



Document Cover Sheet

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APPENDIX L: FORMERLY USED DEFENSE SITES ENVIRONMENTAL RESTORATION PROGRESS

Restoration

The goal of the Formerly Used Defense Sites (FUDS) program is to reduce risk to human health and the environment resulting from past Department of Defense (DoD) activities at properties that were formerly owned, leased, or otherwise under the jurisdiction of DoD or its Components prior to 1986.

The Army acts as the executive agent for the FUDS program, and the U.S. Army Corps of Engineers (USACE) executes the program through its divisions and districts. USACE must evaluate information about the origin and extent of contamination, land transfer issues, past and present property ownership, and program policies before it considers a property eligible for the FUDS program. At FUDS-eligible properties, USACE conducts environmental restoration activities under the Comprehensive Environmental Response, Compensation, and Liability Act. USACE sets priorities for the FUDS program based on an evaluation of relative risk and other factors, such as legal agreements, stakeholder concerns, and economic considerations.

USACE headquarters is responsible for FUDS program management and execution. The FUDS mission within USACE is executed by the field organizations, which consist of seven geographic military divisions; 22 military districts, with necessary support from civil works districts; one hazardous, toxic, and radioactive waste center of expertise; and one military munitions center of expertise. A USACE district commander serves as each property's installation commander, executing environmental restoration projects and fulfilling associated responsibilities, since DoD no longer owns or uses the FUDS properties.

Site Status and Progress Towards Program Goals

The scope and magnitude of the FUDS program are significant, with 9,908 properties identified for potential inclusion in the program, as shown in Figure L-1. Figure L-2 illustrates that, as of the end of Fiscal Year (FY) 2006, USACE

has evaluated 9,350 properties and determined that no response actions were required at 6,306 of those properties. A response action is required at the remaining 3,044 properties, which represents approximately 33 percent of the total properties.

USACE continues to emphasize project execution, FUDS property restoration, and active stakeholder involvement in the environmental restoration process. New properties and sites are continually being identified by property owners or discovered by USACE and added to the FUDS program. USACE continues evaluating potentially FUDS-eligible sites, as well as completing investigation and cleanup requirements to meet DoD management goals.

Figure L-1
FY2006 Program Eligibility Status of
Potential FUDS Programs

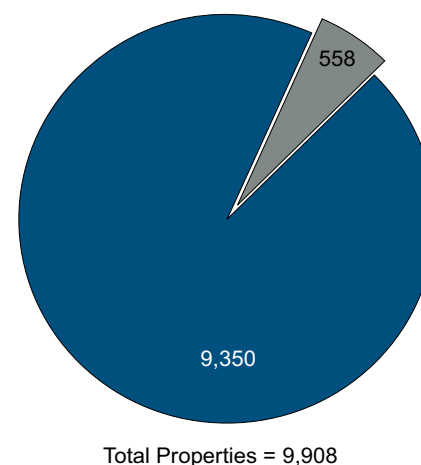
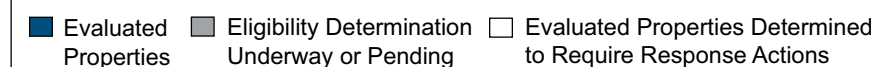
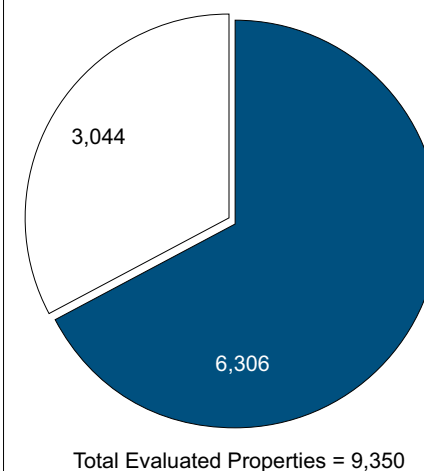


Figure L-2
FY2006 Response Action Status of
Evaluated FUDS Properties



As an example of active stakeholder involvement occurred at the former Camp Wheeler near Macon, GA. The USACE safely removed nearly 350 buried munitions from a residential neighborhood when homes were being built in a World War I and II training area. Constant community involvement was critical to the successful completion of the project.

Installation Restoration Program

USACE strives to evaluate as many Installation Restoration Program (IRP) category sites as possible to assess relative risk to human health and the environment. Besides relative risk, other management factors considered include stakeholder concerns, aid in sequencing work during FUDS planning, programming, budgeting, and project execution.

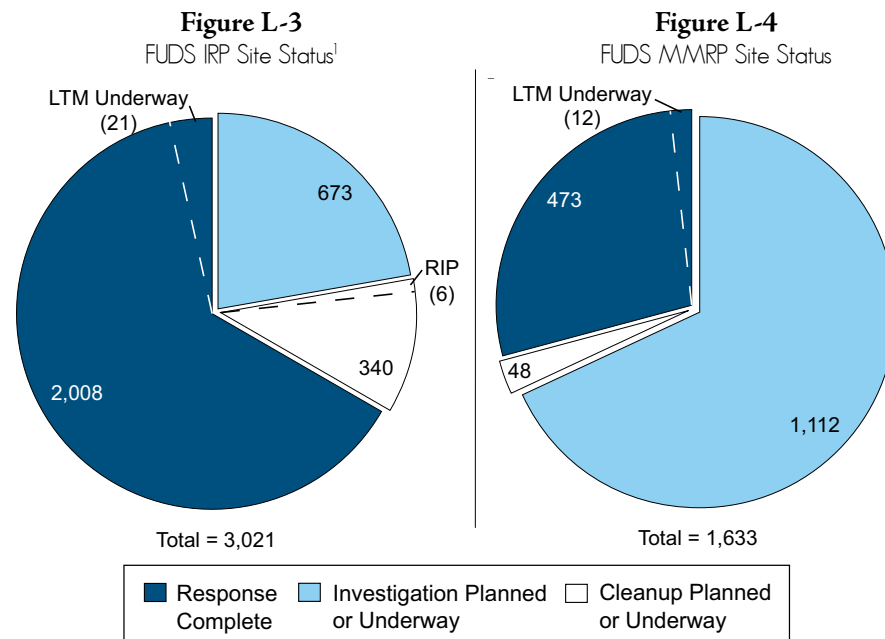
USACE currently has 2,601 IRP and 420 Building Demolition/ Debris Removal (BD/DR) category sites in the FUDS program. Of the 3,021 FUDS IRP and BD/DR sites, approximately 75 percent, or 2,277 sites, do not require a relative-risk ranking because work is ongoing or completed. Project execution figures for FY2006 demonstrate that the FUDS program continues to make significant progress. As of the end of FY2006, 2,008 FUDS IRP and BD/DR sites reached the response complete (RC) milestone, as shown in Figure L-3.

Figure L-5 provides detailed IRP site status, including phase information.

Military Munitions Response Program

USACE also evaluates Military Munitions Response Program (MMRP) category sites for risks to human safety. MMRP assessments consist of a hazard severity assessment and a hazard probability assessment. Both are based on the best available information from archive search reports, explosive ordnance disposal incidence reports, field observations, interviews, and physical site measurements. Of the 1,633 eligible MMRP sites in the FUDS program, 473 have already achieved RC status, as shown in Figure L-4.

The MMRP, as defined in FY2004, encompasses hazards associated with munitions constituents (MC) and not just explosive hazards. Approximately 200 projects had previously been closed out because they do not pose a threat. However, to comply with new legislation and program definitions, these



¹ Includes BD/BR sites as of September 30, 2006.

projects were reopened during FY2005 to address the potential MC threat posed by expended small arms ammunition (i.e., lead).

To date, USACE has completed preliminary assessments (PAs) for nearly all MMRP-eligible sites, in an effort to meet the FY2007 goal for completing PAs and the FY2010 goal for completion of site inspections for sites identified in the MMRP Inventory.

Figure L-5 provides detailed MMRP site status, including phase information.

Financial Management

In FY2006, USACE obligated \$253.8 million for environmental restoration activities at FUDS properties. USACE is planning to expend \$253.8 million for environmental restoration activities in FY2007, with 93 percent project funds designated for investigations and cleanup actions. USACE

used the remaining funds for long-term management activities and program management. The FUDS environmental restoration funding trends are illustrated in Figure L-6.

During FY2007, cost-to-complete (CTC) efforts at MMRP sites are estimated at \$12.6 billion and IRP sites are estimated to cost \$3.4 billion.

Budget and CTC estimates at FUDS properties are shown in Figure L-6.

