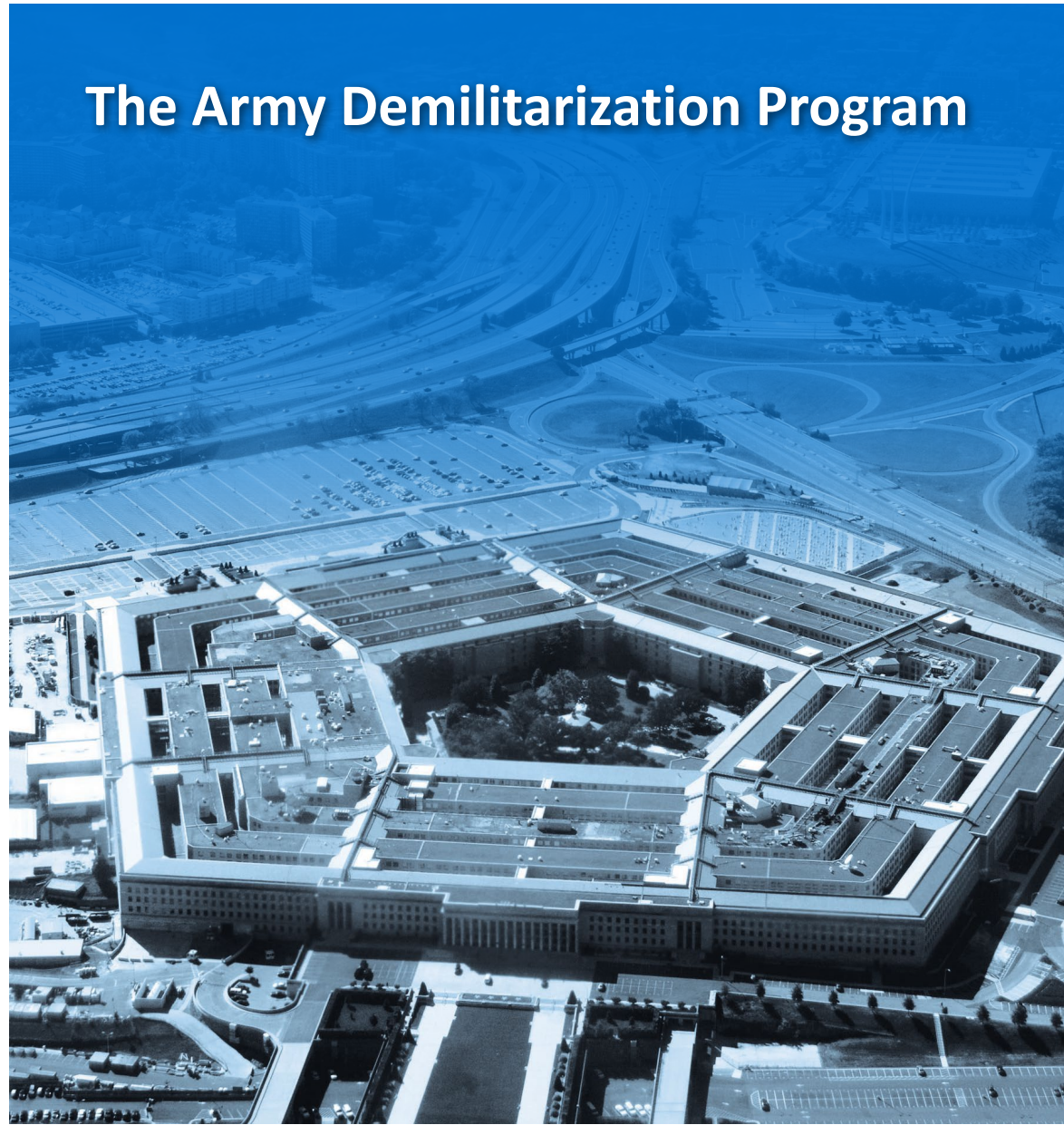




INSPECTOR GENERAL

U.S. Department of Defense

DECEMBER 19, 2017



The Army Demilitarization Program

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Results in Brief

The Army Demilitarization Program

December 19, 2017

Objective

We determined whether Army-held Operating Material and Supplies (OM&S) assets subject to demilitarization were properly reused and safeguarded or, when the assets were no longer required, were disposed of appropriately. We also determined whether the cost associated with storing and safeguarding the assets exceeded the cost of properly disposing of the assets.

During the course of the audit, we identified an additional objective related to the scope of the audit and discussed it with the Office of the Assistant Secretary of the Army (Financial Management and Comptroller). Specifically, we also determined whether the Army reported a liability associated with the cost of disposing of the stockpile of OM&S assets awaiting demilitarization.

Background

OM&S assets include ammunition, missiles, and related spare and repair parts. The Army is responsible for the storage, safeguarding, and demilitarization of OM&S assets. According to DoD Manual 4160.28, demilitarization eliminates the functional capabilities and inherent military design features from DoD material to prevent them from being used against the United States. As of September 30, 2016, there was a 471,767-ton stockpile of OM&S assets awaiting demilitarization.

Findings

We determined that the Army properly reused OM&S assets, safeguarded assets in the demilitarization stockpile, and appropriately disposed of the assets when no longer needed. In addition, although the cost to demilitarize assets exceeded the storage cost, the Army appropriately prioritized the demilitarization workload to focus on safety, policy and legal requirements, and maximizing storage capacity for operational assets.

However, the Office of the Assistant Secretary of the Army (Financial Management and Comptroller) did not report the liability associated with the cost of disposing the demilitarization stockpile on the FY 2016 Army General Fund Financial Statements and related notes. This occurred because Office of the Assistant Secretary of the Army (Financial Management and Comptroller) personnel had not approved a methodology to ensure that the disposal estimate provided by Joint Munitions Command had sufficient support. As a result, the Army materially misstated the disposal liability on the FY 2016 Army General Fund Financial Statements and did not provide decision makers adequate information on the funding needed to properly dispose of the demilitarization stockpile.

Recommendations

We recommend that the Assistant Secretary of the Army (Financial Management and Comptroller) develop procedures to annually determine a reasonable estimate for the cost to dispose of the demilitarization stockpile and report the associated liability on the Army General Fund Balance Sheet and related notes.



Results in Brief

The Army Demilitarization Program

Management Comments and Our Response

The Deputy Assistant Secretary of the Army (Financial Operations), responding for the Assistant Secretary of the Army (Financial Management and Comptroller), agreed with our findings and recommendation. Specifically, the Deputy Assistant Secretary of the Army (Financial Operations) agreed to work with Army Materiel Command and Joint Munitions Command to review the current disposal estimation methodology, make improvements as needed, and disclose a supported estimate in the year end FY 2018 financial statements and related notes.

Therefore, this recommendation is resolved, but will remain open. We will close the recommendation once we verify that the Deputy Assistant Secretary of the Army (Financial Operations) has taken corrective actions to develop procedures to determine demilitarization disposal cost estimates and report the associated liability as required. Please see the Recommendations Table on the next page.

Recommendations Table

Management	Recommendations Unresolved	Recommendations Resolved	Recommendations Closed
Assistant Secretary of the Army (Financial Management and Comptroller)	None	B.1	None

Note: The following categories are used to describe agency management's comments to individual recommendations.

- **Unresolved** – Management has not agreed to implement the recommendation or has not proposed actions that will address the recommendation.
- **Resolved** – Management agreed to implement the recommendation or has proposed actions that will address the underlying finding that generated the recommendation.
- **Closed** – OIG verified that the agreed upon corrective actions were implemented.



