	18851	18817	18859	18876	18698	18699		18698		
42001	12/31/89	12/31/04	125214	125153	115687	121460	48347	125160	125262	120592	120500	68294	120592	2704	
42002	12/31/89	12/31/04	120664	116902	120668	120704	88406	117049	117055	118499	118499	74418	118499	5392	
42003	12/31/89	12/31/04	119082	115544	119290	110985	35814	116757	117004	111753	111752	80253	111360	14741	
42007	12/31/89	11/04/04	118750	121527	124560	122100	50464	120818	121918	73042	73042	48815	73042		
42019	05/24/90	12/31/04	106718	104648	100628	108628	48098	104690	104695	103557	103556	53749	103557		
42020	05/24/90	12/31/04	109449	108980	84924	109636	41183	109103	109109	103540	103524	47249	103539		
42035	05/05/93	12/31/04	99203	90367	99009	99217	45138	90432	90432	97118	97096	53407	97106		
42036	12/31/93	12/31/04	92754	92373	92744	92789	52787	92439	92437	83032	82997	81597	83034	16968	
42039	12/12/95	12/31/04	75744	75534	75563	71532	61047	75621	75631	75178	75178	35692	75178		
42040	12/04/95	12/31/04	59660	58405	59653	59664	58734	58448	58444	59472	59472	36075	59472		
42041	12/12/99	12/31/04	32531	32489	32524	32546	21895	32344	32502	31795	31795		31795		

Table A-11.

GMAQS Summary of Locations, Parameters, and Number of Data Points.

LOCATION ABBR	START DATE	END DATE	GASEOUS								METEOROLOGY											
			CH4	CO	NMHC	NO	NO2	NOX	O3	SO2	CLDC	P	RH	RNF	RWD	RWS	SR	SST	T	TD	WD	WS
010270001	04/01/93	10/31/93								4858												
010510001	04/01/93	10/31/93								4427												
010730025	04/01/93	07/08/93		2348																		
010730028	04/01/93	10/31/93		5051																		
010730032	04/01/93	10/31/93		5090																		
010730033	04/01/93	10/31/93		5083																		
010731003	04/01/93	10/31/93		5102						5107												
010731005	04/01/93	10/31/93								5088												
010732006	04/01/93	10/31/93								5072												
010735002	04/01/93	10/31/93								4853												
010736002	04/01/93	10/31/93								5089												
010790002	04/01/93	10/31/93								4740												
010890014	04/01/93	10/31/93		4952			4754	4753	4753	4753												
010970003	04/01/93	10/31/93								4828												
010970028	04/01/93	10/31/93								4163												
011011002	06/02/93	10/31/93								3422												
011170004	04/01/93	10/31/93					3478	3474	3613	4843												
011190002	04/01/93	10/31/93								4756												
120094001	04/01/93	10/31/93								4965												
120095001	04/01/93	10/31/93								5000												
120110003	04/01/93	10/31/93						4950		5115												
120110009	04/01/93	10/31/93		4933																		
120110010	04/01/93	10/31/93		4848																		
120111201	04/01/93	10/31/93		5060																		
120112003	04/01/93	10/31/93								4922												
120112004	04/01/93	10/31/93		5087																		
120113002	04/01/93	10/31/93		5020																		
120115001	04/01/93	10/31/93		5117																		
120118002	04/01/93	10/31/93						5044		5119												
120250021	04/01/93	10/31/93								4856												
120250027	04/01/93	10/31/93						4430		4986												
120250029	04/01/93	10/31/93								5000												
120250030	04/01/93	09/30/93								3739												
120251019	04/01/93	10/31/93		5032																		
120254002	04/01/93	10/31/93		4979				4399														
120310032	04/01/93	10/31/93						4169														
120310070	04/01/93	10/31/93								4969												
120310077	04/01/93	10/31/93								4981												
120310080	04/01/93	10/31/93		5038																		
120310082	04/01/93	10/31/93		4956																		
120310083	04/01/93	10/29/93		4996																		
120310084	04/01/93	10/31/93		5018																		
120310095	04/01/93	10/31/93		5058																		

Table A-11.
GMAQS Summary of Locations, Parameters, and Number of Data Points
(continued).

LOCATION ABBR	START DATE	END DATE	GASEOUS								METEOROLOGY											
			CH4	CO	NMHC	NO	NO2	NOX	O3	SO2	CLDC	P	RH	RNF	RWD	RWS	SR	SST	T	TD	WD	WS
120330004	04/01/93	10/31/93							5083													
120330018	04/01/93	10/31/93							4938													
120570063	04/01/93	10/31/93		5079																		
120570081	04/01/93	10/31/93							5077													
120571035	04/01/93	10/31/93		5101					5099													
120571045	04/01/93	10/31/93		4952																		
120571065	04/01/93	10/31/93						4961	5073													
120571070	04/01/93	10/31/93		3380																		
120712001	04/01/93	10/31/93							4835													
120713001	04/01/93	10/31/93							4816													
120814010	04/01/93	10/31/93							5001													
120950008	04/01/93	10/31/93							5042													
120951005	04/01/93	10/31/93		4846																		
120952002	04/01/93	10/31/93		4741				4302	4994													
120972002	09/01/93	10/31/93							1429													
120990007	04/01/93	10/31/93							4512													
120991004	04/01/93	10/31/93		4740				3770														
120991005	07/16/93	10/31/93		2419																		
120992004	04/01/93	10/31/93							4789													
121012001	04/01/93	09/30/93							4225													
121030004	04/01/93	10/31/93							4996													
121030018	04/01/93	10/31/93		5012				4842	4892													
121030024	04/01/93	10/31/93		5052																		
121031002	04/01/93	10/31/93		5079																		
121032008	04/14/93	10/31/93		4754																		
121035002	04/01/93	10/31/93							4983													
121056005	04/01/93	10/31/93							5084													
121056006	04/01/93	10/31/93							5091													
121091003	04/01/93	10/31/93							5068													
121151002	04/01/93	10/31/93		5101					5094													
121151004	04/01/93	10/31/93		5103																		
121151005	04/01/93	10/31/93							5044													
121171002	04/01/93	10/31/93							5059													
121272001	04/01/93	10/31/93							5071													
121275002	04/01/93	10/31/93							5061													
220050004	04/01/93	10/31/93							4914													
220110002	04/01/93	10/31/93					4890	4903	4892	5003												
220150008	04/01/93	10/31/93					4946	4948	4946	4994												
220170001	04/01/93	10/31/93							4999													
220190002	04/01/93	10/31/93							5054													
220190007	04/01/93	10/31/93					5015	5021	5018	3287												
220190008	04/01/93	10/31/93							4955													
220190009	04/01/93	10/31/93					4943	4944	4943	4430												

Table A-11.
GMAQS Summary of Locations, Parameters, and Number of Data Points
(continued).

LOCATION ABBR	START DATE	END DATE	GASEOUS								METEOROLOGY											
			CH4	CO	NMHC	NO	NO2	NOX	O3	SO2	CLDC	P	RH	RNF	RWD	RWS	SR	SST	T	TD	WD	WS
220330003	04/01/93	10/31/93		4917		4812	4830	4814	4954													
220330008	04/01/93	10/31/93				4854	4856	4854	4932													
220330009	04/01/93	10/31/93		4821		4726	4803	4783	4932													
220331001	04/01/93	10/31/93				4929	4919	4923	4912													
220470002	04/01/93	10/31/93				4804	4804	4804	4920													
220470007	04/01/93	10/31/93				4852	4871	4869	4904													
220511001	04/01/93	10/31/93				4799	4803	4795	4955													
220550004	04/01/93	10/31/93							5017													
220570002	04/01/93	10/31/93							4917													
220630002	04/01/93	10/31/93				4505	4519	4521	4901													
220710012	04/01/93	10/31/93		4626		4649	4648	4649	4585													
220710017	04/01/93	10/31/93		5058																		
220730002	04/01/93	10/31/93				4783	4785	4784	4968													
220770001	04/01/93	10/31/93				4922	4922	4922	4951													
220870002	04/01/93	10/31/93							5025													
220890003	04/01/93	10/31/93							4993													
220930002	04/01/93	10/31/93				4807	4820	4808	4963													
220950002	04/01/93	10/31/93							4492													
221010003	04/01/93	10/31/93				4948	4949	4948	5026													
22109LUMC	04/19/93	10/17/93				4257	4257	4256	4322		4363	4360	4365	4359	4359			4299				4359
221210001	04/01/93	10/31/93				4865	4868	4859	4949													
280010004	04/01/93	10/31/93							4866													
280330002	04/01/93	10/31/93							4806													
280370001	04/01/93	10/31/93							4857													
280450001	04/01/93	10/31/93							4629													
280490010	04/01/93	10/31/93							4813													
280490018	04/01/93	10/31/93		4674																		
280590006	04/01/93	10/31/93							4856													
280730002	04/01/93	06/21/93							1869													
280750002	04/01/93	10/31/93							4792													
280810003	04/01/93	10/31/93							4870													
280890002	04/01/93	10/31/93							4871													
281250001	04/01/93	10/31/93							4890													
281490004	04/01/93	10/31/93							4875													
34ST	07/18/93	08/31/93				1071	1071	1071	904	1072												
480391003	04/01/93	11/30/93							4591					4108	5620			5620				
480710900	06/01/93	11/30/93		4327		4239	4239	4239	4280	4326			3335	4350	4350			4262		4350	4350	
480710901	06/01/93	11/30/93		4318		4286	4286	4286	4312	4317			4344	4342	4342			4344		4342	4342	
481671002	04/01/93	11/30/93							4176	4333				5787	5787			5787				
48167GILC	04/19/93	10/17/93				3941	3941	3941	4042					3758	3758			4241				4102
481830001	04/01/93	11/30/93							3071					5414	5414			5414				
481990002	04/01/93	11/30/93							4432					5773	5773			5773				
482010004	04/01/93	11/30/93								4766				5836	5836			5837				

Table A-11.
GMAQS Summary of Locations, Parameters, and Number of Data Points
(continued).

