

Storage & Management of Hazardous Waste



State of Oregon
Department of
Environmental
Quality

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Background

In February 1997, the Environmental Quality Commission, the DEQ's governing body, issued environmental permits to the U.S. Army to build and operate the Umatilla Chemical Agent Disposal Facility (UMCDF) to destroy the chemical weapons stockpile stored at the Umatilla Chemical Depot (UMCD). Chemical weapons have been stored at UMCD since the 1960's.

The Umatilla Chemical Depot stores nerve (GB and VX) agents and blister (HD called "mustard") agents in liquid form. All of the chemical warfare agents are highly toxic. Nerve agents are contained in munitions, such as rockets, projectiles and land mines, and in large containers, such as spray tanks, bombs, and "ton containers." Blister agent is stored in ton containers.

What kinds of hazardous wastes are generated by the Umatilla Chemical Depot?

Some Hazardous wastes generated at the UMCD come from support operations that have no association with chemical agents. These hazardous wastes are stored at UMCD only until they can be shipped to a permitted offsite treatment and disposal facility.

The bulk of the hazardous wastes stored at the Depot are chemical agent-related wastes. Chemical generated by the maintenance of the stored chemical munitions. When a leak is detected in a chemical munition the leaking munition is placed in a containment device (overpack) to prevent releases of chemical agent vapor to the air. The overpacked munition is then moved to one of the waste storage "igloos," where it can be monitored on a more frequent basis. Wastes produced during normal inspection and maintenance activities or when dealing with leaking munitions include spent decontamination fluids, packaging wastes and cleanup wastes.

Are all the chemical munitions at UMCD considered hazardous wastes?

Yes, the Oregon hazardous waste regulations were amended in March 2001 requiring all of the chemical agent munitions at the UMCD to be listed as hazardous wastes.

Where are the wastes stored at the Umatilla Chemical Depot?

All of the hazardous wastes at UMCD are stored in buildings called "igloos." The igloos at UMCD were built in 1941 of steel-reinforced concrete covered with about two feet of dirt and gravel. Each igloo is about 13-feet high and 26-feet wide, and can be as long as 80-feet. The igloos were designed to store conventional ammunition. There are a total of 1001 igloos at UMCD, most are presently empty.

About 120 of the igloos at UMCD are used to store chemical agent munitions. The chemical agent is stored in groups of igloos known as I-Block and K-Block. I-Block and K-Block igloos have special security features, including heavy steel-reinforced concrete blocks placed in front of each door; dual, high security padlocks; and an intrusion detection system. Both storage areas are protected by a double cyclone fence with barbed wire on top and an electronic intruder detection system. Armed guards are on patrol duty 24 hours a day, 7 days a week.

The hazardous wastes resulting from maintenance of the chemical munitions are stored in igloos located in a different area called J-Block. These igloos are locked, but have a lower level of security than I-Block and K-Block. This is also the area where process wastes (called "secondary" wastes) produced by operation of the Umatilla Chemical Agent Disposal Facility (UMCDF) will be stored.

[Non-agent related hazardous wastes generated by UMCD administrative support operations are stored in Building 203 which is located in a separate area at the UMCD.]

What kinds of hazardous wastes will be generated when UMCDF begins operations?

Normal operations of UMCDF will produce liquid and solid wastes from the incinerators, pollution control systems, filter systems, and maintenance activities at the project site.

The wastes produced from these activities will include ash, scrap metal, slag, brine salts, used filter carbon, personal protective gear used for agent operations, wood pallets, and packaging materials. Wastes will also be produced from the operation of the laboratory and the numerous chemical agent monitoring operations that UMCDF is required to conduct.

Some of the above mentioned wastes are generated in areas of the plant where there is no contact with agent, some are contaminated with chemical agent, and some are residues remaining after incineration has been completed. All of these different types of wastes are referred to as "secondary wastes," and must be stored and managed in accordance with the regulations governing hazardous wastes.

What will happen to the secondary wastes from UMCDF?

Secondary wastes will be shipped off-site for disposal at a permitted Hazardous Waste Treatment, Storage, and Disposal Facility (called a "TSDF"). In general the wastes shipped offsite are either generated from activities where there is no agent, are residues left over after incineration, or have been analyzed to confirm there is no agent contamination. These wastes could include ash and slag from the incinerators, metal scrap, and salt cake created from drying the brine liquids used in the pollution control systems.

