

APPENDIX B

POLICY ON NATURAL ATTENUATION FOR ENVIRONMENTAL RESTORATION

B-1. The Assistant Chief of Staff for Installation Management originally established interim policy regarding consideration of natural attenuation on all Army projects. This appendix describes USACE policy requiring that natural attenuation be considered as a remedial action alternative. This requirement applies to installation restoration activities under the authorities of Comprehensive Environmental Response, Compensation, and Liability Act; Superfund Amendments and Reauthorization Act of 1986; Resource Conservation and Recovery Act; Underground Storage Tanks; National Environmental Policy Act; or relevant State and local regulations.

B-2. While natural attenuation has no specific regulatory definition, the U.S. Army defines natural attenuation as “the reduction of contaminant concentrations in the environment through biological processes (aerobic and anaerobic biodegradation, plant and animal uptake), physical phenomena (advection, dispersion, dilution, diffusion, volatilization, sorption/desorption), and chemical reactions (ion exchange, complexation, abiotic transformation).” Terms such as “intrinsic remediation” or “biotransformation” are included within the more general natural attenuation definition.

B-3. Natural attenuation is not a no-further-action alternative. Natural attenuation typically requires extensive monitoring to ensure that the predicted natural processes are taking place. Natural attenuation remedies might take longer than engineered remedies to correct the problem. Additionally, there should be a readily available contingent remedy for the site in the event natural attenuation is found to be ineffective. Credible scientific data, site characterization data, and predictive modeling will be required to prove that natural processes are sufficient to reduce risk in the time frame required. This proof will be needed to ensure acceptability of the natural attenuation remedy.

B-4. Therefore, it is Corps policy that natural attenuation must be considered as a candidate remedy for all contaminated sites, either alone or in combination with active engineered measures, during the remedial investigation (RI) and feasibility study phases (FS). An engineered remedial action should not be used unless data exists to prove that natural attenuation is inappropriate for a site cleanup. Reasons for rejecting natural attenuation must be supported by data and related information, and be documented in the RI/FS report. Scopes of work for HTRW contracts should be modified where necessary to reflect this policy.

B-5. Until full protocols can be developed on the use of natural attenuation for classes of contaminants commonly found at Army installations, the following protocols are recommended:

a. The Air Force Center for Environmental Excellence (AFCEE) *Technical Protocol for Implementing Intrinsic Remediation with Long-Term Monitoring for Natural Attenuation of Fuel Contamination, Volumes I and II, 1999.*

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b. EPA/600/R-98/128, *Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Ground Water*, 1998.