



# Environmental Risk Assessment



Federal agencies, states, and private businesses face many novel and changing public health and environmental concerns, such as the contamination of public beaches by pathogens, the presence of relatively high levels of fine particles in urban air, the occurrence of chemical residues in drinking water, and the use of pesticides to control mosquito populations.

At ICF International, we help our clients understand what contaminants may be causing harm and where and how exposure to these substances occurs. Using the best relevant data and innovative analysis, we help our clients determine how they can minimize exposure to contaminants in order to maximize the protection of public health and the environment. Risk assessment is an important tool for understanding where to focus management efforts to most effectively reduce the potential effects of contaminants on public health and the environment. ICF uses risk assessment to help clients make informed decisions on environmental issues such as the transport, storage, and disposal of hazardous materials; the cleanup and redevelopment of contaminated sites; the development and approval of new products; appropriate levels of emission control; and the establishment of regulatory limits on environmental contaminants. Our in-depth analyses provide our clients with the information they need to determine health-protective and cost-effective solutions.

## Examples of contaminants assessed by ICF:

- **Metals**
- **Pesticides, including antimicrobials**
- **Volatile organic compounds (VOCs)**
- **Persistent, bioaccumulative toxicants (PBTs)**
- **Radionuclides**
- **Aquaculture drugs/chemicals**
- **Hazardous air pollutants (HAPs)**
- **Criteria air pollutants**
- **Microbes**
- **Water disinfection byproducts**
- **Greenhouse gases**

## Our Approach

ICF brings end-to-end services and value to our clients by designing case-specific approaches and incorporating the most current modeling and uncertainty analyses. As experienced consultants, we are sensitive to budgets, schedules, and resources, and tailor each approach to fit our clients' needs.

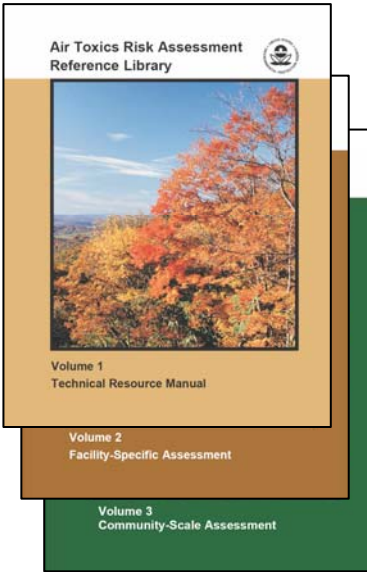
ICF has assessed the risk of exposure to chemicals and pathogens in land, air, and water. Our risk assessment teams, composed of experienced managers, recognized technical experts, and extensive support resources, cover all aspects of risk assessment including quantitative dose-response, environmental pathway, and exposure modeling. For site-specific evaluations, we also offer expertise in field sampling, monitoring, and Geographic Information Systems (GIS) mapping. Our in-depth knowledge of risk assessment guidance and procedures, including OMB's proposed Risk Assessment Bulletin, gives our experts the critical, up-to-date information needed to develop the most effective risk assessments.

# Featured Solutions

## Risk Assessment Guidance, U.S. Environmental Protection Agency (EPA).

ICF has provided EPA with a full range of analytical, research, and technical writing assistance for numerous risk assessment guidance documents. ICF recently assisted

EPA in writing the three-volume Air Toxics Risk Assessment Reference Library, which provides comprehensive information on risk assessment of air toxics at the facility and community scale. We currently are assisting EPA in developing guidance for multi-pathway and multi-route exposure assessments to be used in relative source allocations when developing Ambient Water Quality Criteria for the protection of human health. In addition, ICF



assisted EPA in the development of a Microbial Risk Assessment Thesaurus, the Microbial Risk Assessment Protocol, and the Methodology for Deriving Microbial Ambient Water Quality Criteria. ICF assisted EPA in developing the Wildlife Exposure Factors Handbook, which provides data, references, and guidance for conducting exposure assessments for wildlife species exposed to toxic chemicals in their environment.

## Risk-Based Ranking, U.S. Food and Drug Administration (FDA).

ICF is supporting FDA in developing a monitoring program for drug and chemical residues in imported aquaculture products. ICF developed a database that includes information on U.S. imports of aquaculture species, drug identity and regulatory status, chemical properties, patterns of drug use in exporting countries, occurrence of drug residues in edible tissues, and analytical

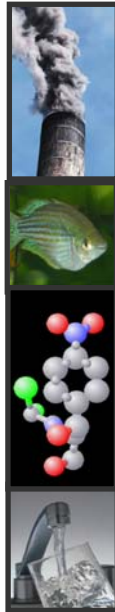
methods for residue analysis. Using the data, ICF developed a risk-based ranking tool that enables FDA to prioritize trade, enforcement, data gathering, analytical methods development, and other needs from among approximately 21,000 possible combinations of country of origin, aquaculture species, and drug identity. The results also provide a basis for promoting discussion with foreign countries regarding the hazards of various drug residues in edible tissues of imported aquaculture products.

## Site-Specific Risk Assessment, U.S. Army Research Laboratory Superfund Site.

ICF provides ongoing support to the Army in the investigation and remediation of a Superfund site. For example, we evaluated potential risks associated with recreational swimming, on-site worker exposure to surface and subsurface soils, on-site and residential exposure to groundwater, off-site exposure to site-generated dust, and ingestion of fish. We also designed and conducted an angler survey for the adjacent lake and completed several ecological risk assessments. ICF developed and negotiated the site cleanup goals for groundwater, resulting in design and operation of a groundwater remedial system that has successfully begun to remove significant amounts of contaminants from the groundwater. In addition, ICF supports the Army by engaging with stakeholders in public meetings and open houses.

## Chemical and Microbiological Risk Assessment, EPA.

ICF is supporting EPA in updating the risk assessment used to establish the 2001 drinking water standard for arsenic. We also are providing extensive toxicology and risk assessment support related to both the drinking water and ambient air quality standards for lead. In addition, ICF is conducting risk assessments for EPA on the pathogens *Cryptosporidium* and *Giardia*, using a newly established framework and protocol for microbial risk assessment. We also are conducting residual risk assessments on air toxics emitted from industrial source categories. These assessments help determine whether existing controls are sufficient to protect human health and the environment or whether additional controls may be needed.



## About ICF International

ICF International partners with government and commercial clients to deliver consulting services and technology solutions in defense, energy, environment, homeland security, social programs, and transportation. Combining passion for our work with industry expertise and innovative analytics, we deliver compelling results throughout the entire program life cycle from analysis and design through implementation and improvement. Since 1969, ICF International has been serving government at all levels, major corporations, and multilateral institutions. More than 1,600 employees serve these clients worldwide.

For more information, contact:

Baxter Jones  
bjones@icfi.com  
703.934.3210

Amy Rosenstein  
Arosenstein@icfi.com  
781.676.4084

9300 Lee Highway  
Fairfax, VA 22031

33 Hayden Ave  
Lexington, MA 02421