LOCATION ABBR	START DATE	END DATE	GASEOUS								METEOROLOGY										
			CH4	CO	NMHC	NO	NO2	NOX	O3	SO2	CLDC	P	RH	RNF	RWD	RWS	SR	SST	T	TD	WD
482010024	04/01/93	11/30/93		3397		3082	2946	2776	3348					3832	3832		4014				
482010029	04/01/93	11/30/93							2973					3513	3513		5082				
482010046	04/01/93	09/30/93							3228	3313				4226	4226		4246		4226		
482010047	04/01/93	09/30/93		3448		3246	3277	3246	3296					4249	4249		4249		4249		
482010051	04/01/93	09/30/93							2928	3288				4260	4260		4260		4260		
482010059	04/01/93	11/30/93							3993	3923				5424	3985		5246				
482010062	04/01/93	09/30/93							3019	3177				4268	4268		4268		4268		
482010801	06/01/93	11/30/93		4305		4224	4224	4224	4306	4252			4040	4320	4320		4320		4320	4320	4320
482010803	06/01/93	11/30/93		4340		4317	4317	4317	4332	4232			1586	4366	4366		4368		4366	4366	4366
482010804	06/01/93	11/30/93		4349		4324	4324	4324	4351	4352			3360	4376	4373		4376		4376	4373	4373
482010807	06/01/93	11/30/93		4362		4313	4313	4313	4328	4356			3356	4374	4374		4376		4374	4374	4374
482010808	06/01/93	11/30/93		4133		4175	4175	4175	4130	4186			2330	4198	4198		4202		4198	4198	4198
482011003	04/01/93	11/30/93							2366	3120				1891	4244		3220				
482011034	04/01/93	05/13/93		251		278	134	278	276	279				1009	1009		1009				
482011035	04/01/93	09/30/93		3226		2970	2977	2970	3265	3408				4214	4214		4255		4214		
482011037	04/01/93	09/30/93		3459		2661	3002	2661	3431	2322				4263	4263		4269		4263		
482450009	04/01/93	11/30/93		4863		4600	4623	4791	4641	4271				4290	5773		5773				
482450011	04/01/93	11/30/93							4487	4751				5720	5720		5729				
482450101	06/01/93	09/30/93	2850		2850	2902	2902	2902	2914					2925	2925		2926		2925	2925	2925
482450102	06/01/93	09/30/93	2736		2736	2868	2868	2868	2912					2921	2921		2923		2921	2921	2921
483550025	04/01/93	11/30/93							4640	4523				4762	5178		5744				
483550026	04/01/93	11/30/93							4783	4752				5362	5748		5748				
483610100	06/01/93	09/30/93	1438		1390	1440	1440	1440	1440					2816	2816		2814		2816	2816	2816
483611001	04/01/93	11/30/93				4864	4804	4864	4677					5763	5763		5763				
483611100	06/01/93	09/30/93	2783		2783	2895	2894	2895	2910					2921	2921		2922		2921	2921	2921
484690003	04/01/93	11/30/93							4361					4954	5408		5411				
AVAT	07/18/93	08/31/93	935		935					1072											
BLOG	06/08/93	11/25/93												1051	1052		1103		1086	1068	1068
BUOY42001	08/01/93	08/31/93										735		735	735		735				
BUOY42003	08/01/93	08/31/93										737		737	737		737				
BUOY42007	08/01/93	08/31/93										733		733	733		733				
BUOYBURL1	08/01/93	08/31/93										731		731	731		731				
BUOYCSBF1	08/01/93	08/31/93										733		733	733		733				
BUOYDPIA1	08/01/93	08/31/93										734		734	734		734				
BUOYSMKF1	08/01/93	08/31/93										736		736	736		736				
BUOYVENF1	08/01/93	08/31/93										734		734	734		734				
CRSC	06/01/93	11/30/93				4166	4166	4166	4288					4178	4175		4304		4353	4175	4175
GAL	04/14/93	10/19/93										4466	4021	4498	4500	4500	4500	4500	4019	4500	4500
GALC	06/01/93	11/30/93				4159	4161	4159	4289					4133	4131		4151		4373	4131	4131
GLRC	06/13/93	11/30/93				4028	4028	4028	3915					4019	4031		4070		4064	4031	4031
HIP	04/20/93	10/15/93										4212	2606	4212	4212	4211	4208	2606	4212	4212	4212
HTCC	06/01/93	11/30/93				4069	4067	4069	4050					3139	3139		3731		3668	3667	3667
LATX42002	04/01/93	11/30/93										2505		2503	2503		2505	2505	1176		

Table A-11.
GMAQS Summary of Locations, Parameters, and Number of Data Points
(continued).

LOCATION ABBR	START DATE	END DATE	GASEOUS								METEOROLOGY											
			CH4	CO	NMHC	NO	NO2	NOX	O3	SO2	CLDC	P	RH	RNF	RWD	RWS	SR	SST	T	TD	WD	WS
LATX42019	04/01/93	10/31/93										4677	3122		4680	4678		4678	4678	3122		
LATX42020	04/01/93	11/30/93										828			828	828		828	828			
LATX42026	04/01/93	09/27/93										4301			2397	3048		4301	3048			
LATX42027	04/01/93	11/30/93										1975			1304	1304		2006	1964			
LATX42028	04/01/93	09/22/93										4180			4180	3018		4180	4180			
LATX42029	04/01/93	05/23/93										1258			1260	1260		1260	1260			
LATX42030	04/01/93	09/23/93										2922			2922	2922		2922	2922			
LATX42031	04/01/93	05/19/93										1159			1159	1159		1159	1159			
LATX42033	04/01/93	05/10/93										225						226	226			
LATX42035	05/06/93	11/30/93										1413			1413	1413		1413	1398			
LATXBUSL1	04/18/93	10/31/93										936			4188	3708		4158	174			
LATXGDIL1	04/01/93	11/30/93										2419			2418	2418		2407	2407	66		
LATXPTAT2	04/01/93	11/30/93										1557			2293	2293		2253	2267			
LATXSRST2	04/01/93	11/30/93										2365			2373	2373		703	2327			
LSU	04/14/93	10/15/93										4403	2300	3956	4403	4403	4403		4403	2301	4403	4403
MEST	07/18/93	08/31/93										1072	1072	1072	974	974	1072		1072		1072	1072
MOBT	07/18/93	08/31/93	1068		1068										1056	1056					1056	1056
NCDC03937	04/01/93	10/31/93										5134	5134	5134		5134	5134		5134	5134		
NCDC12912	04/01/93	10/31/93										5134	5134	5134		5134	5134		5134	5134		
NCDC12916	04/01/93	10/31/93										5134	5134	5134		5134	5134		5134	5134		
NCDC12917	04/01/93	10/31/93										5134	5134	5134		5134	5134		5134	5134		
NCDC12924	04/01/93	10/31/93										5134	5134	5134		5134	5134		5134	5134		
NCDC12960	04/01/93	10/31/93										5134	5134	5134		5134	5134		5134	5134		
NCDC13894	04/01/93	10/31/93										5134	5134	5134		5134	5134		5134	5134		
NCDC13970	04/01/93	10/31/93										5122	5122	5122		5122	5122		5122	5122		
PCOG	06/08/93	11/25/93													1030	1030			1103		1031	1102
SBRC	06/03/93	11/30/93				4164	4166	4164	4283						4202	4202			4309		4243	4264
SDRG	06/08/93	11/25/93													1102	1102			1102		1102	1102
SEH	04/14/93	10/15/93										4415	3906	4415	4415	4415	4414		4415	3909	4415	4415
SPTC	06/01/93	11/30/93				4260	3732	4053	4310						4322	4327			4331		4328	4327
SSP	05/11/93	10/15/93										3768	3183	3768	2983	2983	3417		3254	2745	2983	2983
STWC	06/01/93	11/30/93				4206	4206	4206	4295						4300	4300			4202		4310	4300
SWLT	07/18/93	08/31/93				1042	1042	1042		1048					951	951					1056	951
VICG	06/08/93	11/25/93													1023	1023			1044		1044	1023

Table A-12.

GMAQS Upper Air Data Summary of Locations, Parameters, and Number of Data Points.

LOCATION ABBR	START DATE	END DATE	Upper Air Meteorology								
			P	RH	RWD	RWS	T	TV	U	V	W
COC	04/17/93	10/17/93			110613	110613		37028	110613	110613	139655
GAL	04/17/93	10/18/93			106124	106124		40084	106124	106124	147971
GALC	06/01/93	11/30/93			50599	50599			50599	50599	50599
HIP	04/18/93	10/15/93			162970	162970		44477	162970	162970	211070
JCA	07/01/93	12/31/93			122740	122740		30277	122740	122740	199349
JCSC	06/18/93	11/30/93			49736	49736			49736	49736	49736
LSU	04/16/93	10/17/93			126172	126172		41686	126172	126172	163993
NCDC03937	04/01/93	10/31/93	40007	24707	39002	39002	40007				
NCDC12924	04/01/93	10/31/93	38425	23540	37285	37285	38425				
NCDC53813	04/01/93	10/31/93	48315	30068	46960	46960	48315				
NWHC	06/02/93	11/30/93			57096	57096			57096	57096	57096
SEH	04/19/93	10/17/93			102315	102315		34590	102315	102315	173880
SPSC	06/01/93	11/30/93			63977	63977			63977	63977	63977
SSP	05/10/93	10/17/93			131579	131579		46430	131579	131579	187623

Table A-13.

IMPROVE Data Summary of Locations, Parameters, and Number of Data Points.

LOCATION ABBR	START DATE	END DATE	Meteorology		Speciated PM						Total PM			Visibility											
			RH	T	ECF_TOR	OMCF	PMC	SOILf	SSF	ammNO3f	ammSO4f	PM10	PM2.5	RCFM	DV	ECF_bext	OMCF_bext	PMC_bext	SOILf_bext	SSF_bext	SVR	aerosol_bext	ammNO3f_bext	ammSO4f_bext	total_bext
BRET1	08/28/00	12/29/04			384	384	364	408	408	422	430	381	408	362	324	384	384	364	408	408	324	324	422	430	324
CHAS1	04/03/93	12/26/04			1261	1261	1020	1044	1044	1215	1247	1245	1037	984	964	1261	1261	1020	1044	1044	964	964	1215	1247	964
EVER1	09/28/88	12/29/04			755	755	741	1426	1426	766	834	750	1398	727	712	755	755	741	1426	1426	712	712	766	834	712
OKEF1	09/28/91	12/29/04	38119	38065	1364	1364	1342	1370	1370	1334	1359	1358	1359	1320	1296	1364	1364	1342	1370	1370	1296	1296	1334	1359	1296
ROMA1	09/03/94	12/31/04	8432	8432	1064	1064	1045	1070	1070	1024	1051	1054	1064	1012	995	1064	1064	1045	1070	1070	995	995	1024	1051	995
SAMA1	09/03/00	12/29/04			396	396	413	452	452	456	458	419	452	391	362	396	396	413	452	452	362	362	456	458	362
SIKE1	03/23/01	12/29/04			407	407	430	434	434	432	442	433	434	398	395	407	407	430	434	434	395	395	432	442	395

Table A-14.

NCDC Summary of Locations, Parameters, and Number of Data Points.