Figure L-5
FUDS Site Status

Sites by Classification					Completed		Underway		Future		
IRP Sites		MMRP Sites			IRP	MMRP	IRP	MMRP	IRP	MMRP	
Response Comp.	2,008	Response Comp.	473	Phase	Sites (Actions)						
High	217	RAC-1	96		Study	2,348	521	366	662	307	450
Medium	99	RAC-2	95		IRA	150 (150)	66 (66)	5 (5)	1 (1)		
Low	64	RAC-3	112		Design	1,274	15	161	12	562	914
Not Evaluated	463	RAC-4	314		RA-C	1,309	39	231	59	656	923
Not Required	170	RAC-5	220		RA-O	24	0	11	0	202	1
		Not Evaluated	323		LTM	171	16	121	32	1,750	1,324
Total IRP Sites	3,021	Total MMRP Sites	1,633	Total Number of IRP Properties with Sites							1,707
				Total Number of MMRP Properties with Sites							1,541

Figure L-6
FUDS Budget and CTC Estimates¹

Phase	Costs Through FY2006 (\$000)		FY2006 Funds Obligated (\$000)		FY2007 Execution Planned (\$000)		FY2008 Planning Estimate (\$000)		Estimated Costs (\$000)		
	IRP	MMRP	IRP	MMRP	IRP	MMRP	IRP	MMRP	Fiscal Year	IRP	MMRP
Study	\$986,724	\$289,295	\$58,327	\$38,049	\$49,736	\$42,937	\$32,826	\$46,430	FY2009	\$137,777	\$79,315
IRA	\$111,243	\$34,961	\$1,825	\$4,988	\$434	\$60	\$706	\$0	FY2010	\$156,398	\$77,631
Design	\$158,168	\$1,126	\$3,446	\$129	\$4,425	\$544	\$9,459	\$977	FY2011	\$157,936	\$75,514
RA-C	\$1,158,473	\$275,003	\$42,696	\$48,002	\$38,925	\$41,208	\$62,167	\$32,240	FY2012	\$161,908	\$81,731
RA-O	\$80,696	\$0	\$6,769	\$0	\$9,771	\$0	\$12,840	\$0	FY2013	\$162,062	\$80,721
LTM	\$38,061	\$4,298	\$5,810	\$314	\$12,785	\$762	\$15,400	\$543	FY2007-Comp. IRP	\$3,441,573	
Total	\$2,533,365	\$604,683	\$118,873	\$91,482	\$116,076	\$85,511	\$133,398	\$80,210	FY2007-Comp. MMRP	\$12,639,516	

¹ Excludes PA/INPR, RAB, TAPP, and program management costs.

APPENDIX N: INSTALLATION RESTORATION PROGRAM AND MILITARY MUNITIONS RESPONSE PROGRAM STATUS TABLES

Restoration

The summary status tables in this appendix present the Installation Restoration Program (IRP) category and Military Munitions Response Program (MMRP) category data that fulfill statutory reporting requirements for the Defense Environmental Restoration Program (DERP). These tables are arranged by installation, Department of Defense (DoD) Component, and state to present various aspects of the program. Detailed MMRP funding data are available from Fiscal Year (FY) 1997 forward. Prior to FY1997, munitions response activities were funded through the IRP. Hence, all historical funding prior to FY1997 is reported as IRP funding.

The installation-level tables in Appendix N (N-6, N-7, and N-8) describe the installation status, including the number of IRP and MMRP sites, the funding to date, and cost-to-complete (CTC) estimates. Table N-6 also details the five-year review information, explanations for significant changes in CTC estimates, National Priority List (NPL) status, and Base Realignment and Closure (BRAC) round year(s) for installations with an estimated CTC greater than \$10 million.

In FY2005, DoD consolidated its IRP and MMRP status tables into a single appendix for the Defense Environmental Annual Report to Congress. Prior to FY2005, the IRP and MMRP status tables were reported to Congress in separate appendices. The combined tables will allow readers to retrieve site-level status and funding information, summarized by installation, for both program categories in a more efficient manner. As with the previous annual reports, the IRP category statistics are inclusive of the Building Demolition and Debris Removal (BD/DR) program category, which is a minor portion of the DERP.

A brief summary of each of the status tables follows. Figure N-1 graphically illustrates the descriptions of each of the status tables.

Table N-1 provides a roll-up of all DERP sites, including all current and former DoD properties.

Table N-2 includes separate roll-ups of all DoD active installations, BRAC installations, and Formerly Used Defense Sites (FUDS) properties.

Table N-3 subdivides the DoD active installations in Table N-2 by component (Army, Navy, Air Force, and DLA).

Table N-4 subdivides the DoD BRAC installations in Table N-2 by Component (Army, Navy, Air Force, and DLA).

Table N-5 provides separate roll-ups of all DoD active installations, BRAC installations, and FUDS properties for each state, territory, and the District of Columbia. Status and cost totals are shown for each state, territory, and the District of Columbia, with information for DoD active and BRAC installations and information for FUDS properties displayed separately.

Table N-6 provides status and cost information for DoD installations and FUDS properties that meet the following criteria:

- Investigations or cleanup actions are planned or ongoing
- Total FY2006 IRP and MMRP estimated CTC is greater than \$10 million.

Table N-7 provides cost data for DoD installations and FUDS properties that meet the following criteria:

- Investigations or cleanup actions are planned or ongoing
- Total FY2006 IRP and MMRP estimated CTC are less than or equal to \$10 million.

Table N-8 lists the total number of sites and costs incurred for DoD installations and FUDS properties that have achieved response complete status at all sites.

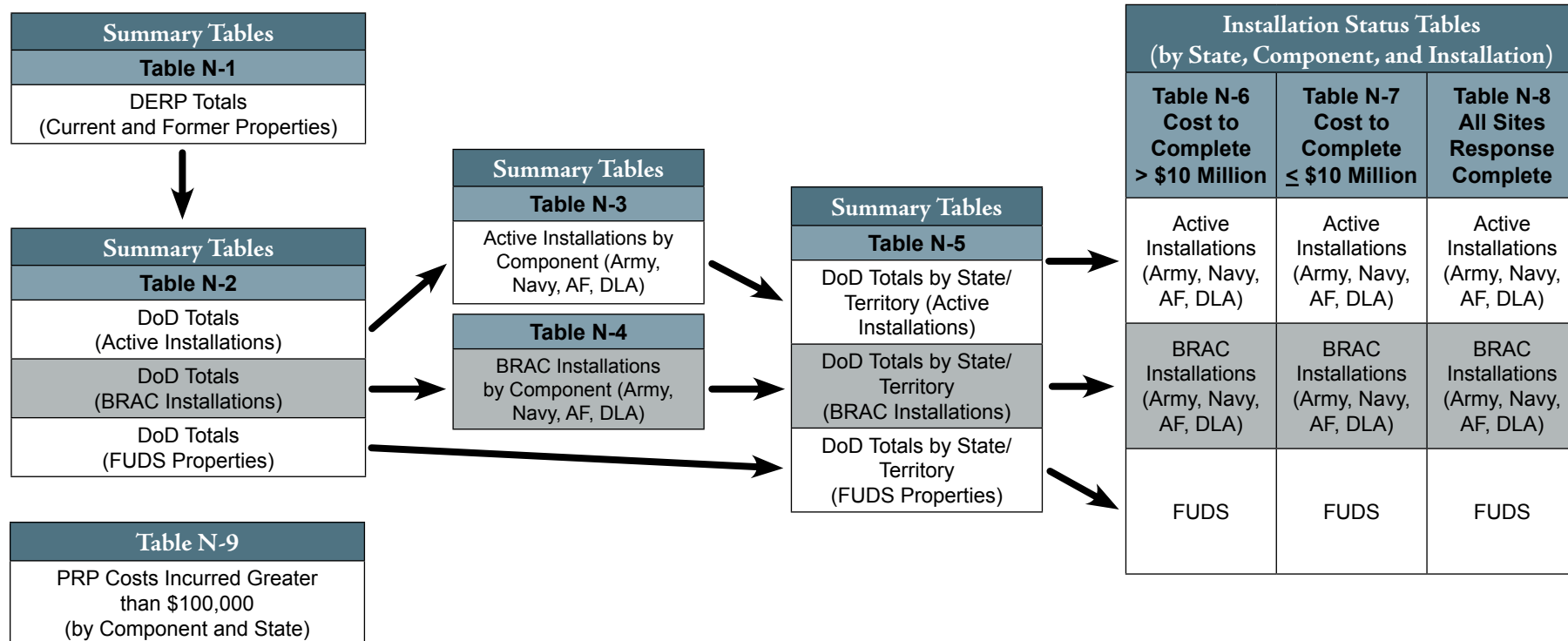
Table N-9 provides data by state for the installations that have incurred potentially responsible party (PRP) costs of more than \$100,000 through FY2006.

