State of Oregon
Department of
Environmental
Quality

Umatilla Chemical Demilitarization Program
Status update
June 16-17, 2010, EQC meeting

Program news

Employee exposed to mustard agent

As reported at the April 29 EQC meeting, on Wednesday, March 17, 2010, a Umatilla Chemical Agent Disposal Facility worker was exposed to HD mustard agent while performing maintenance in the Munitions Demilitarization Building. The employee received medical evaluation and care, and no additional medical treatment is anticipated. The Umatilla Chemical Agent Disposal Facility voluntarily stopped operations pending an investigation.

Resumption of operations and start of HD mustard trial burn

The Umatilla Chemical Agent Disposal Facility resumed operations after the conclusion of the investigation of the March 17, 2010, incident, and the last corrective actions from the investigation were implemented April 9, 2010. The facility restarted pre-trial burn testing operations, known as shakedown operations, on the Liquid Incinerators on April 20, 2010, and the Metal Parts Furnace shakedown was resumed April 21, 2010.

DEQ approved the HD mustard trial burn plan March 24, 2010. The facility began the HD mustard trial burn April 29, 2010, with the start of Methods 1 through 4 on the Metal Parts Furnace. To date, the facility has only conducted Metal Parts Furnace runs, but the Liquid Incinerator testing is scheduled to start soon.

Changes in Umatilla Chemical Agent Disposal Facility management

On May 17, 2010, Steve Warren started his duties as the new facility project general manager for Washington Demilitarization Company, LLC. Don Barclay returned to the project May 13, 2010, as the acting site project manager for the Umatilla Field Office (U.S. Army).

Agent processing at the Umatilla Chemical Agent Disposal Facility

The Umatilla Chemical Agent Disposal Facility has treated 31 ton containers since the last update report. As of May 13, 2010, the facility has destroyed 218,243 munitions, which represents 99 percent of all Umatilla munitions and bulk containers and 43 percent of the original Umatilla stockpile by agent weight.

<u>Mustard operations</u>

The mustard agent campaign began June 4, 2009, and there were 2,635 ton mustard containers in the original stockpile. This represents one percent of all facility munitions and bulk containers and 63 percent of the original stockpile by agent weight. As of May 13, 2010, 260 containers have been treated containing 225 tons of mustard agent.

Sarin operations

The facility completed sarin munitions and bulk items processing in July 2007. Sarin munitions and bulk items comprised 21.4 percent of the total Umatilla stockpile by agent weight. The facility destroyed 155,539 munitions and bulk containers filled with 2,028,020 pounds of sarin nerve agent. This represented 70.5 percent of all Umatilla munitions and bulk containers and 21.4 percent of the original Umatilla stockpile by agent weight. The only remaining sarin-related waste is used filter system carbon.

VX operations

The facility completed VX munitions processing Nov. 5, 2008. VX munitions and bulk items comprised 9.8 percent of the total Umatilla stockpile by agent weight. The facility destroyed 14,519 VX rockets and warheads, one VX ton container, 156 VX spray tanks, 32,313 155mm VX projectiles, 3,752 eight-inch VX projectiles, and 11,685 VX mines filled with over 720,000 pounds of agent.

Except for carbon, the facility has treated all VX-related wastes previously stored in J-Block igloos. The facility is treating secondary wastes produced as they are generated.

Umatilla Chemical Agent Disposal Facility permitting activity

March 25 through May 19, 2010

Permit modification request submittals to DEQ *(Includes 10-016 and 10-018, which were accepted this period)*		
Permit modification request	**Title**	**Submitted**
UMCDF-10-005-MISC(1N)	Redline Annual Update for BRA, TANK, and MISC Systems	03/31/10
UMCDF-10-016-CONT(1N)	Update to Contingency Plan Emergency Coordinator	04/20/10
UMCDF-10-018-CONT(1N)	Update to Contingency Plan Emergency Coordinator List	04/29/10
UMCDF-10-019-CONT(1N)	Update to Contingency Plan Emergency Coordinator	05/13/10

Withdrawn permit modification requests			
Permit modification request	**Title**	**Received**	**Decision**
UMCDF-10-012-MPF(1R)	MPF 90% Feed Rate Demonstration	02/25/10	03/29/10