LOCATION ABBR	START DATE	END DATE	METEOROLOGY											VISIBILITY VR	
			ALT	CEIL	GLDC	P	RH	RNF	SLP	T	TD	WD	WS		
013904	04/01/99	12/31/99	5854							5841	5854	5854	4369	5854	5843
03813	01/01/90	12/31/95		52499	37944	50673	52488	52578			52532	52495	52500	52500	52494
03820	01/01/90	12/31/95		52569	37944	52359	52575	52582			52583	52574	52565	52565	52566
03822	01/01/90	12/31/95		52583	52583	52517	52583	52583			52583	52583	52583	52583	52581
03927	01/01/90	12/31/95		52562	51827	50146	52547	52578			52583	52548	52563	52563	52561
03937	01/01/90	12/31/95		52577	52577	52567	52576	52582			52583	52578	52580	52580	52573
03940	01/01/90	12/31/95		52460	30648	51201	52466	52580			52482	52466	52464	52464	52450
12815	01/01/90	12/31/95		52580	52580	52567	52581	52582			52583	52583	52582	52582	52579
12816	01/01/90	12/31/95		52557	52559	52490	52538	52581			52583	52538	52553	52553	52557
12834	01/01/90	12/31/95		52478	47447	52497	52473	52579			52507	52473	52481	52481	52476
12835	01/01/90	12/31/95		50374	50374	50359	50297	52583			50347	50297	50367	50367	50374
12836	01/01/90	12/31/95		52569	52575	52572	52572	52582			52583	52573	52574	52574	52573
12839	01/01/90	12/31/95		52581	52579	52578	52577	52583			52583	52575	52582	52582	52574
12842	01/01/90	12/31/95		52569	51119	52427	52568	52581			52583	52568	52570	52570	52562
12843	01/01/90	12/31/95		52555	52551	51796	52551	52582			52559	52550	52554	52554	52554
12844	01/01/90	12/31/95		52537	28461	52565	52536	52578			52583	52538	52540	52540	52517
12912	01/01/90	12/31/95		52570	51839	52488	52557	52581			52583	52557	52570	52570	52567
12916	01/01/90	12/31/95		52555	52576	52567	52556	52580			52583	52558	52553	52553	52555
12917	01/01/90	12/31/95		52541	48168	52554	52526	52583			52583	52526	52540	52540	52538
12919	01/01/90	12/31/95		52489	37944	52488	52472	52576			52535	52479	52500	52500	52482
12921	01/01/90	12/31/95		52548	47446	52021	52540	52578			52572	52541	52548	52548	52542
12924	01/01/90	12/31/95		52575	51839	52524	52572	52581			52583	52572	52575	52575	52575
12960	01/01/90	12/31/95		52583	52582	52469	52581	52583			52583	52582	52583	52583	52580
13865	01/01/90	12/31/95		52498	48167	51653	52500	52582			52502	52501	52497	52497	52497
13876	01/01/90	12/31/95		52581	52574	49490	52571	52583			52583	52570	52581	52581	52581
13880	01/01/90	12/31/95		52536	50373	52512	52532	52579			52563	52535	52536	52536	52533
13889	01/01/90	12/31/95		52583	52581	52565	52583	52583			52583	52583	52583	52583	52582
13894	01/01/90	12/31/95		52581	52583	52287	52583	52582			52583	52583	52581	52581	52581
13895	01/01/90	12/31/95		52441	48167	52220	52434	52580			52453	52431	52440	52440	52437
13899	01/01/90	12/31/95		48163	48163	48130	48151	52583			48167	48151	48163	48163	48163
13957	01/01/90	12/31/95		52559	50374	51755	52552	52578			52571	52551	52560	52560	52557
13958	01/01/90	12/31/95		52572	48166	50641	52572	52580			52583	52571	52574	52574	52569
13962	01/01/90	12/31/95		52583	52582	52583	52579	52583			52583	52578	52583	52583	52577
13970	01/01/90	12/31/95		52512	29183	52522	52500	52577			52571	52504	52504	52504	52491
23034	01/01/90	12/31/95		52579	52581	52583	52580	52582			52583	52582	52581	52581	52581
690190	12/31/94	12/31/04	67703					5	66159	67460	67445	62381	67079	67835	67835
690290	06/23/04	11/29/04	3677						35		3661	3659	3484	3661	3654
720021	02/25/04	12/29/04	208								204	204	148	213	213
720048	03/16/04	12/31/04	147								141	119	129	147	149
720110	08/06/04	12/31/04	3060						45		2921	2921	1835	2843	2894
720150	08/03/04	09/30/04	1344						12		1344	1344	1125	1343	1344
720159	04/15/04	12/30/04	298								299	299	290	302	303
720257	05/25/04	12/31/04	4973								4921	4918	2374	4918	4758
720265	05/25/04	12/31/04	5148						96		5142	5142	2887	5149	5142
720268	05/25/04	12/31/04	5116								5085	5085	3567	5106	5109
720269	05/25/04	12/31/04	5163						58		5160	5159	4183	5161	5142
720273	05/25/04	12/31/04	5116						132		5102	5088	4125	5104	5075
720276	05/25/04	12/31/04	4429						43		4428	4428	3800	4427	4428
720286	05/25/04	12/31/04	4855						103		4889	4525	3822	4890	4890
720289	05/25/04	12/31/04	4922								4910	4910	2682	4881	4881
720291	05/25/04	12/31/04	5160						161		5161	5160	3794	5161	5161
720295	05/25/04	12/31/04	5054						116		4882	4881	4582	5186	5187
720296	05/25/04	12/31/04	5062						124		5063	5063	2312	5061	5062
720298	05/26/04	12/31/04	5033						95		5033	5033	4046	5034	5028
720299	05/25/04	12/31/04	4717						126		4948	4597	4163	4949	4944
720301	05/25/04	12/31/04	5097								4872	4872	3158	5095	5094
720302	05/25/04	12/31/04	5160						122		5119	5119	3701	5161	5159
720303	05/25/04	12/31/04	5045						118		4922	4922	3510	5045	5044
720305	05/25/04	12/31/04	5026						137		5025	5025	4529	5026	5023

Table A- 14.
 NCDC Summary of Locations, Parameters, and Number of Data Points
 (continued).

LOCATION ABBR	START DATE	END DATE	METEOROLOGY											VISIBILITY VR	
			ALT	CELL	CLDC	P	RH	RNF	SLP	T	TD	WD	WS		
720311	05/25/04	12/31/04	5184						105		5182	5180	3692	5183	5168
720314	05/25/04	12/31/04	5162						111		4796	4783	3804	5146	5144
720316	07/16/04	12/31/04	3659						37		3651	3651	3290	3658	3656
720318	05/25/04	12/31/04	5121						104		5110	5109	3819	5109	5105
720320	08/03/04	12/31/04	3519						83		3519	3519	3240	3518	3519
720323	05/25/04	12/31/04	5063						90		5053	5052	3656	5051	5024
722010	12/31/94	12/31/04	97983						51790		88639	98223	99090	99066	99568
722011	01/01/03	12/31/04	705								668	666	594	715	708
722012	12/31/02	12/31/04	16713								16691	15988	9994	16932	16707
722014	01/14/99	12/31/04	46005						3903	44879	45902	45789	31697	45064	45899
722015	12/31/94	12/31/04	80454						155	1811	80308	81321	80398	76518	81683
722016	01/01/95	12/31/04	64299							3429	54992	63743	63712	50328	63544
722017	01/14/99	05/16/01	16646							1049	16223	16462	16423	13207	16671
722018	01/14/99	05/16/01	16445							1229	16335	16419	16409	11275	16460
722020	12/31/94	12/31/04	95491						51469	88741	96494	97143	97134	82092	97235
722021	12/31/02	12/31/04	14427							183		13721	13714	8280	14529
722022	01/01/03	12/31/04	2646								2616	2615	2356	2652	2664
722024	01/01/95	12/31/04	65781							6882	56104	57358	57236	57186	64681
722025	12/31/94	12/31/04	69592							5733	55146	69170	69117	61940	69712
722026	01/03/95	12/31/04	82564								80788	82190	82178	77102	82272
722029	01/01/95	12/31/04	75862							6468	54213	75512	75381	63638	74892
722030	12/31/95	12/31/04	88513						41317	80036	87848	88710	88699	77603	88616
722034	01/14/99	12/31/04	46692							4294	46444	46347	46325	39574	46030
722037	09/04/99	12/31/04	44964							5246	43086	44811	44769	37678	43840
722038	12/31/94	12/31/04	39645							1789	17761	38996	38490	32941	39621
722039	01/01/95	12/31/04	69250							6297	55434	57172	57108	57620	68508
722040	01/01/95	12/31/04	50525						5	36964	40199	49921	49728	45579	49948
722041	05/25/04	12/28/04	165								161	161	145	178	177
722042	05/25/04	12/31/04	2765							51		2759	2759	1673	2760
722045	12/31/94	12/31/04	74073						30206	2585	76150	77268	77205	63507	77751
722046	01/01/95	12/30/04	18409								11	18305	38	16329	18497
722049	12/31/94	12/31/04	66181							5813	56636	58592	58562	59731	65402
722050	12/31/94	12/31/04	96546						50123	88459	96235	97259	97184	83793	97533
722053	01/01/95	12/31/04	74796							5335	54758	74060	73881	63260	73483
722055	12/31/95	12/31/04	42138							1752	41926	41673	29852	42168	41804
722056	12/31/95	12/31/04	80801						4298	79485	80371	82503	82488	60328	82641
722057	12/31/95	12/31/04	60804							5158	49421	60658	60596	50817	59679
722060	12/31/95	12/31/04	87953						43428	47454	88547	89875	89859	67488	89558
722062	05/09/04	12/31/04	5332								5223	5219	3227	5237	5001
722064	12/20/96	01/11/99	16693							1497	16651	16569	16559	9561	16600
722065	12/31/95	12/31/04	74948						72	80	74854	75790	74898	69363	76101
722066	12/31/94	12/31/04	68948						111	3710	68992	69998	68923	63647	70173
722067	12/31/94	12/30/04	37015						128	1549	36375	37879	36223	27214	38243
722068	12/31/94	12/31/03	67190							5072	51466	66924	66453	51430	65184
722069	09/02/97	12/31/04	35928							3623	35234	35677	35632	25900	35951
722070	12/31/94	12/31/04	96661						50444	88930	97114	98945	98859	71283	98772
722090	01/03/95	12/30/04	37500						10	3	34933	37321	37304	33130	37189
722094	07/13/04	12/31/04	4013							88		3971	3970	3252	4013
722100	07/01/99	10/24/04							18		14	14	13	18	20
722102	05/25/04	06/17/04	526							2		525	525	512	526
722103	01/01/95	12/31/04	56785							4786	45435	46963	46952	43155	54453
722104	01/01/95	12/31/04	65616							42992	53260	64803	63799	60864	64889
722106	12/31/94	12/31/04	72992						6558	57295	64157	74562	74314	62735	75386
722108	12/31/94	12/31/04	69839							5616	54847	69652	69417	55343	68479
722110	12/31/94	12/31/04	96444						51356	87644	97028	97418	97401	78742	97372
722112	05/25/04	12/31/04	3794							65		3792	3791	2610	3791
722113	05/25/04	12/31/04	3835							77		3831	3831	2735	3833
722115	01/01/95	12/31/04	62119							4344	48662	61779	61681	55150	61296
722116	12/31/94	12/31/04	73235							4979	53371	72835	72705	66362	72499
722119	12/31/94	12/31/04	28881								14	28741	28703	21054	28441

Table A- 14.
 NCDC Summary of Locations, Parameters, and Number of Data Points
 (continued).

