

2010 SECRETARY OF DEFENSE ENVIRONMENTAL AWARD SUBMISSION  
ENVIRONMENTAL QUALITY, INDUSTRIAL INSTALLATION  
for TOBYHANNA ARMY DEPOT

1. INTRODUCTION.

Tobyhanna Army Depot (TYAD) is registered to the International Organization for Standardization (ISO) 9001, ISO 14001 and Occupational Health & Safety Assessment Series 18001 standards. TYAD was the first Occupational Safety and Health Administration (OSHA) Voluntary Protection Program Star Point site in the Department of Defense (DoD), and incorporates Lean Six Sigma process changes and a team-directed approach to management. The Directorate of Industrial Risk Management, Environmental Management Division (EMD) personnel utilize compliance inspections and ISO 14001 internal and external audits to detect environmental deficiencies and initiate corrective actions. Scorecard metrics are established emphasizing areas of focus, prevention and corrective actions.



TYAD is the largest, full-service electronics maintenance facility in the DoD with a population of over 5,800 government and contractor employees. TYAD's mission is to provide superior logistics support, sustainment, manufacturing, integration and field support for C4ISR systems for the Warfighter – worldwide. These systems include satellite terminals, radio and radar systems, telephones, electro-optics, night vision and anti-intrusion devices, airborne surveillance equipment, navigational instruments, electronic warfare and guidance and control systems for tactical missiles. TYAD is the DoD's recognized leader in the areas of automated test equipment, systems integration and downsizing of electronics systems. The Army has designated TYAD as its center of industrial and technical excellence for communications-electronics, radar and missile guidance and control. The Air Force has designated TYAD as its technical source of repair for command, control, communications and intelligence systems. We require 130 job skills to perform our missions, including engineers, electronics-mechanics, computer specialists and industrial trade workers. TYAD, its tenant activities and contractors working on post make the installation the largest employer in the region with an annual economic impact of \$2.7 billion.

## 2. RECYCLING PROGRAM SUCCESSES.

TYAD recycles in order to conserve natural resources and to protect the environment, as well as to reduce costs. All TYAD organizations and all tenant organizations participate in the recycling program. Information on the recycling program is disseminated to employees via the TYAD newspaper (The Tobyhanna Reporter), employee bulletins, Earth Day displays, the TYAD intranet and reports for the Command Staff meetings, which get cascaded to employees. By recycling, TYAD conserved more than 100,000 cubic yards of landfill space in FY09. In FY09 and FY10, TYAD recycled the following scrap material:

Steel	Aluminum	Printer/Copier Cartridges
Cardboard	Wire and Cable	Tires
Office Paper	Untreated Wood	CDs/DVDs
Newspaper & Magazines	Batteries	Equipment Oil
Plastics	Glass	Cafeteria Cooking Oil
Light Bulbs	Aluminum Cans	Shrink Wrap
Cubicle Dividers	Office Chairs	

Excluding construction and demolition debris, TYAD recycled 5.8 and 5.6 million pounds in FY09 and FY10, respectively. For FY09, this resulted in sales of \$1.4 million and cost avoidance of \$440,000. FY10 sales were \$1.2 million with a cost avoidance of \$450,000. TYADs FY09 and FY10 recycling rates were 52% and 58%, well ahead of the FY15 DoD goal of 50%.



In FY09, TYAD recycled 1,534,823 pounds, and reused 3,376,800 pounds of Construction and Demolition (C&D) debris, including debris from the demolition of a boiler plant. In FY10, TYAD recycled 191,323 pounds and reused 434,932 pounds. Of all C&D debris generated in FY09 and FY10, 87% and 59% was diverted from a landfill, respectively. Both years, diversion of C&D debris exceeded the Army goal of a minimum of 50%.

Some examples of other environmental benefits of TYADs recycling program in FY10 are:

a. All material recycled in FY10 saved 72,573 cubic yards of landfill space.

b. In FY10, TYADs process for recycling scrap aluminum turnings was improved by compacting the turnings, or chips, into bars at their generation point. Loose chips that once were collected in twenty 55-gallon drums (6.4 cubic yards) are now compacted into 1 cubic yard of bars collected in a small dump hopper. The compacting process also recovers for reuse approximately 98% of the machine-cutting oils that coat the chips. Compacting the chips into bars has provided additional storage space for mission material, reduced material handling, decreased environmental impact, reduced costs and increased recycling sales.

c. In FY10, the paper recycling process was expanded to include increased information security. In addition to recycling scrap whole and personally-shredded paper collected from work areas, locked containers have been provided for the collection of large quantities of scrap paper containing sensitive information. A contractor shreds this paper on site and then recycles it.

d. TYAD continued to expand its list of recyclable materials, adding scrap shrink wrap in FY09 and adding scrap desk chairs and cubicle dividers in FY10.

e. In FY10, TYADs recycling and solid waste programs also coordinated with a tenant organization to ensure scrap packaging materials that could not be recycled were collected for reuse, rather than sent to a landfill.

### 3. ENERGY RECOVERY FROM NEW TECHNOLOGY.

TYAD is nearing completion of a new conveyORIZED painting operation that includes two paint booths and two paint ovens. These booths and ovens require a high rate of ventilation to eliminate explosive environments as well as provide occupational health and safety for workers. This large air turnover consumes a large amount of energy for heating. To minimize energy waste, the equipment being installed captures the heat energy of exhausted air and uses it to preheat the incoming raw outdoor air. This energy recovery equipment will reduce natural gas consumption by approximately 10 million cubic feet per year.

