



# APPENDIX P

## ENVIRONMENTAL RESTORATION COSTS FOR DoD's 33 MAJOR PROPOSED CLOSURES

INSTALLATION	COST TO COMPLETE ENVIRONMENTAL RESTORATION	DOLLARS SPENT THROUGH FY03	OPERATIONAL RANGES COST TO CLOSE	COMMENTS
Kulis Air Guard Station, AK	0*	\$0.75M	0	
Onizuka Air Force Station, CA	0	0	0	
Otis Air National Guard Base, MA	\$146.78M*	\$83.45M	0	
WK Kellogg Airport Air Guard Station, MI	0*	\$7.89M	0	
Cannon Air Force Base, NM	\$1.20M	\$12.5M	0*	Indicates ranges will not be closed
Niagara Falls Air Reserve Station, NY	\$1.42M	\$9.23M	0	
Pittsburgh International Airport Air Reserve Station, PA	0	\$2.10M	0	
Ellsworth Air Force Base, SD	\$27.00M	\$67.36M	0*	Indicates ranges will not be closed
Brooks City Base, TX	\$4.19M	\$41.86M	0	
General Mitchell Air Reserve Station, WI	0	\$2.06M	0	Cost to complete is \$30K
<b>Air Force Total: 10 sites</b>	<b>\$180.59M</b>	<b>\$227.20M</b>	<b>0</b>	
Naval Weapons Station Seal Beach Detachment, Concord, CA	\$40.30M	\$54.9M	0	
Naval Support Activity, Corona, CA	0	0	0	
Naval Submarine Base, New London, CT	\$23.90M	\$56.5M	0	
Naval Air Station, Atlanta, GA	0	0	0*	
Naval Support Activity, New Orleans, LA	0	\$0.3M	0	
Naval Shipyard Portsmouth, ME	\$47.10M	\$46.8M	0	
Naval Station, Pascagoula, MS	0	0	0*	

INSTALLATION	COST TO COMPLETE ENVIRONMENTAL RESTORATION	DOLLARS SPENT THROUGH FY03	OPERATIONAL RANGES COST TO CLOSE	COMMENTS
Naval Air Station, Joint Reserve Base, Willow Grove, PA	\$10.31M	\$6.3M	0	
Naval Station, Ingleside, TX	0	0	0*	
<b>Navy Total: 9 sites</b>	<b>\$121.61M</b>	<b>\$164.80M</b>	<b>0</b>	
Riverbank Army Ammunition Plant, CA	\$10.50M*	\$50.2M	0	
Fort Gillem, GA	\$18.00M*	\$27.1M	\$8.8–21.4M	11 operational ranges
Fort McPherson, GA	\$8.90M*	\$11.1M	\$3.1–29.3M	4 operational & 2 small arms ranges
Newport Chemical Depot, IN	\$1.22M*	\$16.3M	0*	Has potential buried VX munitions, cost TBD
Kansas Army Ammunition Plant, KS	\$33.18M*	\$30.7M	\$4.7–46.6M	5 operational & 2 small arms ranges
U.S. Army Garrison Selfridge, MI	\$13.30M	0	0	
Mississippi Army Ammunition Plant, MS	\$2.3M*	0	0	
Hawthorne Army Depot, NV	\$383.20M*	\$28.5M	\$29.2–324.8M	16 operational ranges
Fort Monmouth, NJ	\$2.90M*	\$11M	\$15.3–110M	11 operational ranges
Umatilla Chemical Depot, OR	\$10.29M	\$53.5M	\$0.5–20M	Additional costs for UXO and or chemical contamination
Lone Star Army Ammunition Plant, TX	\$2.74M	\$21.3M	\$1–24.2M	3 operational ranges
Red River Army Depot, TX	\$62.56M	\$17.9M	\$6.4–73.9M	8 operational & 2 small arms ranges
Deseret Chemical Depot, UT	\$66.85M	\$23.3M	\$1–5M	UXO, chemical weapons, building decontamination and range cleanup
Fort Monroe, VA	0*	\$1.8M	0*	No operational ranges; UXO in moat, no estimate given
<b>Army total: 14 sites</b>	<b>\$615.94M</b>	<b>\$292.70M</b>	<b>\$70 M to 655.2 M</b>	
<b>Total all 33 major proposed closures</b>	<b>\$918.14M</b>	<b>\$684.70M</b>	<b>\$70M to \$655.2M</b>	

Cost-to-complete environmental restoration includes military munitions response program costs.