**INSPECTOR GENERAL
DEPARTMENT OF DEFENSE
4800 MARK CENTER DRIVE
ALEXANDRIA, VIRGINIA 22350-1500**

December 19, 2017

**MEMORANDUM FOR ASSISTANT SECRETARY OF THE ARMY
(FINANCIAL MANAGEMENT AND COMPTROLLER)
AUDITOR GENERAL, DEPARTMENT OF THE ARMY**

SUBJECT: The Army Demilitarization Program (Report No. DODIG-2018-052)

We are providing this report for your information and use. The Army properly reused Operating Material and Supplies assets, safeguarded assets in the demilitarization stockpile, and appropriately disposed of the assets when no longer needed. In addition, the Army appropriately prioritized the demilitarization workload to focus on safety, policy and legal requirements, and maximizing storage capacity for operational assets. However, the Office of Assistant Secretary of the Army (Financial Management and Comptroller) did not report the liability associated with the cost of disposing of the demilitarization stockpile on the FY 2016 Army General Fund Financial Statements and related notes. We conducted this audit in accordance with generally accepted government auditing standards.

We considered management comments on a draft of this report when preparing the final report. Comments from the Deputy Assistant Secretary of the Army (Financial Operations), responding for the Assistant Secretary of the Army (Financial Management and Comptroller), conformed to the requirements of DoD Instruction 7650.03; therefore, we do not require additional comments.

We appreciate the courtesies extended to the staff. Please direct questions to me at (703) 601-5945 (DSN 329-5945).

A handwritten signature in cursive script that reads "Lorin T. Venable".

Lorin T. Venable, CPA
Assistant Inspector General
Financial Management and Reporting

Contents

Introduction

Objectives	1
Background	1
Review of Internal Controls	4

Findings

Finding A. The Army Appropriately Managed the Demilitarization Program	5
Army Properly Reused OM&S Assets	5
Army Properly Safeguarded DEMIL Stockpile	6
Army Disposed of DEMIL Stockpile Appropriately	7
Army Appropriately Prioritized the DEMIL Workload	9
Conclusion	11
Finding B. The Army Needs to Report Its Liability for Disposal Costs	12
Army Did Not Report a Liability for Disposal Costs	12
No Methodology to Support the Liability Estimate	14
Liabilities on FY 2016 Financial Statements Were Understated	14
Recommendations, Management Comments, and Our Response	15

Appendixes

Appendix A. Scope and Methodology	16
Use of Computer-Processed Data	17
Prior Coverage	17
Appendix B. DEMIL Processes	20

Management Comments

Office of the Assistant Secretary of the Army (Financial Management and Comptroller)	22
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Acronyms and Abbreviations	23
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Introduction

Objectives

Our objective was to determine whether Army-held Operating Material and Supplies (OM&S) subject to demilitarization (DEMIL) were properly reused and safeguarded or, when the assets were no longer required, were being disposed of appropriately.¹ We also determined whether the cost associated with storing and safeguarding the assets exceeded the cost of properly disposing of the assets.

During the course of the audit, we identified an additional objective related to the scope of the audit and discussed it with the Office of the Assistant Secretary of the Army (Financial Management and Comptroller) (OASA[FM&C]). Specifically, we determined whether the Army reported a liability associated with the cost of disposing of the DEMIL stockpile.² See Appendix A for a discussion of the scope and methodology and prior audit coverage.

Background

The DoD provides military forces and capabilities to protect the security of the United States. To perform the DoD's primary mission, the Military Services use ammunition, bombs, explosives, mines, fuses, detonators, missiles, rockets, and propellants. The Military Services report these items and related spare and repair parts as OM&S assets on the Balance Sheet of their financial statements.

The Army is responsible for storing, safeguarding, and demilitarizing OM&S assets for all the Military Services. According to DoD Manual 4160.28, DEMIL eliminates the functional capabilities and inherent military design of DoD material and is required to prevent it from being used for its originally intended purpose and to prevent the release of inherent design information that could be used against the United States.³ The Army performs DEMIL processes at seven DEMIL locations.⁴ Figure 1 identifies the seven DEMIL locations and their DEMIL capabilities (see Appendix B for information on the DEMIL processes).

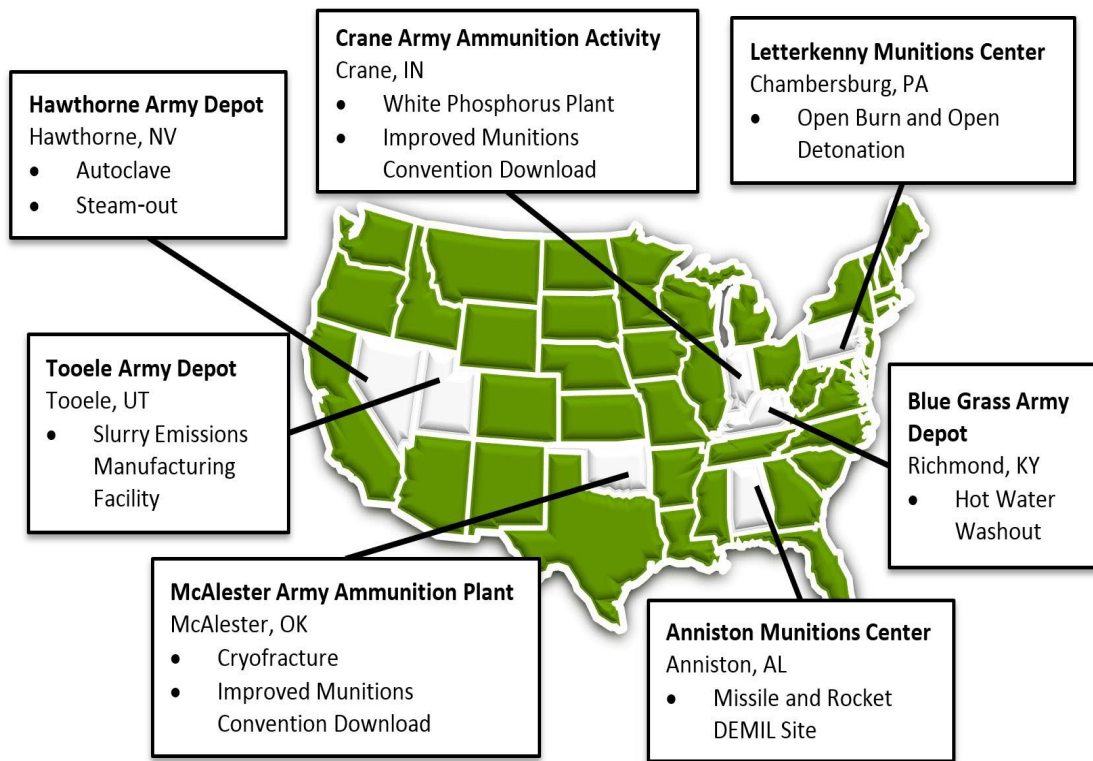
¹ For this audit, we considered "reuse" to be the redistribution of excess serviceable OM&S assets, which occurs before the assets are transferred to the Resource, Recovery, and Disposition Account. Conversely, disposal of assets occurs after the Military Services transfer the assets to the Resource, Recovery, and Disposition Account.

² In this report, we will refer to the stockpile of OM&S assets awaiting DEMIL as the DEMIL stockpile.

³ DoD Manual 4160.28, volume 1, "Defense Demilitarization: Program Administration," June 7, 2011.