### 4. SUSTAINABLE BUILDING INITIATIVES.

The United States Green Building Council developed a sustainable building certification program titled Leadership in Energy and Environmental Design that has gained wide acceptance as the benchmark for sustainable design and construction of buildings. TYAD is currently implementing four construction projects that are being constructed to this standard that incorporate sustainable features such as improved water efficiency, reduced energy consumption, use of recycled materials and regional materials and reduced construction waste.

One building (Bldg 1D), which was built before air conditioning was authorized in Northeastern Pennsylvania Corps of Engineers (COE) projects, presented a unique quality of life challenge. Each summer, employees would consistently complain about how hot it was inside the building.

Anecdotally, this resulted in decreased morale and productivity. The roof structure, though built to the COEs 50 pounds per square foot static load design standard, could not support Heating, Ventilation and Air Conditioning equipment,

necessitating another approach to cool the building. Structural analysis concluded that the building could support a modular green roof, so TYAD funded a project to put a green roof over as much of the roof as practical (leaving a 15-foot border, which was coated with a reflective coating in lieu of the green roof). 61,288 square feet of green roof were laid down in the fall of 2009. The summer of 2010 was brutally hot in Northeastern Pennsylvania, breaking a record for the number of days over 90 degrees Fahrenheit. However, employees in Bldg 1D did not file any heat-related complaints to the Directorate of Public Works all summer long.



TYAD utilizes green roof projects and other initiatives to improve quality of life and working environment issues

## 5. LEAN MANUFACTURING AND THE ENVIRONMENT.



TYADs hazardous materials storage facility

TYAD subscribes to the Lean manufacturing business model in an effort to reduce waste while providing quality products and support at the lowest possible cost to our customers. EMD program managers are available to provide support and advice concerning potential environmental issues arising from the nearly 200 Lean events conducted each year. All EMD employees have been trained on the concepts of Lean manufacturing and the 6S (Safety, Sort, Set in Order, Shine, Standardize and Sustain) Program.

TYAD has performed a Lean Value Stream Analysis of our Hazardous Material (HM) turn-in process. As a result, EMD provides feedback to mission and support organization supervisors reflecting the rate at which HM is consumed and returned to the various pharmacies. TYAD policy is for turn-in of all HM containers after use, whether empty, unusable or no longer needed for frequent use. This helps to ensure that HMs are disposed of properly to reduce any potentially adverse environmental impacts.

## 6. ENVIRONMENTAL OBJECTIVES AND TARGETS.

Through the EMS, EMD establishes objectives and targets that support the mission of TYAD and consequently, the Army, the DoD and ultimately the Warfighter. Our current objectives include: reduction in release of toxic substances reportable through the National Pollutant Discharge Elimination System (NPDES) and the Clean Water Act, increased turn-in rates and reduction in hazardous waste generation, increase in contractor compliance with National Environmental Policy Act (NEPA) and reduction in energy usage and generation of renewable energy.

**Hazardous Material Management System**

File Edit Action Administration Material Functions Waste Management Air Tools Window Help

**Create or Request Container**

**Request Information**

Collection Site: SANDBLAST 9, SANDBLAST, RONALD/A/REGGIE, 9, 18, 57608

Waste Profile: 25JNES926, SANDBLAST WASTE - GLOVES, S, D006, Hazardous Waste

**Container Characteristics**

Quantity: 2, Size: 55.00, UOM: GL, Type: DM, Top: Open Top

**Delivery Options**

I need container(s) delivered to me

**Label Options**

Print Container Labels

**Request Information**

Request Number: 109, Requested By: WGB038, Request Date: 12-FEB-2001, Delivered User: WGB038, Delivered Date: 18-MAR-2001

**Container Information**

Container Number	Alternate ID	Size	UOM	Type	Top
13		55.00	GL	DM	Open Top
14		55.00	GL	DM	Open Top

Enter the Collection Site: Record: 1277 List of Values: <OSL> <DBG>

Screenshot of TYADs Hazardous Material Management System (HMMS)

As a result of these O&T teams, TYAD has decreased NPDES permit excursions and is on pace to have a new wastewater treatment system online by the end of 2011. TYAD has also experienced a threefold increase in HM turn-in rates (24% to 77%) and is on pace to achieve a 20% reduction in hazardous waste generation. TYAD has trained all 25 Public Works engineers in NEPA awareness to help ensure contractor compliance. Also, a project has been approved for a photovoltaic energy array integrated with a carport and covered walkway. This system is expected to generate over 360,000 kWh per year.

## 7. EMPLOYEE AND COMMUNITY PARTICIPATION.

With over 2,200 employees participating, TYAD has the largest participation in the mass transit program of all federal government facilities outside of Washington, DC. This program results in an estimated annual reduction of 318 tons of carbon monoxide and 11,000 tons of total greenhouse gas emissions. The fuel savings amounts to approximately 3.1 million gallons and \$8.9 million per year.

All TYAD organizations, tenants, contractors and on-post residents participate in the recycling program. Proceeds from the sale of aluminum beverage containers go to TYADs Operation Santa Claus, a TYAD-sponsored volunteer organization that helps out needy children, senior citizens and handicapped individuals throughout northeastern Pennsylvania.