

Scope of Services

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UMC's Environmental Services Division includes geotechnical services; environmental engineering and remediation; regulatory assistance and compliance services. Profiles of a sampling of projects that UMC and/or UMC staff have completed are included in Attachment B.

Geotechnical Services

UMC's geotechnical services staff includes geologists, hydrogeologists, and environmental scientists. This broad expertise allows UMC to provide diverse, high quality services to our clients. The primary focus of the Geological Services group is environmental investigations and related services including:

- Phase I Environmental Site Assessments;
- Phase II Site Characterization Planning and Implementation;
- Groundwater investigation services;
- CERCLA, RCRA, TSCA, Property Transfer, and Remedial Investigations;
- Brownfield Redevelopment Projects; and
- Risk Assessments.

The Phase I Site Assessment is the first step in identifying potential areas of concern at a site. These assessments are conducted with a high standard of care and in strict compliance with the applicable standard (ASTM, state, or client-defined). Sites are carefully evaluated through research, database searches and on-site reconnaissance. The client is provided with a full documented report identifying known and potential environmental concerns. This report provides the client the data relating to the environmental condition of the property required to make informed decisions. Alternatively or in addition to the full report, a focused report can be provided listing all issues and identifying costs to fully evaluate or resolve each issue.

Phase II activities focus on known and potential areas of environmental concern. Our geotechnical services staff evaluates site features and uses to design and conduct structured, focused investigations. Data collected in a Phase II investigation may eliminate potential areas of concern from further consideration or indicate that full characterization of the site or area is required.

UMC's Geotechnical Services staff provide our clients the expertise to meet the ever-increasing demand for clean ground water and to comply with state and federal rules, regulations and guidelines governing groundwater quality. To evaluate existing groundwater conditions and quality and to monitor changes, UMC provides:

- Groundwater sampling and data evaluation;
- Groundwater monitoring and system design;
- Installation and development of monitoring wells; and
- Groundwater modeling services.

State and Federal regulations deal with the environmental condition of real property (CERCLA (or Superfund), RCRA, TSCA, and various state property transfer laws). The Geotechnical Services staff works with the regulating agencies to provide comprehensive, approvable investigations to determine the condition of soil, groundwater, sediment, surface water, and any other affected media in accordance with the requirements of specific governing state or federal programs.

Brownfields are abandoned, idled, or under-used industrial and commercial facilities where expansion or redevelopment is complicated by real or perceived environmental problem. State and federal agencies have placed a high priority on redevelopment of these sites to dissuade creation of new industrial sites on virgin property. UMC works closely with the EPA and state officials in following program-specific guidelines for investigating, characterizing, and if necessary, remediating Brownfields.

Risk assessments can play an important role in determining the need to cleanup contaminated sites. UMC Geotechnical Services staff offers our clients the blend of skills and capabilities important for identifying environmental risks, evaluating and quantifying these risks and determining risk acceptability.

Our Geotechnical Services group works closely with other professionals at UMC to provide a multi-disciplinary approach to complex geological issues. Upon completion of the investigation phase at most properties (Brownfields, Superfund sites, properties undergoing voluntary remediation, etc.) the Geotechnical staff remains involved in project negotiations to establish reasonable site cleanup standards and remedies, and developing effective strategies for land use and re-use projects.

Environmental Engineering and Remediation

UMC offers proven experience in engineering and remedial solutions to hazardous and toxic waste issues. Site-specific work plans can be developed and implemented for a wide range of remediation projects. During the design and implementation phases of work, UMC relies on strong project and contract management skills and a thorough understanding of client's demands, cost factors and the scope of work to successfully keep jobs on schedule and within budget. Services offered in Engineering and Remediation include:

- Negotiation of Clean-Up Standards;
- Evaluation of technologies, life-cycle costs, and feasibility of remedial alternatives;
- Remedial designs (in-situ and ex-situ alternative solutions);
- Onsite remediation of hazardous and toxic waste contaminated sites including RCRA Corrective Action implementation and CERCLA Remedial Action Services;
- Contaminated Soil and Groundwater remedies;
- Closure plans and cost estimates; and
- Third party executive engineer oversight & construction management/inspection.

Once a specific environmental condition has been identified and delineated, a number of activities must be completed. The need to remediate the site must be evaluated. This task may include the negotiation of clean-up standards on a site specific basis with state or federal regulators. The outcome of these negotiations leads into the evaluation of technologies, life-cycle costs and feasibility of remedial alternatives. The Engineering and Remediation staff carefully evaluates each alternative to assist in selecting the option which is most effective in meeting the established clean-up standard for the least cost and the least liability. UMC does not maintain any corporate interests in remedial technology providers allowing true, independent evaluations of technologies and resulting in selection of the best suited technology for the project considering site specific criteria.

The remedial design can then be developed which meets the established standards using the selected remedial alternative with site specific considerations. UMC staff have successfully completed numerous in situ and ex-situ soil and groundwater remediation programs including soil excavation with offsite disposal, air sparging, soil vapor extraction, groundwater recovery and treatment, and soil bioremediation. These projects have been conducted for clients working under the auspices of the federal Superfund program, various state-Superfund programs, RCRA Corrective Actions, as well as voluntary remediation projects. The Engineering and Remediation staff have also implemented many of the designs that were developed for these projects.

Integrated Environmental Support

Many services can be provided to clients with operations in Mexico and Central America. UMC has experience evaluating, designing and providing oversight for the installation of wastewater treatment systems, as well as negotiating permits in Costa Rica, Panama, Honduras, Mexico and Ecuador. We can provide an evaluation of operations and provide practical solutions to environmental issues.