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*Military Base Closures: Cleanup of Contaminated Properties  
for Civilian Reuse*

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**Abstract.** In 2005, the 109th Congress approved a new Base Realignment and Closure (BRAC) round. As the Department of Defense (DOD) implements the new round, issues for Congress include the pace and costs of closing and realigning the selected installations and the impacts on surrounding communities. The disposal of surplus property has stimulated interest among affected communities in how the land can be redeveloped to replace jobs lost as a result of the planned closures. Environmental contamination can limit the potential for economic redevelopment if the availability of funding or technological capabilities constrains the degree of cleanup needed to make the land suitable for its intended use. Although most of the properties on installations closed under the four earlier rounds in 1988, 1991, 1993, and 1995 have been cleaned up and made available for redevelopment, the most extensively contaminated properties remain in various stages of cleanup to make them suitable for their desired use. Cleanup began many years ago at 2005 round installations when they were still operational. As a result, cleanup generally should be at a more advanced stage upon closure, compared to installations closed under earlier rounds when cleanup efforts were less mature. Still, installations closed under the 2005 round could face delays in redevelopment if a community's desired land use would require a lengthy and costly cleanup.

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## CRS Report for Congress

# Military Base Closures: Cleanup of Contaminated Properties for Civilian Reuse

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### Summary

In 2005, the 109<sup>th</sup> Congress approved a new Base Realignment and Closure (BRAC) round. As the Department of Defense (DOD) implements the new round, issues for Congress include the pace and costs of closing and realigning the selected installations and the impacts on surrounding communities. The disposal of surplus property has stimulated interest among affected communities in how the land can be redeveloped to replace jobs lost as a result of the planned closures. Environmental contamination can limit the potential for economic redevelopment if the availability of funding or technological capabilities constrains the degree of cleanup needed to make the land suitable for its intended use. Although most of the properties on installations closed under the four earlier rounds in 1988, 1991, 1993, and 1995 have been cleaned up and made available for redevelopment, the most extensively contaminated properties remain in various stages of cleanup to make them suitable for their desired use. Cleanup began many years ago at 2005 round installations when they were still operational. As a result, cleanup generally should be at a more advanced stage upon closure, compared to installations closed under earlier rounds when cleanup efforts were less mature. Still, installations closed under the 2005 round could face delays in redevelopment if a community's desired land use would require a lengthy and costly cleanup.

### Introduction

Following the collapse of the former Soviet Union, Congress authorized the closure of certain military installations under four BRAC rounds in 1988, 1991, 1993, and 1995. These installations have been closed for many years, and the majority of the properties have been made available for civilian purposes. However, cleanup efforts continue at some of the most contaminated properties, delaying their reuse. Public desire for their redevelopment has motivated ongoing concern about the pace and costs of cleaning up these remaining properties. The completion of cleanup is often a key factor in economic redevelopment, because a property cannot be used for its intended purpose until it is cleaned up to a degree that would be suitable for that use. In 2005, the 109<sup>th</sup> Congress

approved a new BRAC round.<sup>1</sup> Although the Department of Defense (DOD) is required to close and realign selected installations by 2011, there is no statutory deadline for the cleanup of contaminated property. The timing of cleanup will depend on response actions negotiated with federal and state regulators, capabilities of cleanup technologies, and the amount of funding appropriated by Congress to support cleanup efforts.

This report explains the federal statutory requirements that govern the transfer and reuse of contaminated properties on closed military installations, discusses the status of cleanup to prepare these properties for reuse, examines estimates of costs to address remaining cleanup challenges, and identifies issues for Congress.

## Cleanup Requirements for Property Transfer and Reuse

As amended in 1986, the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, commonly referred to as Superfund) generally requires the United States to clean up contaminated federal property prior to transfer out of federal ownership.<sup>2</sup> This requirement applies to all contaminated property declared surplus to the needs of the federal government, including property on closed military installations. The agency with administrative jurisdiction over a property usually administers and pays for the cleanup to satisfy the responsibility of the United States. DOD typically assumes this responsibility for closed military installations.