Other secondary wastes, such as used filter carbon, personal protective gear, lab wastes, packaging materials, and wastes produced from maintenance activities (i.e., decontamination wastes, rags, contaminated tools, used hydraulic oil) will require further treatment at UMCDF to destroy any possible agent contamination before they can be shipped off site for disposal. These wastes will be stored in J-Block until they can be returned to UMCDF for treatment.

What types of hazardous wastes will be stored in each of the storage areas?

Building 203 will be used to store "non-agent related" hazardous wastes, such as paint wastes and used solvents until it can be shipped to a TSDF.

K-Block will continue as the storage area for chemical nerve agent munitions and containers until they can be treated at UMCDF. Munitions that are transported to UMCDF and then rejected for processing may sometimes be returned to K-Block for special handling and processing.

[Most of the operations at UMCDF are conducted by robotic machinery. If an automatic machine cannot process a munition (for example, a part that cannot be unscrewed or opened) it will be rejected. These munitions will be stored and then processed individually at a later date.]

I-Block will continue as the storage area for blister (mustard) agent stored in ton containers.

J-Block will continue as the storage area for chemical agent-related wastes until the wastes can be treated at UMCDF. J-Block will also be used to store secondary wastes from UMCDF operations that require further treatment before final off-site disposal at a TSDF.

Who keeps track of what is in storage and how it is managed?

The U.S. Army owns the Umatilla Chemical Depot (UMCD) and the Umatilla Chemical Agent Disposal Facility (UMCDF) and is responsible for operations at both facilities. This includes the management of the various storage areas, maintenance activities, monitoring of the chemical weapons stockpile, and recordkeeping required by regulations.

Until recently, UMCD and UMCDF were managed by two separate organizations within the Army. The organization known as the Soldier Biological and Chemical Command (SBCCOM) had direct oversight of UMCD and the storage of the chemical weapons stockpile. Another organization called the Project Manager for Chemical Stockpile Disposal (PMCSDD) was responsible for operations at UMCDF.

These two responsibilities remain distinct, but are now under a unified command structure called the Chemical Materials Agency (CMA), with the UMCD commander is the senior local officer. Responsibility for UMCDF operations is now part of CMA called the Project Manager for Elimination of Chemical Weapons (PM ECW)

PM ECW has contracted with Washington Demilitarization Company (WDC) to build and operate UMCDF. All daily UMCDF operations, including management of the secondary wastes, are conducted by WDC personnel under the direct oversight of PM ECW. All three organizations (UMCD, PM ECW, and WDC) are named on the UMCDF hazardous waste treatment and storage permit.

The Oregon DEQ and the U.S. Environmental Protection Agency (EPA) represent the state and federal government as oversight agencies to ensure full compliance with hazardous waste rules and regulations.

What kind of inspections are done and how often?

DEQ inspects UMCDF waste management systems and records at least monthly, and generally a DEQ hazardous waste compliance inspector is at UMCDF two to three days a week. DEQ inspects the UMCD's waste management systems, storage facilities and records at least quarterly. DEQ and EPA conduct joint inspections of UMCD every year.

UMCD must physically examine, at least annually, every igloo that contains hazardous wastes. UMCD inspectors look for structural integrity, cracks, evidence of leaks, and function of drains and vents. Waste storage containers within J-Block igloos, Building 203 and "accumulation areas" are examined at least weekly for evidence of leakage or damage, and proper storage conditions and labeling.

UMCD use interior air monitoring as an alternate to physical entry of the munitions storage units. Currently, the air inside of I-Block and K-Block storage igloos is monitored at least weekly for signs of chemical agent leaks. The two igloos used for storage of overpacked leaker munitions are monitored daily. If a leak is detected, the air inside the igloo is cleaned using a carbon filter allowing personnel wearing protective clothing to enter and remove the "leaker" munition. Igloos are also entered periodically for inspection or maintenance functions. Individual munitions in storage igloos are visually inspected on a rotating basis at least annually. More intensive and comprehensive inspections of individual munitions are conducted periodically in accordance with Army requirements.

Where to get more information

Contact Shelly Ingram at the DEQ office in Hermiston, 256 East Hurlburt (Suite 105) or call (541) 567-8297 ext. 25 (toll-free in Oregon 1-800-452-4011).

Alternative formats

Alternative formats of this document can be made available. Contact DEQ, Shelly Ingram at (541) 567-8297 ext. 25. People with hearing impairment may call DEQ's TTY at (503) 229-6993.