⁴ DEMIL may be performed at other Army locations due to emergency safety concerns.

Figure 1. Army DEMIL Locations and Critical DEMIL Capabilities



Source: Program Executive Office Ammunition.

Single Manager for Conventional Ammunition

Pursuant to DoD Directive 5160.65, the Secretary of Defense assigned the Secretary of the Army to be the DoD's Single Manager for Conventional Ammunition (SMCA).⁵ The Secretary of the Army is responsible for the life-cycle management of OM&S assets, from research and development through disposal.⁶ As the SMCA, the Army stores OM&S assets for all the Military Services in the DEMIL stockpile.

Program Executive Office Ammunition

The roles and responsibilities for the SMCA mission are identified in DoD Instruction 5160.68 and the SMCA Charter.⁷ Specifically, the Assistant Secretary of the Army (Acquisitions, Logistics, and Technology) delegated the authorities necessary to execute the SMCA mission to the Program Executive Office Ammunition (PEO Ammo). Within PEO Ammo, the Product Manager–DEMIL has the authority for tactical missiles and ammunition, including responsibilities to

⁵ DoD Instruction 5160.65, "Single Manager for Conventional Ammunition (SMCA)," August 1, 2008.

⁶ According to DoD Manual 4160.21, volume 1, "Defense Materiel Disposition: Disposal Guidance and Procedures," October 22, 2015, disposal covers end-of-life tasks or actions for residual materials resulting from DEMIL or disposition operations.

⁷ DoD Instruction 5160.68, "Single Manager for Conventional Ammunition (SMCA): Responsibilities of the SMCA, the Military Services, and United States Special Operations Command," December 29, 2008, and the Single Manager for Conventional Ammunition Charter, May 2015.

plan, program, and budget for DEMIL operations. The Product Manager–DEMIL works with Joint Munitions Command (JMC) and the Aviation and Missile Command to manage the DEMIL stockpile.

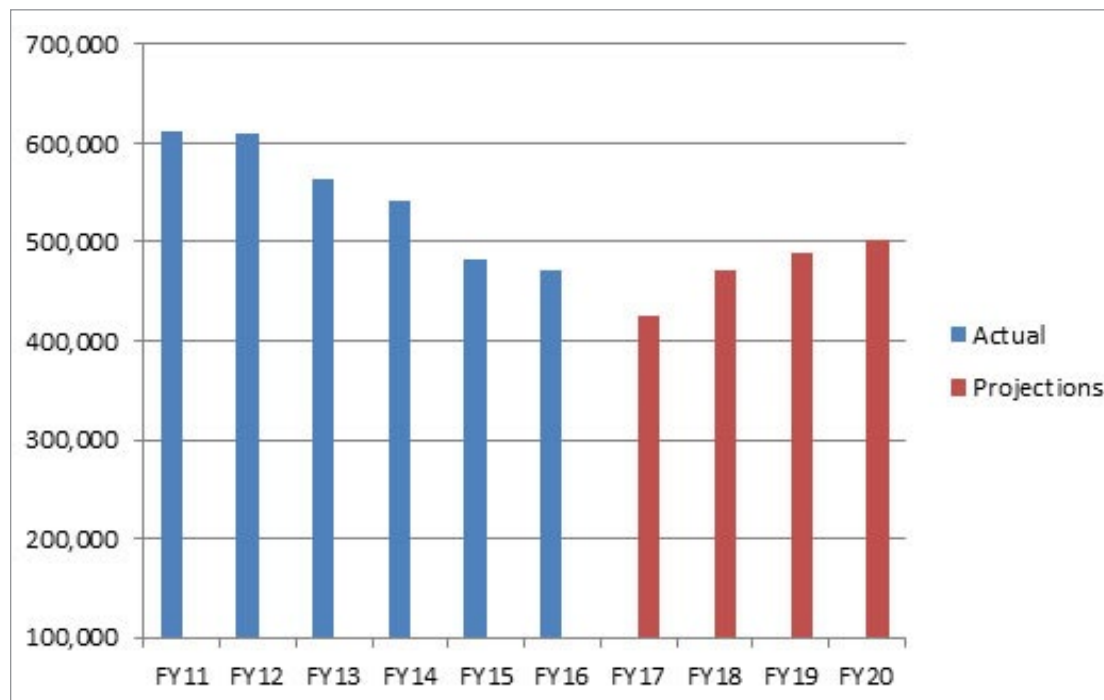
DEMIL Stockpile

The Military Services transfer OM&S assets into the DEMIL stockpile for disposal when the assets are:

- excess (exceed their expected demand);
- obsolete due to changes in technology, laws, or operations; or
- physically damaged and cannot be used in normal operations.

Historically, the Army’s DEMIL funding levels have not been adequate to keep up with the amount of OM&S assets requiring disposal, which contributed to the current DEMIL stockpile. The DEMIL stockpile has steadily decreased in recent years but the Army expects it to begin increasing in FY 2018 based on inadequate funding for the DEMIL program. The stockpile is projected to grow because additions to the stockpile, from the Military Services, will exceed the DEMIL execution that can be performed with the funding provided. Figure 2 illustrates the changes in the size of the DEMIL stockpile from FY 2011 to FY 2020.

Figure 2. Tonnage of DEMIL Stockpile FY 2011 through FY 2020



Source: Joint Munitions Command.

The Army uses the Resource, Recovery, and Disposition Account for property accountability of the assets in the DEMIL stockpile until they are demilitarized.⁸

Reporting of Operating Material and Supplies

The OASA(FM&C) uses financial data and processes to produce Department of the Army financial reports. The Army reports the net amount of its assets and liabilities on the Balance Sheet and more detailed information about the balances in the notes accompanying the financial statements. On the FY 2016 Army General Fund Balance Sheet, the Army reported a net OM&S balance of \$29.7 billion. In Note 9, "Inventory and Related Property," the Army classified OM&S assets in the following categories:

- Held for Use (operational assets),
- Held for Repair (repairable assets), and
- Excess, Obsolete, and Unserviceable.

As of September 30, 2016, the Army held 471,767 tons of assets in the DEMIL stockpile, valued at \$15.9 billion. However, the Army did not report the assets in the DEMIL stockpile on the FY 2016 Army General Fund Financial Statements and related notes.⁹

Review of Internal Controls

DoD Instruction 5010.40 requires DoD organizations to implement a comprehensive system of internal controls that provides reasonable assurance that programs are operating as intended and to evaluate the effectiveness of the controls.¹⁰ We determined that Army's internal controls for safeguarding and disposing of the OM&S assets in the DEMIL stockpile were effective. However, we identified an internal control weakness concerning the Army's ability to report the liability for the cost of disposing the OM&S assets in the DEMIL stockpile. We will provide a copy of the report to the senior official responsible for internal controls at the Department of the Army.

⁸ The Army also referred to the account by the routing identifier code of B5A.

⁹ In Report No. A-2017-0065-FMR, "Operating Materials and Supplies—B5A Asset Reporting," May 19, 2017, U.S. Army Audit Agency reported this condition and recommended that the Deputy Assistant Secretary of the Army (Financial Operations) update existing procedures to report assets in the DEMIL stockpile as excess, obsolete, and unserviceable in Note 9 of the Army General Fund Financial Statements.

¹⁰ DoD Instruction 5010.40, "Manager's Internal Control Program Procedures," May 30, 2013.