Permit modification request approvals or acceptances by DEQ			
Permit modification request	**Title**	**Received**	**Decision**
UMCDF-10-009-CONT(1N)	Update to Contingency Plan Emergency Coordinator List	03/11/10	03/30/10
UMCDF-09-010-MISC(1N)	Redline Annual Update for BRA, TANK, and MISC Systems	03/17/09	04/06/10
UMCDF-10-008-CONT(1N)	Annual Contingency Plan Update	03/04/10	04/23/10
UMCDF-10-011-CONT(1N)	Update to Contingency Plan Emergency Coordinator	03/17/10	04/23/10
UMCDF-10-016-CONT(1N)	Update to Contingency Plan Emergency Coordinator	04/20/10	05/14/10
UMCDF-10-018-CONT(1N)	Update to Contingency Plan Emergency Coordinator List	04/29/10	05/14/10

IN PROCESS: The following permit modification notices and permit modification requests are under DEQ review *(includes 10-005 and 10-019, which were also submitted during this period)*				
Permit modification request	**Title**	**Received**	**Public Comment Period Close**	**Target Decision/ Review Date**
Requests				
UMCDF-07-006-DFS(3TA)	Minimum Temperature Limit Change on the Deactivation Furnace System	01/16/07	04/25/08[2]	TBD
UMCDF-09-006-CLOS(2)	Amend Closure Plan	09/25/09	11/24/09[1]	02/25/10
UMCDF-09-012-WAP(2)	Spent Carbon Waste Determination	10/28/09	12/28/09[1]	03/30/10
Notices				
UMCDF-08-037-MISC(1N)	Annual Procedures Update	05/29/08	N/A	TBD
UMCDF-09-018-PAS(1N)	High-Moisture Automatic Waste Feed Cut-Off	04/21/09	N/A	TBD
UMCDF-09-017-MISC(1N)	Redline Annual Update for DMIL, Munitions Demilitarization Building and MISC Systems	08/06/09	N/A	TBD
UMCDF-09-021-MISC(1N)	Redline annual update for General, PAS, and MISC systems	10/13/09	N/A	TBD
UMCDF-09-023-MISC(1N)	Redline Annual Update for Furnace and Misc. Systems	12/21/09	N/A	TBD
UMCDF-10-005-MISC(1N)	Redline Annual Update for BRA, TANK, and MISC Systems	03/31/10	N/A	06/01/10
UMCDF-10-019-CONT(1N)	Update to Contingency Plan Emergency Coordinator	05/13/10	N/A	07/12/10

[1] Initial (permittee) public comment period.
[2] DEQ (draft permit) public comment period.
Acronyms/Abbreviations:
BRA = Brine Reduction Area
DMIL = Demilitarization
MISC = Miscellaneous
PAS = Pollution Abatement System
TANK = Tank

Umatilla Chemical Depot permitting activity. None for the period March 25 through May 19, 2010.

Significant events at other demilitarization facilities
As of April 15, 2010, 72.6 percent of the national chemical agent stockpile tonnage has been destroyed.

Tooele Chemical Agent Disposal Facility, Utah
As of April 11, 2010, the Tooele facility has destroyed 88.9 percent of its original stockpile tonnage.

Deseret Chemical Depot workers and a special U.S. Army technical team began a two- to three-month project Feb. 17, 2010, to X-ray more than 300 overpacked projectiles and mortars for destruction using an explosive detonation technology. The X-rays will help URS subcontractor

Versar, Inc. gain a better understanding of the overpacked munitions as they prepare for explosive detonation technology operations, which are slated to begin in early 2011. The Tooele facility has started plans to eliminate small stockpiles of Tabun and Lewisite blister agent.

Anniston Chemical Agent Disposal Facility, Alabama
The Anniston facility began processing HT and HD mustard 4.2-inch mortars on July 2, 2009. As of April 11, 2010, the facility has destroyed 71.2 percent of the original tonnage and its mustard campaign may end in early 2012.

The Anniston facility has ordered a static detonation chamber from the Swedish company DYNASAFE AB to process remaining mustard-filled munitions that have deteriorated over time. The chamber will be used to destroy small numbers of munitions as a means toward meeting the international treaty requirements, and will likely begin this summer.

