Analytical Services Branch
NRAS Program

Polychlorinated Biphenyl Congeners (inclusive of dioxin-like congeners)

The EPA Analytical Services Branch (ASB) of the Office of Superfund Remediation and Technology Innovation (OSRTI) offers nationally administered analytical services that provide data from the measurement of various pollutants in environmental samples from known or suspected hazardous waste sites using EPA standardized analytical methods to measure pollutants provide critical data in support of the Superfund decision-making process. One such service provides support for measurement of polychlorinated biphenyl (PCB) congeners. This service is offered as part of the Non-Routine Analytical Services (NRAS) program managed by the ASB.

Description of Services

The PCB congener analytical service provides a flexible framework for laboratories to apply EPA analytical methods for the isolation, detection, and quantitative measurement of 209 substituted mono- through deca- PCB congeners in water, soil, sediment, sludge, non-human tissue, ash, oil, and oily matrices. EPA ASB has prequalified laboratories that use the PCB congener Statement of Work (SOW) CBC01.2 to provide this service under a Blanket Purchase Agreement (BPA). The BPAs are managed by the ASB and the Office of Acquisition Management (OAM). Regional customers utilize a "buy-in" process to acquire analytical services and a Request for Quote is used to determine award.

The standard data Turnaround Time (TAT) for this service is 35 days after laboratory receipt of the last sample in the Sample Delivery Group (SDG). Additional Turnaround Time options (14 and 21) are available upon request. Cost per sample is commensurate with TAT.

Requesting the Service

The PCB congener analytical service can be requested by EPA Regional personnel by submitting a Task Order (TO) to EPA ASB. These TOs can modify the SOW to meet project-specific requirements [e.g., changes in TAT, detection limits, or the Target Compound List]. The NRAS PCB congener Program can accommodate approximately 500 samples a month (nationally) using the standard analytical method and TAT. Additional information about this and other NRAS Programs can be found at:

http://www.epa.gov/superfund/programs/clp/analytic.htm#nonroutine

Data Uses

The PCB congener analytical service provides data that can be used by EPA to determine: (1) the nature and extent of contamination at a hazardous waste site; (2) priorities for response based on risks to health and the environment; (3) appropriate clean-up actions; and (4) when remedial actions are complete. The data may be used in the investigation of hazardous waste sites, including: site inspections; Hazard Ranking System (HRS) scoring; remedial investigation/feasibility studies; remedial design; treatability studies; and removal actions. In addition, this service provides data that are available for use in Superfund enforcement and litigation activities.

Target Compounds and Detection Limits

The applicable target compounds and Contract Required Quantitation Limits (CRQLs) for this service are dependent on sample condition (i.e., matrix, moisture content, laboratory background, concentration, etc). In addition to the detection and reporting of the 209 PCB congeners, CBC01.2 allows for the quantification and reporting of total PCB, total homologues and PCB congener toxicity equivalence.

Methods

Samples are analyzed for PCB congeners using High Resolution Gas Chromatography/High Resolution Mass Spectrometry (HRGC/HRMS). The CBC01.2 SOW is based on the EPA Office of Water Methods 1668A and 1668B. These methods represent the EPA Office of Water's most recent requirements for detecting and quantitating PCB congeners. Additional information about these methods is provided in Exhibit D of the SOW which may be accessed at: *http://www.epa.gov/superfund/programs/clp/cbc1.htm*

Data Deliverables

Data deliverables for this service include hardcopy data reporting forms and supporting raw data. Laboratories must also submit the data electronically, referred to as an Electronic Data Deliverable (EDD), within the contract required TAT. EPA then processes the EDD through a web-based data assessment tool - the Electronic Data eXchange and Evaluation System (EXES). EXES provides data users with electronic data assessment reports and spreadsheets within 24 to 48 hours of data receipt that can be tailored to regional data management needs. Further data evaluation can be performed by regional customers using the National Functional Guidelines (NFG) document provided by EPA ASB.

EXES reports also facilitate the transfer of analytical data into regional client databases. In addition to the automated data assessment reports described above, laboratories are provided with a data assessment report documenting instances of noncompliance. Other EDDs (i.e., Excel, txt and csv) are also available upon request.

Quality Assurance (QA) and Quality Control (QC)

The QA process consists of management review and oversight at the planning, implementation, and completion stages of the environmental data collection activity. This process ensures that the data provided are of known and documented quality.

Each contract laboratory prepares a Quality Assurance Plan (QAP) to provide sound analytical chemical measurements. The QAP must specify the policies, organization, objectives, and functional guidelines, as well as the QA and QC activities designed to achieve the data quality requirements in the contract.

The QC process includes those activities defined by regional customers required during analytical data collection to produce data suitable for decision making. The analytical data acquired from QC procedures are used to estimate and evaluate the analytical results. The QC procedures required for this analysis ensure data of known quality suitable for most environmental decision making purposes. More detailed QA/QC procedures for this analytical service are provided in Exhibit E of the SOW, which can be accessed at: *http://www.epa.gov/superfund/programs/clp/cbc1.htm*

Performance Monitoring Activities

Laboratory performance monitoring activities are provided primarily by ASB and the Regions to ensure that contract laboratories are producing data of the appropriate quality. These performance monitoring activities may include on-site laboratory evaluations, electronic data audits, data package audits, HRGC/HRMS tape audits, and the evaluation of laboratory performance through the use of blind Performance Evaluation (PE) samples.

Additional Information

For more information, or to submit suggestions to
improve this analytical service, please contact:

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