Component roll-ups for all DoD active and BRAC installations and a roll-up of all FUDS properties are included in Appendix J: Active Installations Environmental Restoration Progress; Appendix K: BRAC Installations Environmental Restoration Progress; and Appendix L: Formerly Used Defense Sites Environmental Progress. Appendix K also provides data for BRAC installations by BRAC round (1988, 1991, 1993, 1995, and 2005).

All DoD summary tables in this appendix include historical Defense Threat Reduction Agency (DTRA) cost data, but do not include DTRA site counts. DTRA is not shown separately in this appendix because it no longer has any DERP sites. There may be differences between the information in these tables and the information in other parts of this report. Such discrepancies can be attributed, for the most part, to the way in which project costs have been captured in the past. For example, at particular installations, costs for interim actions and designs often have been combined with the cost for actual cleanup, and costs for projects that covered multiple installations (such as preliminary assessments) may not have been allocated to each installation involved. Also, these tables do not contain program management and support costs, only cleanup process costs, as these support costs are not managed at the site level.

An installation's five-year review status is also provided in the N-tables. It is important to note that a five-year review may be required for selected

Figure N-1
Illustration of Tables N-1 through N-9



individual sites, not necessarily all sites at an installation. Installations may need to change their funding projections from year to year. Installations that have an estimated CTC greater than \$10 million include a note explaining the reason for cost differences of more than 10 percent from year to year (these changes are labeled CTC deltas). There are three possible explanation categories for CTC deltas (which include, but are not limited to, the examples that follow them): technical issues (additional sites found, incomplete site data, additional or extended remedial action operations); regulatory issues (changes to an existing cleanup requirement or new regulations); and estimating criteria (addition of cost data that were overlooked or previously unknown, or database updates and corrections).

The number of installations reported in Tables N-1 and N-2 is the number of installations funded by each Component. Note that the number of installations reported in these tables may exceed the number of actual installations because:

- Installations may be funded by more than one DoD Component
- Prior-year Environmental Restoration (ER) funding may be reported for installations that are now funded completely by the BRAC program
- Current and future ER and BRAC funding may be reported for one installation at the same time where both ER and BRAC sites exist.

A list of the current total number of DERP eligible installations and FUDS properties reported by each DoD Component is shown in Figure N-2.

Figure N-3 reports installations that receive funding for ER activities from more than one Component.

Although BRAC installations are funded primarily by the BRAC account, some of these installations may also receive ER funding. Figure N-4 provides a list of installations closed under BRAC that received ER funding in FY2006. Installations realigned under BRAC only receive ER funding for restoration activities and are not listed in Figure N-4.

Figure N-2

Total Number of Eligible DERP Installations and Properties

Component	Number of Installations/Properties
Army	1,249
Navy	253
Air Force	301
Defense Logistics Agency	7
Defense Threat Reduction Agency	0
Formerly Used Defense Sites	2,808
Total	4,618

Figure N-3

Installations Funded by Multiple Services in FY2006

Installation	FFID
Massachusetts Military Reservation; Funded by Army ER and Air Force ER	MA157282448700

Figure N-4

BRAC Installations Receiving ER Funding in FY2006

Army	FFID
Deseret Chemical Depot	UT821522026500
Devens Reserve Training	MA121042027000
Fort Buchanan	PR22140RQ32700
Fort George G. Meade	MD321022056700
Fort Greely	AK021362215500
Indiana Army Ammunition Plant	IN521382044300
Letterkenny Army Depot	PA321382050300
Red River Army Depot	TX621382073800
Sierra Army Depot	CA921382084300
Tooele Army Depot	UT821382089400
Vancouver Barracks	WA021042092400
Walter Reed Army Medical Center	DC321162115600

Navy	FFID
Barbers Point Naval Air Station	HI917002432600
Bethesda NAVMEDCOM NATCAPREG	MD317002468700
Concord NWS	CA917002452800
Guam FISC	GU917002753200
Guam NAVACTS	GU917002758300
Guam NSRF	GU917002758500
Key West Naval Air Station	FL417002295200
Long Beach NS San Pedro	CA917002755400
Memphis Naval Air Station	TN417002260000
San Diego Naval Training Center	CA917002320200

Air Force	FFID
Carswell Air Force Base	TX657002404200
Grissom Air Force Base	IN557212447200
March Air Force Base	CA957212452700

				Phase	Completed		Underway		Future		Costs Through FY06 (\$000)		FY06 Funds Obligated (\$000)		FY07 Execution Planned (\$000)		FY08 Planning Estimate (\$000)		Estimated Costs (\$000)						
					IRP	MMRP	IRP	MMRP	IRP	MMRP															
					Sites (Actions)						IRP	MMRP	IRP	MMRP	IRP	MMRP	IRP	MMRP	Fiscal Year	IRP	MMRP				
DoD Installations and FUDS Properties																									
IRP Sites by Classification				MMRP Sites by Classification				Study	24411	891	2905	1909	541	516	\$9,123,905	\$427,166	\$306,208	\$86,959	\$224,383	\$110,069	\$208,048	\$131,046	FY09	\$1,113,131	\$343,569
Response Complete	22,074	Response Complete	821	IRA	4315(5719)	97(100)	664(958)	7(8)			\$3,897,628	\$57,549	\$171,070	\$8,140	\$221,570	\$3,782	\$149,508	\$19,242	FY10	\$993,385	\$500,236				
High	1,155	RAC-1	198	Design	3836	21	530	17	1690	1552	\$1,182,321	\$23,075	\$30,750	\$3,800	\$28,601	\$5,632	\$31,189	\$4,839	FY11	\$945,405	\$575,190				
Medium	1,162	RAC-2	327	RA-C	5238	64	934	76	2201	1720	\$8,486,781	\$476,245	\$512,951	\$102,051	\$448,080	\$76,448	\$465,930	\$81,567	FY12	\$808,877	\$731,928				
Low	1,301	RAC-3	283	RA-O	637	1	1171	0	1215	144	\$2,012,461	\$525	\$243,892	\$0	\$317,812	\$51	\$338,356	\$51	FY13	\$750,366	\$782,219				
Not Evaluated	923	RAC-4	526	LTM	940	18	1324	46	3726	1876	\$799,001	\$15,644	\$105,537	\$1,844	\$113,365	\$1,644	\$111,181	\$1,759	FY07-Comp. IRP		\$13,902,796				
Not Required	1,242	RAC-5	594							Total	\$25,502,097	\$1,000,204	\$1,370,408	\$202,794	\$1,353,811	\$197,626	\$1,304,212	\$238,504	FY07-Comp. MMRP		\$18,689,590				
		Not Evaluated	567																		FY07-Complete		\$32,592,386		
Total IRP Sites	27857	Total MMRP Sites	3316																						
Total Number of IRP Installations with Sites			3,447																						
Total Number of MMRP Installations with Sites			1,895																						

				Phase	Completed		Underway		Future		Costs Through FY06 (\$000)		FY06 Funds Obligated (\$000)		FY07 Execution Planned (\$000)		FY08 Planning Estimate (\$000)		Estimated Costs (\$000)						
					IRP	MMRP	IRP	MMRP	IRP	MMRP															
					Sites (Actions)						IRP	MMRP	IRP	MMRP	IRP	MMRP	IRP	MMRP	Fiscal Year	IRP	MMRP				
Active Installations																									
IRP Sites by Classification				MMRP Sites by Classification				Study	17699	234	1909	1012	218	64	\$5,907,393	\$104,622	\$192,912	\$37,280	\$125,091	\$62,739	\$144,509	\$71,792	FY09	\$843,102	\$233,931
Response Complete	16,035	Response Complete	226	IRA	2931(4018)	7(7)	355(418)	1(2)			\$2,910,156	\$3,592	\$121,472	\$64	\$116,866	\$0	\$102,105	\$5,820	FY10	\$695,419	\$356,236				
High	687	RAC-1	85	Design	1860	1	327	2	724	581	\$726,748	\$1,000	\$15,049	\$1,000	\$13,573	\$5,088	\$18,322	\$2,484	FY11	\$648,753	\$446,472				
Medium	930	RAC-2	199	RA-C	2924	3	606	8	1067	712	\$4,843,799	\$18,902	\$325,192	\$18,891	\$312,272	\$19,763	\$319,108	\$29,822	FY12	\$501,580	\$594,398				
Low	1,151	RAC-3	150	RA-O	473	0	904	0	847	137	\$1,303,060	\$0	\$175,960	\$0	\$226,425	\$0	\$251,828	\$0	FY13	\$444,005	\$659,668				
Not Evaluated	195	RAC-4	200	LTM	632	0	805	3	1604	463	\$539,265	\$1,247	\$72,903	\$1,247	\$82,969	\$204	\$79,436	\$496	FY07-Comp. IRP		\$7,467,528				
Not Required	828	RAC-5	351							Total	\$16,230,421	\$129,363	\$903,488	\$58,482	\$877,196	\$87,794	\$915,308	\$110,414	FY07-Comp. MMRP		\$5,147,867				
		Not Evaluated	99																	FY07-Complete		\$12,615,395			
Total IRP Sites	19826	Total MMRP Sites	1310																						