The Anniston Depot is conducting testing on behalf of the Pueblo, Colorado, facility. On March 23, 2010, Anniston Depot employees started delivering 4.2-inch mortars to a building on Anniston Army Depot laid out to resemble an area of the Pueblo Chemical Agent-Destruction Pilot Plant under construction in Colorado. A team of specially trained Anniston Chemical Agent Disposal Facility employees started using the linear projectile mortar disassembly machine to remove explosives, fuzes and bursters, from the munitions. Employees will collect machine reliability and maintenance data over the course of several months which will be used by Pueblo-based counterparts.

The linear projectile mortar disassembly machine is a yellow, six-axis robot that is remotely operated by a team from a nearby control room. After other employees carefully place mustard munitions on a conveyor system, the robotic machine picks up the munitions one at a time and places them at munition handling stations like those used in the older projectile disassembly machines. The use of the robotic linear projectile mortar disassembly machine, rather than older, flat, rotary projectile disassembly machines, is expected to improve Pueblo facility operations.

Pine Bluff Chemical Agent Disposal Facility, Arkansas
The Pine Bluff facility started mustard agent-filled ton container processing December 7, 2008, and had processed 2,416 HT and three HD ton containers as of April 11, 2010. The facility has destroyed 71.4 percent of its original tonnage.

On April 5, 2010, the Pine Bluff facility concluded a scheduled five-week maintenance outage, in which the liquid incinerator and metal parts furnace systems shut down. During the outage, the facility rebricked the liquid incinerator, inspected the metal parts furnace and installed a heel transfer system.

Newport Chemical Agent Disposal Facility, Indiana
Newport has completed agent disposal operations. It is the third site to complete operations, following Johnston Atoll Chemical Agent Disposal System in 2000 and Aberdeen Chemical Agent Disposal Facility in 2006. The final 1X waste was shipped offsite Oct. 22, 2009, to the Veolia facility in Port Arthur, Texas.

The contractor notified the Army that it has completed the physical facility closure. Remaining administrative closure activities, including records archiving, property disposition, and contracts closeout, continue. The Army Chemical Materials Agency intends to transfer the Newport Chemical Depot property to the Army Base Realignment and Closure Commission on July 18, 2010.

Blue Grass Chemical Agent Destruction Pilot Plant, Kentucky
The Blue Grass facility will use neutralization followed by supercritical water oxidation to destroy its 524-ton stockpile of nerve and mustard agents. The facility has neutralized three sarin ton containers, known as Operation Swift Solution, representing 0.2 percent of the stockpile. The facility is scheduled to begin chemical agent operations in 2018, recently extended from 2017, and to be completed by 2023. The design work is 99 percent complete and should be final in September 2010, with startup projected for 2018.

The first structural steel for the control and support building was placed Sept. 17, 2009. A metal parts treater, made specifically for the Blue Grass facility, is being fabricated at the Parsons facility in Pasco, Washington. Testing of this and other facility-specific equipment will be conducted over a six-month period.

Based on the Army's commitment to treat all agent-contaminated secondary wastes onsite versus offsite shipment, as was done at Newport, all hydrolysates will be processed onsite. When treatment has been completed, the operational facilities will be shut down and the temporary structures and equipment will be shipped back to Aberdeen Proving Grounds.

Pueblo Chemical Agent Destruction Pilot Plant, Colorado
The Pueblo facility will use neutralization followed by biotreatment to destroy its 2,611-ton mustard agent stockpile of artillery and mortar projectiles.

The facility has completed the overall design and construction is under way, but site-specific equipment is still being designed and fabricated. Some special equipment was tested in spring 2009. The Pueblo facility extended its startup date from 2014 to January 2015, with a December 2017 completion date.

Based on the U.S. Army's commitment to treat all agent-contaminated secondary wastes onsite versus offsite shipment, as was done at Newport, all hydrolysates will be processed onsite.

