



*EPA's FY 2007
Performance and Accountability Report*

Appendix B – Data Quality

This document is one chapter from the "Fiscal Year 2007 Performance and Accountability Report, U.S. Environmental Protection Agency," (EPA-190-R-07-001), published on November 15, 2007. This document is available at:

<http://www.epa.gov/ocfo/par/2007par>.

APPENDIX B - DATA QUALITY

This section addresses performance data completeness and reliability in compliance with the Office of Management and Budget's (OMB's) Circular A-11. For a fuller explanation of data limitations, data quality reviews and audits as well as improvements to data systems and collection activities, please refer to the on-line Data Quality Appendix at www.epa.gov/ocfo/par/2007par (see "Supplemental Information"). This information is organized by 2007 performance measure (as presented in the FY 2007 Performance and Accountability Report) and supporting database.

Completeness

In its Circular A-11 (Section 230), the Office of Management and Budget (OMB) defines performance data as complete when actual or preliminary performance is reported for every performance goal and measure, and, in cases where data are not currently available, the Agency notes the year when actual performance data will be reported.

According to this OMB definition, EPA's performance data for 2007 are complete. We have provided actual performance data for each 2007 performance target or the date when actual performance data will be reported. EPA prefers not to publish preliminary data because early results may significantly differ from end-of-year results.

Data Gaps

EPA has made significant progress moving from program activity and output measures to outcome measures of environmental condition, risk, or health effects. However, a consequence of this conversion is that end-of-year results tend to be delayed for outcome measures. In this year's PAR, 31% of measures do not yet report actual results, but provide the date when data will be available.

There are several reasons for these delays in reporting. In many cases, because changes in environmental outcomes typically occur over many years, it makes better sense to look at trends for these measures rather than interpret annual results. Where data are missing for 2007, however, results may be available for past years and are provided in this report. Gaps in data will be filled over time, providing a historical record that offers a more complete picture of Agency progress than could any one-year snapshot.

In addition, representative environmental monitoring on an annual basis is not always cost-effective. Data processing, including quality assurance and control, is generally more time-consuming and resource intensive for outcome data than for outputs. This is exemplified by data on blood-lead levels of women of child-bearing age, which the Centers for Disease Control collect every calendar year by, but release to the public in 2-year sets. The most current data set for 2001-2002 was not available to EPA until early 2005.

EPA does utilize projections when there is a reliable empirical or computer model to project results using prior year data. For example, the National Emissions Inventory of Hazardous Air Pollutants is compiled every 3 years and off-year results are projected using an emissions modeling system. Information on modeled results is contained in this appendix.

Real-time Data

As environmental monitoring in continuous “real-time” becomes more widespread, we can expect data gaps to be significantly reduced or eliminated. The use of distributed sensor networks and other advanced sensor systems, including “smart” monitors which can automate responses, is leading the way to obtaining better and more cost-effective environmental monitoring data.

Reliability

In accordance with OMB’s definitions, the performance data supporting the 2007 PAR are reliable and not materially inadequate. Agency managers and decision-makers use these data on an ongoing basis in the normal course of their duties.

All of EPA’s data are subject to the Agency’s “Quality System,” formal and compulsory policies and procedures that ensure environmental programs and decisions are supported by quality-assured data. Data collected using environmental technology, for example, must comply with appropriate engineering standards and practices. Quality Management Plans and Quality Assurance Project Plans (QAPP) are required under EPA’s Quality System. For definitions and additional information, see EPA’s Quality System website at <http://www.epa.gov/quality>.

Beginning in 2007, EPA’s Quality Staff will be revising its guidance for evaluating existing data for use in environmental projects or programs. The guidance will clarify to EPA organizations what are the quality assurance requirements for secondary use data, including the use of program and compliance data to measure Agency performance and progress towards environmental goals. When the revised guidance is issued, it will make clear that projects using existing environmental data will require quality assurance project plans or equivalent documentation, and an evaluation of the data based on acceptance criteria. The results of the evaluation will document how well the existing data meet the objectives of the project and will provide information on data limitations, methods for data collection, compilation and analysis, and quality assurance procedures. Also, where appropriate, the results of the evaluation will provide information on how well the data meet various quality indicators (e.g., precision, bias, comparability, completeness, or representativeness). Further, the documentation of the results of the data quality evaluation will meet Agency information quality criteria for transparency, objectivity, and utility. Because these quality assurance requirements are covered by the Agency’s Quality Order, the data will be certified by an appropriate quality assurance officer, who will be accountable for their reliability.

The discussion of “Management Accomplishments and Challenges,” included in Part 3 of this report, “Other Accompanying Information,” presents key management challenges identified by EPA’s Office of Inspector General in FY 2007 and the Agency’s response. A number of challenges are related to data quality and performance measures, as well as the Agency’s need to better demonstrate program results (e.g., data standards/data quality, emissions factors, managing for results). EPA is working to address these challenges, setting priorities for improving its performance measures and finding new and innovative ways to improve the quality of the data it uses for decision-making. For example, to address OIG concerns regarding emission factors, in FY 2007 EPA created a new, streamlined emission factors development process that will provide

clearer guidance on the regulatory and environmental risk of using emission factors. For a more detailed discussion of EPA's response to OIG's key management challenges, refer to "Other Accompanying Information."