After a property is transferred out of federal ownership, the United States remains liable for any original contamination found not to have been sufficiently remediated. However, the document transferring ownership typically guarantees cleanup only to a level suitable for a specific use, and in some cases may include a deed restriction prohibiting certain uses that would be considered unsafe relative to the level of cleanup performed. Considering this condition, the United States is usually held responsible for further cleanup to the extent that more work is found to be needed to make the originally agreed-upon use safe. If a new owner later decides to use the property for another purpose that would require further cleanup, the new owner ordinarily is held responsible for additional cleanup costs to make the property suitable for that purpose.

Property declared surplus to the needs of the federal government is typically transferred to a Local Redevelopment Authority (LRA) responsible for implementing a plan for civilian reuse. While the administering agency generally must complete the cleanup prior to transfer out of federal ownership, CERCLA authorizes early transfer under certain conditions, including assurances that the cleanup will be carried out.<sup>3</sup> Early transfer can speed the redevelopment process, if it may be feasible for cleanup to occur in conjunction with redevelopment planning and construction, or if a short-term use would be suitable for the existing level of contamination while cleanup proceeds to prepare the property for its eventual use.

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<sup>1</sup> See the BRAC Commission Report to the President for a list of military installations selected for closure under the 2005 round at: [<http://www.brac.gov/finalreport.html>].

<sup>2</sup> 42 U.S.C. 9620(h).

<sup>3</sup> 42 U.S.C. 9620(h)(3)(C).

Early transfer also may offer the potential to speed the redevelopment process in situations in which the recipient *voluntarily* agrees to administer and pay for the cleanup. In such cases, the property is usually sold at a discounted price to offset the cleanup costs borne by the purchaser. A discounted price may lower a purchaser's initial costs to buy the property, but the purchaser does assume some financial risk if the cleanup costs are greater than expected. The cost of environmental insurance to limit this financial risk may offset some of the initial savings gained from a discounted price.

If a property on a closed installation still could be of use to the federal government, DOD may transfer it to another federal agency rather than make it available to non-federal entities. If a contaminated property remains in federal ownership, CERCLA does not specify which agency has responsibility for the cleanup. The determination of which agency performs the cleanup is subject to negotiation among the agencies involved, and as such is an Executive Branch decision. Although the agency that caused the contamination most often administers and pays for the cleanup, disagreements over this responsibility sometimes arise in negotiating the transfer of jurisdiction. Congress has sometimes addressed such disagreements in legislation, specifying agency responsibilities.

Regardless of who administers the cleanup of a closed military installation, the Environmental Protection Agency (EPA) and state regulatory agencies oversee cleanup decisions to ensure that applicable requirements are met. CERCLA specifically requires EPA to take the lead in overseeing cleanup of federal facilities on the National Priorities List (NPL).<sup>4</sup> States usually oversee cleanup of federal facilities not on the NPL.

## The Role of Land Use in Cleanup Decisions

CERCLA generally requires cleanup actions to achieve levels of exposure to contamination that would be protective of human health and the environment. Land use is critical in determining the potential exposure risks and the cleanup actions needed to address those risks. Cleanup generally is more extensive and more costly for land uses that would result in greater exposure risks. Cleanup typically is the most stringent and the most costly for residential use because of the greater likelihood of exposure among sensitive populations, including children and the elderly. Cleanup is usually the least costly and the least stringent for industrial use, as the exposure risks are not as great.

As amended, the Defense Base Closure and Realignment Act requires DOD to give "substantial deference" to an LRA's redevelopment plan in determining the use of surplus property on closed military installations.<sup>5</sup> Still, the locally preferred use can be constrained, if costs or technical challenges would make it infeasible to clean up a property to a certain degree. EPA guidance acknowledges that some uses may not be practical because of such challenges, and indicates that cleanup goals may need to be revised, which could result in "different, more reasonable land use(s)."<sup>6</sup>

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<sup>4</sup> 42 U.S.C. 9620(e)(2).

<sup>5</sup> 10 U.S.C. 2687 note.

<sup>6</sup> EPA. Office of Solid Waste and Emergency Response. *Land Use in the CERCLA Remedy Selection Process*. OSWER Directive No. 9355.7-04. May 25, 1995.

