

Dioxin and Furan Analytical Services (DLM02.2)



The EPA Analytical Services Branch (ASB) of the Office of Superfund Remediation and Technology Innovation (OSRTI) offers non-routine analytical services that provide data from the measurement of various pollutants in environmental samples from known or suspected hazardous waste sites. EPA standardized analytical methods to measure pollutants provide critical data to the Superfund decision making process.

Description of Services

The dioxin and furan analytical service provides a technical and contractual framework based on EPA Office of Water Method 1613B and EPA SW-846 Method 8290A for the extraction, isolation, detection, and quantitative measurement of 2,3,7,8-substituted chlorinated dibenzo-p-dioxins and chlorinated dibenzofurans (CDDs/CDFs) in water, soil, sediment, sludge, tissue (no human tissue), ash, and oil/oily matrices. ASB provides the specific technical, reporting, and contractual requirements, including Quality Assurance (QA), Quality Control (QC), and Standard Operating Procedures (SOPs), by which EPA evaluates the data. Data delivery turnaround time (TAT) is a 35-day standard service. Flexible options are available and may be added to contractual requirements.

Data Uses

The dioxin and furan analytical service provides data that can be used by EPA to determine: the nature and extent of contamination at a hazardous waste site; priorities for response based on risks to health and the environment; appropriate clean-up actions; and 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/litigation activities.

Target Compounds

A list of the target compounds and typical reporting limits can be found by accessing Exhibit C of the SOW using the following link: <https://www.epa.gov/clp/usepa-analytical-services-branch-statement-work-analysis-chlorinated-dibenzo-p-dioxins-cdds-and>.

Methods and Instrumentation

The analytical method measures CDDs/CDFs using High Resolution Gas Chromatography/High Resolution Mass Spectrometry (HRGC/HRMS). Additional information about this method is provided in Exhibit D of the SOW, which may be accessed at: <https://www.epa.gov/clp/usepa-analytical-services-branch-statement-work-analysis-chlorinated-dibenzo-p-dioxins-cdds-and>.



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. Additional information about EDD requirements are provided in Exhibit H of the SOW, located at <https://www.epa.gov/clp/usepa-analytical-services-branch-statement-work-analysis-chlorinated-dibenzo-p-dioxins-cdds-and>.

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/usability reports and spreadsheets within 24 to 48 hours of data receipt. EXES reports also facilitate the transfer of analytical data into client databases. In addition to the data assessment/usability reports, laboratories are provided with a data assessment report documenting instances of noncompliance.

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 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 and to determine the necessity for, or the effect of, corrective action procedures. More detailed QA/QC procedures for this analytical service are provided in Exhibit E of the SOW, which can be accessed at: <https://www.epa.gov/clp/usepa-analytical-services-branch-statement-work-analysis-chlorinated-dibenzo-p-dioxins-cdds-and>.

Performance Monitoring Activities

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

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

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