



Contact our experts for more information on CH2M HILL's Applied Sciences Laboratory-related services.

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Applied Sciences Laboratory

What We Offer

CH2M HILL's Applied Sciences Laboratory provides analytical support to projects throughout the United States and globally regardless of size and degree of complexity. Our qualifications are unique to the specific analytical needs of consulting and engineering projects. ASL offers a full range of analytical support including analytical chemistry (wet chemistry, inorganics, and organics), air toxics, aquatic toxicology, treatability, and consulting.

- Experienced analytical chemists and biologists with a full service analytical laboratory
- A nationwide network of environmental chemists to support and enhance CH2M HILL's integrated delivery systems
- Field technicians, chemists, and biologists with equipment for standard and custom environmental sampling or testing

NELAC Accreditation

The Applied Sciences Laboratory is one of only a select few laboratories nationwide to be accredited for four of the programs administered by NELAC (National Environmental Laboratory Accreditation Conference). The four NELAC programs include: Clean Air Act, Clean Water Act, Safe Drinking Water Act, and RCRA. For more information, see our Certifications page.

NELAC standards are set through a process involving the EPA, State Environmental and Laboratory Certification Agencies, other Federal Partners, and the stakeholders which include commercial laboratories, regulated parties, accrediting organizations, and trade associations.

Step-by-Step Sample Testing

Ready to take Samples? Print out an Online Chain-of-Custody form to request your analyses.

1. Chemistry Form

See Appendix A.

2. Bioassay Form

See Appendix B

3. EPA Methods Listing

This reference document provides a listing of most EPA methods, and the document or CD code in which the method can be found. Please contact us for a copy.

4. Sample Containers

See our Sample Containers table (Appendix C) to find the correct container and preservative for your samples.

5. Soil Samples from Foreign Countries

Shipping soil samples into the United States from other countries can be an easy task with the correct paperwork. The U.S. Department of Agriculture requires any soil coming into the United States through any U.S. port of entry (Guam, Hawaii, Puerto Rico, and the U.S. Virgin Islands) to follow these procedures.

- All shipments of soil must be in sturdy, leak proof containers, which will prevent spillage in transit.
- Packages are to be labeled "Contents – Soil Samples."
- Each package should be accompanied with a copy of the USDA permit, which is supplied by the laboratory.

Once the laboratory has received the foreign samples, the following must be adhered to:

- Soil may not be retained longer than six (6) months.
- It must be stored only at the receiving laboratory.
- It must be stored in leak proof containers and clearly marked to show the country of origin and the date collected.
- Access to the storage facility must be limited to authorized personnel only.
- Soil residues must be treated by Dry Heat or Steam Heat as stipulated in the permit.

Services

Air Toxics Analysis Service

CH2M HILL's Air Toxics Laboratory utilizes state-of-the-art instrumentation and experienced staff to provide air analyses services that few other laboratories in the world can offer. Air toxics laboratory staff has extensive experience in both sample collection and analysis.

The air toxics laboratory has been in operation since 1991. Projects and clients often use the data generated from air toxics analyses for:

- odor studies
 - soil gas investigations
 - ambient air studies
 - remedial investigations
 - vapor intrusion
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Aquatic Toxicology Service

CH2M HILL's Applied Sciences Laboratory operates an aquatic toxicology laboratory providing aquatic testing services to a variety of clients. The laboratory has full-service aquatic toxicology capabilities (acute, chronic, and flow-through testing) as well as one-of-a-kind custom tests. Applied Sciences staff have performed thousands of toxicity tests ranging from simple acute testing to lifecycle chronic and bioaccumulation studies. This experience has included testing over 40 different marine and freshwater vertebrate, invertebrate, and algal species.

Close Support Laboratories Services

Close Support Laboratories (CSLs) provide data on an as-needed or near "real-time" basis utilizing portable analyzers or lab grade instrumentation in a trailer or facility in close proximity of the site.