## Program Administration and Funding

DOD administers a Defense Environmental Restoration Program to carry out cleanup actions under CERCLA on military installations in the United States.<sup>7</sup> Multiple defense appropriations accounts fund this program. Two Defense Base Closure accounts fund the cleanup of installations closed under the BRAC rounds. The “1990” account consolidates funding for the cleanup of installations closed prior to the 2005 round. This account is now entirely devoted to cleanup, as these installations were closed many years ago. The “2005” account funds the cleanup of installations being closed under the 2005 round. Most of this account currently funds the actions necessary to close and realign the missions of the installations. As these actions are completed, a greater portion of the 2005 account will be devoted to cleanup to prepare surplus properties for reuse. The cleanup of realigned installations that remain in active use will be funded out of the Defense Environmental Restoration Accounts that support cleanup of active installations. See the “Estimated Costs” section of this report for the amount of funding spent on the cleanup of closed installations over time out of the Base Closure accounts.

## Status of Cleanup

To manage cleanup efforts, DOD divides each installation into discrete sites (i.e., parcels of land), based on the nature and boundary of contamination. One installation may contain numerous sites with differing types of contamination. As of the end of FY2007, DOD had identified a total of 5,356 sites on hundreds of installations closed under all five BRAC rounds where contamination was known or suspected to be present.<sup>8</sup> These sites include those on installations that are in the process of closing under the 2005 round. The vast majority of sites on BRAC installations were contaminated with hazardous substances (i.e., chemical contaminants), but some sites contained abandoned or discarded munitions on former training ranges and munitions disposal facilities.<sup>9</sup> Congress enacted specific authorities for the cleanup of munitions sites in the National Defense Authorization Act for FY2002 (P.L. 107-107). See CRS Report RS22862, *Cleanup of U.S. Military Munitions: Authorities, Status, and Costs*, by David M. Bearden.

DOD reported that planned response actions were complete at 70% of the 5,356 sites it had identified through FY2007. No response was required or expected at 14% of the sites because investigations revealed that the potential for exposure to contamination was within an acceptable range, based on applicable standards. Response actions were pending at 10% of the site inventory, with varying stages of progress among individual sites ranging from the assessment phase to the construction of cleanup remedies. Evaluations were pending at 6% of the sites, leaving much uncertainty as to the extent of contamination at those locations and the cleanup actions that will be required. Sites requiring no further response actions generally have been made available for their intended use. Some sites where response actions were not complete also have been made

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<sup>7</sup> 10 U.S.C. 2701 et seq.

<sup>8</sup> Department of Defense. *Defense Environmental Programs Fiscal Year 2007 Annual Report to Congress*. March 2007. Appendix K, pp. K-8 — K-12.

<sup>9</sup> Ibid. DOD identified 5,019 sites contaminated with hazardous substances, and 337 sites on former training ranges and munitions disposal facilities where munitions were present.

available using early transfer authority, or by leasing the property with ownership retained by the federal government. However, remaining contamination and ongoing cleanup could limit the use of these properties. **Table 1** presents the status of cleanup through FY2007 at sites on closed military installations by individual BRAC round.

**Table 1. Site Cleanup Status by BRAC Round through FY2007**

BRAC Round	Response Complete	No Response Required/ Expected	Evaluation Pending	Response Planned/ Under Way	Total Sites
1988	1,058	69	92	51	1,270
1991	1,157	101	37	40	1,335
1993	466	417	13	96	992
1995	1,009	126	174	279	1,588
2005	62	24	35	50	171
<b>All Rounds<sup>a</sup></b>	<b>3,752</b>	<b>737</b>	<b>351</b>	<b>516</b>	<b>5,356</b>

**Source:** Department of Defense, *Defense Environmental Programs Fiscal Year 2007 Annual Report to Congress*, March 2007, Appendix K, pp. K-8 — K-12.

a. The sum of BRAC cleanup sites that DOD reported differed from the sum of sites it reported by individual round, resulting in 5,415 total sites instead of 5,356. This difference appeared to result from the inclusion of 59 sites that DOD did not attribute to individual BRAC rounds. Of these 59 sites, 24 did not require response actions, 32 were not yet evaluated, and 3 had response actions planned or under way.