Finding A

The Army Appropriately Managed the Demilitarization Program

The Army properly reused OM&S assets, safeguarded assets in the DEMIL stockpile, and appropriately disposed of the assets when no longer needed. In addition, although the cost to demilitarize assets exceeded the annual storage cost, the Army appropriately prioritized the DEMIL workload to focus on safety, policy and legal requirements, and maximizing storage capacity for operational assets.

Army Properly Reused OM&S Assets

As required by DoD Manual 4140.01, volume 10, the Army annually identified excess OM&S assets and prioritized redistribution.¹¹ DoD Manual 4140.01, volume 10, directs the Military Services to stratify and report, at least annually, the current inventory levels of all ammunition and identify opportunities for redistributing ammunition to meet unfilled needs in other Military Services. The Army offered the assets first to the Military Services and then to other Government Agencies and Foreign Militaries. Figure 3 illustrates the process the Army followed to redistribute assets and avoid transfers to the DEMIL stockpile.

Figure 3. Redistribution Prior to Assets being Transferred to the DEMIL Stockpile



Source: Program Executive Office Ammunition.

The Army offered excess OM&S assets through the Military Munitions Cross-Leveling Program, as required by DoD Manual 4140.01, volume 10.¹² Through this program, the Office of the Executive Director for Conventional Ammunition facilitated the redistribution of excess OM&S assets between Military Services to fulfill munition requirements, which reduced DEMIL and storage costs.¹³ Although we did not validate the estimated savings reported by the Army for this program,

¹¹ DoD Manual 4140.01, volume 10, "DoD Supply Chain Materiel Management Procedures: Metrics and Inventory Stratification Reporting," June 25, 2015.

¹² The Office of the Executive Director for Conventional Ammunition facilitates the Military Munitions Cross-Leveling Program for the Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics/Land Warfare and Munitions. The program, which started in FY 1997, provides a formal process for the transfer of excess munitions between Military Services to fulfill munition requirements on a free issue basis.

¹³ Munitions is a general term for ammunition and missiles.

we reviewed the supporting documentation. For example, the Army identified 52 unique asset types that were transferred during FY 2016 including the nomenclature for the item, quantity, the service that provided it, and the service that received it. The Army estimated that it saved \$4.2 million in FY 2016 by not having to demilitarize 1,974 tons of OM&S assets. In addition, the Army estimated that the Military Services receiving the 1,974 tons of OM&S assets avoided the cost of purchasing new items, saving the DoD an additional \$88.8 million.

The Army then offered excess OM&S assets to other government agencies as required by Section 346 of the Ike Skelton National Defense Authorization Act (the Act).¹⁴ The Act states that excess serviceable small arms ammunition and ammunition components, which are not otherwise prohibited from commercial sale or certified by the Secretary of Defense as unserviceable or unsafe, may not be demilitarized or destroyed and shall be made available for commercial sale.

In addition, DoD Manual 4140.01, volume 6, states that the Secretary of Defense can transfer excess ammunition suitable for law enforcement activities to other Federal and state agencies.¹⁵ As a result, the Army agreed to work with the Defense Logistics Agency to transfer small caliber ammunition to Federal and state agencies in FY 2017.

The Army also transferred 9,800 tons of excess OM&S assets to eligible foreign governments through the Excess Defense Articles program which saved \$11.4 million in DEMIL costs for FY 2016.¹⁶

Army Properly Safeguarded DEMIL Stockpile

As required by Army Regulation 190-11, the Army ensured the DEMIL stockpile was stored with the same level of security as OM&S assets being held for use.¹⁷ During the audit, we observed that the assets in the DEMIL stockpile were being stored and maintained in storage facilities in the same manner and alongside OM&S assets available for issue. The Army safeguarded the DEMIL stockpile in a secured area of the installation along with OM&S assets available for use to prevent unauthorized loss. For example, during site visits to Crane

The Army safeguarded the DEMIL stockpile in a secured area of the installation along with OM&S assets available for use to prevent unauthorized loss.

¹⁴ Public Law 111-383, "The Ike Skelton National Defense Authorization Act for Fiscal Year 2011," section 346 (2011), as amended by Public Law 112-81, "The National Defense Authorization Act for Fiscal Year 2012," section 361 (2011).

¹⁵ DoD Manual 4140.01, volume 6, "DoD Supply Chain Materiel Management Procedures: Materiel Returns, Retention, and Disposition," August 14, 2015.

¹⁶ The Excess Defense Articles program was established by the Foreign Assistance Act of 1961 (Public Law 87-195).

¹⁷ Army Regulation 190-11, "Physical Security of Arms, Ammunition, and Explosives," September 5, 2013, refers to OM&S assets as arms, ammunition, and explosives.

Army Ammunition Activity, Indiana, and McAlester Army Ammunition Plant, Oklahoma, we observed that the DEMIL stockpile was secured in areas safeguarded by fencing, guard posts, and lock systems.

The Army had procedures in place to inventory and account for the DEMIL stockpile, along with the operational OM&S assets held at the seven DEMIL locations, as required by Army Materiel Command Regulation 740-27.¹⁸ We considered the inventory process to be a low risk area and performed limited testing of DEMIL assets (see Appendix A for additional information on our methodology). Although we did not validate the monthly inventories performed at the seven DEMIL locations throughout FY 2016, the inventory reports did not indicate any discrepancies that could not be reconciled and the Commanders at the seven DEMIL locations certified that the FY 2016 annual physical inventories were completed and that appropriate corrective actions were implemented to resolve discrepancies.¹⁹ During FY 2016, the DEMIL locations reported an overall inventory accuracy rate of 99 percent.

Army Disposed of DEMIL Stockpile Appropriately

After the Military Services transferred excess, obsolete, or unserviceable items into the DEMIL stockpile, the Army appropriately disposed of the assets either by providing them to the Military Services, when requested, or through various DEMIL processes.²⁰

Withdrawals from the DEMIL Stockpile Avoided Additional Purchases

DoD Manual 4140.01, volume 6, requires the Military Services to withdraw items from the DEMIL stockpile before buying similar items. In FY 2016, the Military Services performed a comprehensive review of the assets in the DEMIL stockpile and acquired 1,203 tons of serviceable OM&S assets from the DEMIL stockpile to use for other requirements. According to the FY 2016 Military Munitions Cross-Leveling Program Year-End Summary, the Military Services saved an estimated \$92.8 million by making these withdrawals instead of purchasing new OM&S assets. In addition, the Army saved \$2.5 million by avoiding the cost of having to demilitarize the assets that were withdrawn from the DEMIL stockpile during FY 2016.

¹⁸ Army Materiel Command Regulation 740-27, "Ammunition Inventory and Accountability," March 10, 2010.

¹⁹ Discrepancies are differences between the physical count at the storage site and the amount recorded in the property records.

²⁰ According to DoD Manual 4160.28, disposal includes recycling, redistributing, transferring, donating, selling, demilitarizing, destroying, or fulfilling other end of life tasks or actions for DoD property.