All cost data pulled from the Summary of Scenario Environmental Impacts provided by DoD, unless marked by an \*.

\* Revised or verified cost to complete data from DoD clearinghouse responses.

# POTENTIAL ENVIRONMENTAL IMPACTS TO REUSE FOR SELECTED MAJOR DOD RECOMMENDATIONS

## OTIS AIR NATIONAL GUARD BASE, MASSACHUSETTS

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The Otis Air National Guard Base is located on the much larger (approximately 22,000 acres) Massachusetts Military Reservation (MMR), which in turn is listed on the National Priorities List (“Super Fund”). The facility has spent \$83,453,000 through FY03 on environmental restoration, and the estimated cost to complete is \$146,783,000. The Air Force detected volatile organic compounds (VOCs) in onsite monitoring wells near the base landfill and a Fire Training Area. Monitoring had also detected VOCs in several hundred private wells (all of which now use safe municipal water) and in one town well (which is shut down). The EPA has designated the Sagamore Lens underlying MMR as a sole-source aquifer under the Safe Drinking Water Act. The groundwater is contaminated with VOCs, including trichloroethane, tetrachloroethylene, ethylene dibromide, carbon tetrachloride, and dichloroethylene. Ethylene dibromide has been found to be upwelling in two separate locations, outside the MMR property boundaries, within cranberry bogs in Mashpee and Falmouth. Contaminated groundwater could also pose a threat to the environment within several ponds and streams used for recreation. Soil contamination primarily includes heavy metals, polycyclic aromatic hydrocarbons, pesticides, and PCBs. Possible residential reuse of Otis, therefore, would be impacted by the risks of these contaminants’ creating future residential exposures as well as ecological risks.

## W.K KELLOGG AIRPORT AIR GUARD STATION, MICHIGAN

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The facility is located on 320 acres of leased property, and \$7,890,000 has been spent through FY03 on environmental restoration, with the Air Force estimating a cost to complete of \$0. As part of the cleanup, landfills and a surface storage yard were capped. Ground water contamination was not delineated on a site-specific basis, although there are small pockets of contamination, and the facility installed monitors at the fence line to confirm that contamination does not migrate offsite. If the facility is closed, land-use controls will be needed to prevent use of the ground water and impacts to the capped landfills. The current cost-to-complete estimate does not account for the potential additional workload required to implement the land-use controls or to verify the extent of ground-water contamination (which is unknown)..

## ELLSWORTH AIR FORCE BASE, SOUTH DAKOTA

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The facility is located on 4,858 acres and is on the National Priorities List, and \$67,364,000 had been spent through FY03 on environmental restoration, with an estimated cost to complete of \$26,983,000. Ground-water contamination, capped landfills, and monitored natural attenuation at the facility will require institutional controls and long-term groundwater monitoring. Waste is still onsite under presumptive-remedy landfill caps, so continued monitoring and maintenance on the cap will be needed. Ground-water cleanup could be ongoing for anywhere from 5 years to 30 years, depending on the location of the contamination plume. Construction completion for environmental restoration is scheduled for 2028.

## FORT MCPHERSON, GEORGIA

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The facility is located on 487 acres, and \$11,100,000 had been spent through FY03 on environmental restoration, with an estimated DERA cost to complete of \$120,000. The estimated MMRP cost to complete is \$8,780,000, for a total of \$8,900,000. In addition to these costs, the facility has four operational ranges and two small-arms ranges with estimated closure and cleanup costs from \$3,080,000 to \$29,300,000. The MMRP is still a new program, and costs are being revised as the initial surveys are completed.

