Superfund Analytical Methods (SFAM) Analytical Services

The EPA Analytical Services Branch of the Office of Superfund Remediation and Technology Innovation provides analytical services through the Contract Laboratory Program (CLP) to support Superfund Program cleanup activities with data of known and documented quality. Analytical services are performed by EPA-approved contract laboratories in accordance with the requirements of the Statement of Work (SOW) and the contract.

Description of Services

The Superfund Analytical Methods (SFAM) SOW defines the analytical methods provided by the CLP for inorganic and organic analytical services. The SOW provides the analytical methods with specified technical quality assurance, quality control, and reporting requirements. The SFAM SOW and other CLP resources are available on the EPA's *Superfund Contract Laboratory Program* website.

Inorganic analytical services provide the isolation, detection, and quantitative measurement of 23 Metals (including Mercury), Cyanide in aqueous/water, soil/sediment, or waste samples as applicable, and Metals (excluding Mercury) analysis in wipes. Instrumentation includes Inductively Coupled Plasma-Atomic Emission Spectrometer (ICP-AES), Inductively Coupled Plasma-Mass Spectrometer (ICP-MS), and Cold Vapor Atomic Absorption (CVAA) technique. Data delivery turnaround times include 7-day, 14-day, and 21-day service. Preliminary data submission includes 48-hour turnaround for all analyses.

Organic analytical services provide the isolation, detection, and quantitative measurement of 54 Trace Volatiles, 5 Trace Volatiles by Selected Ion Monitoring (SIM), 54 Low/Medium Volatiles, 71 Semivolatiles, 20 Semivolatiles by SIM, 21 Pesticides, and 9 Aroclors in aqueous/water, soil/sediment, and waste samples. Instrumentation includes Gas Chromatograph/Mass Spectrometer (GC/MS) and GC with electron capture detector (GC/ECD). Data delivery turnaround times include 7-day, 14-day, and 21-day service. Preliminary data submission options include 48-hour (for Trace and Low/Medium Volatiles) and 72-hour (for Semivolatiles, Pesticides, and Aroclors).

The SOW also includes procedures for percent solids, pH, and the leaching of samples by Toxicity Characteristic Leaching Procedure (TCLP) or Synthetic Precipitation Leaching Procedure (SPLP).

The Superfund CLP offers flexible services including, not limited to, lower quantitation limits, unique matrices, faster turnaround time, and/or additional target analytes.

Data Deliverables

The Superfund CLP laboratories are required to provide a complete data deliverable. The complete data deliverables include all data for analysis of all samples including field samples, calibrations, QC samples and supporting documentation. The data is reported to the EPA in Portable Document Format (PDF), hard copy (when requested), and as a Staged Electronic Data Deliverable (SEDD). The data deliverables are inspected and assessed for completeness, compliance, and usability via a web-based data assessment tool - the Electronic Data eXchange and Evaluation System (EXES). Data usability is determined in accordance with the CLP's National Functional Guidelines for Data Review. All laboratory deliverables and EXES-generated inspection and assessment reports are available to the EPA customer through the web-based EXES Data Manager (EDM).

Quality Assurance (QA)

The Superfund CLP maintains a comprehensive Quality Assurance (QA) program to ensure CLP data is compliant with EPA's commitment to utilizing environmental information of known and documented quality, scientifically valid, legally defensible, and appropriate for the intended use (EPA CIO 2105.1).

The Superfund CLP requires EPA-contracted laboratories maintain a Quality Management Plan (QMP), Quality Assurance Project Plan (QAPP), and Standard Operating Procedures (SOP) to achieve the data quality requirements in the contract.

The Superfund CLP QA program utilizes on-site laboratory audits, data package audits, electronic data audits, proficiency testing audits, performance-based laboratory scheduling, and data inspection and usability assessments to monitor laboratory performance.

Data Uses

The Superfund CLP analytical data is used by EPA for a variety of purposes such as defining the nature and extent of contamination at a Superfund site, determining priorities for response based on risks to health and the environment, and determining appropriate clean-up actions, emergency response and remedial actions. The data may be used in all stages of hazardous waste sites investigations including site inspections; Hazard Ranking System (HRS) scoring; remedial investigation/feasibility studies; remedial design; treatability studies; and removal actions. In addition, the CLP data is used in Superfund enforcement/litigation activities.