BRAC Installations																							
IRP Sites by Classification		MMRP Sites by Classification		Study	4364	136	630	235	16	2	\$2,165,574	\$32,674	\$54,969	\$11,630	\$49,556	\$4,393	\$30,713	\$12,824	FY09	\$132,252	\$30,323		
Response Complete	4,031	Response Complete	122		IRA	1234(1551)	24(27)	304(535)	5(5)			\$876,229	\$18,563	\$47,773	\$3,088	\$104,270	\$3,722	\$46,697	\$13,422	FY10	\$141,568	\$66,369	
High	251	RAC-1	17		Design	702	5	42	3	404	57	\$297,352	\$20,949	\$12,255	\$2,671	\$10,603	\$0	\$3,408	\$1,358	FY11	\$138,716	\$53,204	
Medium	133	RAC-2	33		RA-C	1005	22	97	9	478	85	\$2,481,953	\$182,340	\$145,063	\$35,158	\$96,883	\$15,477	\$84,655	\$19,505	FY12	\$145,389	\$55,799	
Low	86	RAC-3	21		RA-O	140	1	256	0	166	6	\$628,705	\$525	\$61,163	\$0	\$81,616	\$51	\$73,688	\$51	FY13	\$144,299	\$41,830	
Not Evaluated	265	RAC-4	12		LTM	137	2	398	11	372	89	\$221,675	\$10,099	\$26,824	\$283	\$17,611	\$678	\$16,345	\$720	FY07-Comp. IRP		\$2,993,695	
Not Required	244	RAC-5	23								Total	\$6,671,488	\$265,150	\$348,047	\$52,830	\$360,539	\$24,321	\$255,506	\$47,880	FY07-Comp. MMRP		\$902,207	
		Not Evaluated	145																		FY07-Complete		\$3,895,902
Total IRP Sites	5010	Total MMRP Sites	373																				
Total Number of IRP Installations Funded:			221																				
Total Number of MMRP Installations Funded:			71																				

Formerly Used Defense Sites																							
IRP Sites by Classification		MMRP Sites by Classification		Study	2348	521	366	662	307	450	\$1,050,938	\$289,870	\$58,327	\$38,049	\$49,736	\$42,937	\$32,826	\$46,430	FY09	\$137,777	\$79,315		
Response Complete	2,008	Response Complete	473		IRA	150(150)	66(66)	5(5)	1(1)			\$111,243	\$35,394	\$1,825	\$4,988	\$434	\$60	\$706	\$0	FY10	\$156,398	\$77,631	
High	217	RAC-1	96		Design	1274	15	161	12	562	914	\$158,221	\$1,126	\$3,446	\$129	\$4,425	\$544	\$9,459	\$997	FY11	\$157,936	\$75,514	
Medium	99	RAC-2	95		RA-C	1309	39	231	59	656	923	\$1,161,029	\$275,003	\$42,696	\$48,002	\$38,925	\$41,208	\$62,167	\$32,240	FY12	\$161,908	\$81,731	
Low	64	RAC-3	112		RA-O	24	0	11	0	202	1	\$80,696	\$0	\$6,769	\$0	\$9,771	\$0	\$12,840	\$0	FY13	\$162,062	\$80,721	
Not Evaluated	463	RAC-4	314		LTM	171	16	121	32	1750	1324	\$38,061	\$4,298	\$5,810	\$314	\$12,785	\$762	\$15,400	\$543	FY07-Comp. IRP		\$3,441,573	
Not Required	170	RAC-5	220								Total	\$2,600,188	\$605,691	\$118,873	\$91,482	\$116,076	\$85,511	\$133,398	\$80,210	FY07-Comp. MMRP		\$12,639,516	
		Not Evaluated	323																		FY07-Complete		\$16,081,089
Total IRP Sites	3021	Total MMRP Sites	1633																				
Total Number of IRP Potential Properties Funded:			1,707																				
Total Number of MMRP Potential Properties Funded:			1,541																				

Table N-3 Status of Component Active Installations IRP/MMRP Summary as of September 30, 2006

Defense Environmental Restoration Program

				Phase	Completed		Underway		Future		Costs Through FY06 (\$000)		FY06 Funds Obligated (\$000)		FY07 Execution Planned (\$000)		FY08 Planning Estimate (\$000)		Estimated Costs (\$000)							
					IRP	MMRP	IRP	MMRP	IRP	MMRP																
					Sites (Actions)						IRP	MMRP	IRP	MMRP	IRP	MMRP	IRP	MMRP	Fiscal Year	IRP	MMRP					
ARMY																										
IRP Sites by Classification				MMRP Sites by Classification				Study	9,857	130	594	655	0	0	\$1,962,944	\$30,465	\$35,101	\$12,401	\$37,269	\$26,668	\$68,497	\$26,871	FY09	\$261,866	\$132,718	
Response Complete	9,568	Response Complete	127	IRA	780(1178)	2(2)	30(32)	1(2)				\$880,497	\$361	\$11,868	\$0	\$3,468	\$0	\$1,235	\$5,144	FY10	\$161,786	\$210,961				
High	222	RAC-1	57	Design	755	0	176	1	163	396	\$191,045	\$0	\$860	\$0	\$4,826	\$25	\$3,845	\$103	FY11	\$130,043	\$283,224					
Medium	305	RAC-2	146	RA-C	1,280	2	316	4	220	410	\$2,358,399	\$0	\$190,112	\$0	\$162,932	\$0	\$170,895	\$4,878	FY12	\$96,089	\$326,361					
Low	249	RAC-3	78	RA-O	89	0	217	0	119	22	\$384,267	\$0	\$39,774	\$0	\$49,517	\$0	\$46,743	\$0	FY13	\$71,316	\$360,459					
Not Evaluated	5	RAC-4	92	LTM	162	0	268	2	381	227	\$235,051	\$0	\$51,255	\$0	\$51,631	\$10	\$49,125	\$13	FY07-Comp. IRP		\$2,144,727					
Not Required	102	RAC-5	284							Total	\$6,012,203	\$30,826	\$328,970	\$12,401	\$309,643	\$26,703	\$340,340	\$37,009	FY07-Comp. MMRP		\$3,032,076					
		Not Evaluated	1																					FY07-Complete		\$5,176,803
Total IRP Sites	10,451	Total MMRP Sites	785																							
Total Number of IRP Installations with Sites			1,083																							
Total Number of MMRP Installations with Sites			157																							
NAVY																										
IRP Sites by Classification				MMRP Sites by Classification				Study	3,053	40	465	124	186	57	\$1,549,475	\$50,459	\$58,545	\$14,140	\$33,019	\$18,256	\$41,597	\$16,773	FY09	\$216,647	\$43,410	
Response Complete	2,672	Response Complete	35	IRA	821(1013)	4(4)	54(57)	0(0)			\$937,713	\$3,167	\$49,445	\$0	\$57,015	\$0	\$42,435	\$676	FY10	\$210,228	\$40,067					
High	345	RAC-1	10	Design	473	1	29	1	243	20	\$109,120	\$1,000	\$2,205	\$1,000	\$4,604	\$5,063	\$3,211	\$2,381	FY11	\$209,788	\$54,658					
Medium	173	RAC-2	18	RA-C	695	0	82	4	334	120	\$1,141,719	\$18,902	\$50,633	\$18,891	\$71,894	\$19,763	\$65,568	\$24,944	FY12	\$215,420	\$55,983					
Low	271	RAC-3	18	RA-O	151	0	229	0	248	10	\$284,269	\$0	\$39,565	\$0	\$42,183	\$0	\$46,149	\$0	FY13	\$219,858	\$57,021					
Not Evaluated	14	RAC-4	28	LTM	171	0	174	1	476	72	\$76,279	\$1,247	\$11,252	\$1,247	\$9,865	\$194	\$11,669	\$483	FY07-Comp. IRP		\$1,987,354					
Not Required	229	RAC-5	17							Total	\$4,098,575	\$74,775	\$211,645	\$35,278	\$218,580	\$43,276	\$210,629	\$45,257	FY07-Comp. MMRP		\$619,475					
		Not Evaluated	95																					FY07-Complete		\$2,606,829
Total IRP Sites	3,704	Total MMRP Sites	221																							
Total Number of IRP Installations with Sites			202																							
Total Number of MMRP Installations with Sites			58																							
AIR FORCE																										
IRP Sites by Classification				MMRP Sites by Classification				Study	4,447	64	847	233	32	7	\$2,301,624	\$23,698	\$94,182	\$10,739	\$53,580	\$17,815	\$34,415	\$28,148	FY09	\$355,553	\$57,803	
Response Complete	3,471	Response Complete	64	IRA	1266(1745)	1(1)	270(328)	0(0)			\$1,077,847	\$64	\$60,159	\$64	\$56,383	\$0	\$58,435	\$0	FY10	\$315,962	\$105,208					
High	116	RAC-1	18	Design	540	0	119	0	313	165	\$405,440	\$0	\$10,641	\$0	\$4,064	\$0	\$9,919	\$0	FY11	\$302,728	\$108,590					
Medium	451	RAC-2	35	RA-C	801	1	204	0	506	182	\$1,186,138	\$0	\$84,387	\$0	\$76,973	\$0	\$80,360	\$0	FY12	\$184,476	\$212,054					
Low	627	RAC-3	54	RA-O	203	0	446	0	474	105	\$557,470	\$0	\$88,513	\$0	\$129,699	\$0	\$154,474	\$0	FY13	\$147,915	\$242,188					
Not Evaluated	174	RAC-4	80	LTM	279	0	352	0	727	164	\$226,555	\$0	\$10,356	\$0	\$20,835	\$0	\$17,838	\$0	FY07-Comp. IRP		\$3,171,322					
Not Required	487	RAC-5	50							Total	\$5,755,074	\$23,762	\$348,238	\$10,803	\$341,534	\$17,815	\$355,441	\$28,148	FY07-Comp. MMRP		\$1,496,316					
		Not Evaluated	3																					FY07-Complete		\$4,667,638
Total IRP Sites	5,326	Total MMRP Sites	304																							
Total Number of IRP Installations with Sites			274																							
Total Number of MMRP Installations with Sites			77																							