Army Used Various DEMIL Processes to Dispose of Munitions in the DEMIL Stockpile

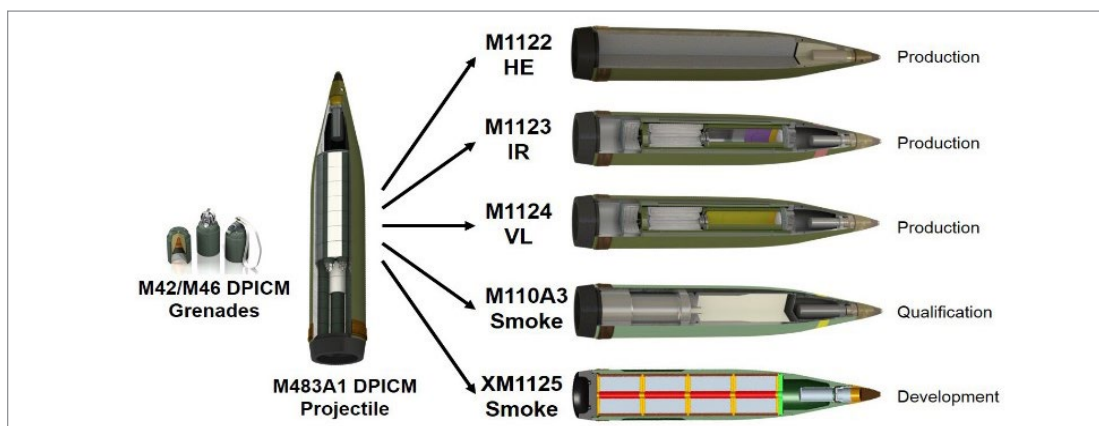
DoD Instruction 5160.68 requires the Army, as the SMCA, to plan and budget for disposal of the DEMIL stockpile.

Historically, the primary and least expensive method to demilitarize OM&S assets has been through Open Burn and Open Detonation (burning or detonating the asset in an open area). However, the Army has developed alternative processes that are more environmentally acceptable, reduce waste, and allow for resource recovery and recycling. In FY 2016, Army personnel reported they used 10 alternative processes to demilitarize 32,365 tons from the DEMIL stockpile. Some of the alternative methods produced residual materials, such as scrap brass from small caliber munitions, phosphoric acid from flares, and metal parts from projectiles, which were either recycled or used to produce new assets.

The Army has developed alternative processes that are more environmentally acceptable, reduce waste, and allow for resource recovery and recycling.

In FY 2016, the Army generated \$3.2 million in recycling revenue, which was used to purchase supplies and equipment that would enhance and improve DEMIL processes and capabilities.²¹ One of the 10 alternative processes the Army developed was the Improved Munitions Convention Download process. The Improved Munitions Convention Download process used parts from disassembled projectiles to produce new assets, which not only saved on disposal costs, but also reduced costs to manufacture new assets, saving \$12.7 million in FY 2016. Figure 4 illustrates the Improved Munitions Convention Download process that used parts of an obsolete projectile to produce five new projectiles.

Figure 4. The Army's Process for Making New Projectiles from an Obsolete Projectile



Source: Product Manager-Demil.

²¹ Public Law 109-364, "The FY 2007 National Defense Authorization Act," section 4690, authorized the Secretary of the Army to sell residual materials obtained from recycling excess OM&S assets and to use the proceeds from the recycling program to conduct research and development.

Army Appropriately Prioritized the DEMIL Workload

Army personnel appropriately prioritized the DEMIL workload to focus on safety, policy and legal requirements, and maximizing storage capacity for operational assets.

Although the cost to demilitarize the DEMIL stockpile exceeded the annual cost to store those items, delaying DEMIL increased overall costs. According to the JMC, as of September 2016, it cost the Army an average of \$2,890 per ton to demilitarize assets in the DEMIL stockpile, which exceeded the average cost of \$737 per ton to annually store the DEMIL stockpile at the seven DEMIL locations.²² By demilitarizing assets in the stockpile, the Army would save money and avoid the additional storage costs. However, annual funding was not adequate to dispose of the entire stockpile so the Army had to prioritize the DEMIL workload and store the remaining assets. Army personnel appropriately prioritized the DEMIL workload to focus on safety, policy and legal requirements, and maximizing storage capacity for operational assets.

Storage Costs Lower Than DEMIL Costs

The average cost to store the DEMIL stockpile was less than the average cost to demilitarize assets at all DEMIL locations. Although the cost varied by type of OM&S asset, the average DEMIL cost per ton was \$2,890.²³ Based on the average DEMIL cost per ton, JMC personnel estimated that it would cost \$1.4 billion to demilitarize and dispose of the 471,767 tons of OM&S assets in the DEMIL stockpile as of September 30, 2016.²⁴

The average annual cost to store the DEMIL stockpile at each of the seven DEMIL locations was considerably less than the \$2,890 average cost to demilitarize the stockpile. Table 1 identifies the average cost to store per DEMIL location.

²² In Report No. GAO-15-538, "Improved Data and Information Sharing Could Aid in DoD's Management of Ammunition Categorized for Disposal," July 21, 2015, U.S. Government Accountability Office reported that there is no requirement to conduct a cost comparison and that these costs are driven by the quantities and the complexity of the items being demilitarized. As a result, we did not validate these costs and focused on how the Army prioritized the DEMIL workload.

²³ To determine this amount, the JMC developed cost estimates for assets that a DEMIL cost could be estimated based on historical data. However, the JMC did not have the necessary data for all items in the DEMIL stockpile. For items that a DEMIL cost could not be determined, an average cost was used.

²⁴ The total estimated cost to dispose of the entire stockpile (\$1.4 billion) was calculated taking the total DEMIL tonnage (471,767) multiplied by the average DEMIL cost (\$2,890).

Table 1. Average and Total Cost to Store DEMIL Assets at the Seven DEMIL Locations

DEMIL Locations	Average Cost to Store per Ton	Tons Stored at Each Location	Cost to Store
Anniston Munitions Center	\$1,129.64	35,890	\$40,542,779.60
Blue Grass Army Depot	986.85	21,825	21,538,001.25
Crane Army Ammunition Activity	887.01	146,792	130,205,971.92
Hawthorne Army Depot	377.90	102,146	38,600,973.40
Letterkenny Munitions Center	786.70	15,059	11,846,915.30
McAlester Army Ammunition Plant	655.52	97,676	64,028,571.52
Tooele Army Depot	793.43	44,680	35,450,452.40
Total	\$737.42	464,068*	\$342,213,665.39

*There were an additional 7,699 tons of DEMIL assets stored at other Army locations.

Source: Joint Munitions Command.

However, according to JMC personnel, the cost to store the DEMIL stockpile did not influence DEMIL planning decisions.

Automated Tool Assists in DEMIL Prioritization

Army personnel appropriately prioritized the DEMIL workload to focus on safety, policy mandates, and legal requirements. As required by DoD Manual 4140.01, volume 10, Army personnel prioritized DEMIL assets that posed safety concerns as the highest priority, followed by compliance with policy mandates and legal requirements.²⁵ Army personnel then used an automated tool (Demilitarization Optimizer) to assist in prioritizing the remaining DEMIL workload.²⁶ The Army's primary goal was to demilitarize the maximum tonnage of DEMIL assets with the funding provided. See Figure 5 for the funding allocated for the DEMIL program.

The Demilitarization Optimizer allowed the Army to identify the maximum amount that could be demilitarized considering variables such as the current DEMIL stockpile, forecasted increases to the stockpile, funding levels, and estimated execution costs. The Demilitarization Optimizer did not consider storage cost. However, reducing the stockpile decreases the associated storage cost and increases available storage capacity. According to the Army, every ton that is demilitarized increases the storage capacity by seven to nine square feet.

²⁵ For example, DoD policy mandates that the stockpile of cluster munitions be removed from the active inventory and demilitarized as soon as practicable within available funding and industrial capacity.

²⁶ The Army has used this automated tool to assist in planning the disposal of the DEMIL stockpile since 1999.

Therefore, this strategy would allow the Army to increase storage capacity for operational OM&S assets.