LOCATION ABBR	START DATE	END DATE	METEOROLOGY											VISIBILITY VR	
			ALT	CELL	CLDC	P	RH	RNF	SLP	T	TD	WD	WS		
722120	12/31/94	12/31/04	55650			16874			1855	79110	77832	77651	70024	100180	21332
722123	01/03/95	12/31/04	21612							5	21503	21488	18069	21343	21726
722130	07/11/95	12/31/04	23993				12			14	23125	23067	16156	24005	23266
722134	08/16/01	12/31/04	16895								16870	16846	11860	17036	16859
722135	12/31/94	12/31/04	47590						21330	42045	47230	47168	26309	47764	47593
722136	01/01/95	12/31/04	41618						2	30	41050	40630	31178	41849	41544
722137	01/01/95	12/31/04	56340						36039	55224	56109	56055	50039	56572	56439
722140	12/31/94	12/31/04	99298			52221			89415	99264	101562	101529	69937	101585	101862
722143	05/25/04	12/31/04	5153						115	2	5148	5146	3913	5150	5147
722146	12/31/94	12/31/04	77919			20071			56907	82901	86022	85869	63237	86360	86243
722147	05/25/04	12/31/04	5142								5139	5139	3271	5142	5143
722150	04/28/99	09/05/04				6				7	7	6	5	7	7
722153	05/25/04	12/31/04	394								389	389	367	394	394
722159	05/25/04	12/31/04	5021						10		5022	5021	4244	5019	5023
722160	12/31/94	12/31/04	50290				22		3641	40438	49723	49660	37156	48229	50382
722166	01/01/95	12/31/04	57250						3433	53676	56482	56131	38568	55442	57317
722170	12/31/94	12/31/04	100089			51828			88902	98904	101469	101301	74282	101278	101621
722175	12/31/94	12/31/04	83926							82088	83464	83448	78018	82990	84153
722176	01/14/99	12/31/04	31722								30297	30284	13366	31539	31048
722180	12/31/94	12/31/04	100313			51750			89112	98530	101313	101273	64418	101597	101980
722181	01/23/97	12/31/04	64122						5945	62420	63489	63433	48998	63449	64019
722189	05/25/04	12/31/04	495							485	485	476	497	503	503
722192	05/25/04	12/31/04	4986						88	4954	4952	4698	4963	4962	4962
722197	01/31/96	12/31/04	74673						7162	72568	74305	74229	31253	71549	74517
722200	07/31/98	12/31/04	50508			13273			4404	55867	55289	55248	46259	55160	55146
722202	05/25/04	12/31/04	5058						160	4936	4936	4315	5057	5029	5029
722209	08/03/04	12/31/04	3538						46	3538	3538	3114	3536	3538	3538
722210	12/31/94	12/31/04	87752			16				83838	87336	87277	80315	87687	87941
722212	01/31/97	12/31/04	37260						1718		37106	37097	33154	37499	36983
722213	01/23/97	12/31/04	63386						5135	62012	63093	63046	44739	62511	63241
722215	12/31/94	12/31/04	78778						39154	75084	77757	77520	49493	77981	78594
722220	09/08/01	12/31/04				1001				986	1002	1002	811	1001	1001
722223	12/31/94	12/31/04	79363			4213			61315	67523	78606	78156	68464	79333	79757
722224	05/14/98	12/31/04	30925						1261	54049	29173	29132	35471	51327	1341
722225	12/31/94	12/30/04	76134				187		3346	76528	77408	76327	65687	77979	77570
722226	12/31/94	12/30/04	56864				148		3472	55547	57847	56793	48042	57927	58072
722230	12/31/94	12/31/04	98226			50881			88943	96595	99145	99125	82787	99134	99345
722235	12/31/94	12/31/04	79048						7307	68031	78726	78593	67491	78251	79180
722239	02/28/98	04/01/98	93							82	92	92	59	93	93
722240	07/13/03	05/27/04				2				2	2	2	1	2	2
722245	12/31/94	12/31/04	65663						5759	54433	64972	64788	53191	64423	65673
722246	01/03/95	12/31/04	35528						2	34232	35480	35467	32850	35656	35680
722250	12/31/94	12/31/04	78461				5		2	73435	78194	78177	70939	78099	78617
722255	12/31/94	12/31/04	90955			13037			88354	87560	91007	90847	67270	92489	92625
722260	12/31/94	12/31/04	99968			43823			88437	98918	101415	101299	75935	101134	101607
722265	01/03/95	12/29/04	65927						4	64462	65687	65675	51338	63606	66059
722267	01/03/95	12/31/04	55430						3891	53651	55331	55300	40404	52837	55481
722268	12/31/94	12/31/04	46854						3328	32093	46603	46510	41215	46488	47048
722269	12/31/94	12/31/04	82916						13	78678	82288	82270	71745	81002	83044
722275	01/03/95	12/30/04	20553						65	19739	20744	20678	16743	20388	20907
722276	01/04/95	12/31/04	48468						4786	47160	49542	49490	25982	47524	49482
722280	12/31/94	12/31/04	77945			17437			64166	77441	79759	79633	58850	80131	80192
722284	01/01/95	12/31/04	48415						1970	3	48065	48060	41236	48415	47140
722286	01/01/95	12/31/04	63841						5031	53615	63508	62859	40851	60824	64200
722287	12/31/94	12/31/04	80246						44304	77237	80120	79941	55287	80220	80271
722288	12/31/94	03/29/96								9640	9647	9646	9462	9644	
722293	01/01/95	12/31/04	1760							2	1784	1779	1605	1797	1810
722295	01/01/95	12/31/04	2555							1	2556	2554	2475	2540	2583
722300	12/31/98	12/31/04	51220				23		5261	50226	50852	50841	29764	48287	51029
722307	01/02/95	02/03/00	1053							2	1062	1059	905	1059	1063

Table A- 14.
 NCDC Summary of Locations, Parameters, and Number of Data Points
 (continued).

LOCATION ABBR	START DATE	END DATE	METEOROLOGY											VISIBILITY VR	
			ALT	CELL	CLDC	P	RH	RNF	SLP	T	TD	WD	WS		
722308	01/01/95	12/31/04	2051								2044	2043	1967	2063	2073
722309	01/02/95	12/30/04	2335								2333	2332	2227	2341	2362
722310	12/31/94	12/31/04	96658				50590		88608	96787	97704	97685	84428	98047	98044
722312	12/31/02	12/31/04	16483						349		15991	15991	10506	16747	16244
722314	12/31/94	12/31/04	69101						6079	55393	68965	58457	56908	67864	69230
722315	01/01/95	12/31/04	81504						5050	78367	80772	80738	78549	81511	81769
722316	12/31/94	12/31/04	66875				158		88	66451	67417	66407	46466	67410	67354
722317	12/31/94	12/31/04	89557				13046		88357	89393	92385	92367	66210	92493	92354
722319	12/31/02	12/31/04	16506						166		16428	16427	10636	16520	16218
722320	07/21/99	12/31/04	37327				13		2911	37189	36869	36637	30923	36833	37088
722323	11/23/04	12/31/04	918						8		917	917	738	917	917
722328	01/01/95	12/31/04	4691								4662	4659	3648	4661	4729
722329	12/31/94	12/31/04	46862							1126	1	46360	46315	39060	46992
722330	02/12/01	02/12/01					1			1	1		1	1	1
722338	08/24/04	12/31/04	3022						28		3005	3005	2614	3020	3022
722339	10/06/04	12/31/04	45								45	44	45	45	45
722340	12/31/94	12/31/04	99995				50123		89304	97909	100742	100695	71515	100592	101059
722341	10/05/04	12/31/04	437								439	439	343	438	440
722345	12/31/94	12/31/04	58658				166		54	57411	59647	58276	34393	59585	59727
722347	08/15/01	12/31/04	27666						3122	26798	27638	27636	16716	26477	27646
722348	12/31/94	12/31/04	47318						1868	2	47023	47019	29471	47247	47065
722350	12/31/94	12/31/04	101675				52879		89559	100377	102880	102850	65409	102270	102894
722354	08/15/01	12/31/04	28647						3026	27423	28428	28424	20677	27609	28615
722356	01/01/95	12/31/04	40730						3116	27324	40021	39366	35634	39982	40508
722357	12/31/94	12/31/04	47446						1973		47297	47241	37197	47609	46908
722358	12/31/94	12/31/04	72064						36216	70651	71833	71490	49523	72033	72324
722359	01/01/95	12/31/04	83868						7221	79871	83401	83302	65648	83738	83808
722366	01/14/99	12/31/04	44833						4350	43853	44636	44613	27067	42848	44668
722390	12/31/94	12/31/04	78574				17		1	76031	78092	78073	63818	75207	78777
722398	01/01/95	02/27/03	3644								3684	3679	3560	3626	3708
722400	12/31/94	12/31/04	100610				53221		89048	100096	102492	102413	82202	102602	103002
722403	01/01/95	12/31/04	30339						2265	55093	40999	40414	28846	64186	983
722404	01/03/95	12/31/04	15558							6	15484	15463	13429	15423	15584
722405	12/31/94	12/31/04	81208						5970	77397	80637	80182	67906	81382	81194
722406	01/01/95	12/30/04	17278							6	16866	15997	14920	17364	17527
722408	01/01/95	12/30/04	2264							1	2262	2261	1875	2252	2285
722410	12/31/94	12/31/04	99079				36729		89223	97932	101075	100721	88602	101456	101463
722416	03/17/99	12/31/04	41827						3225	40521	41583	41170	37058	41398	41679
722420	01/01/95	12/31/04	78575						5993	77061	77596	77486	75602	78528	78334
722427	08/15/01	12/31/04	28485						3190	27562	28428	28397	21176	27921	28420
722429	01/01/95	12/31/04	69933						5953	58169	69291	68882	49886	67271	69801
722430	12/31/94	12/31/04	96948				50555		88826	96880	98051	98034	75508	98162	98386
722435	01/01/95	12/31/04	74250						52543	71944	73717	73699	64513	74366	74195
722436	12/31/94	12/30/04	8613							754	8595	8567	8058	8651	8683
722444	01/14/99	12/31/04	49575						4407	48238	49304	49280	28795	47548	49391
722445	12/31/94	12/31/04	88324						53477	84431	87449	87286	68374	88225	88309
722446	12/31/94	12/31/04	67171				23641		36921	67439	69008	68857	55094	70057	70006
722447	01/14/99	12/31/04	49204						4569	48038	49112	49110	27468	47416	49142
722448	01/01/95	12/31/04	69970						5416	57057	69516	68969	60589	69940	69988
722453	01/01/95	12/31/04	3134							1	3069	3069	2837	3146	3172
722469	01/14/99	12/31/04	49136						3876	47856	48820	48813	45532	48745	48958
722470	01/01/95	12/31/04	68742						5484	55979	68140	67967	56301	66469	68742
722479	03/17/99	12/31/04	49130						4054	47930	48921	48873	43849	48663	49059
722480	12/31/94	12/31/04	97224				51253		88875	97279	99273	99250	80164	99037	99388
722484	12/31/94	12/31/04	68960						6605	62801	64727	64686	53993	68678	68810
722485	01/03/95	12/31/04	73683						2	69247	73077	73062	65300	72070	73853
722486	01/01/95	12/31/04	79485						26512	76175	78940	78922	59093	79539	79566
722487	01/01/95	12/31/04	85894						7730	82238	84763	84559	47156	85505	85488
722488	07/18/97	12/31/04	60777						6343	59504	60425	60376	48927	59738	60445
722489	01/14/99	12/31/04	48108						3722	47006	47869	47863	40977	47034	48060

Table A- 14.
 NCDC Summary of Locations, Parameters, and Number of Data Points
 (continued).