Note: Totals reflect installation project funding allocated to individual sites and do not include program management and support costs.

Table N-3 Status of Component Active Installations IRP/MMRP Summary as of September 30, 2006

Defense Environmental Restoration Program

				Phase	Completed		Underway		Future		Costs Through FY06 (\$000)		FY06 Funds Obligated (\$000)		FY07 Execution Planned (\$000)		FY08 Planning Estimate (\$000)		Estimated Costs (\$000)				
					IRP	MMRP	IRP	MMRP	IRP	MMRP													
					Sites (Actions)						IRP	MMRP	IRP	MMRP	IRP	MMRP	IRP	MMRP	Fiscal Year	IRP	MMRP		
DEFENSE LOGISTICS AGENCY																							
IRP Sites by Classification		MMRP Sites by Classification		Study	342	0	3	0	0	\$89,493	\$0	\$5,084	\$0	\$1,223	\$0	\$0	\$0	FY09	\$9,036	\$0			
Response Complete	324	Response Complete	0	IRA	64(82)	0(0)	1(1)	0(0)		\$14,099	\$0	\$0	\$0	\$0	\$0	\$0	\$0	FY10	\$7,443	\$0			
High	4	RAC-1	0	Design	92	0	3	0	5	\$21,143	\$0	\$1,343	\$0	\$79	\$0	\$1,347	\$0	FY11	\$6,194	\$0			
Medium	1	RAC-2	0	RA-C	148	0	4	0	7	\$147,622	\$0	\$60	\$0	\$473	\$0	\$2,285	\$0	FY12	\$5,595	\$0			
Low	4	RAC-3	0	RA-O	30	0	12	0	6	\$65,014	\$0	\$8,108	\$0	\$5,026	\$0	\$4,462	\$0	FY13	\$4,916	\$0			
Not Evaluated	2	RAC-4	0	LTM	20	0	11	0	20	\$1,380	\$0	\$40	\$0	\$638	\$0	\$804	\$0	FY07-Comp. IRP		\$164,125			
Not Required	10	RAC-5	0							Total	\$338,751	\$0	\$14,635	\$0	\$7,439	\$0	\$8,898	\$0	FY07-Comp. MMRP		\$0		
		Not Evaluated	0																		FY07-Complete		\$164,125
Total IRP Sites	345	Total MMRP Sites	0																				
Total Number of IRP Installations with Sites				5																			
Total Number of MMRP Installations with Sites				0																			

Note: Totals reflect installation project funding allocated to individual sites and do not include program management and support costs.

Table N-4 Status of Component Closing Installations IRP/MMRP Summary as of September 30, 2006

Defense Environmental Restoration Program

				Phase	Completed		Underway		Future		Costs Through FY06 (\$000)		FY06 Funds Obligated (\$000)		FY07 Execution Planned (\$000)		FY08 Planning Estimate (\$000)		Estimated Costs (\$000)						
					IRP	MMRP	IRP	MMRP	IRP	MMRP															
					Sites (Actions)						IRP	MMRP	IRP	MMRP	IRP	MMRP	IRP	MMRP	Fiscal Year	IRP	MMRP				
ARMY																									
IRP Sites by Classification				MMRP Sites by Classification				Study	1,853	124	114	93	0	0	\$551,094	\$23,254	\$6,485	\$6,495	\$2,423	\$3,688	\$4,426	\$8,813	FY09	\$39,432	\$29,824
Response Complete	1,781	Response Complete	118	IRA	217(265)	24(27)	7(7)	4(4)			\$50,441	\$18,477	\$501	\$3,002	\$0	\$1,504	\$1,287	\$4,297	FY10	\$40,394	\$65,928				
High	71	RAC-1	17	Design	353	4	13	3	42	47	\$97,401	\$20,949	\$1,955	\$2,671	\$83	\$0	\$241	\$50	FY11	\$33,093	\$47,526				
Medium	37	RAC-2	33	RA-C	501	22	46	3	53	73	\$1,027,853	\$170,712	\$12,396	\$33,626	\$4,821	\$4,800	\$16,137	\$13,392	FY12	\$35,640	\$50,943				
Low	43	RAC-3	19	RA-O	33	1	47	0	22	1	\$62,608	\$525	\$10,124	\$0	\$14,941	\$0	\$15,741	\$0	FY13	\$33,763	\$41,760				
Not Evaluated	0	RAC-4	10	LTM	34	2	69	11	127	80	\$89,123	\$10,099	\$11,767	\$283	\$3,510	\$678	\$2,392	\$666	FY07-Comp. IRP		\$523,686				
Not Required	35	RAC-5	20							Total	\$1,878,520	\$244,016	\$43,228	\$46,077	\$25,778	\$10,670	\$40,224	\$27,218	FY07-Comp. MMRP		\$800,312				
		Not Evaluated	0																				FY07-Complete		\$1,323,998
Total IRP Sites	1,967	Total MMRP Sites	217																						
Total Number of IRP Installations with Sites				127																					
Total Number of MMRP Installations with Sites				38																					
NAVY																									
IRP Sites by Classification				MMRP Sites by Classification				Study	1,004	12	104	16	16	2	\$864,083	\$8,940	\$34,938	\$5,135	\$33,808	\$705	\$12,961	\$4,011	FY09	\$3,298	\$499
Response Complete	914	Response Complete	4	IRA	304(361)	0(0)	14(14)	1(1)			\$451,359	\$86	\$28,055	\$86	\$90,422	\$2,218	\$33,132	\$9,125	FY10	\$3,028	\$441				
High	67	RAC-1	0	Design	221	1	24	0	67	10	\$60,689	\$0	\$7,614	\$0	\$4,338	\$0	\$3,167	\$1,308	FY11	\$2,182	\$5,678				
Medium	33	RAC-2	0	RA-C	322	0	43	6	79	12	\$757,097	\$11,628	\$118,899	\$1,532	\$87,497	\$10,677	\$55,318	\$6,113	FY12	\$2,756	\$4,856				
Low	18	RAC-3	2	RA-O	36	0	58	0	56	5	\$137,511	\$0	\$19,979	\$0	\$16,403	\$51	\$13,688	\$51	FY13	\$370	\$70				
Not Evaluated	34	RAC-4	2	LTM	85	0	57	0	73	9	\$62,742	\$0	\$10,031	\$0	\$9,258	\$0	\$4,657	\$54	FY07-Comp. IRP		\$1,417,858				
Not Required	58	RAC-5	3							Total	\$2,333,481	\$20,654	\$219,516	\$6,753	\$241,726	\$13,651	\$122,923	\$20,662	FY07-Comp. MMRP		\$101,895				
		Not Evaluated	19																				FY07-Complete		\$1,519,753
Total IRP Sites	1,124	Total MMRP Sites	30																						
Total Number of IRP Installations with Sites				62																					
Total Number of MMRP Installations with Sites				8																					
AIR FORCE																									
IRP Sites by Classification				MMRP Sites by Classification				Study	1,343	0	412	126	0	0	\$733,482	\$480	\$13,546	\$0	\$13,325	\$0	\$13,326	\$0	FY09	\$87,708	\$0
Response Complete	1,179	Response Complete	0	IRA	692(899)	0(0)	278(509)	0(0)			\$367,976	\$0	\$19,217	\$0	\$13,848	\$0	\$12,278	\$0	FY10	\$96,402	\$0				
High	111	RAC-1	0	Design	107	0	0	0	295	0	\$123,230	\$0	\$2,179	\$0	\$5,561	\$0	\$0	\$0	FY11	\$101,676	\$0				
Medium	60	RAC-2	0	RA-C	155	0	8	0	340	0	\$661,329	\$0	\$11,458	\$0	\$1,825	\$0	\$11,814	\$0	FY12	\$105,154	\$0				
Low	24	RAC-3	0	RA-O	71	0	150	0	82	0	\$408,693	\$0	\$29,722	\$0	\$48,688	\$0	\$43,564	\$0	FY13	\$108,282	\$0				
Not Evaluated	231	RAC-4	0	LTM	17	0	272	0	144	0	\$69,069	\$0	\$4,926	\$0	\$4,819	\$0	\$8,592	\$0	FY07-Comp. IRP		\$1,023,520				
Not Required	150	RAC-5	0							Total	\$2,363,779	\$480	\$81,048	\$0	\$88,066	\$0	\$89,574	\$0	FY07-Comp. MMRP		\$0				
		Not Evaluated	126																				FY07-Complete		\$1,023,520
Total IRP Sites	1,755	Total MMRP Sites	126																						
Total Number of IRP Installations with Sites				30																					
Total Number of MMRP Installations with Sites				25																					