Conclusion

We determined that the Army properly managed the DEMIL program by implementing policies and procedures to reuse OM&S assets, safeguard assets in the DEMIL stockpile, and appropriately dispose of the assets when they are no longer needed. The reuse of OM&S assets, the Military Services' withdrawals from the DEMIL stockpile, and the various DEMIL processes saved \$212.4 million, generated \$3.2 million in recycling revenue, and allowed for improved DEMIL program processes.²⁷ Additionally, the Army appropriately prioritized the DEMIL workload. As a result, we have no recommendations in this area.

²⁷ The \$212.4 million was comprised of \$104.4 million from the reuse of OM&S assets, \$95.3 million from Military Services' withdrawals from the DEMIL stockpile, and \$12.7 million from the various DEMIL processes.

Finding B

The Army Needs to Report Its Liability for Disposal Costs

The OASA(FM&C) did not report and disclose the liability associated with the cost of disposing the DEMIL stockpile in the FY 2016 Army General Fund Financial Statements and related notes. This occurred because OASA(FM&C) personnel had not approved a methodology to ensure that the disposal estimate provided by JMC had sufficient support. As a result of the failure to report and disclose the liability, the Army materially misstated the disposal liability on the FY 2016 Army General Fund Financial Statements and did not provide decision makers adequate information on the funding needed to properly dispose of the DEMIL stockpile.

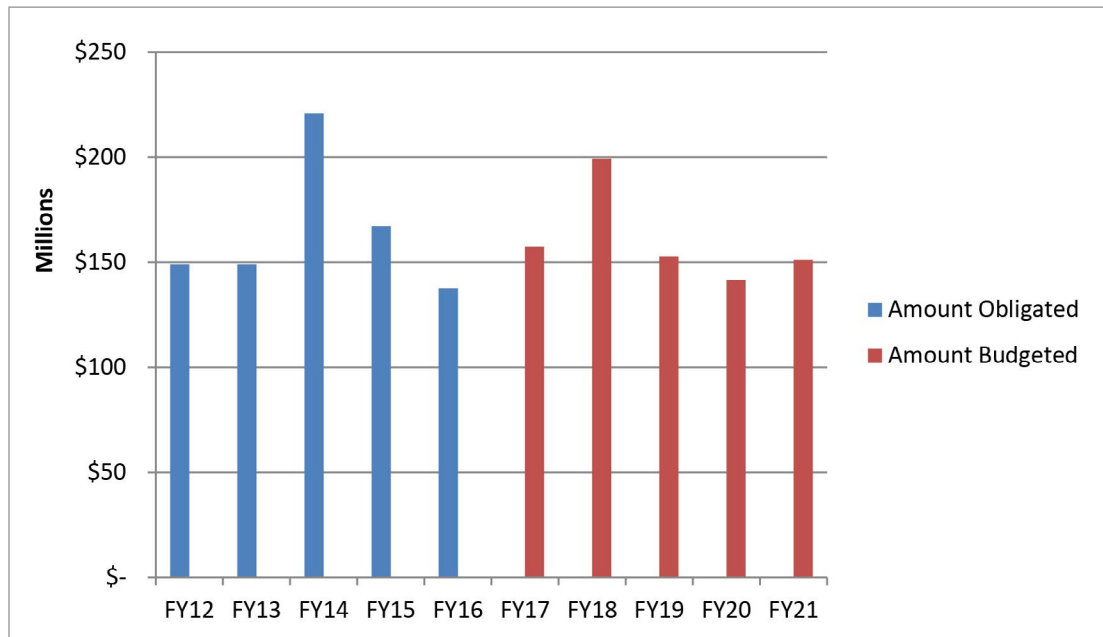
Army Did Not Report a Liability for Disposal Costs

The OASA(FM&C) did not report or disclose the liability for the cost of disposing of the DEMIL stockpile on the FY 2016 Army General Fund Financial Statements in Notes 11 (Liabilities Not Covered by Budgetary Resources) and 15 (Other Liabilities).²⁸ The OASA(FM&C) had previously reported the cost of disposing DEMIL assets in the FYs 2002 through 2014 Army General Fund Financial Statements. The Statement of Federal Financial Accounting Standards No. 5 requires a liability to be reported and disclosed in the financial statements for any probable and measurable future expenses arising from past transactions.²⁹ The Statement of Federal Financial Accounting Standards No. 5 defines “probable” as that which is likely to occur based on current facts and circumstances. Future expenses to demilitarize the stockpile are probable because DoD Instruction 5160.68 requires the Army to plan and budget for disposal of the DEMIL stockpile. As illustrated in Figure 5, the Army has spent \$824.0 million to dispose of the DEMIL stockpile over the past 5 years and is projected to spend \$802.2 million over the next 5 years.

²⁸ Liabilities Not Covered by Budgetary Resources are liabilities for which congressional action is needed before budgetary resources can be provided. Other Liabilities include, but are not limited to, capital lease liabilities; insurance; advances and prepayment from others; deposit fund amounts held in escrow; contingent liabilities; and resources payable to the U.S. Treasury and other accrued liabilities.

²⁹ Statement of Federal Financial Accounting Standards No. 5, “Accounting for Liabilities of the Federal Government,” December 20, 1995.

Figure 5. Disposal Costs FY 2012 through FY 2021



Source: Joint Munitions Command.

Using the average disposal cost per ton of \$2,890, JMC personnel estimated the liability to be \$2.3 billion.

The Statement of Federal Financial Accounting Standards No. 5 also states that future expenses are “measurable” if they can be reasonably estimated. JMC personnel estimated the liability for the cost of DEMIL stockpile disposal. Specifically, JMC personnel identified 478,361 tons in the DEMIL stockpile as of September 19, 2016, and an anticipated 304,239 tons that would be added to the DEMIL stockpile over the next 5 years.³⁰ Using the average disposal cost per ton of \$2,890, JMC personnel estimated the liability to be \$2.3 billion.³¹

With the need to dispose of the DEMIL stockpile and the cost reasonably estimated, the Army should have reported and disclosed the liability in the Army General Fund Financial Statements and related notes. According to the DoD Financial Management Regulation, nonenvironmental disposal liabilities are “Other Liabilities,” which are reported in Note 15 as a nonfederal liability and included in the total Liabilities amount on the Balance Sheet.³² The disposal cost liabilities are also disclosed in Note 11 as information related to liabilities not covered by budgetary resources.

³⁰ The amount in the DEMIL stockpile as of September 30, 2016, was 471,767 tons. However, to calculate the estimated liability, JMC personnel used the amount in the stockpile as of September 19, 2016, due to the required suspense date of the data call submission.

³¹ JMC personnel reduced the liability amount by \$5.6 million for the unobligated funding available for the DEMIL program.

³² DoD Regulation 7000.14-R, “DoD Financial Management Regulation,” volume 6B, chapter 10, “Notes to the Financial Statements.”

No Methodology to Support the Liability Estimate

JMC personnel provided the disposal cost estimate of \$2.3 billion for FY 2016 in response to a quarterly data call request from the Deputy Assistant Secretary of the Army (Financial Operations). However, OASA(FM&C) personnel did not report the liability because they had not approved a methodology to ensure that the amount provided by JMC had sufficient support.³³ According to the DoD Financial Management Regulation, proper documentation is necessary to support all journal vouchers.³⁴ From FYs 2002 through 2014, the Army reported and disclosed a liability for the disposal of the DEMIL stockpile in the Army General Fund Financial Statements and related notes using unsupported journal vouchers.³⁵ For example, OASA(FM&C) personnel reported a \$2.1 billion liability on the Other Liabilities line of the FY 2014 Army General Fund Balance Sheet and in Note 15 (Other Liabilities). They also disclosed the liability in Note 11 (Liabilities Not Covered by Budgetary Resources) as a nonfederal liability for the expected expenditure to dispose of conventional munitions. However, in FY 2015, OASA(FM&C) personnel stopped reporting the liability because they determined that the liability had previously been reported using an unsupported journal voucher. During this audit, OASA(FM&C) personnel stated that they were reviewing the data call submissions from JMC to establish a methodology to ensure auditable and supported values are reported beginning third quarter FY 2018.

