

CLARIFICATION NUMBER CAO-00-065, REV. 3
DETERMINATION OF TENTATIVELY IDENTIFIED COMPOUNDS (TICS)

ISSUE

1. Is it necessary to use the maximum instrument sensitivity when analyzing for target analytes or when screening for tentatively identified compounds (TICs)? B3-1
2. Must the entire NIST Library be used for searches for TICs? B3-1 and Tables B3-2, B3-4, B3-6, and B3-8
3. Is the use of automated software systems allowed? B-3a(1)
4. What are the steps to establish PRQLs for TICs that are added to the target analyte list and that do not have corresponding values in the permit? B3-6, B3-7, and B3-8

CONCLUSION

1. The use of maximum instrument sensitivity is not required. Instrument sensitivity must only comply with the WIPP program requirements in Attachment B3.
2. No. Only those compounds that are listed as hazardous constituents in 40 CFR 261, Appendix VIII need to be included in the reference library. This library can be further reduced to include those compounds being sought by the analysis. This applies to totals analysis and headspace gas analysis. For example, headspace gas analysis need only use a subset of Appendix VIII that includes VOCs.
3. Yes, the use of automated software is allowed as long as the review of the spectral analysis is performed by a qualified individual and the criteria found in the permit for identifying TICs are met.
4. For compounds that do not have PRQLs in the permit, the following should be used:

For solids: use the Regulatory Threshold Limit established by the Toxicity Characteristic (TC). These are defined in Table 1 in 40 CFR 261. Use 100 ppm for metals that do not have a TC limit; use 100 ppm for aqueous extractable VOCs that do not have a TC limit; use 10 ppm for purgeable VOCs that do not have a TC limit; use 40 ppm for SVOC that do not have a TC limit.

For gases: use 100 ppm aqueous extractable VOCs and use 10 ppm for all others.

DISCUSSION

1. The USEPA's Office of Solid Waste analytical methodology as specified in SW-846 allows the latitude in determining both equipment and instrument settings. Chapter 2, Section 2.1 of SW-846 states that:

...equipment and settings other than those listed in this manual may be employed provided that method performance appropriate for the intended RCRA application has been documented. Such performance includes consideration of precision, accuracy (or bias), recovery, representativeness, comparability and sensitivity (detection, quantitation, or reporting limits) relative to the data quality objectives for the intended use of the analytical results.

The permit provides the data quality objectives in Attachment B3. Equipment selection and settings must assure that these DQOs are met.

2. EPA's SW-846, Chapter 2, Section 2.1 states:

It is the EPA's intention that the target analyte list for any procedure include those analytes necessary to meet the data quality objectives of the project, i.e., those analytes subject to monitoring requirements and set out in a RCRA permit.

With regards to the WIPP permit, the analytes of interest are those found in 40 CFR 261, Appendix VIII.

For the purposes of the determining what compounds from Appendix VIII are considered to be VOCs, the following definition from TO-14, Section 4.5 should be used:

VOCs are generally classified as those organics having saturated vapor pressures at 25°C greater than 10^{-1} mm Hg.

3. Automated software can be used to assist in the determination of TICs. Specifically, software can be set to limit TIC identification to account for instrument noise. This can be done by setting the software to perform a forward search of the NIST library of mass spectra for tentatively identified compounds for all chromatographic peaks greater than 10 percent of the nearest internal standard.
4. These are consistent with the limits set by the NMED in the permit in Tables B3-2, 4, 6, and 8.