LOCATION ABBR	START DATE	END DATE	METEOROLOGY											VISIBILITY VR	
			ALT	CELL	CLDC	P	RH	RNF	SLP	T	TD	WD	WS		
722499	12/31/94	12/31/04	48899						1638		48447	48445	36203	48744	47695
722500	12/31/94	12/31/04	96560				50868		88428	97116	98944	98862	91448	99250	99177
722505	01/01/95	12/31/04	79989						4852	65268	79829	79593	75657	79928	80024
722506	01/01/95	12/31/04	86679						11418	74506	85983	85840	80297	86464	86599
722508	08/15/01	12/31/04	27017						2149	26963	26423	26342	25528	26948	26856
722510	12/31/94	12/31/04	98546				50827		88862	98325	100510	100502	95231	100809	100626
722515	12/31/94	12/31/04	83894				218		4069	83870	85226	83938	82119	85585	84626
722516	12/31/94	12/31/04	67724				236		3103	67789	68764	67107	63304	69018	68343
722517	12/31/94	12/31/04	66618						2608	64879	66360	66272	60977	66662	66593
722518	10/21/96	07/22/97	1325						108	1195	1320	1320	1242	1336	1331
722520	12/31/94	12/31/04	17075				1			16	17007	16823	16584	17165	17160
722523	01/01/95	12/31/04	56238						19871	47454	49600	49580	45551	55033	56301
722524	01/02/95	12/31/04	73424						5081	71986	72895	72870	68055	73297	73109
722526	12/31/94	12/31/04	59765						2001	49605	59554	59498	52872	59433	59829
722527	10/05/98	12/31/04	51853						5216	51027	51587	51506	40362	50828	51675
722530	12/31/94	12/31/04	98182				51753		89075	98416	99600	99560	87996	99935	99763
722533	02/22/95	12/31/04	77242						4522	74423	75965	75899	70090	76638	76771
722535	12/31/94	12/31/04	83523							81249	83161	83151	74261	81617	83601
722536	12/31/94	12/30/04	76165						68648	63429	75675	75669	69523	74687	76239
722537	12/03/00	12/31/04	16718						854		16659	16656	12595	16782	16662
722539	02/01/98	12/31/04	37740						1234		37613	37612	33928	37719	37359
722540	12/31/94	12/31/04	81476				46645		68101	82713	83762	83695	65814	83881	83864
722542	01/23/97	12/31/04	64836						4710	62948	64344	64309	51099	64124	64780
722543	01/31/97	12/31/04	38322						4042	33523	38260	35707	31604	37578	38347
722544	12/31/02	12/31/04	19374						18000	18607	19275	18525	9504	19388	19331
722545	01/03/95	12/31/00	16906						557	15802	16623	16590	14459	16846	16836
722546	01/01/95	06/27/96	12270								12141	12025	11229	12269	12186
722547	01/01/95	12/31/04	49004						1300		48937	48932	41586	48979	48667
722550	12/31/94	12/31/04	97789				51293		88789	97673	98927	98892	91808	99839	99766
722553	12/31/02	12/31/04	16100						354		15970	15964	11655	16112	15821
722554	01/03/03	12/31/04	16654						341		16757	16754	11475	16960	16764
722555	12/31/94	12/31/04	73005						25567	72117	72540	72516	68877	72439	73226
722560	12/31/94	12/31/04	96745				49790		87751	96719	99057	99010	90465	99227	99431
722563	01/01/95	12/31/03	40235						710		39836	39835	36252	40150	39859
722570	01/03/95	12/31/03	36954						3787	36427	37046	37018	33922	36583	37226
722575	12/31/94	12/31/03	40941						817	2	40865	40849	37496	40890	40778
722576	12/31/94	12/31/03	77893						1	76129	77656	77636	71049	76707	78062
722577	01/01/95	12/31/03	40407						828	1	40292	40276	37482	40333	39648
722583	12/31/94	12/31/03	70089						53365	53462	69903	69885	63036	70112	70086
722585	12/31/94	01/02/98	18907				93		18	18458	19303	19067	17965	19433	19241
722588	01/03/95	12/31/03	14517						102	1	14001	13130	12559	14523	14408
722589	02/08/98	12/31/03	48179						3246	47528	47943	47938	42896	47411	48035
722590	12/31/94	12/31/03	86007				48652		79529	86058	86936	86915	81374	87029	87163
722593	01/01/03	12/31/03	2143						14		2130	2131	1874	2149	2129
722594	12/31/94	12/31/03	67948						4103	54320	67858	67665	55659	66431	68052
722595	12/31/94	12/31/04	70115						3227	70253	69932	69870	65160	70240	70357
722596	01/01/95	12/31/04	82769						67054	79011	82508	82403	74996	82806	82850
722597	12/31/94	12/31/04	69333						2657	55257	69128	69045	62533	69342	69326
722598	12/31/94	12/30/04	12677						345	14	12659	12430	11845	12745	12777
722599	12/31/94	12/31/04	67703						5774	62479	71813	71720	64725	71140	72009
722600	04/02/03	12/31/04	14776				1		289		14669	14666	12670	14935	14797
722630	12/31/94	12/31/04	95314				43761		88318	95016	97172	97115	87884	97145	97312
722660	12/31/94	12/31/04	96389				43766		88137	95486	97829	97747	92506	98004	98089
722666	01/01/03	12/31/04	16560						3		16500	16499	12475	16557	16408
722682	09/04/04	12/30/04	94								94	93	94	94	94
723082	08/25/04	12/31/04	99								99	96	100	99	100
723307	12/31/94	12/31/04	47715						1857	2	47629	47624	37161	47752	47660
723418	12/31/02	12/31/04	18640						12076	17779	18592	18536	15565	18790	18668
723419	12/31/02	12/31/04	18331						17798	17569	18305	18305	12950	18434	18319
723424	12/31/02	12/31/04	17735						2390	16893	17634	17591	9348	17833	17727

Table A- 14.
 NCDC Summary of Locations, Parameters, and Number of Data Points
 (continued).

LOCATION ABBR	START DATE	END DATE	METEOROLOGY											VISIBILITY VR	
			ALT	CELL	CLDC	P	RH	RNF	SLP	T	TD	WD	WS		
724389	09/04/04	12/31/04	56								56	56	52	56	56
747355	11/23/04	12/31/04	912								912	912	834	912	912
747400	12/31/94	12/31/04	64187				9943		17409	45944	70667	70641	59292	71274	46276
747540	03/15/95	12/31/04	61330				1		9409	43266	61248	60943	45995	59230	61388
747685	01/01/95	12/31/04	66351						5412	53419	66033	65810	48592	64170	66399
747686	12/31/94	12/31/04	77757							74193	77178	77168	67053	74358	77832
747688	01/14/99	12/31/03	38227						3242	37908	38142	37979	18780	36531	38124
747750	12/31/94	12/30/04	83950							80023	83599	83582	76423	82547	84157
747760	08/15/01	12/31/04	28763						2592	27555	28435	28419	19003	27662	28738
747770	01/03/95	12/31/04	82095						2	79480	81685	81662	74861	81203	82390
747804	12/31/94	12/31/04	85063						7978	82558	84734	84717	71884	82903	85205
747805	12/31/02	12/31/04	16635							16511	16496	9679	16736	16366	16366
747806	12/31/02	12/31/04	16310							16215	16194	12577	16461	16250	16250
747807	12/31/02	12/31/04	16803							16657	16657	10372	16885	16653	16653
747810	12/31/94	12/30/04	74974						2	72820	74556	74550	69911	74383	75099
747880	01/03/95	12/31/04	78139						1	76496	77864	77841	74553	77659	78335
747930	08/15/01	12/31/04	25197						2641	24408	25026	24980	21520	24890	25200
747946	12/31/94	12/31/04	87586							84438	87048	87036	82090	87265	87758
747950	01/03/95	12/31/04	63659						1	61935	63273	63263	61334	63481	63854
93805	01/01/90	12/31/95		52555	52583	52546	52581	52583			52583	52572	52582	52582	52583
93842	01/01/90	12/31/95		52537	37943	50269	52528	52581			52559	52529	52536	52536	52527
994010	01/01/95	12/31/04								80164	80236	58927	79130	79917	28173
994050	12/31/94	10/05/04					4040			25976	25997	14569	25899	26034	2
994082	07/13/04	12/31/04									3061		3037	3037	
994083	07/13/04	12/31/04								3242	3270		3188	3188	
994085	07/13/04	12/31/04									3808		3407	3407	
994086	07/13/04	12/31/04								2010	3683		2885	2885	
994110	12/31/94	12/31/04							1	81265	80178	52909	81986	82199	6
994170	01/11/95	08/16/01					62			79	85	80	54	87	80
994220	01/09/95	12/31/04					3			40203	40264	18131	39940	40295	5
994260	12/31/94	12/31/04					318			81656	81674	57556	81275	81619	6
994290	12/31/94	12/31/04					2			45410	45444	45409	44585	44891	99
994310	02/03/95	11/28/01					33			51	54	48	29	54	53
994360	12/31/94	09/07/04								34232	34210	16953	33696	34324	5
994380	12/31/94	12/19/01					3			15507	10167	3	15233	15379	2
994390	12/31/94	12/31/04								81983	83730	37813	83164	83761	5
994410	12/31/94	12/31/04								84010	83941	29132	81875	82811	4
994420	12/31/94	12/31/04								83680	83787	28232	82850	83847	4
994430	12/31/94	12/31/04					2444			82038	82142	4	80359	82160	5
994440	05/07/96	08/12/01					3			1	3	3	3	4	3
994450	12/31/94	12/31/04					2			36105	33682	21515	36176	36541	7
994560	12/31/94	12/31/04					12178			30859	34391	16605	31755	34642	16607
994570	12/31/94	12/31/04					1			46345	46358		45714	46369	1
994620	12/31/02	12/31/04								16809	16815	1280	16417	16794	
994630	12/31/02	08/13/04								13690	13700		13037	13451	
994640	12/31/02	12/31/04								17051	17062	16558	16908	17074	
994650	12/31/02	12/31/04								16991	17013	9907	16788	17025	
994740	06/08/04	10/12/04								2330	2334		2287	2287	
994820	06/08/04	12/31/04								4798	4805	4802	4758	4810	
994840	06/07/04	12/31/04								4283	4292	4290	4286	4294	
994870	08/03/04	12/16/04											2700	3019	
994880	08/03/04	08/30/04								513	519		487	559	
997211	09/04/04	12/31/04								2611	2561		1802	1802	
997235	09/20/04	12/31/04								1035	983		1034	1036	
997236	09/22/04	12/31/04								1307	1288	675	1303	1311	6
997238	09/20/04	12/31/04								962	921		955	962	
997239	09/20/04	12/31/04								730			732	735	2
997267	11/21/04	12/31/04								51	552	432	398	424	

Table A-15.

NCDC Upper Air Data Summary of Locations, Parameters, and Number of Data Points.

LOCATION ABBR	START DATE	END DATE	UPPER AIR METEOROLOGY				
			P	WD	TD	T	WS
1M1	01/01/90	09/30/94	330601	319908	175580	230886	320156
AHN	01/01/90	08/29/94	257459	245118	140321	178211	245352
AMA	01/01/90	12/31/04	860856	666023	518529	562041	669817
AQQ	01/01/90	06/11/91	89507	85704	50813	68642	85704
AYS	01/01/90	01/24/95	294303	284458	173738	208596	284860
BMX	08/25/94	12/31/04	653878	482632	431041	431427	487203
BRO	01/01/90	12/31/04	912774	750426	581987	613746	753794
CHS	01/01/90	12/31/04	933571	749630	573883	617326	753787
CKL	01/01/90	08/22/94	313822	302756	173661	222987	302954
CRP	01/01/90	12/31/04	943896	783815	587004	623823	787891
DRT	01/01/90	12/31/04	873070	712139	529830	571444	715998
EYW	01/01/90	12/31/04	943254	784735	599985	636565	800702
FFC	09/01/94	12/31/04	628421	472494	407042	408975	476698
FWD	07/13/94	12/31/04	682113	519996	434424	435392	524434
GGG	01/01/90	02/21/95	357083	339733	198768	248962	340300
JAN	01/01/90	12/31/04	959505	809483	594932	646189	813782
JAX	01/27/95	12/31/04	603992	449733	390219	395014	453241
LCH	01/01/90	01/01/05	991300	809100	628991	676433	812992
LZK	10/01/94	12/31/04	640701	488812	381445	412019	493124
MAF	01/01/90	12/31/04	869404	703901	525127	561905	708042
MFL	07/22/95	12/31/04	599992	437380	395373	396309	440565
OUN	01/01/90	01/01/91	57404	53471	27382	40539	53471
PBI	01/01/90	07/19/95	339960	331784	213533	245854	332347
SEP	01/01/90	07/11/94	246922	233303	128832	167818	233564
SHV	02/24/95	12/31/04	603775	440539	392748	393140	444370
SIL	01/01/90	12/31/04	988986	804458	640489	679048	808608
TBW	01/01/90	12/31/04	955627	745539	623983	656889	748954
TLH	01/01/92	12/31/04	863241	660033	568146	589342	663792
VPS	01/03/90	12/29/04	327506	191391	199951	239724	193450
XMR	01/23/90	12/31/04	961691	619068	416281	649956	621852

Table A-16.

