

Case Study: Naval Air Station Patuxent River (Site 5), St. Mary’s County, Maryland, USA

<p>Site Overview</p>	<p>This 7,900-acre facility is located at the confluence of the Patuxent River and the Chesapeake Bay on a peninsula known as Cedar Point. This case study addresses Site 5 (Disposal Site Near Pine Hill Run) on-site, which was a 10-acre disposal area for waste and debris from 1957 through 1965. The site is adjacent to a stream, and an interim removal action that included green and sustainable practices was completed in April 2013.</p>
<p>GSR Project Outcome</p>	<p>An interim remedial action with green and sustainable practices was implemented at Site 5. The green and sustainable practices implemented were as follows:</p> <ul style="list-style-type: none"> • Using 8,000 cubic yards of on-site soil for grading purposes (vs. importing it) avoided approximately \$300,000 in costs. • Recycling the scrap metal resulted in a credit of approximately \$12,000 and avoided \$3,000 in landfill disposal costs. • Recycling 38.66 tons of concrete resulted in avoiding \$1,000 in landfill disposal costs. • In total, implementing green and sustainable practices avoided approximately \$316,000 in costs.
<p>Background & Drivers</p>	<p>The Navy developed guidance on Green and Sustainable Remediation in 2012 that identifies two executive orders:</p> <ul style="list-style-type: none"> • Executive Orders 13514 and 13423 which both call for a reduction in GHGs, energy consumption, and potable and industrial water use by federal agencies. • The DOD GSR memorandum, dated August 2009, states that the DOD is committed to conducting its environmental program in a sustainable manner, in line with EO 13423. <p>The Navy Optimization Policy (2012) calls for implementation of GSR throughout the cleanup process as part of Optimization.</p>
<p>Regulatory Program</p>	<p>CERCLA (Superfund)</p>
<p>Site End Use</p>	<p>No changes in site use planned for the immediate future.</p>

<p>Contaminants of Concern and Impacted Media</p>	<p>There were no specific contaminants of concern (COCs) at Site 5. The purpose of the removal action was separate recyclables and other wastes from soil. The lack of COCs allowed for soil reuse at the site and had no impact on other GSR aspects of the project.</p>
<p>Key Stakeholders in Project</p>	<p>U.S. Department of the Navy</p>
<p>Cleanup Objectives</p>	<p>Remove all waste such that the site could be closed and allow for unrestricted use/unrestricted exposure.</p>
<p>Remediation Strategy</p>	<p>Excavation and offsite disposal as part of an interim removal action.</p>
<p>GSR Strategy/Best Management Practices (BMPs)</p>	<p>The following green best management practices contributed to the project outcome:</p> <ul style="list-style-type: none"> • Reusing clean soil avoided importing approximately 8,000 cubic yards of fill at a cost of approximately \$300,000. • Recycling the scrap metal recovered through the screening process resulted in a credit of approximately \$12,000; alternatively, disposal of the metal at a landfill would have cost approximately \$3,000, resulting in a total savings of approximately \$15,000. • Recycling of concrete cost less than half of the landfill disposal cost resulting in a savings of approximately \$1,000.

<p>GSR Metrics and/or Footprinting Tool(s)</p>	<p>An analysis of the interim remedial action was performed using SiteWise™ and compared to a baseline in which soil was not reused and metal and concrete were disposed of, rather than recycled. The following reductions were estimated: greenhouse gas emissions, energy consumption, air pollutants emissions, resource consumption (landfill space), and waste generation. Community and economic impacts were not evaluated, other than cost savings.</p> <p>According to the SiteWise™ analysis, areas of significant footprint reduction by implementation of BMPs included:</p> <ul style="list-style-type: none"> • Greenhouse gas emission reductions of 224.41 metric tons • Energy consumption reductions of 1,650 MMBTU • Landfill space for 94 tons of waste (approximate amount of waste generated by 100 people in 1 year) was saved • 9,600 tons of clean soil was saved from consumption
<p>Lessons Learned [Optional]</p>	<p>Not evaluated.</p>
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<p>Relevant Links</p>	<p>NAVFAC GSR Web Page http://navfac.navy.mil/navfac_worldwide/specialty_centers/exwc/products_and_services/ev/erb/gsr.html</p> <p>Navy Optimization Policy http://navfac.navy.mil/content/dam/navfac/Specialty%20Centers/Engineering%20and%20Expeditionary%20Warfare%20Center/Environmental/Restoration/er_pdfs/gpr/don-ev-pol-opt-actions-20120402.pdf</p> <p>Navy GSR Guidance http://navfac.navy.mil/content/dam/navfac/Specialty%20Centers/Engineering%20and%20Expeditionary%20Warfare%20Center/Environmental/Restoration/er_pdfs/gpr/navfacesc-ev-ug-2093-env-gsr-20120405r1.pdf</p> <p>Navy GSR White Paper with additional case studies http://navfac.navy.mil/content/dam/navfac/Specialty%20Centers/Engineering%20and%20Expeditionary%20Warfare%20Center/Environmental/Restoration/er_pdfs/g/navfacexwc-ev-tm-1439-gsr-ersites-201406.pdf</p>