Chemical Weapons Destruction Program
Glossary of Acronyms and Terms of Art

ABCDF – Aberdeen Chemical Agent Disposal Facility, located at the Aberdeen Proving Grounds in Maryland

ACAMS – Automatic Continuous Air Monitoring System – the chemical agent monitoring instruments used by the Army to provide low-level, near real time analysis of chemical agent levels in the air

ACWA –Assembled Chemical Weapons Alternatives, agency of the Army overseeing operations at Pueblo, CO (PCAPP) and Bluegrass, Kentucky (BGCAPP)

ANCDF – Anniston Chemical Agent Disposal Facility, located at Anniston Army Depot in Alabama

APG–Aberdeen Proving Grounds, Edgewood, Maryland

ATB – agent trial burn – test burns on incinerators to demonstrate compliance with emission limits and other permit conditions

AWFCO instrument– Automatic Waste Feed Cutoff – an instrument that monitors key operating parameters of a high temperature incinerator and automatically shuts off waste feed to the incinerator if prescribed operating limits are exceeded

BDS – Bulk Drain Station – the used in the Munitions Demilitarization Building to weigh, hole punch and drain liquid HD from ton containers

BGCA – Blue Grass Chemical Activity, located at the Blue Grass Army Depot in Kentucky

BGCAPP – Blue Grass Chemical Agent Destruction Pilot Plant, new designation for BGCA.

BRA – Brine Reduction Area – the hazardous waste treatment unit that uses steam evaporators and drum dryers to convert the salt solution (brine) generated from pollution abatement systems on the incinerators into a dry salt that is shipped off-site to a hazardous waste landfill for disposal

CAC – Chemical Demilitarization Citizens Advisory Commission – the nine member group appointed by the Governor to receive information and briefings and provide input and express concerns to the U.S. Army regarding the Army's ongoing program for disposal of chemical agents and munitions – each state with a chemical weapons storage facility has its own CAC – in Oregon the DEQ's Chemical Demilitarization Program

Administrator and the Oregon CSEPP Manager serve on the CAC as non-voting members

CAMDS – Chemical Agent Munitions Disposal System – the former research and development facility for chemical weapons processing, located at the Deseret Chemical Depot in Utah

CDC – Centers for Disease Control and Prevention – a federal agency that provides oversight and technical assistance to the U.S. Army related to chemical agent monitoring, laboratory operations, and safety issues at chemical agent disposal facilities (Website: http://www.cdc.gov/nceh/demil/)

CMA – U.S. Army's Chemical Materials Agency, the agency responsible for chemical weapons destruction (website: http://www.cma.army.mil/)

CMP – comprehensive monitoring program – a program designed to conduct sampling of various environmental media (air, water, soil and biota) required by the EQC in 1997 to confirm the projections of the Pre-Trial Burn Health and Ecological Risk Assessment.

CMS – carbon micronization system – a new treatment system that is proposed to be used in conjunction with the deactivation furnace system to process spent carbon generated at UMCDF during facility operations – the CMS would pulverize the spent carbon and then inject the powder into the deactivation furnace system for thermal treatment to destroy residual chemical agent adsorbed onto the carbon

CSEPP – Chemical Stockpile Emergency Preparedness Program – the national program that provides resources for local officials (including emergency first responders) to provide protection to people living and working in proximity to chemical weapons storage facilities and to respond to emergencies in the event of an off-post release of chemical warfare agents (Website: http://csepp.net/)

CWC Treaty – Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction. Ratified by the U.S. Senate on April 24, 1997.

CWWG – Chemical Weapons Working Group, an international organization opposed to incineration as a technology for chemical weapons destruction and a proponent of alternative technologies, such as chemical neutralization (Website: http://www.cwwg.org/)

DAAMS – Depot Area Air Monitoring System – the system that is utilized for perimeter air monitoring at chemical weapons depots and to confirm or refute ACAMS readings at chemical agent disposal facilities – samples are collected in tubes of sorbent materials and taken to a laboratory for analysis by gas chromatography

DAL – discharge airlock – a chamber at the end of MPF used to monitor treated waste residues prior to release.

