In January 2003, the Assistant Administrator of OSWER proposed an organizational structure to better meet new responsibilities related to homeland security. The organizational change included moving the emergency response (including emergency and time-critical removals) and oil spill programs, then in OERR, into the Chemical Emergency Preparedness and Prevention Office (CEPPO), and the Technology Innovation Office (TIO) into OERR. The final phases of the reorganization were completed by January 2004 for the former OERR, now renamed the Office of Superfund Remediation and Technology Innovation (OSRTI), and by September 2004 for the former CEPPO, now renamed the Office of Emergency Management (OEM).

† The discussion in this document is intended solely as guidance. This document is not a regulation. It does not impose binding legal requirements. EPA retains the right to adopt approaches on a case-by-case basis that differ from those described in this guidance, where appropriate. This guidance document interprets Agency policies on QA. This guidance document may be revised without notice.
Table 1: Requirements of the Data Categories
(Analytical Data)

<table>
<thead>
<tr>
<th>Screening Data</th>
<th>Screening Data With Definitive Confirmation</th>
<th>Definitive Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample documentation (location, date and time collected, batch, etc.)</td>
<td>Sample documentation (location, date and time collected, batch, etc.)</td>
<td>Sample documentation (location, date and time collected, batch, etc.)</td>
</tr>
<tr>
<td>Chain of custody (when appropriate)</td>
<td>Chain of custody (when appropriate)</td>
<td>Chain of custody (when appropriate)</td>
</tr>
<tr>
<td>Sampling design approach (systematic, simple or stratified random, judgmental, etc.)</td>
<td>Sampling design approach (systematic, simple or stratified random, judgmental, etc.)</td>
<td>Sampling design approach (systematic, simple or stratified random, judgmental, etc.)</td>
</tr>
<tr>
<td>Initial and continuing calibration</td>
<td>Initial and continuing calibration</td>
<td>Initial and continuing calibration</td>
</tr>
<tr>
<td>Determination and documentation of detection limits</td>
<td>Determination and documentation of detection limits</td>
<td>Determination and documentation of detection limits</td>
</tr>
<tr>
<td>Analyte(s) identification</td>
<td>Analyte(s) identification</td>
<td>Analyte(s) identification</td>
</tr>
<tr>
<td>Analyte(s) quantitation</td>
<td>Analyte(s) quantitation</td>
<td>Analyte(s) quantitation</td>
</tr>
<tr>
<td>Quality control (QC) blanks (trip, rinsate, method)</td>
<td>Quality control (QC) blanks (trip, rinsate, method)</td>
<td>Quality control (QC) blanks (trip, rinsate, method)</td>
</tr>
<tr>
<td>Matrix spike recoveries</td>
<td>Performance Evaluation (PE) samples (when specified)</td>
<td>Performance Evaluation (PE) samples (when specified)</td>
</tr>
<tr>
<td>Analytical error determination¹</td>
<td>Analytical error determination¹</td>
<td>Analytical error determination¹</td>
</tr>
<tr>
<td>Definitive confirmation²</td>
<td>Total measurement error determination³</td>
<td>Total measurement error determination³</td>
</tr>
</tbody>
</table>

**NOTES:**
1. Measures the precision of the analytical method. An appropriate number of replicate aliquots, as specified in the QA Project Plan (QAPP), are taken from at least one thoroughly homogenized sample, the replicate aliquots are analyzed, and standard laboratory QC parameters (such as variance, mean, and coefficient of variation) are calculated and compared to method-specific performance requirements specified in the QAPP.

2. At least 10 percent of the screening data must be confirmed with definitive data. At a minimum, at least three screening samples reported above the action level (if any) and three screening samples reported below the action level (or as non-detects) should be randomly selected from the appropriate group and confirmed.

3. Measures overall precision of the measurement system, from sample acquisition through analyses. An appropriate number of co-located samples as determined by the QAPP are independently collected from the same location and analyzed following standard operating procedures. Based on these analytical results, standard laboratory QC parameters such as variance, mean, and coefficient of variation should be calculated and compared to established measurement error goals. This procedure may be required for each matrix under investigation, and may be repeated for a given matrix at more than one location at the site.

either analytical or total measurement error must be determined. (See Table 1.) Per the UFP-QAPP Part 1, definitive data “are analytical data that are suitable for final decision-making.”

What are “Screening Data”?

Screening data are generated by rapid, less precise methods of analysis with less rigorous sample preparation than definitive data. Screening data provide analyte (or at least chemical class) identification and quantification, although the quantification may be relatively imprecise. According to the UFP-QAPP Part 1, screening data are “analytical data that are of sufficient quality to support an intermediate or preliminary decision but must eventually be supported by definitive data before a project is complete.” For definitive confirmation, at least 10 percent of the screening data are confirmed using analytical methods, quality control procedures, and criteria associated with definitive data. Screening data without associated confirmation data are generally not considered to be data of known quality. Screening data without confirmations are generally allowed only under limited circumstances, and will be discussed later.

Requirements for the Data Categories

Each data category is associated with a list of minimum requirements. (See Table 1.) Therefore, any method or analytical instrument that can meet the quality requirements can be used for each one of the data categories.

For example, if a field portable X-ray fluorescence method can meet all the “definitive data” quality requirements, the resulting data are definitive. However, if a mass spectrometer method was used, but not all “definitive data” quality requirements were met, then the resulting data are not definitive.

Data Category Most Relevant to the Removal Program

“Definitive data” and “screening data with definitive confirmation” provide useful and valid data for enforcement purposes, determination of extent of contamination, disposal and/or treatment, responsible party identification, and cleanup verification.

It is anticipated that “screening data with definitive confirmation” will satisfy most data quality requirements for the Removal Program. The “definitive data” category is expected to be used only in those cases where an error determination is needed to identify false negative or false positive values for critical decision level concentrations. The “screening data” category (without confirmation) has only limited use, specifically for the following:

- Emergencies;
- Health and safety screening using, for example, Jerome Mercury Vapor analyzer, Industrial Scientific multi-gas monitor, or RAE Systems MultiRAE organic vapor monitor (OVM), and other techniques; ‡
- Real-time field data to supplement analytical data (e.g., “sniffing” a monitoring well with an OVM prior to sampling or measuring pH, dissolved oxygen and/or conductivity at the time of sampling);
- Field sample locational decisions (i.e., collecting screening data to determine in real time where to collect confirmation samples for definitive data analysis);
- Waste profiling; and
- Preliminary identification and quantitation of pollutants.

Quality Control for Screening Data Collection

Operating procedures for OVMs, conductivity meters, and other field instruments require the use of calibration gases or solutions. The manufacturer’s instructions or the Regional standard operating procedures should specify the method for and frequency of continuing calibration during use of field measurement instruments. Actual frequency during use should meet or exceed these levels.

Identification of Data Categories for a Project

The selected data category or categories should be decided upon during the project’s systematic planning process. As stated earlier, the data category or categories need to correspond to the project’s data use objectives. Additionally, the data category or categories should be documented in the project’s Quality Assurance Project Plan or Quality Assurance Sampling Plan. Refer to the Quality Assurance Technical Information Bulletins titled Systematic Planning Processes for the Removal Program and Changes in Quality Assurance Policies for the Removal Program for a more detailed discussion of the planning process as well as the contents and completion of QA plans for removals.

References

5. U.S. Environmental Protection Agency, EPA Quality Manual For Environmental Programs, EPA Manual

‡ Mention of company or product names should not be construed as an endorsement by the U.S. Environmental Protection Agency.