SEARCH Summary of Locations, Parameters, and Number of Data Points.

LOCATION ABBR	START DATE	END DATE	GASEOUS							METEOROLOGY					
			CO	HNO3	NO	NO2	NOY	O3	SO2	P	RH	SR	T	WD	WS
BHM	01/01/00	12/31/04	41995	40641	42635	35315	25216	33622	42186	34377	34341	34184	34291	32325	32004
CTR	01/01/00	12/31/04	42872	42038	43124	42769	24963	41830	42342	41449	41688	40738	41550	39497	38948
GFP	01/01/00	12/31/04	41441	41451	42251	40844	24388	34549	41910	41546	41631	38308	41460	39904	39423
JST	01/01/00	12/31/04	43172	43190	43519	43146	43338	41089	43154	43032	42829	42916	42392	41285	41221
OAK	01/01/00	12/31/04	43684	43684	43684	43684	26304	40966	43684	41845	40898	42102	40247	41631	41260
OLF	01/01/00	12/31/04	41550	41904	42544	41626	24604	39830	41531	41494	41151	40893	41212	39656	39309
PNS	01/01/00	12/31/04	25006	24394	25069	24524	24250	40181	24780	41217	41525	41611	41686	40461	39711
YRK	01/01/00	12/31/04	42587	42559	42951	33867	33990	41569	42582	42119	41994	42397	42786	42281	40655

LOCATION ABBR	SPECIATED PM											
	ECF_TOR	MMOC	MMOF	NH4c	NH4f	NO3c	NO3f	OMCF	PMC	SO4c	SO4f	PM2.5
BHM	622	354	688	344	637	344	636	627	479	344	637	1798
CTR	705	391	730	353	703	353	695	713	545	352	702	1801
GFP	618	108	710	113	654	113	651	625	214	113	654	1757
JST	1773	1504	1568	1705	1764	1705	1761	1773	1727	1705	1764	1804
OAK	682	100	721	103	719	103	718	689	191	103	718	1775
OLF	621	288	745	289	640	289	638	636	408	288	642	1794
PNS	654	282	749	294	647	294	646	634	377	294	647	1634
YRK	655	286	725	289	896	290	672	675	395	290	901	1799

APPENDIX B: OUTPUT PRODUCT EXAMPLES

BUOY_42003.xls											
	A	B	C	D	E	F	G	H	I	J	K
1	DataSetID	DataSetAbbr	RecordDate	P	PWS	SST	T	TD	WD	WS	
2	BUOY	42003	07/01/2004 00:00	1018.1	7.7	29.2	28.4	23.7	123	5.9	
3	BUOY	42003	07/01/2004 01:00	1017.5	6.5	29.2	28.2	23.8	128	5.3	
4	BUOY	42003	07/01/2004 02:00	1017.4	6.1	29.1	28.3	23.5	126	5.2	
5	BUOY	42003	07/01/2004 03:00	1017.5	5.2	29.1	27.2	23.1	147	4.4	
6	BUOY	42003	07/01/2004 04:00	1017.9	3.4	29.2	27.6	23.7	139	2.6	
7	BUOY	42003	07/01/2004 05:00	1018.1	3.2	29.2	28.1	23.8	123	2.3	
8	BUOY	42003	07/01/2004 06:00	1018.6	4	29.2	28.4	24	101	2.7	
9	BUOY	42003	07/01/2004 07:00	1019	6	29.2	27.1	22.6	90	4.9	
10	BUOY	42003	07/01/2004 08:00	1019.3	4.2	29.3	28.2	23.4	107	3.5	
11	BUOY	42003	07/01/2004 09:00	1019.5	5.7	29.5	28.2	24.2	99	4.7	
12	BUOY	42003	07/01/2004 10:00	1019.4	6.5	29.6	28.5	23.6	106	4.9	
13	BUOY	42003	07/01/2004 11:00	1019	6.8	29.7	28.3	24.3	91	5.6	
14	BUOY	42003	07/01/2004 12:00	1018.6	6.4	29.7	27.9	24.1	124	5.3	
15	BUOY	42003	07/01/2004 13:00	1018	4.8	29.8	28.4	24	116	4	
16	BUOY	42003	07/01/2004 14:00	1017.4	4.4	29.9	28.8	24.1	118	3.5	
17	BUOY	42003	07/01/2004 15:00	1017.1	3.6	29.7	27.6	24	187	2.5	
18	BUOY	42003	07/01/2004 16:00	1017.1	5.2	29.6	28.6	23.8	110	4.1	
19	BUOY	42003	07/01/2004 17:00	1017.2	6	29.6	28.4	24.3	117	5.2	
20	BUOY	42003	07/01/2004 18:00	1017.4	5.7	29.6	28.3	24	133	5.1	
21	BUOY	42003	07/01/2004 19:00	1017.9	4.3	29.5	28.1	24.6	137	3.6	
22	BUOY	42003	07/01/2004 20:00	1018.5	5.1	29.5	28.5	24.2	131	3.9	
23	BUOY	42003	07/01/2004 21:00	1018.8	4.8	29.4	28.5	24.3	124	4	
24	BUOY	42003	07/01/2004 22:00	1018.8	4.6	29.4	28.5	23.9	137	3.9	
25	BUOY	42003	07/01/2004 23:00	1018.6	4.7	29.4	28.5	23.8	133	3.8	
26	BUOY	42003	07/02/2004 00:00	1018	5.9	29.4	28.4	23.8	120	4.3	
27	BUOY	42003	07/02/2004 01:00	1017.3	5.3	29.3	28.3	23.8	123	4.3	
28	BUOY	42003	07/02/2004 02:00	1016.9	5.4	29.3	28.3	23.5	130	4.2	
29	BUOY	42003	07/02/2004 03:00	1016.9	6.2	29.3	28.4	23.2	128	5.3	
30	BUOY	42003	07/02/2004 04:00	1016.9	5.7	29.3	28.1	23.7	122	4.7	
31	BUOY	42003	07/02/2004 05:00	1017.1	4.8	29.2	28.4	23.9	110	3.2	
32	BUOY	42003	07/02/2004 06:00	1017.7	5.7	29.3	28.7	23.4	129	4.7	
33	BUOY	42003	07/02/2004 07:00	1018.1	4.8	29.4	28.8	23.7	116	3.4	
34	BUOY	42003	07/02/2004 08:00	1018.2	4.5	29.5	28.8	24	107	3.4	
35	BUOY	42003	07/02/2004 09:00	1018.2	4.4	29.7	28.8	24.1	111	3.6	
36	BUOY	42003	07/02/2004 10:00	1017.9	6.1	29.8	28.8	24.3	101	4.6	
37	BUOY	42003	07/02/2004 11:00	1017.3	5.5	29.9	28.8	24.1	01	4.6	
38	BUOY	42003	07/02/2004 12:00	1017	6.5	29.9	28.9	23.8	22	5.6	

Figure B-1. Export records to an Excel (XLS) file.

GMAQDB Data Availability

Site: NCDC - 722055

Selected Date Range: 1/1/2002 - 12/31/2002

Parameter	Valid Observations		
	Begin DateTime	End DateTime	No.
WS - Wind Speed	01/01/02 08:00	12/31/02 23:00	6260
WD - Wind Direction	01/01/02 08:00	12/31/02 23:00	4259
T - Temperature	01/01/02 08:00	12/31/02 23:00	6266
SLP - Sea Level Pressure	01/01/02 08:00	12/31/02 23:00	0
RNF - Precipitation	01/01/02 08:00	12/31/02 23:00	329
TD - Dew Point	01/01/02 08:00	12/31/02 23:00	6266
P - Barometric Pressure	01/01/02 08:00	12/31/02 23:00	0
ALT - Altimeter Setting	01/01/02 08:00	12/31/02 23:00	6279

Figure B-2. Summary report of available data.

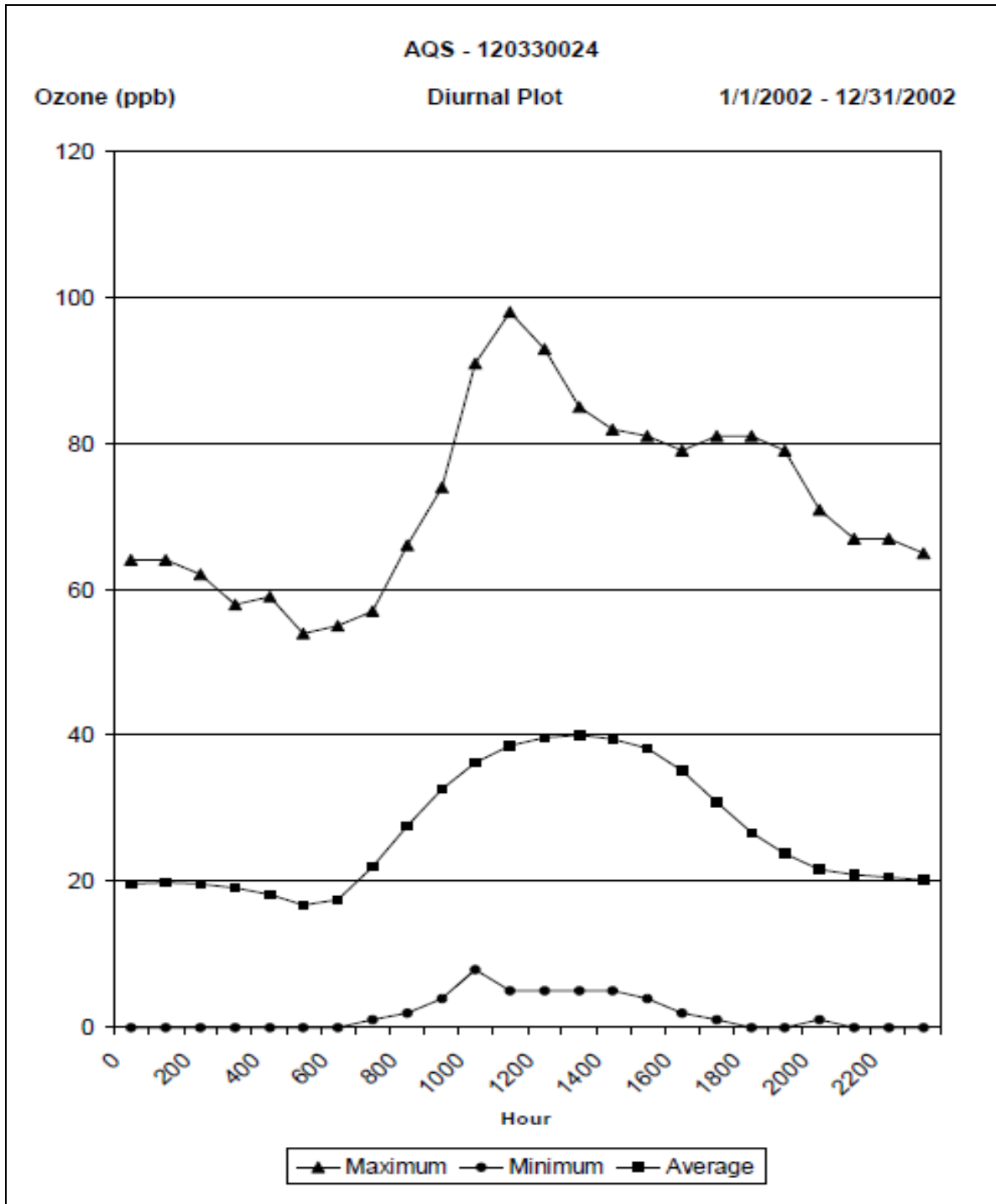


Figure B-3. Diurnal plot.