Liabilities on FY 2016 Financial Statements Were Understated

As a result of OASA(FM&C) personnel failing to report and disclose the liability, the Army materially misstated the FY 2016 Army General Fund Financial Statements. Without knowledge of the cost needed to dispose of the DEMIL stockpile, decision makers cannot make informed decisions on the funding needed to properly dispose of the DEMIL stockpile. Additionally, material misstatements affect the reliability of the financial statements.

³³ Supporting documentation should fully substantiate the validity of a transaction or group of transactions and provide reasonable assurance that the transaction is valid and properly accounted for.

³⁴ DoD Regulation 7000.14-R, "DoD Financial Management Regulation," volume 6A, chapter 2, "Financial Reports Roles and Responsibilities."

³⁵ Journal vouchers are manual adjustments made in an accounting system to correct accounting errors due to system limitations or timing differences.

Recommendations, Management Comments, and Our Response

Recommendation B.1

We recommend that the Assistant Secretary of the Army (Financial Management and Comptroller) develop procedures to annually determine a reasonable and supportable estimate for the cost to dispose of the demilitarization stockpile and report the associated liability in the Army General Fund Financial Statements and related notes.

Assistant Secretary of the Army (Financial Management and Comptroller) Comments

The Deputy Assistant Secretary of the Army (Financial Operations), responding for the Assistant Secretary of the Army (Financial Management and Comptroller), agreed with our recommendation, stating that the OASA(FM&C) will work with Army Materiel Command and Joint Munitions Command to review the current disposal estimation methodology, make improvements as needed, and disclose a supported estimate in the yearend FY 2018 financial statements and related notes.

Our Response

Comments from the Deputy Assistant Secretary of the Army (Financial Operations) addressed all specifics of the recommendation; therefore, the recommendation is resolved, but will remain open. We will close this recommendation once we verify that the OASA(FM&C) has developed a methodology to estimate reasonable and supportable costs for demilitarization stockpile disposal and reported that estimate in the yearend FY 2018 Army General Fund Financial Statements and related notes.

Appendix A

Scope and Methodology

We conducted this performance audit from August 2016 through November 2017 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

To determine if assets in the DEMIL stockpile were properly reused and appropriately disposed of when no longer needed, we reviewed:

- DoD Manual 4140.01, volume 10, “DoD Supply Chain Materiel Management Procedures: Metrics and Inventory Stratification Reporting,” June 25, 2015, and
- DoD Manual 4160.21, volume 1, “Defense Materiel Disposition: Disposal Guidance and Procedures,” October 22, 2015.

We interviewed officials and obtained documentation from the JMC, PEO Ammo, and the Product Manager–DEMIL. Specifically, we received documentation regarding the Military Munitions Cross-Leveling Program including the annual summary that reported the estimated savings recognized during the fiscal year. We did not validate the estimated savings reported by the Army for this program. However, we reviewed the supporting documentation which included a listing of the individual items that were redistributed between the Military Services.

We also obtained standard operating procedures and process descriptions from Army officials which described the various DEMIL processes used to dispose of the DEMIL stockpile. In addition, we visited Crane Army Ammunition Activity to interview personnel responsible for DEMIL operations and observed procedures associated with two DEMIL processes: White Phosphorus Plant, and Open Burn and Open Detonation (see Appendix B for detailed information on these processes).

To determine if the DEMIL stockpile was properly safeguarded, we reviewed:

- Army Regulation 190-11, “Physical Security of Arms, Ammunition, and Explosives,” September 5, 2013, and
- U.S. Army Materiel Command Regulation 740-27, “Ammunition Inventory and Accountability,” March 10, 2010.

Due to prior audit coverage and the testing results reported in the Financial Improvement and Audit Readiness Plan Status Report, we considered the physical inventory process to be a low risk area and only performed existence testing on a non-statistical sample of DEMIL assets held at Crane Army Ammunition Activity. During our testing, we obtained and reviewed documentation on their inventory process. We also obtained and reviewed the FY 2016 annual physical inventory certifications submitted by each of the DEMIL locations to verify completion of inventory requirements in accordance with U.S. Army Materiel Command Regulation 740-27. In addition, we observed physical security measures at Crane Army Ammunition Activity and McAlester Army Ammunition Plant such as fencing, guard posts, and lock systems.

Army officials also provided us information on the cost associated with storing and safeguarding the DEMIL stockpile along with the associated DEMIL costs. We did not validate these costs and instead focused on how the Army prioritized the DEMIL workload by reviewing the Army's strategic plan. We also reviewed the variables that Army personnel considered when prioritizing the DEMIL workload and how they used the Demilitarization Optimizer to reduce the DEMIL stockpile.

To determine if the Army reported the liability associated with the cost to dispose of the DEMIL stockpile, we reviewed:

- Statement of Federal Financial Accounting Standards No. 5, "Accounting for Liabilities of the Federal Government," December 20, 1995, and
- DoD Regulation 7000.14-R, "DoD Financial Management Regulation," volume 6B, chapter 10, "Notes to the Financial Statements," April 2013.

We also reviewed the Army General Fund Financial Statements and related notes for FY 2002 through FY 2016 to determine if the Army reported a DEMIL liability. In addition, we spoke with officials from OASA(FM&C) about reporting a DEMIL liability and obtained information from JMC on the cost to dispose of the DEMIL stockpile.

Use of Computer-Processed Data

We did not use computer-processed data to perform this audit.

Prior Coverage

During the last 5 years, the Government Accountability Office (GAO), the Department of Defense Office of Inspector General (DoD OIG), and U.S. Army Audit Agency (AAA) issued seven reports discussing Army OM&S assets and their DEMIL or disposal. Unrestricted GAO reports can be accessed

at <http://www.gao.gov>. Unrestricted DoD OIG reports can be accessed at <http://www.dodig.mil/reports.html/>. Unrestricted AAA reports can be accessed from .mil and gao.gov domains at <https://www.aaa.army.mil/>.

GAO

Report No. GAO-15-538, “Improved Data and Information Sharing Could Aid in DOD’s Management of Ammunition Categorized for Disposal,” July 21, 2015

The Logistics Modernization Program database did not contain complete data on weight for ammunition in the DEMIL stockpile. In addition, the DoD does not have a systematic means of sharing information with other government agencies to search for usable ammunition in the DEMIL stockpile. GAO recommended that the DoD develop a plan to identify and record missing weight data and develop a systematic means to share information on the stockpile with other government agencies.

Report No. GAO-14-182, “Actions Needed to Improve Department-Wide Management of Conventional Ammunition Inventory,” March 31, 2014

The systems used by Military Services to manage and maintain accountability of ammunition inventory have limitations that affect the ability to facilitate efficient management of conventional ammunition. GAO made seven recommendations to improve the efficiency of the Services’ systems for managing DoD’s ammunition inventory and improve data sharing.