DCD – Deseret Chemical Depot – the chemical weapons depot located in Utah

DFS – deactivation furnace system – a high temperature incinerator (rotary kiln with afterburner) used to destroy rockets and conventional explosives (e.g., fuses and bursters) from chemical weapons

DPE – demilitarization protective ensemble – the fully-encapsulated personal protective suits with supplied air that are worn by workers in areas with high levels of agent contamination

DUN – dunnage incinerator – high temperature incinerator included in the original UMCDF design and intended to treat secondary process wastes generated from munitions destruction activities – this incinerator was never constructed at UMCDF

ECR – Explosive Containment Room – UMCDF has two ECRs used to process explosively configured munitions. ECRs are designed with reinforced walls, fire suppression systems, pressure sensors, and automatic fire dampers to detect and contain explosions and/or fire that might occur during munitions processing

EONC – Enhanced Onsite Container – Specialized vessel used for the transport of munitions and bulk items from UNCD to UMCDF and for the interim storage of those items in the UMCDF Container Handling Building until they are unpacked for processing

G.A.S.P. – a Hermiston-based anti-incineration environmental group that has filed multiple lawsuits in opposition to the use of incineration technology for the destruction of chemical weapons at the Umatilla Chemical Depot – G.A.S.P. is a member of the Chemical Weapons Working Group

GB – the nerve agent sarin

HD – the blister agent mustard

HTS – Heel Transfer Station – the part of the HD bulk drain station that contains the water and air sprays that used to solubilize solid heels in ton containers for purposes of sampling and meeting waste feed limitations

HVAC – heating, ventilation, and air conditioning

HW – hazardous waste

I-Block – the area of storage igloos where ton containers of mustard agent are stored at UMCD

IOD – integrated operations demonstration – part of the Operational Readiness Review process when UMCDF demonstrates the full functionality of equipment and operators prior to the start of a new agent or munition campaign.

JACADS – Johnston Atoll Chemical Agent Disposal System, the prototype chemical agent disposal facility located on the Johnston Atoll in the Pacific Ocean (now closed and dismantled)

J-Block – the area of storage igloos where secondary wastes generated from chemical weapons destruction are stored at UMCD

K-Block – the area of storage igloos where chemical weapons are stored at UMCD

LIC1 & LIC2 – liquid incinerators #1 & #2 – high temperature incinerators (liquid injection with afterburner) used to destroy liquid chemical agents

MDB – munitions demilitarization building – the building that houses all of the incinerators and chemical agent processing systems. The MDB has a cascaded air filtration system that keeps the building under a constant negative pressure to prevent the escape of agent vapor. All air from inside the MDB travels through a series of carbon filters to ensure it is clean before it is released to the atmosphere.

MPF – metal parts furnace – high temperature incinerator (roller hearth with afterburner) used to destroy secondary wastes and for final decontamination of metal parts and drained munitions bodies

NECDF – Newport Chemical Agent Disposal Facility, located at the Newport Chemical Depot in Indiana

NRC – National Research Council

ORR – operational readiness review – a formal documented review process by internal and external agencies to assess the overall readiness of UMCDF to begin a new agent or munitions processing campaign.

PBCDF – Pine Bluff Chemical Agent Disposal Facility, located at the Pine Bluff Arsenal in Arkansas

PCAPP – Pueblo Chemical Agent Destruction Pilot Plant, new designation for PUCDF.

PFS – the carbon filter system installed on the pollution abatement systems of the incinerators used for chemical agent destruction

PICs – products of incomplete combustion – by-product emissions generated from processing waste materials in an incinerator

PMR – permit modification request

PMN – permit modification notice

PUCDF – Pueblo Chemical Agent Disposal Facility, located at the Pueblo Chemical Depot in Colorado

SAP – sampling and analysis plan

SETH – simulated equipment test hardware – "dummy" munitions used by UMCDF to test processing systems and train operators before the processing of a new munitions type. SETH munitions are often filled with ethylene glycol to simulate the liquid chemical agent so that all components of the system, including the agent draining process, can be tested.

TAR – Temporary Authorization Request

TOCDF – the Tooele Chemical Agent Disposal Facility, located at the Deseret Chemical Depot in Utah

UMCD – Umatilla Chemical Depot

UMCDF – Umatilla Chemical Agent Disposal Facility

WAP – waste analysis plan –a plan required for every RCRA permit which describes the methodology that will be used to characterize wastes generated and/or managed at the facility.

WDC – Washington Demilitarization Company, LLC – the Systems Contractor for the U.S. Army at UMCDF.

VX – a nerve agent