STATEMENT OF QUALIFICATIONS

SUPERFUND/CERCLA RISK ASSESSMENT



Geosyntec consultants



GEOSYNTEC OVERVIEW

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Geosyntec is a consulting and engineering firm that works with private- and public-sector clients to address new ventures and complex problems confronting our environment, natural resource, energy, and civil infrastructure. We serve clients from more than 130 offices in the United States, Canada, the United Kingdom, Ireland, Sweden, Spain, Finland, the United Arab Emirates, Saudi Arabia, and Australia. With more than 2,800 scientists, engineers, and other professionals from around the globe, we work each day to forge an inclusive and equitable environment for all our employees, clients, partners, and for the communities we serve.

RELIABLE INNOVATION

Clients turn to Geosyntec because we deliver reliable, proven solutions. We work with universities, industry, and governmental organizations to develop, test, and commercialize new technologies that save our clients' money and time and get them better results. We combine long-tested methods with proven innovative elements to create tailored solutions to their most challenging problems.

Geosyntec's human health and ecological risk assessment services identify best-value approaches to remediate sites impacted by a wide variety of contaminants. Our risk assessment specialists work alongside our remediation practitioners to develop site-specific, pragmatic solutions. Our specialists also provide expert consultation and testimony on environmental exposure issues for legal clients. Our technical specialists in toxicology, exposure assessment, statistics, epidemiology, information management, contaminant fate and transport modeling, and others characterize risk and hazard and tailor our approach to meet our clients' goals for compliance, financial management, and environmental stewardship. Our practitioners have expertise in addressing complex issues associated with multiparty and high-profile sites and integrating remediation and redevelopment plans with sensitive land use designs, such as residential neighborhoods, schools, recreational facilities, and wildlife habitats.



Geosyntec's risk assessment experts also lend support with communicating with regulators and the public, using fact sheets, public meetings and other information exchanges to address the concerns of local communities and regulators.

BACKGROUND

Superfund is a United States federal environmental remediation program established by the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). The program is administered by the United States Environmental Protection Agency (USEPA) and is designed to investigate, and clean up sites contaminated with hazardous substances. Sites managed under this program are referred to as Superfund sites. The program can force responsible parties to implement corrective action and can also allow USEPA to advance corrective action and seek restitution from responsible parties, if applicable, after the fact. When there is no viable responsible party, Superfund gives USEPA the funds and authority to clean up contaminated sites.

Geosyntec risk assessors are experts in discerning what data is needed to keep the investigation focused on nature and extent of possible impacts, focusing resources on the critical needs.

Superfund sites is a complex, multiphase process. The process includes preliminary assessment and site inspection (site assessment), National Priorities List (NPL) site listing, remedial investigation and feasibility study (site characterization), records of decision (remedy decisions), remedial design and remedial action, construction, postconstruction completion, NPL deletion, and site reuse and/or redevelopment. Each part of this process comes with its own challenges, and interaction with federal and state agencies is critical in resolving and overcoming project hurdles.

To start the cleanup process outlined above, the first step is to assess risk, and for that, appropriate data are vital. Geosyntec risk assessors are experts in discerning what data is needed to keep the investigation focused on nature and extent of possible impacts, allocating resources for the most critical needs. Identifying the proper data needs—how many samples, from what media, and at what level of sensitivity—makes data collection efficient and effective for informing risk.

The risk assessors use analytical results to quantify and characterize exposure to key receptor (human and ecological) populations, which informs remedial action targets. By extension, these risk-mediated corrective action targets allow our engineers to assess various remedial technologies capable of achieving risk assessment-defined remedial goals.

Risk assessment experts also help clients communicate with regulators and the public, using fact sheets, public meetings and other information exchanges to address the concerns of local communities and regulators.









PROJECT HIGHLIGHTS

We help our clients navigate risk communication, advocate for fairly allocated site cleanup costs, and gain acceptance from regulators for novel site remedies. We also provide support regarding changes in state and federal regulations.

BLACKWELL ZINC SUPERFUND SITE
OKLAHOMA

- Directed an updated human health risk assessment (HHRA) for soil lead in residential and commercial properties near a former zinc smelter facility in response to comments from USEPA during a five-year review.
- Conducted in vitro bio accessibility testing of lead in site soil as an input to USEPA's Integrated Exposure Uptake Biokinetic (IEUBK) model, developed a site-specific remedial goal for soil using the IEUBK model, and reviewed and analyzed blood lead biomonitoring data from children in the local community as well as child blood lead data from other counties in the state to evaluate trends and factors potentially contributing to elevated blood lead levels.
- Interacted with representatives of USEPA, Oklahoma Department of Environmental Quality, and Agency for Toxic Substances and Disease Registry (ATSDR) on issues related to ongoing remedial actions and public health evaluations.

AMERICAN CREOSOTE WORKS SUPERFUND SITE
FLORIDA

- Directed probabilistic risk assessments (PRAs) for soil contaminated with dioxins and furans in residential areas pursuant to provisions of the Florida Department of Environmental Protection (FDEP) Contaminated Site Cleanup Criteria rule while under contract to USEPA. Statutory provisions in Florida require cleanup target levels to be based on a 10_{-6} (1-in-1 million incremental excess lifetime cancer risk) target cancer risk level, which is at the most conservative end of USEPA's relative risk range under the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), often putting USEPA and FDEP at odds on CERCLA sites when USEPA establishes remedial goals based on less stringent target risk levels. The PRA-based soil cleanup levels are greater than the FDEP defaults, while still meeting the more stringent 10_{-6} risk target.
- Work on this project provided valuable insights into emerging USEPA policy considerations on dioxin toxicology and cleanup.

LCP CHEMICALS SUPERFUND SITE
GEORGIA

- Performed HHRA and ecological risk assessment (ERA) for two different operable units (terrestrial uplands and estuary) at a former chlor-alkali and petrochemical manufacturing facility where the primary chemicals of concern included lead, mercury, and polychlorinated biphenyls (PCBs).
- Evaluated numerous sampling stations annually in the estuary for sediment and surface water chemistry, chronic toxicity of surface water and sediment, benthic invertebrate community structure, and chemical body burden in a variety of fish, blue crabs, fiddler crabs, marsh grass, and insects.
- Integrated these studies for the ERA to develop risk estimates and cleanup levels.
- Negotiated with USEPA and Georgia Environmental Protection Division regulators regarding cleanup criteria and remediation strategies for the site.

HANLIN-ALLIED-OLIN SUPERFUND SITE
MOUNDSVILLE, WV

- Managed the HHRAs for soil and groundwater and a screening-level ERA for river floodplain soil at a former chlor-alkali facility. The site includes over 100 acres of terrestrial habitat and former manufacturing facilities, and several miles of shoreline and sediment impacts along the Ohio River. Chemicals of concern included mercury, PCBs, and various volatile organic compounds (VOCs).
- Identified areas for focused risk evaluations by coupling screening-level ERA results with HHRA results and background data.



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