## NEWPORT CHEMICAL DEPOT, INDIANA

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The facility is located on 7,098 acres, and \$16,300,000 has been spent through FY03 on environmental restoration, with an estimated cost to complete of \$1,220,000. Cleanup is being completed under a permit issued by the state. Corrective action has been completed at the majority of the identified solid-waste management units. Removal and decontamination of the former VX plant has started, and the chemical agent disposal facility began destruction of VX stockpiles earlier this year. Although this installation listed no MMRP cost, the program is still new, and the costs are being revised as the initial surveys are completed. For example, the Defense Environmental Programs Annual Report to Congress for Fiscal Year 2004 reported Newport’s MMRP costs as \$3,286,000.

## KANSAS ARMY AMMUNITION PLANT, KANSAS

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The facility is located on 13,727 acres, and \$30,700,000 had been spent through FY03 on environmental restoration, with an estimated cost to complete of \$33,180,000. No MMRP cost to complete was provided. In addition, the facility has five operational ranges and two small-arms ranges with estimated closure costs from \$4,700,000 to \$46,600,000. Cleanup is being completed under a permit issued by EPA, which requires investigation at several landfills, open burn/open detonation areas, and fly ash/lime slurry pits from the power plant. Construction completion for environmental restoration is scheduled for 2011.

## MISSISSIPPI ARMY AMMUNITION PLANT, MISSISSIPPI

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The facility is located on 4,337 acres, containing three manufacturing complexes. Available data indicate that very little had been spent through FY03 on environmental restoration, with an estimated cost to complete of \$2,300,000. Although this installation listed no MMRP cost, the program is new, and costs are being revised as the initial surveys are completed. For example, the Defense Environmental Programs Annual Report to Congress for Fiscal Year 2004 reported MMRP cost of \$8,413,000.

## HAWTHORNE ARMY DEPOT, NEVADA

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The facility is located on 147,189 acres of land withdrawn from public use. After all remedial work is complete and if the site is closed, the land would be returned to the Bureau of Land Management. Approximately \$28,500,000 has been spent on environmental restoration, with an estimated DERA cost to complete of \$21,600,000 and an estimated MMRP cost to complete of \$361,600,000, for a grand total of \$383,200,000. In addition, the facility has 16 operational ranges with estimated closure costs from \$29,200,000 to \$324,800,000. Environmental restoration includes remediation of soils and groundwater contaminated with explosive residues, ground water contaminated with chlorinated solvents, and landfills with unknown munitions/ordnance and pesticides. In addition, some buildings could be contaminated with explosives. Construction completion for environmental restoration is scheduled for 2032. The MMRP is a new program, and costs are being revised as the initial surveys are completed. For example, the Defense Environmental Programs Annual Report to Congress for Fiscal Year 2004 reported MMRP costs of \$444,276,000 for this installation, an increase of \$82,676,000 over FY 2003.

## FORT MONMOUTH, NEW JERSEY

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The facility is located on 1,338 acres, and \$11,000,000 has been spent on environmental restoration, with an estimated DERA cost to complete of \$2,900,000. In addition, the facility has 11 operational ranges, with estimated closure costs from \$15,300,000 to \$110,000,000. Environmental restoration remaining includes removal of polychlorinated biphenyl spill areas and hazard abatement within historic buildings. Although this installation listed no MMRP cost, the program is new and costs are being revised as the initial surveys are completed. For example, the Defense Environmental Programs Annual Report to Congress for Fiscal Year 2004 reported MMRP costs of \$1,198,000.

## RED RIVER ARMY DEPOT, TEXAS

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The facility is located on 19,081 acres, with 765 acres transferred during the 1995 BRAC round. The facility has spent \$17,900,000 on environmental restoration through FY03, with an estimated DERA cost to complete of \$35,720,000. The estimated MMRP cost to complete is \$26,840,000, for a total of \$62,560,000. In addition to these costs, the facility has eight operational ranges and two small-arms ranges with estimated closure costs from \$6,400,000 to \$73,900,000. There exists environmental contamination (perchlorates) delineated to the property boundaries from the smaller previous BRAC round portion, and it is presumed to be offsite as well. Other sites include potential sediment contamination, landfills, open burn/open detonation areas, munitions, and special-purpose concrete igloos. Construction completion for environmental restoration is scheduled for 2032. The MMRP is a new program, and costs are being revised as the initial surveys are completed.

