

This e-mail is supported by NAVFAC's Alternative Restoration Technology Team (ARTT) to provide links to Technology Transfer (T2) tools and the latest information on policies, guidance, and training related to innovative technologies. The T2 topics highlighted in this issue will help support the ARTT's chartered goals of promoting the use of innovative technologies, removing barriers to implementing new technologies, and reducing cleanup costs, while remaining protective of the environment and human health.

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Green and Sustainable Remediation Resources

This is a special edition of the T2 e-mail to share technical resources about green and sustainable remediation (GSR). The Department of the Navy (DON) Optimization policy and GSR guidance serve as key resources for Remedial Project Managers. In addition, NAVFAC has prepared several products and tools to facilitate and track the implementation of GSR at Environmental Restoration (ER) sites.

Navy Policy and Guidance

[DON Policy for Optimizing Remedial and Removal Actions at all DON ER Program Navy Sites](#)

DON has implemented GSR as part of its existing optimization program as stated in the policy released in 2012. This policy requires optimization and GSR evaluations at the remedy evaluation and selection, design, remedial action operation, and long-term management phases.

[DON Guidance on Green and Sustainable Remediation](#)

This guidance provides a general overview of GSR metrics and presents a step-wise approach for the application of GSR techniques at projects in all phases of the ER process, including site investigation, remedy selection, remedial design, construction, remedial action operation, and long-term monitoring. Methods for evaluating remedy footprints are discussed, along with strategies for footprint reduction.

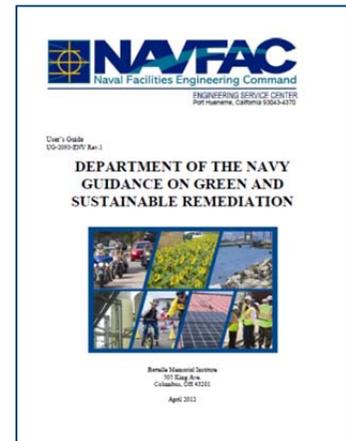
NAVFAC Technical Resources

[NAVFAC Green and Sustainable Remediation Fact Sheet](#)

This fact sheet summarizes GSR metrics and footprint reduction methods.

[A Review of Green and Sustainable Remediation Practices at NAVFAC Environmental Restoration Sites](#)

A review was conducted in 2014 to assess the application of GSR metrics at 60 Navy and Marine Corps sites nationwide. The case study information obtained was used to identify and categorize BMPs and their potential impact on the remedy footprint and to track overall trends in the adoption of GSR practices across NAVFAC. Among the sites where a remedy was selected, the results showed 84% of GSR evaluations resulted in the selection of the lowest footprint remedy and 69% resulted in the selection of the lowest cost remedy. The results of the review suggest that GSR evaluations are leading to more sustainable and cost-effective remedies.



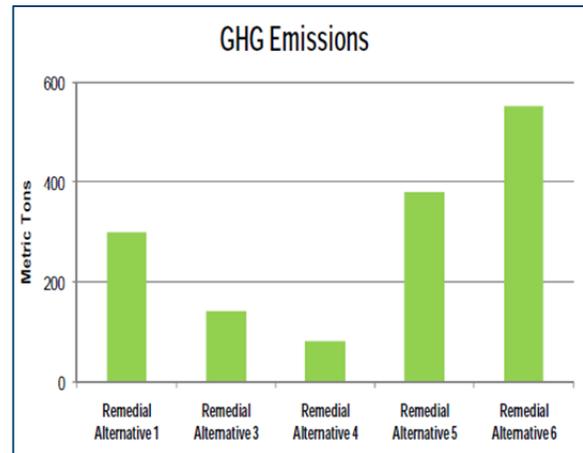
NAVFAC Technical Resources (Continued)

[Integrating GSR Metrics within the CERCLA Process During the Feasibility Study](#)

This white paper focuses on GSR metrics and their incorporation into the nine criteria for alternatives analysis during the remedy evaluation phase. An example case study is discussed where GSR considerations are incorporated into the remedy selection process.

[SiteWise™ Version 3 User Guide](#)

SiteWise™ is a calculation tool designed to determine footprints of environmental restoration actions in terms of selected metrics such as greenhouse gas (GHG) emissions, energy consumption, criteria air pollutant emissions, water consumption, and worker safety. This updated guide includes a general description of SiteWise™ Version 3, instructions for using SiteWise™, and the basis of calculations.



[SiteWise Version 3.0](#)

The latest version of SiteWise™ is available for download from the Sustainable Remediation Forum Web site.

Visit the [NAVFAC GSR Web Page](#) for more information.

Other Technical Resources

[DoD ESTCP Quantifying Life-Cycle Environmental Footprints of Soil and Groundwater Remedies](#)

[ITRC Green and Sustainable Remediation Team](#)

[Sustainable Remediation Forum](#)

[USACE Evaluation of Consideration and Incorporation of GSR in Army Environmental Remediation](#)

[US EPA Green Remediation](#)

[US EPA Comparison of Footprint Quantification Tools Relative to Each Other and the EPA Footprint Methodology: Alameda Point OU-2B California](#)

Updated NAVFAC Technology Transfer Web Page

Visit the updated [NAVFAC T2 Web Page](#) for more Web tools, videos, fact sheets, white papers, handbooks, and other technical resources. The T2 Web Tools are now available featuring topics related to key issues such as conceptual site models, risk assessment, innovative remedial technologies, vapor intrusion, GSR, optimization, sediment site characterization, sediment remediation, munitions response, site closeout, and more.

For questions or more information, please contact EXWC_T2@navy.mil or visit our Web page at: <https://www.navfac.navy.mil/go/erb>