Note 1: Totals reflect installation project funding allocated to individual sites and do not include program management and support costs.

Note 2: Total BRAC environmental funding includes compliance, planning, program management, and restoration. This table only displays site level BRAC environmental restoration funding.

Table N-4 Status of Component Closing Installations IRP/MMRP Summary as of September 30, 2006

Defense Environmental Restoration Program

				Phase	Completed		Underway		Future		Costs Through FY06 (\$000)		FY06 Funds Obligated (\$000)		FY07 Execution Planned (\$000)		FY08 Planning Estimate (\$000)		Estimated Costs (\$000)				
					IRP	MMRP	IRP	MMRP	IRP	MMRP													
					Sites (Actions)						IRP	MMRP	IRP	MMRP	IRP	MMRP	IRP	MMRP	Fiscal Year	IRP	MMRP		
DEFENSE LOGISTICS AGENCY																							
IRP Sites by Classification		MMRP Sites by Classification		Study	164	0	0	0	0	0	\$16,915	\$0	\$0	\$0	\$0	\$0	\$0	FY09	\$1,814	\$0			
Response Complete	157	Response Complete	0	IRA	21(26)	0(0)	5(5)	0(0)			\$6,453	\$0	\$0	\$0	\$0	\$0	\$0	FY10	\$1,744	\$0			
High	2	RAC-1	0	Design	21	0	5	0	0	0	\$16,032	\$0	\$507	\$0	\$621	\$0	\$0	FY11	\$1,765	\$0			
Medium	3	RAC-2	0	RA-C	27	0	0	0	6	0	\$35,674	\$0	\$2,310	\$0	\$2,740	\$0	\$1,386	FY12	\$1,839	\$0			
Low	1	RAC-3	0	RA-O	0	0	1	0	6	0	\$19,893	\$0	\$1,338	\$0	\$1,584	\$0	\$695	FY13	\$1,884	\$0			
Not Evaluated	0	RAC-4	0	LTM	1	0	0	0	28	0	\$741	\$0	\$100	\$0	\$24	\$0	\$704	FY07-Comp. IRP		\$28,631			
Not Required	1	RAC-5	0							Total	\$95,708	\$0	\$4,255	\$0	\$4,969	\$0	\$2,785	FY07-Comp. MMRP		\$0			
		Not Evaluated	0																		FY07-Complete		\$28,631
Total IRP Sites	164	Total MMRP Sites	0																				
Total Number of IRP Installations with Sites			2																				
Total Number of MMRP Installations with Sites			0																				

Note 1: Totals reflect installation project funding allocated to individual sites and do not include program management and support costs.

Note 2: Total BRAC environmental funding includes compliance, planning, program management, and restoration. This table only displays site level BRAC environmental restoration funding.

APPENDIX R: SEA DISPOSAL OF MILITARY MUNITIONS

Restoration

Under Section 314 of the Fiscal Year (FY) 2007 National Defense Authorization Act, the Department of Defense (DoD) is required to conduct a historical review of available records to determine the number, size, and probable locations of sites where the military disposed of military munitions in U.S. coastal waters. The Department will include the final Section 314 report in the FY2009 Defense Environmental Programs Annual Report to Congress. In the interim, DoD will report any new information identified during the review.

This interim report identifies the Department's progress on the historical review. Specifically, this report identifies the general locations, types, and quantities of chemical munitions or chemical agents disposed in U.S. waters.

DoD's preliminary research has identified approximately 30,000 tons of disposed chemical agent (CA) at 16 sites in U.S. waters. The term CA as used in Appendix R is limited to those substances on the Chemical Weapons Convention (CWC) schedule of chemicals. Figure R-1 provides a summary of the net chemical agent weight (NCAW) of disposed chemical warfare materials (CWM) according to the chemical agent and disposal

Figure R-1
Summary of Sea Disposal of Military Munitions - Chemical

Chemical Agent	Total Net Chemical Agent Weight by Location (Number of Sites)					
	Atlantic Coast (9)	Pacific Coast (1)	Gulf Coast (2)	Alaska Coast (1)	Hawaii Coast (3)	Total NCAW (tons)
Lewisite	8,394	1,723		843	181	11,141
Mustard	5,172	9,040	8	55	2,153	16,428
Sarin	239					239
VX	124					124
Arsenic Trichloride	505					505
Arsenic	16					16
Phosgene	28		1			29
Cyanogen Chloride	1				204	205
Cyanide	8				2	10
Tabun	1					1
Unknown Agent	519		184			703
Total	15,007	10,763	193	898	2,540	29,401

operation location. Net chemical agent weight totals were determined using assumptions regarding the container sizes and densities of the disposed materials.

Figure R-2 displays the locations of each disposal site. Figures R-3 through R-21 provide information on each CWM disposal site, including any non-CWM items. The tables do not provide a comprehensive list of all materials at a given site; they only provide those materials that references listed as being co-disposed with the CWC schedule chemicals.

Each table identifies the type of CA or other material (e.g., white phosphorus, explosives) that research indicates was disposed of at the site, the type of container or munition disposed (e.g. drum, projectile), the units (e.g., containers, pounds, tons) associated with the quantity, the number of a specific container type of CWM with a specific fill in a disposal area, the NCAW in pounds, and the total NCAW to provide an estimate in short-tons of the CA in all of the items of a given type and fill.

