



Project Summary

US Army Engineer
Research and Development Center
Waterways Experiment Station

August 1999

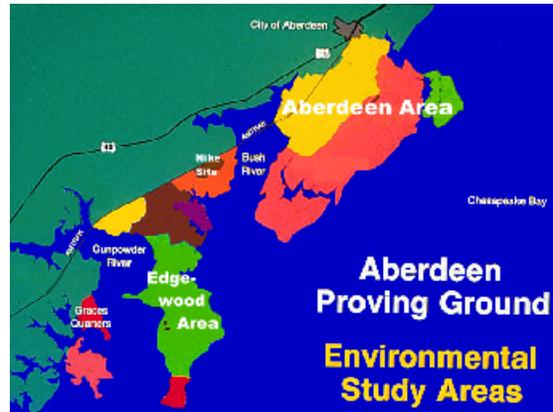
Public Affairs Office Ž 3909 Halls Ferry Road Ž Vicksburg, MS 39180-6199 Ž (601) 634-2504 Ž <http://www.wes.army.mil>

Holistic Hydrogeologic Definition of Military Installations

Principal Investigators: [Paul Miller](#) and [Stanley Swartzel](#), (601) 634-3247/-3326

Associate Investigator: [Charlie Whitten](#), (601) 634-2977

Problem Statement: Most military installations date from World War II or earlier and have a long history of intense military and industrial activities. Past accepted practices and lack of historical record have resulted in long periods of contamination at known and unknown locations. Threats to human health and the environment cannot be evaluated by localized investigations because individual sites escaped detection and synergistic effects of known and unknown sites will not be identified. The current experience base has identified the principle contamination and transport medium as groundwater. The primary paths leading from the installation and the quality of groundwater moving through and from the installation must be determined.



Objectives: 1) Develop a regional hydrogeologic model for the installation, 2) Define primary pathways for transport of contamination in and off the installation, and 3) Design a long-term monitoring plan for identified pathways.

Scope: Regional geology and groundwater flow patterns have been developed for Aberdeen Proving Ground (APG), MD. Current activities include additional stratigraphic borings, monitoring of groundwater flow and quality, groundwater modeling, and development of monitoring plans for key boundary areas. Studies for other large DoD installations also are underway.

Approach: Existing regional geologic knowledge has been gathered and combined with site specific characterization studies for APG. A draft conceptual geologic model and report has been completed. A data base of borings and wells (over 1800) has been completed. Measurement of groundwater levels and flow patterns is ongoing. Primary groundwater flow pathways are being defined and monitoring plans designed and implemented.

Results: To date, the conceptual model has been applied to ongoing site studies, has been used to develop groundwater models, and has focused resources on the most critical risks. Communication tools developed during these studies are used in meetings with advisory boards and landowners, and are contributing to the positive relationship between APG and surrounding communities.

Conclusion: A regional approach to determination of environmental pathways and risks provides the most efficient approach for resolution of contamination problems at DoD installations.