## DESERET CHEMICAL DEPOT, UTAH

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The facility has spent \$23,300,000 on environmental restoration through FY03, with an estimated DERA cost to complete of \$7,250,000 and an estimated MMRP cost to complete of \$59,600,000 (with a total of \$66,850,000). The facility has

potential chemical weapons disposal areas, open burn/open detonation areas, and potential building decontamination that will be required. Construction completion for the environmental restoration is scheduled for 2032. The MMRP is a new program, and costs are being revised for many facilities as the initial surveys are completed. The Defense Environmental Programs Annual Report to Congress for Fiscal Year 2004 reported MMRP costs of \$170,125,000 for this installation, an increase of \$110,525,000 over FY 2003.

#### **FORT MONROE, VIRGINIA**

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The facility is located on 570 acres, and field sampling for ground water, surface water, and soils for other possible environmental contaminants is incomplete. The summary reports indicated that no DERA money was being spent at the facility, and there was no MMRP cost shown. However, during the site visit, the facility provided information that the MMRP cost to complete could require investments of up to \$192,000,000, with a completion date of 2049. The MMRP is a new program, and costs are being revised as the initial surveys are completed. For example, the Defense Environmental Programs Annual Report to Congress for Fiscal Year 2004 reported MMRP costs of \$201,165,000.

#### **NAVAL WEAPONS STATION SEAL BEACH DETACHMENT, CONCORD, CALIFORNIA**

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This 12,800-acre site contains two geographically separate units: the Inland (5,170 acres) and Tidal (7,630 acres). DoD's proposal closes only the Inland facility, except those parts necessary to support the Tidal operations. The facility is on the National Priorities List, and \$57,900,000 of environmental restoration has been spent, with an estimated cost to complete of \$40,300,000. It is unknown how much of these costs are directly related to the Inland portion of the site. Environmental contamination at the site includes elevated arsenic in soils in the 500-acre Main Magazine Area; supplemental investigation in the planning stage to assess offsite residences, other magazine areas, and Mt. Diablo Creek (sediments); as well as low-level perchlorate detected in the former Open Burn and Fire Training Area. Construction completion for environmental restoration is scheduled for 2023. The MMRP is a new program, and costs are being revised as the initial surveys are completed. For example, the Defense Environmental Programs Annual Report to Congress for Fiscal Year 2004 reported MMRP costs as \$33,840,000.

#### **NAVAL SUBMARINE BASE, NEW LONDON, CONNECTICUT**

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Included on the National Priorities List, this 576-acre facility has spent \$56,500,000 through FY03 on environmental restoration, with an estimated cost to complete of \$23,900,000. Three landfills have been capped, and seven removal actions have been completed, with additional investigations under way in the Lower Sub Base Area and for ground water throughout the base. The reuse and redevelopment at this facility may be impacted by land-use restrictions. Construction completion for environmental restoration is scheduled for 2020, and although no MMRP costs were listed, the program is new, and costs are being revised as the initial surveys are completed.

#### **NAVAL SHIPYARD PORTSMOUTH, NEW HAMPSHIRE**

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Included on the National Priorities List, this facility occupies a 278-acre site, two-thirds of which is covered by a high-density industrial area containing 376 buildings. About \$46,800,000 had been spent through FY03 on environmental restoration, with an estimated cost to complete of \$47,100,000. The facility includes landfills, potential sediment contamination, and ground-water contamination, and investigations are under way at all remaining sites. A former storage yard has been capped, with plans under way to cap the remaining landfill. Construction completion for environmental restoration is scheduled for 2016. Although this installation listed no MMRP cost, the program is new, and the costs are being revised as the initial surveys are completed.