Summary of Selected Data					
Site: SEARCH - JST					
1/1/2002 - 12/31/2002					
Parameter	Date	Value	Units	Number	Std Dev
CO					
Average		.39	ppm	8760	.60
Minimum	01/01/2002 11:00	-1.00	ppm		
Maximum	02/06/2002 23:00	6.22	ppm		
HNO3					
Average		-.06	ppm	8760	.20
Minimum	01/01/2002 11:00	-1.00	ppm		
Maximum	03/26/2002 13:00	.01	ppm		
NO					
Average		-.04	ppm	8760	.20
Minimum	01/01/2002 11:00	-1.00	ppm		
Maximum	12/17/2002 04:00	.41	ppm		
NO2					
Average		-.08	ppm	8760	.30
Minimum	01/01/2002 11:00	-1.00	ppm		
Maximum	08/08/2002 23:00	.09	ppm		
NOY					
Average		-.01	ppm	8760	.20
Minimum	01/01/2002 11:00	-1.00	ppm		
Maximum	11/08/2002 04:00	.39	ppm		
O3					
Average		24.00	ppb	7943	22.20
Minimum	01/12/2002 18:00	.00	ppb		
Maximum	06/12/2002 17:00	132.00	ppb		
SO2					
Average		-.06	ppm	8760	.20
Minimum	01/01/2002 11:00	-1.00	ppm		
Maximum	12/12/2002 12:00	.09	ppm		

Figure B-4. Summary report of min, max, and mean

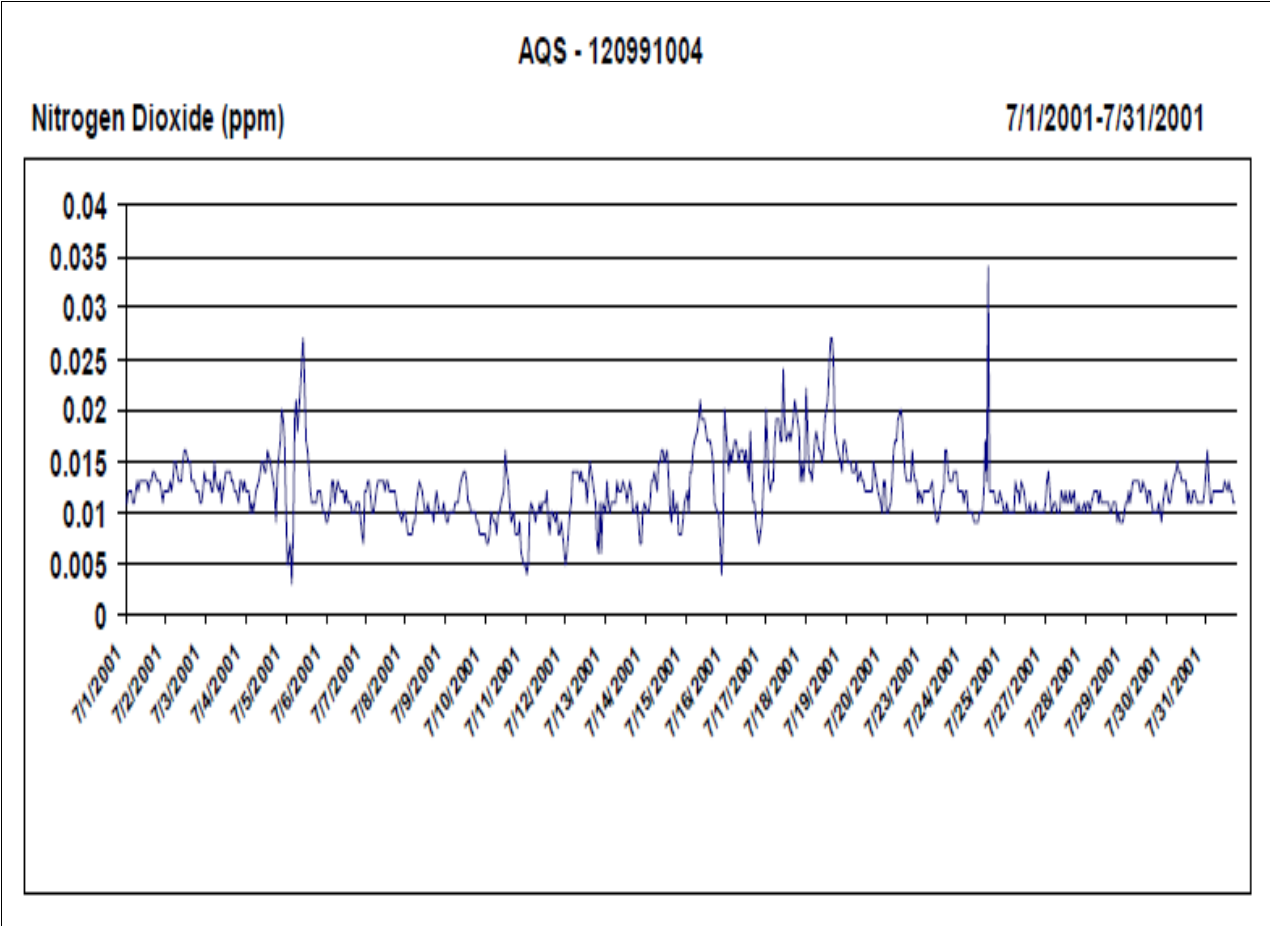


Figure B-5. Timeline plot - single parameter.

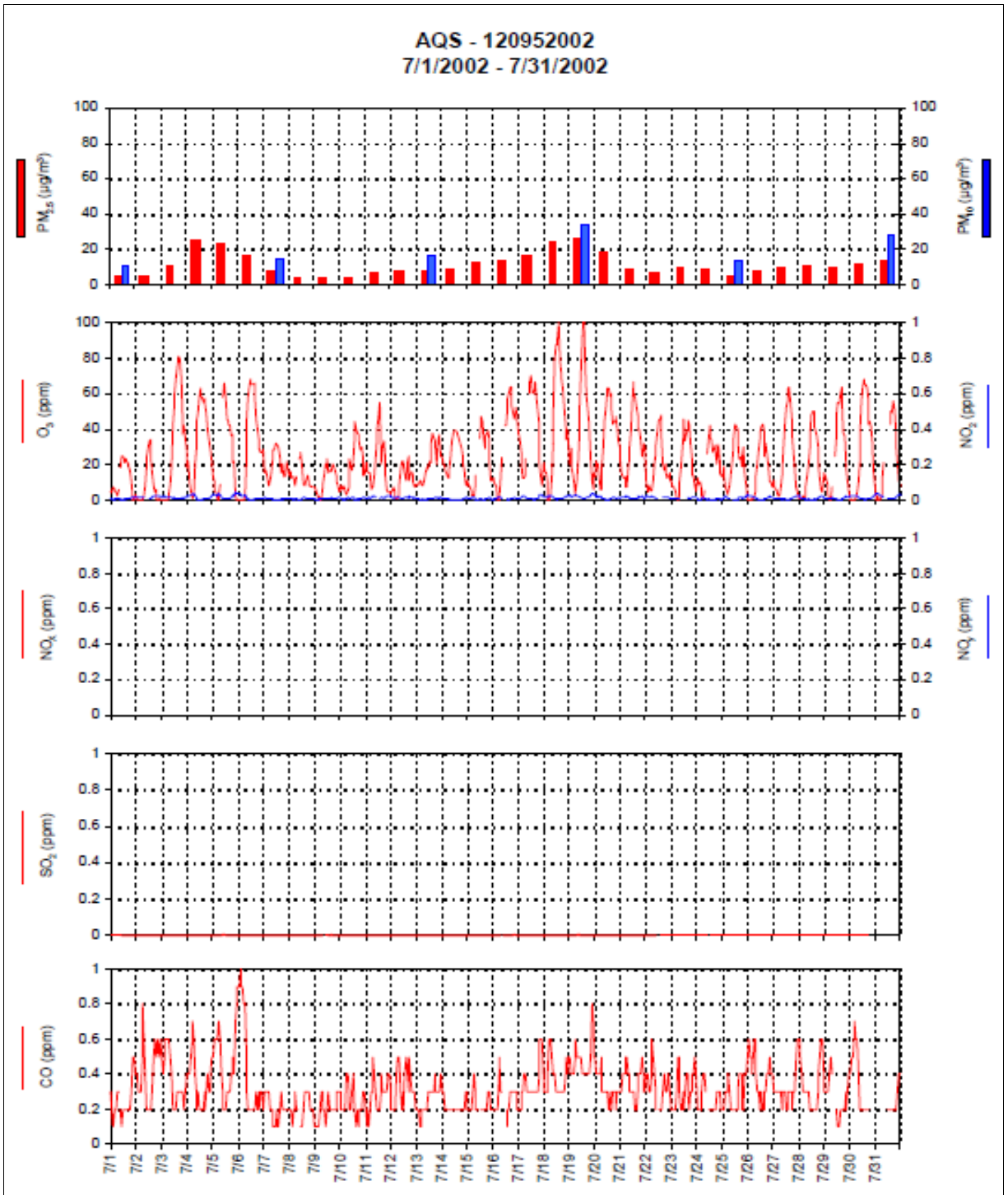


Figure B-6. Timeline plot - multiple, pre-selected parameters (AQS data set).