DoD OIG

Report No. DODIG-2015-031, “The Services Need To Improve Accuracy When Initially Assigning Demilitarization Codes,” November 7, 2014

The Services were not properly assigning DEMIL codes to DoD property when initially registering items in the DoD supply system. The DoD OIG recommended that the Assistant Secretary of Defense for Logistics and Materiel Readiness revise DEMIL guidance, establish metrics, and require the Services to revise their respective DEMIL guidance and establish controls.

AAA

Report No. A-2017-0065-FMR, “Operating Materials and Supplies–B5A Asset Reporting,” May 19, 2017

The Army’s operating materials and supplies assets recorded in the B5A account, with a value of \$16.4 billion, were not presented in the third quarter FY 2016 financial statements. AAA recommended that the Deputy Assistant Secretary of the Army (Financial Operations) update existing procedures

to report operating materials and supplies awaiting DEMIL or disposal as excess, obsolete, and unserviceable in Note 9 of the Army General Fund Financial Statements.

Report No. A-2017-0051-FMR, "Operating Materials and Supplies Existence and Completeness," March 31, 2017

Army commands did not prioritize audit readiness at the lowest levels of command, address signature requirements in OM&S policy, or emphasize the requirements for marking documents posted into property systems. AAA recommended the Army increase internal control testing and issue a memorandum to clarify and reemphasize the requirements to mark documentation when entered into property systems.

Report No. A-2014-0023-IEE, "Follow up Audit of Funding Requirements for the Conventional Ammunition Demilitarization Program," December 16, 2013

Army personnel implemented the agreed-to actions by defining the critical level of requirements for conventional ammunition DEMIL to keep pace with annual additions. AAA suggested the Army reduce the DEMIL stockpile, capitalize on identified efficiencies, and follow forecasting guidance provided in Joint Conventional Ammunition Policies and Procedures 7.

Report No. A-2014-0007-IEE, "Demilitarization Efficiencies-Conventional Ammunition," November 15, 2013

The Army established policy to implement requirements to consider DEMIL when designing or modifying ammunition; however, Army personnel did not track or report the efforts and could not provide the status of the implementation efforts. In addition, the Army needed to improve how it executed DEMIL operations to maximize identified opportunities to achieve efficiencies. AAA recommended the Army update Army Acquisition Policy to clearly outline responsibility for providing oversight on the efforts to consider DEMIL when designing ammunition and develop or update regulations for the current alignment of the DEMIL function.

Appendix B

DEMIL Processes

Army personnel at Product Manager–DEMIL provided the following list of the processes that Army uses in the DEMIL of OM&S assets.³⁶

1. Open Burn and Open Detonation – Open burn and open detonation techniques involve the intentional combustion or detonation of explosives and munitions, without control or containment of the reaction. They are the preferred method for cost-effective DEMIL of many items. Open burn and open detonation techniques have been the primary means used to demilitarize munitions for several decades.
2. Incineration – Incineration provides an environmentally acceptable means to destroy munitions not suitable for other DEMIL methods and reclaim the metal scrap for sale. Small munitions and components are put into the incinerator for burning or detonation. Metal residues are discharged and collected for salvage.
3. INERT – According to PEO Ammo, INERT is the process of shredding, cutting, or mutilation of munitions items, components, or packaging that does not contain energetic materials.
4. Autoclave – Autoclave capability removes and reclaims the main explosive from projectiles and bombs. Munitions are prepared for the autoclave by disassembly or cutting to expose the main explosive charge. Munitions are placed in the autoclave and the vessel is heated using steam. As the munitions body heats up, the explosive melts and flows to the bottom of the autoclave for collection in heated kettles.
5. Hot Water Washout – Washout capability removes and reclaims the main explosive from projectiles, bombs, and mines. Munitions are prepared for washout by disassembly to expose the main explosive charge. Munitions are placed over a washout tank where low-pressure hot water is injected into the cavity to wash out the explosives into a recovery tank.
6. Cryofracture – Cryofracture involves the cooling of the munitions in a liquid nitrogen bath, followed by fracture of the item in a hydraulic press and the subsequent thermal treatment of the fractured munitions debris in order to destroy the explosives and decontaminate any residual metal parts.

³⁶ Additionally, flashing furnaces are used to ensure that metal scrap released to commercial recyclers is free of residual energetic materials, which may be present after washout, autoclave, or other explosive removal operations.

7. Hydrolysis – Hydrolysis uses a sodium hydroxide solution to dissolve the aluminum casing and expose the energetic materials contained within the casing. The sodium hydroxide solution then reacts with the energetic materials, breaking them down and rendering them free of residual energetic materials.
8. Improved Munitions Convention Download – This is a process developed to demilitarize artillery projectiles that contain submunitions, which are small bombs. The base plate of the projectile is removed to access the submunitions and they are removed for disposition on the open detonation range. The metal parts, including the projectile body and base plate, are often used in the manufacture of new rounds.
9. Slurry Emissions Manufacturing Facility – This facility combines energetic material recovered from munitions items with other commercial ingredients to produce blasting charges that the mining industry uses.
10. Steam-out – Steam-out is similar to hot water washout in that both processes essentially melt out energetic fillers in large-caliber projectiles, bombs, and other munitions. With the steam-out process, items are placed on an inclined cradle, and steam is jetted in to melt out the fill. The molten slurry is collected and sent to corrugated cooling pans. The pans are held in a vented and heated hood until the water is all evaporated and the explosive solidifies. The solidified explosive is broken into chunks, boxed, and then used as donor material for open detonation projects.
11. White Phosphorus Plant – The White Phosphorus Plant provides an environmentally acceptable means to demilitarize munitions containing white phosphorus by converting it into phosphoric acid. The munitions are punched to expose the white phosphorus and quickly burned. Smoke from the burning munitions is pulled through a closed-loop ducting system into the wet scrubber in the acid plant system for conversion to phosphoric acid. The phosphoric acid is collected and packaged for sale. Metal parts are discharged and collected for salvage.

Management Comments

Office of the Assistant Secretary of the Army (Financial Management and Comptroller)



DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT SECRETARY OF THE ARMY
FINANCIAL MANAGEMENT AND COMPTROLLER
109 ARMY PENTAGON
WASHINGTON DC 20310-0109


SAFM-FO

7 December 2017

MEMORANDUM FOR Department of the Army, Army Audit Agency, 6000 6th Street,
Fort Belvoir, VA 22060

SUBJECT: Response to DoDIG Draft Report No. D2016FI-D000FI-0193, "The Army
Demilitarization Program", 8 November 2017

1. The Army concurs with the findings of the report and recommendation for Finding B.1. We will complete actions related to this finding by the end of the third quarter FY2018. OASA (FM&C) will work with the Army Materiel Command (AMC) and the Joint Munitions Command (JMC) to review the current disposal estimation methodology followed by JMC personnel, making improvements as needed and ensuring all documentation is available to support the results.
2. OASA (FM&C) will coordinate with AMC, JMC and other appropriate financial reporting organizations to disclose a supported estimate in the year-end FY2018 financial statements and related notes.
3. The point of contact is [REDACTED]


Wesley C. Miller
Deputy Assistant Secretary of the Army
(Financial Operations)

Acronyms and Abbreviations

DEMIL	Demilitarization
JMC	Joint Munitions Command
OASA(FM&C)	Office of the Assistant Secretary of the Army (Financial Management and Comptroller)
OM&S	Operating Material and Supplies
PEO Ammo	Program Executive Office Ammunition
SMCA	Single Manager for Conventional Ammunition



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