CSLs can be located anywhere. The equipment and staff specific to the project are relocated to the site. The CSL allows for quick decisions to be made. The data is targeted to specific parameters and generated through the use of standard testing protocols or methods modified or developed specifically for the parameters and the sample matrix.

The rationale associated with utilizing CSL onsite includes:

- Provides data to project staff when it is most pertinent to ongoing activities
- Permits the project manager and task leaders to make informed decisions concerning the direction of their work, and helps identify when adjustments are needed
- Reduces the tendency to under- or over-investigate a site or contaminant source
- Focuses on target parameters rather than extensive lists of unrelated parameters
- Provides additional data sets for use in feasibility studies
- Methods used are customized or fitted to best analyze the site parameters in the same matrices of interest
- Eliminates sample packaging and shipping costs
- Offers a cost-effective alternative to extensive offsite laboratory analytical work
- Produces data for all levels of QC, and obtain state/regulatory certification if necessary

Consulting Chemistry Services

- Custom instrumentation
 - Data validation
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- Emissions characterization
- Method development
- Process analysis
- Regulatory consultation
- Sample plan development

Laboratory Sediment Management Services

The analysis of sediments, overlying water, bioassays, porewater and tissues is complex. It is often driven by regulatory requirements and risk assessments with low reporting limits that are difficult, if not impossible, to meet unless scientists know how to “clean up” samples and resolve analytical interference factors. The Applied Science Laboratory offers years of experience in handling these samples. The laboratory can consistently deliver:

- Accurate, reliable data
- Data within lower reporting limit
- Quick turnaround



Quality Assurance Management

CH2M HILL Applied Sciences senior chemists have years of laboratory and management experience, often with a number of different laboratories. We have assisted a number of clients with:

- Laboratory audits to assist clients with preparing for state or federal certification programs.
- Preparation of blind quality assurance samples to be submitted to the Client’s laboratory as part of an overall performance evaluation.
- Development, preparation, or revision of standard operating procedures (SOP) as part of a laboratory’s overall quality control program, or to meet specific requirements by outside agencies.
- Development or presentation of training programs to provide laboratory staff with health and safety training, sample collection or sample analysis training (general or instrument-specific).
- Development, or evaluation of Quality Assurance Plans (QAP) to meet project-specific requirements or for general laboratory operation.

Restrictive Substances/Green Chemistry

Green Chemistry is defined by the American Chemical Society as “the design of chemical products and processes that reduce or eliminate the use and generation of hazardous substance” and “linking the design of chemical products and processes with their impacts on human health and the environment.”



Green Chemistry is an integral part of sustainable development because its principles attempt to reduce the use of toxic materials, conserve natural resources, and minimize waste and emissions. As an ardent supporter of sustainable design and development, CH2M HILL has consulted with clients on restricted substances issues. The laboratory is also capable of carrying out the analysis for restricted substances, advising clients on environmental impacts of manufacturing processes, assisting with interpretation of regulations related to Green Chemistry, and collecting, evaluating, and interpreting environmental data.

Sample Collection and Analysis

CH2M HILL Applied Sciences maintains a full service laboratory at the CH2M HILL Corvallis, Oregon, location. Capabilities include a broad range of environmental and industrial testing.

Standard analytical methods as specified by the Environmental Protection Agency (EPA), Department of Energy (DOE), American Society for Testing and Materials (ASTM), National Institute for Occupational Safety and Health (NIOSH), and other federal and state agencies are typically used.

Sediment/Tissue Analysis

The analysis of sediments, overlying water, porewater, and tissues is demanding, often with low reporting limits driven by regulatory requirements and risk assessments. The Applied Sciences Laboratory is experienced with the extraction, cleanup procedures, concentration of samples, and the specialized analyses for sediments, waters and tissues. CH2M HILL can identify strategic solutions that are expedient, cost-effective, and environmentally compliant.