YYYY	MM	DD	hh	WD	WSPD	GST	WVHT	DPD	APD	MWD	BAR	ATMP	WTMP	DEWP	VIS	TIDE
2004	01	01	00	61	3.9	4.6	0.77	5.56	4.10	999	1028.1	999.0	999.0	10.2	99.0	99.00
2004	01	01	01	57	3.2	3.7	0.79	10.00	4.59	999	1028.6	13.9	13.7	10.8	99.0	99.00
2004	01	01	02	56	3.0	3.4	0.81	11.43	4.70	999	1028.8	13.8	13.5	11.0	99.0	99.00
2004	01	01	03	56	1.9	2.3	0.78	10.81	4.86	999	1029.2	13.7	13.4	11.0	99.0	99.00
2004	01	01	04	37	1.6	1.9	0.77	10.81	5.04	999	1028.4	13.5	13.4	10.9	99.0	99.00
2004	01	01	05	346	1.9	2.2	0.79	10.00	5.15	999	1027.9	13.1	13.4	11.1	99.0	99.00
2004	01	01	06	348	1.6	2.2	0.73	8.33	4.95	999	1027.8	12.9	13.5	11.2	99.0	99.00
2004	01	01	07	4	2.6	3.2	0.76	10.81	5.24	999	1028.0	12.9	13.6	11.1	99.0	99.00
2004	01	01	08	9	2.6	3.2	0.69	10.81	5.33	999	1028.1	13.1	13.6	10.6	99.0	99.00
2004	01	01	09	6	3.4	3.9	0.63	11.43	5.51	999	1028.1	13.1	13.6	9.9	99.0	99.00
2004	01	01	10	2	3.9	4.3	0.64	11.43	5.63	999	1028.4	12.9	13.6	9.4	99.0	99.00
2004	01	01	11	17	3.7	4.5	0.62	10.81	5.61	999	1028.5	12.8	13.6	8.5	99.0	99.00
2004	01	01	12	10	3.7	4.3	0.62	11.43	5.45	999	1029.0	12.7	13.5	7.8	99.0	99.00
2004	01	01	13	17	3.8	4.4	0.58	10.81	5.42	999	1029.7	12.9	13.4	7.4	99.0	99.00
2004	01	01	14	18	2.3	2.6	0.57	10.81	5.33	999	1030.8	13.1	13.4	7.0	99.0	99.00
2004	01	01	15	349	2.2	2.5	0.59	10.81	5.60	999	1032.1	12.9	13.4	7.8	99.0	99.00
2004	01	01	16	354	3.1	3.5	0.57	7.69	5.22	999	1032.1	12.7	13.6	7.3	99.0	99.00
2004	01	01	17	349	3.1	3.6	0.55	7.69	5.48	999	1031.1	12.4	13.7	6.7	99.0	99.00
2004	01	01	18	354	1.6	2.1	0.58	10.81	5.74	999	1030.1	12.6	13.9	6.3	99.0	99.00
2004	01	01	19	336	2.1	2.5	0.53	10.81	5.81	999	1029.4	12.8	14.0	6.5	99.0	99.00
2004	01	01	20	355	2.3	2.7	99.00	99.00	99.00	999	1028.7	13.1	14.1	5.7	99.0	99.00
2004	01	01	21	44	0.7	1.0	0.50	10.81	5.98	999	1028.6	13.7	14.0	5.4	99.0	99.00
2004	01	01	22	63	2.4	2.8	0.49	10.81	5.97	999	1028.1	13.6	14.0	4.9	99.0	99.00
2004	01	01	23	58	0.8	1.5	0.49	10.81	5.96	999	1028.5	13.6	13.9	4.6	99.0	99.00

Figure C-2. Buoy data format.

USAF	WBAN	YR--MODAHRMN	DIR	SPD	VSB	TEMP	DEWP	SLP	ALT	STP	PCPO1
690190	*****	200401010000	200	36	11265	160	60	1018.4	30.09	*****	*****
690190	*****	200401010100	180	46	11265	150	70	1018.7	30.09	*****	*****
690190	*****	200401010200	190	26	11265	140	80	1019.1	30.10	*****	*****
690190	*****	200401010300	190	57	11265	150	70	1019.3	30.11	*****	*****
690190	*****	200401010400	190	57	11265	150	100	1019.2	30.11	*****	*****
690190	*****	200401010500	200	82	11265	140	100	1018.3	30.09	*****	*****
690190	*****	200401010600	190	57	11265	160	90	1017.7	30.08	*****	*****
690190	*****	200401010700	190	51	11265	150	110	1017.7	30.07	*****	*****
690190	*****	200401010800	290	41	11265	140	110	*****	30.11	*****	*****
690190	*****	200401010900	210	51	11265	150	90	*****	30.10	*****	*****
690190	*****	200401011000	210	51	11265	150	110	1017.6	30.09	*****	*****
690190	*****	200401011100	190	51	11265	150	120	1016.5	30.05	*****	*****
690190	*****	200401011200	190	36	11265	150	130	1017.4	30.07	*****	*****
690190	*****	200401011300	190	26	11265	150	140	1017.7	30.08	*****	*****
690190	*****	200401011500	230	41	11265	180	120	1019.0	30.12	*****	*****
690190	*****	200401011600	240	41	11265	190	120	1020.4	30.17	*****	*****
690190	*****	200401011700	210	62	11265	190	130	1019.9	30.15	*****	*****
690190	*****	200401011800	220	72	11265	200	130	1019.1	30.13	*****	*****
690190	*****	200401011900	240	67	11265	210	130	1018.2	30.11	*****	*****
690190	*****	200401012000	230	77	11265	220	120	1017.0	30.07	*****	*****
690190	*****	200401012100	230	67	11265	220	110	1016.4	30.05	*****	*****
690190	*****	200401012200	230	57	11265	210	110	1016.6	30.06	*****	*****
690190	*****	200401012300	210	36	11265	200	110	1016.7	30.06	*****	*****
690190	*****	200401020000	210	26	11265	190	120	1016.9	30.07	*****	*****
690190	*****	200401020100	240	26	11265	170	110	1017.2	30.07	*****	*****
690190	*****	200401020200	220	41	11265	160	110	1017.6	30.08	*****	*****
690190	*****	200401020300	210	41	11265	160	110	1017.5	30.08	*****	*****
690190	*****	200401021700	250	62	11265	200	110	1016.4	30.05	*****	*****
690190	*****	200401021800	230	82	11265	220	110	1014.8	30.01	*****	*****
690190	*****	200401021900	220	82	11265	250	110	1012.6	29.95	*****	*****
690190	*****	200401031500	210	77	11265	180	130	1009.3	29.84	*****	*****
690190	*****	200401031600	210	77	11265	190	150	1010.1	29.87	*****	*****
690190	*****	200401031700	210	67	11265	190	150	1009.7	29.86	*****	*****
690190	*****	200401031800	210	98	11265	210	150	1008.7	29.83	*****	*****
690190	*****	200401031900	210	82	11265	220	150	1007.6	29.80	*****	*****
690190	*****	200401032000	220	72	11265	220	150	1006.8	29.78	*****	*****
690190	*****	200401032100	230	62	11265	230	150	1006.0	29.75	*****	*****
690190	*****	200401032200	200	62	11265	230	150	1005.4	29.74	*****	*****
690190	*****	200401032300	210	51	11265	240	140	1005.0	29.73	*****	*****

Figure C-3. NCDC surface data format.

254	0	1	JAN	2004		
1	3937	72240	30.12N	93.22W	5	99999
2	200	1390	1580	76	99999	3
3		LCH			52	ms
9	10250	5	174	128	100	26
4	10000	212	160	113	105	46
6	9891	304	99999	99999	110	51
5	9680	485	134	108	99999	99999
6	9538	609	99999	99999	155	46
5	9380	749	144	128	99999	99999
4	9250	871	140	129	200	67
6	9203	914	99999	99999	200	57
6	8873	1219	99999	99999	195	87
5	8800	1288	118	118	99999	99999
5	8680	1403	138	91	99999	99999
4	8500	1584	142	82	190	82
6	8255	1828	99999	99999	190	93
5	8020	2069	110	50	99999	99999
6	7958	2133	99999	99999	195	103
6	7669	2438	99999	99999	195	108
6	7391	2743	99999	99999	200	108
4	7000	3192	30	30	210	103
5	6730	3508	14	2	99999	99999
6	6606	3657	99999	99999	225	103
5	6500	3786	0	-60	99999	99999
6	6357	3962	99999	99999	230	113
6	6116	4267	99999	99999	225	118
5	6070	4327	-45	-135	99999	99999
5	5950	4484	-29	-329	99999	99999
5	5720	4794	-41	-441	99999	99999
6	5661	4876	99999	99999	200	82
6	5237	5486	99999	99999	215	93
6	5038	5791	99999	99999	205	123
4	5000	5850	-117	-487	205	118
6	4839	6096	99999	99999	210	134
5	4330	6933	-189	-499	99999	99999
6	4112	7315	99999	99999	245	129
4	4000	7520	-235	-505	245	149
6	3944	7620	99999	99999	240	149
6	3471	8534	99999	99999	230	149
5	3420	8640	-333	-563	99999	99999
6	3181	9144	99999	99999	230	190
4	3000	9550	-391	-561	230	237
5	2930	9711	-395	-455	99999	99999
5	2840	9923	-413	-453	99999	99999

Figure C-4. NCDC upper-air data format.

BHMPData2004Public.xls											
	A	B	C	D	E	F	G	H	I	J	K
1	File Creation Date 7/19/2006 12:14:51 PM										
2											
3		SampleDate	FRM_EQ	FRM_EQ	FRM_EQ	FRM_EQ	FRM_EQ	FRM_EQ	FRM_EQ	FRM_EQ	OTHER_PM25
4	BHM	1/1/2004 0:00	33.33333	0.634888	3.742294	0.413987	5.284901	18.38064	3.580499	1.296129	
5	BHM	1/2/2004 0:00	15.76923	-999	-999	-999	-999	-999	-999	-999	
6	BHM	1/3/2004 0:00	11.45833	-999	-999	-999	-999	-999	-999	-999	
7	BHM	1/4/2004 0:00	7.625	0.113733	3.305718	0.995093	0.412326	2.011653	0.116221	0.670256	

Figure C-5. SEARCH PM2.5.

BHMPMCoarseData2004Public.xls							
	A	B	C	D	E	F	G
1	File Creation Date 7/19/2006 1:07:56 PM						
2	0	1	2	3	4	5	6
3		SampleDate	Coarse Mass	Coarse SO4	Coarse NO3	Coarse NH4	CoarseMajorMetalOxides
4	BHM	1/1/2004 0:00	21.40	-999	-999	-999	-999
5	BHM	1/2/2004 0:00	-999.00	-999	-999	-999	-999
6	BHM	1/3/2004 0:00	-999.00	-999	-999	-999	-999
7	BHM	1/4/2004 0:00	6.82	0.414610573	1.047548635	0.003549019	0.583502388
8	BHM	1/5/2004 0:00	-999.00	-999	-999	-999	-999
9	BHM	1/6/2004 0:00	-999.00	-999	-999	-999	-999
10	BHM	1/7/2004 0:00	6.57	-999	-999	-999	-999
11	BHM	1/8/2004 0:00	-999.00	-999	-999	-999	-999
12	BHM	1/9/2004 0:00	-999.00	-999	-999	-999	-999
13	BHM	1/10/2004 0:00	4.17	0.137814673	0.417612146	0.016765437	1.291654864

Figure C-6. SEARCH coarse PM.



The Department of the Interior Mission

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historical places; and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The Department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.



The Minerals Management Service Mission

As a bureau of the Department of the Interior, the Minerals Management Service's (MMS) primary responsibilities are to manage the mineral resources located on the Nation's Outer Continental Shelf (OCS), collect revenue from the Federal OCS and onshore Federal and Indian lands, and distribute those revenues.

Moreover, in working to meet its responsibilities, the **Offshore Minerals Management Program** administers the OCS competitive leasing program and oversees the safe and environmentally sound exploration and production of our Nation's offshore natural gas, oil and other mineral resources. The MMS **Minerals Revenue Management** meets its responsibilities by ensuring the efficient, timely and accurate collection and disbursement of revenue from mineral leasing and production due to Indian tribes and allottees, States and the U.S. Treasury.

The MMS strives to fulfill its responsibilities through the general guiding principles of: (1) being responsive to the public's concerns and interests by maintaining a dialogue with all potentially affected parties and (2) carrying out its programs with an emphasis on working to enhance the quality of life for all Americans by lending MMS assistance and expertise to economic development and environmental protection.