Considering that the cleanup of 2005 round installations began many years ago when these installations were still operational, cleanup generally should be at a more advanced stage upon closure than experienced under earlier rounds when cleanup efforts were less mature. As of the end of FY2007, planned response actions were complete, or not required, at half of the sites on 2005 round installations, leaving much of the property inventory suitable for reuse. However, sites where response actions were complete would have been cleaned up to a level compatible with military use at that time. If other uses are desired after closure, additional cleanup may be needed.

## Estimated Costs

Through FY2007, DOD had spent nearly \$7.3 billion out of the Base Closure accounts over time to clean up contaminated sites on installations closed under all five BRAC rounds to prepare these properties for reuse. In March 2007, DOD estimated that another \$3.9 billion would be needed to complete all planned cleanup actions. DOD estimated the future cleanup costs based on its most recent knowledge of conditions at the sites presented in **Table 1**. DOD periodically revises its estimates as more is learned about the type and level of contamination at each site, and the actions that federal and state regulators will seek to address potential risks. In effect, these estimates are “moving targets” that change as more information becomes available to project the costs of future actions. Uncertainties about the degree of cleanup that ultimately will be required at some sites make it challenging to accurately estimate the total costs to complete cleanup. **Table 2** presents the past and estimated future costs to clean up contaminated sites at closed military installations by individual BRAC round.

**Table 2. Site Cleanup Costs by BRAC Round through FY2007**

<b>BRAC Round</b>	<b>Costs Incurred Through FY2007<sup>a</sup></b>	<b>Estimated Costs FY2008 to Completion</b>	<b>Total Costs</b>
1988	\$1,442,335,000	\$488,607,000	\$1,930,942,000
1991	\$2,219,968,000	\$1,322,851,000	\$3,542,819,000
1993	\$1,763,241,000	\$474,159,000	\$2,237,400,000
1995	\$1,803,356,000	\$1,208,167,000	\$3,011,523,000
2005	\$34,385,000	\$386,244,000	\$420,629,000
<b>All Rounds<sup>b</sup></b>	<b>\$7,263,285,000</b>	<b>\$3,880,028,000</b>	<b>\$11,143,313,000</b>

**Source:** DOD, *Defense Environmental Programs Fiscal Year 2007 Annual Report to Congress*, March 2007, Appendix K, pp. K-8 — K-12. Amounts reflect project funding allocated to individual sites and do not include program management and other support costs.

a. Costs incurred only reflect funds spent on cleanup out of the Base Closure accounts. The Defense Environmental Restoration accounts funded cleanup when the installations were in active military use. A breakout of this funding is not readily available.

b. The sum of all BRAC cleanup costs that DOD reported differed from the sum of costs it reported by individual round, resulting in a higher past cost of \$7,307,310,000 through FY2007, and a higher estimated future cost of \$3,881,533,000. This difference appeared to result from the inclusion of costs associated with 59 BRAC sites that were not attributed to individual rounds.

Some attention has been drawn to the impact that potentially higher cleanup costs could have on the savings expected from a BRAC round. The closure of a military installation results in annual “savings” in operational expenses, but cleanup costs to prepare decommissioned properties for reuse can reduce these savings. However, some of the cleanup costs would have been incurred regardless, as DOD still is required to clean up its active installations to a degree that would be suitable for military purposes.

## Issues for Congress

The amount of time and resources needed to complete the cleanup of closed military installations generally depends on the level of contamination on those properties, and the actions selected to make them suitable for civilian reuse. Cleanup can take many years in some instances, as the continuing cleanup of certain installations closed between 1988 and 1995 demonstrates. However, the generally more advanced stage of cleanup at 2005 round installations anticipated upon closure may allow contaminated properties to become available for reuse more quickly. Still, the availability of funding and capabilities of cleanup technologies could limit the feasibility of cleanup at some installations, making certain land uses impractical and posing challenges to economic redevelopment.

It is difficult to ascertain whether DOD’s cleanup cost estimates are a reasonable approximation of the funding that will be needed to prepare closed installations for reuse. Because the civilian uses of installations to be closed in the 2005 round have yet to be decided, DOD’s cost estimates are based on a degree of cleanup that would be compatible with recent military use. If a property were to be used for other purposes that would result in a higher risk of exposure to contamination, more stringent cleanup likely would be required to make the property suitable for that use. In these circumstances, more time and resources could be needed to complete cleanup than DOD has estimated.