Figure R-2
Approximate Locations of CWC Schedule Disposals in U.S. Waters

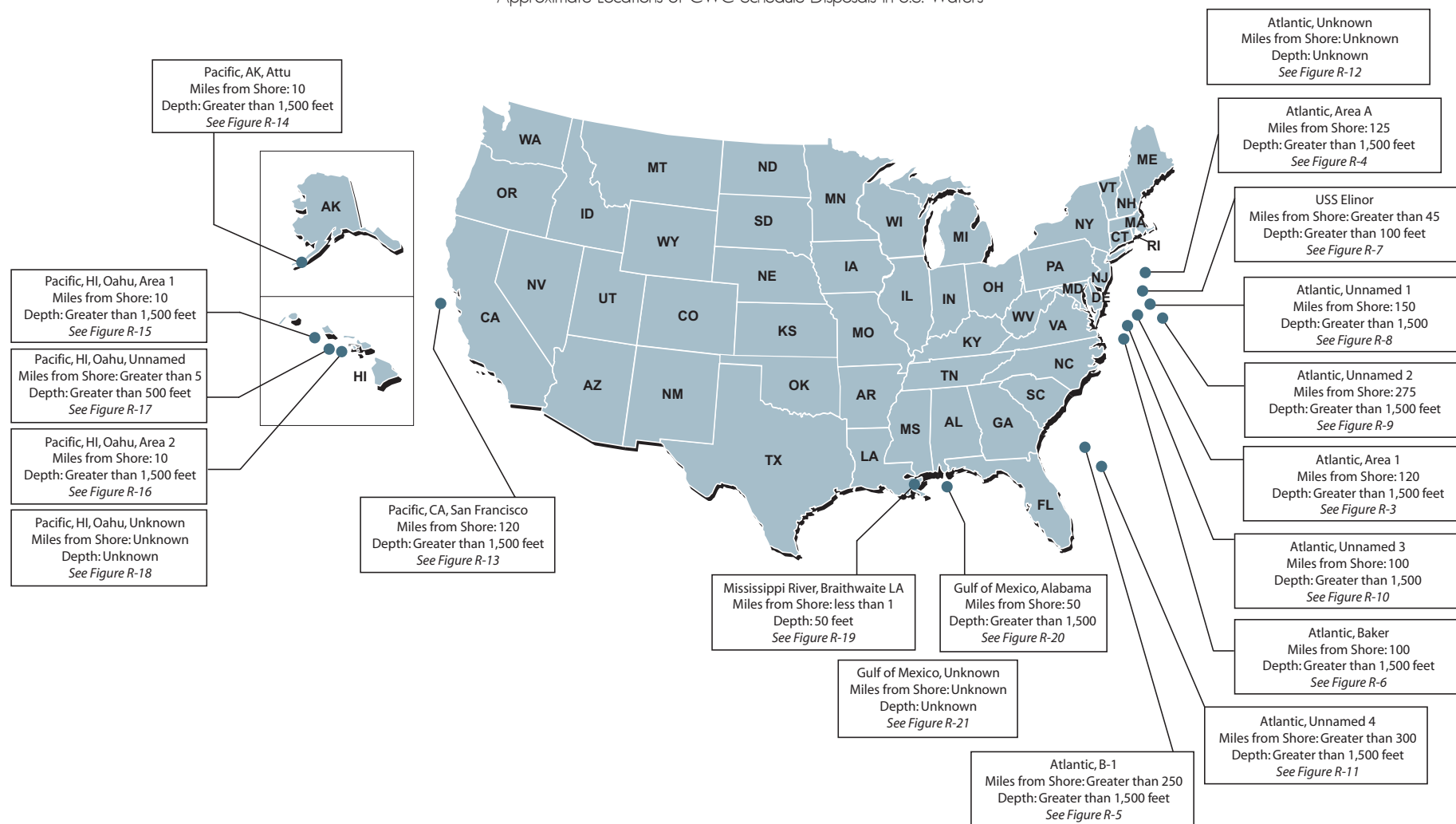


Figure R-3
U.S. Waters - Atlantic Area 1
Detail of CWC Schedule Disposals and Other Materials Co-Disposed

Item or Fill	Container	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)
CWC Schedule Disposals					
Lewisite	Ton container	Each	1	1,900	<1
Lewisite Total					<1
Mustard	155 mm projectiles	Each	341	11.7	2
Mustard	105 mm projectiles	Each	378	3.17	<1
Mustard	4.2 inch mortar shells	Each	56,144	6.5	182
Mustard Total					185
Arsenic trichloride	55 gallon drum	Each	1,154	875	505
Arsenic trichloride Total					505
Cyanide	55 gallon drum	Each	20	283	3
Cyanide Total					3
Other Materials Co-Disposed					
Low level radiological waste	Unknown	Pounds	421,757	NA	NA
White Phosphorous (WP)	M74 500 lb Cluster bomb	Each	278	NA	NA
WP	M74 110 lb Cluster bombs	Each	646	NA	NA
WP	57 mm cartridge	Each	2,376	NA	NA
WP	Igniters	Each	2,876	NA	NA
Adamsite	Smoke candles	Each	375	NA	NA
Smoke	M1 155 mm smoke canisters	Each	52	NA	NA
Smoke	M2 155 mm smoke canisters	Each	84	NA	NA

Item or Fill	Container	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)
Smoke	M3 155 mm smoke canisters	Each	156	NA	NA
Smoke	M4 155 mm smoke canisters	Each	52.00	NA	NA
Smoke (HC)	105 mm smoke canisters	Each	55,201	NA	NA
Smoke	76 mm smoke canister	Each	84	NA	NA
Smoke	76 mm smoke canister (unfixed)	Each	22,110	NA	NA
Smoke	60 mm smoke canister (unfixed)	Each	378	NA	NA
Smoke	M84 smoke shells (unfixed)	Each	96	NA	NA
Smoke (HC)	2.36 inch T27E1 rocket heads	Each	1,273	NA	NA
Smoke (HC)	T6 rifle grenade heads	Each	155	NA	NA
Incendiary	2.36 inch T31 rocket heads	Each	8	NA	NA

Figure R-4
U.S. Waters - Atlantic Area A
Detail of CWC Schedule Disposals and Other Materials Co-Disposed

Item or Fill	Container	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)
CWC Schedule Disposals					
Mustard	Ton container	Each	4,577	1,800	4,119
Mustard Total					4,119
Sarin (GB)	M55 Rockets in concrete vaults	Each	29,280	10.7	157
Sarin (GB)	Ton container	Each	19	1,600	15
Sarin Total					172
VX	M55 Rockets in concrete vaults	Each	21,900	10	110
VX	Ton container	Each	19	1,430	14
VX Totals					124
Arsenic	50 & 30 gallon drums or canisters	Each	60	543	16
Arsenic Total					16
Cyanide	50 & 30 gallon drums or canisters	Each	60	176	5
Cyanide Total					5
Unknown Agent	Ton container	Each	28	1,900	27
Unknown Agent Total					27
Other Materials Co-Disposed					
Methyl bromide	Cylinder	Each	4	NA	NA
Explosives	Unknown	Tons	2,444	NA	NA
Water-filled	Ton container	Each	3,500	NA	NA

Figure R-5
U.S. Waters - Atlantic Area B-1
Detail of CWC Schedule Disposals and Other Materials Co-Disposed

Item or Fill	Container	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)
CWC Schedule Disposals					
Lewisite	Bomb	Tons	462	1,100	254
Lewisite	M70 115 lb bomb	Tons	2,854	1,100	1,570
Lewisite	M70 115 lb bomb	Each	928	83	38
Lewisite	Ton container	Car	6	20,000	60
Lewisite Total					1,922
Mustard	155 mm projectile	Each	968	11.7	6
Mustard	105 mm projectile	Each	1,048	3.17	2
Mustard	75 mm projectile	Each	86	1.35	<1
Mustard Total					8
Other Materials Co-Disposed					
High Explosive (HE)	1,000 kg bomb	Each	25	NA	NA
HE	1,000 lb bomb	Each	7	NA	NA
HE	500 kg bomb	Each	18	NA	NA
HE	250 kg bomb	Each	24	NA	NA
HE	100 kg bomb	Each	6	NA	NA
HE	100 lb bomb	Each	1	NA	NA
HE	81 mm detonator	Each	176	NA	NA
HE	81 mm detonator	Each	176	NA	NA
WP	81 mm projectile	Each	176	NA	NA

Figure R-6
U.S. Waters - Atlantic Area Baker
Detail of CWC Schedule Disposals and Other Materials Co-Disposed

Item or Fill	Container	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)
CWC Schedule Disposal					
Mustard	4.2 inch mortar shells	Each	12,160	6.5	40
Mustard Total					40

Figure R-7
U.S. Waters - Atlantic U.S.S. Elinor
Detail of CWC Schedule Disposals and Other Materials Co-Disposed

Item or Fill	Container	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)
CWC Schedule Disposals					
Unknown Agent	Miscellaneous	Each	2,460	400	492
Unknown Agent Total					492

Figure R-8
U.S. Waters - Atlantic Unnamed 1
Detail of CWC Schedule Disposals and Other Materials Co-Disposed

Item or Fill	Container	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)
CWC Schedule Disposals					
Lewisite	Ton container	Each	2	1,900	2
Lewisite	150 lb cylinder	Each	1	75	<1
Lewisite Total					2
Mustard	Ton container	Each	74	1,800	67
Mustard	75 mm projectile	Each	1,700	1.35	1
Mustard Total					68
Cyanogen Chloride	M78 500 lb bomb	Each	10	176	<1
Cyanogen Chloride Total					<1
Other Materials Co-Disposed					
Radiological Waste	55 gallon drum	Each	800	NA	NA
Radiological Waste	Unknown	Each	NA	NA	NA
CNB	Ton container	Each	456	NA	NA

Figure R-9
U.S. Waters - Atlantic Unnamed 2
Detail of CWC Schedule Disposals and Other Materials Co-Disposed

Item or Fill	Container	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)
CWC Schedule Disposals					
Lewisite	Ton container	Each	48	1,900	46
Lewisite Total					46

Figure R-10

U.S. Waters - Atlantic Unnamed 3
Detail of CWC Schedule Disposals and Other Materials Co-Disposed

Item or Fill	Container	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)
CWC Schedule Disposals					
Mustard	4.2 inch mortar shells	Each	19,728	6.5	64
Mustard Total					64

Figure R-11

U.S. Waters - Atlantic Unnamed 4
Detail of CWC Schedule Disposals and Other Materials Co-Disposed

Item or Fill	Container	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)
CWC Schedule Disposals					
Lewisite	Container	Each	3,711	1,900	3,525
Lewisite Total					3,525
Mustard	75 mm & 155 mm projectiles	Car	62	20,000	620
Mustard Total					620
Sarin (GB)	M121 155 mm projectiles	Each	3	6	<1
Sarin (GB)	M55 rockets	Each	12,500	10.7	67
Sarin Total					67
VX	M23 Land Mine	Each	1	10.5	<1
VX Total					<1
Other Materials Co-Disposed					
Incendiary	M14 500 lb bomb	Each	60	NA	NA
Unknown	Experimental Munitions		NA	NA	NA

Figure R-12
U.S. Waters - Atlantic Area Unknown
Detail of CWC Schedule Disposals and Other Materials Co-Disposed

Item or Fill	Container	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)
CWC Schedule Disposals					
Lewisite	55 gallon barrel	Each	364	780	142
Lewisite	M70 115 lb bomb	Each	30,432	83	1,263
Lewisite	Ton container	Each	1,572	1,900	1,493
Lewisite Total					2,898
Mustard	1,000 lb bomb	Each	6	420	1
Mustard	500 lb bomb	Each	71	220	8
Mustard	1,000 & 500 German	Container	3	NA	NA
Mustard	100 lb bomb	Each	52	70	2
Mustard	Unspecified	NA	NA	NA	NA
Mustard (HN)	Ton container	Each	63	1,800	57
Mustard Total					68
Phosgene	1,000 lb bomb	Each	6	475	1
Phosgene	500 lb bomb	Each	70	205	7
Phosgene	M79 1000 lb & M78 500 lb	NA	NA	NA	NA
Phosgene	Cylinder	Each	20	2,000	20
Phosgene Total					28
Tabun (GA)	1,000 lb bomb	Each	6	420	1
Tabun (GA)	German 1000 lb bomb	Shipping container	40	NA	NA
Tabun Total					1
Unknown Agent	100 lb bomb, 105 mm projectiles & chemical munitions	NA	NA	NA	NA
Unknown Agent Total					NA
Other Materials Co-Disposed					
Stannic Chloride (KJ)	Hand Grenades	NA	NA	NA	NA
Decontaminating agent	Unknown	Pounds	70,180	NA	NA
Water-Filled	Ton container	Container	2	NA	NA

Figure R-13
U.S. Waters - Pacific West Coast
Detail of CWC Schedule Disposals and Other Materials Co-Disposed

Item or Fill	Container	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)
CWC Schedule Disposals					
Lewisite	Ton container	Each	1,814	1,900	1,723
Lewisite Total					1,742
Mustard	M70 115 lb bomb	Each	301,000	60	9,030
Mustard	M47 115 lb bomb	Each	6	74.75	<1
Mustard	Ton container	Each	11	1,800	10
Mustard Total					9,040
Other Materials Co-Disposed					
Other	55 gallon drum	Each	4	NA	NA
Other	Contaminated soil w/fragments	NA	NA	NA	NA

Figure R-14
U.S. Waters - Pacific Alaska
Detail of CWC Schedule Disposals and Other Materials Co-Disposed

Item or Fill	Container	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)
CWC Schedule Disposals					
Lewisite	Ton container	Each	887	1,900	843
Lewisite Total					843
Mustard	Ton container	Each	61	1,800	55
Mustard Total					55

Figure R-15

U.S. Waters - Pacific, Hawaii, Oahu Area 1
Detail of CWC Schedule Disposals and Other Materials Co-Disposed

Item or Fill	Container	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)
CWC Schedule Disposals					
Lewisite	Ton container	Each	190	1,900	181
Lewisite Total					181
Mustard	M70 115 lb bomb	Each	14,956	60	449
Mustard	M110 155 mm projectile	Each	1,949	11.7	11
Mustard	MK2 155 mm projectile	Each	1,747	11.4	10
Mustard	MK2A1 155 mm projectile	Each	595	11.4	3
Mustard	M60 105 mm projectile	Each	10,773	3.17	17
Mustard	M64 75 mm projectile	Each	2,390	1.04	1
Mustard	4.2 inch mortar shells	Each	30,917	6.5	100
Mustard	Ton container	Each	1,038	1,800	934
Mustard Total					1,525
Cyanogen Chloride	M79 1,000 lb bomb	Each	1,100	351	193
Cyanogen Chloride	M78 500 lb bomb	Each	125	176	11
Cyanogen Chloride Total					204
Cyanide (AC)	M79 1,000 lb bomb	Each	20	200	2
Cyanide Total					2

Figure R-16

U.S. Waters - Pacific, Hawaii, Oahu Area 2
Detail of CWC Schedule Disposals and Other Materials Co-Disposed

Item or Fill	Container	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)
CWC Schedule Disposals					
Mustard	M104 155 mm projectile	Each	888	11.7	5
Mustard	M60 105 mm projectile	Each	14,119	3.17	22
Mustard	MKII 75 mm shells	Each	1,213	1.35	1
Mustard	M64 75 mm projectile	Each	2,151	1.04	1
Mustard Total					29

Figure R-17

U.S. Waters - Pacific, Hawaii, Oahu Unnamed
Detail of CWC Schedule Disposals and Other Materials Co-Disposed

Item or Fill	Container	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)
CWC Schedule Disposals					
Mustard	M47A2 100 lb bomb	Each	16,000	74.75	598
Mustard Total					598

Figure R-18

U.S. Waters - Pacific, Hawaii, Oahu Unknown
Detail of CWC Schedule Disposals and Other Materials Co-Disposed

Item or Fill	Container	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)
CWC Schedule Disposals					
Mustard	MK42 100 lb bomb	Each	6	40.5	<1
Mustard	M47A2 100 lb bomb	Each	36	74.75	1
Mustard Total					1

Figure R-19

U.S. Waters - Gulf of Mexico, Louisiana, Braithwaite
Detail of CWC Schedule Disposals and Other Materials Co-Disposed

Item or Fill	Container	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)
CWC Schedule Disposals					
Mustard	100 lb bomb	Each	20	74.75	<1
Mustard Total					<1
Unknown Agent	Bomb	Each	2	NA	NA
Unknown Agent Total					

Figure R-20

U.S. Waters - Gulf of Mexico, Alabama, Mobile
Detail of CWC Schedule Disposals and Other Materials Co-Disposed

Item or Fill	Container	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)
CWC Schedule Disposals					
Mustard	1000 lb bomb	Each	30	540	8
Mustard	500 lb bomb	Each	3	235	<1
Mustard Total					4

Figure R-21

U.S. Waters - Gulf of Mexico, Unknown
Detail of CWC Schedule Disposals and Other Materials Co-Disposed

Item or Fill	Container	Unit	Quantity	NCAW Per Unit (lbs)	Total NCAW (tons)
CWC Schedule Disposals					
Mustard	T3 126 lb bomb	Each	2	60	<1
Mustard Total					<1
Phosgene	250 kg bomb	Each	1	240	<1
Phosgene	500 kg bomb	Each	1	475	<1
Phosgene	250 kg bomb	Each	2	386	<1
Phosgene Total					<1
Unknown Agent	Munitions	Short tons	921.73	400	184
Unknown Agent Total					184
Other Materials Co-Disposed					
CNS	4.2 inch mortar shells	Barge		NA	NA