State of Oregon
Department of Environmental Quality

Umatilla Chemical Demilitarization Program
Status Update
Environmental Quality Commission
December 10, 2009

UMCDF Chemical Demilitarization Program News

The GASP VI lawsuit was competed with summary judgment issued in favor of the Environmental Quality Commission except as to the timeliness of issuance of the Title V air quality permit. However, the Title V permit for UMCD was issued October 30, 2009, and the court found that petitioners were not entitled to relief on that basis either.

DEQ issued the Washington Demilitarization Company a civil penalty of $111,000 for exceeding air emission limits for carbon monoxide from the metal parts furnace, exceeding one heel size feed limit to the metal parts furnace, failing to completely characterize hazardous brine prior to management off-site and failing to update the contingency plan in a timely manner to reflect personnel changes.

Agent Processing at the Umatilla Chemical Agent Disposal Facility

As of November 18, 2009, 218,128 munitions have been destroyed. This represents 99 percent of all Umatilla munitions and bulk containers and 41 percent of the original Umatilla stockpile by agent weight.

Mustard operations

The mustard campaign began June 4, 2009, with the receipt of the first mustard ton container from facility storage. There are 2,635 mustard ton containers in the facility stockpile. This represents one percent of all facility munitions and bulk containers and 63 percent, by agent weight, of the original stockpile. As of November 18, 2009, 159 ton containers, containing 141 tons of mustard agent, have been treated.

The facility completed the characterization sampling of the initial 60 ton containers required by the permit. Based on issues identified during this period, particularly the carbon monoxide emission limit violations and comments received, the facility is reevaluating the mustard trial burn plan.

Sarin operations

The facility completed sarin munitions and bulk items processing in July 2007. 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% of the original Umatilla stockpile by agent weight.

The only remaining sarin-related waste is used filter system carbon. All other secondary wastes have been treated.

VX nerve agent operations

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

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

UMCDF Permitting Activity

September 29, 2009, through November 30, 2009**:**

SUBMITTALS		
PMR/TAR#	**Title**	**Submitted**
UMCDF-09-025-MPF(2TA)	Metal Parts Furnace (MPF) Discharge Airlock (DAL) Water Cooling and Request for Temporary Authorization (TAR)	10/12/09
UMCDF-09-021-MISC(1N)	Redline Annual Update for General, PAS, and MISC Systems	10/13/09
UMCDF-09-012-WAP(2)	Spent Carbon Waste Determination	10/28/09

APPROVALS/ACCEPTANCES			
PMR#	**Title**	**Received**	**Decn**
UMCDF-09-020-DMIL(1R)	Change in Bulk Drain Station Weight Instrument Operating Range	07/01/09	10/05/09

IN PROCESS: The following permit modification notices and permit modification requests are under DEQ review *(includes 09-012, 09-021, and 09-025, which were also submitted during this period)*

PMR#	**Title**	**Received**	**Public Comment Period Close**	**Target Decision/ Review Date**
Requests				
UMCDF-05-034-WAST(3)	Deletion of the DUN and Addition of the CMS	10/25/05	12/24/05[1]	TBD
UMCDF-07-006-DFS(3TA)	Minimum Temperature Limit Change on the DFS	01/16/07	04/25/08[3]	TBD
UMCDF-09-003-MISC(3)	Resubmittal of HD ATBP	02/26/09	08/12/09[3]	10/15/09
UMCDF-09-006-CLOS(2)	Amend Closure Plan	09/25/09	11/24/09[1]	12/24/09
UMCDF-09-025-MPF(2TA)	MPF DAL Water Cooling and TAR	10/12/2009	12/14/09[1]	01/11/10
UMCDF-09-012-WAP(2)	Spent Carbon Waste Determination	10/28/2009	12/28/09[1]	01/23/10

IN PROCESS: The following permit modification notices and permit modification requests are under DEQ review *(includes 09-012, 09-021, and 09-025, which were also submitted during this period)*				
PMR#	**Title**	**Received**	**Public Comment Period Close**	**Target Decision/ Review Date**
Notices				
UMCDF-08-037-MISC(1N)	Annual Procedures Update	05/29/08	N/A	TBD
UMCDF-08-028-MISC(1N)	Redline Annual Update for General/ PAS Systems	11/26/08	N/A	TBD
UMCDF-09-001-MISC(1N)	Redline Annual Update-Furnace System	01/21/09	N/A	TBD
UMCDF-09-010-MISC(1N)	Redline Annual Update for the BRA, Tank, and MISC Systems	03/17/09	N/A	TBD
UMCDF-09-018-PAS(1N)	High-Moisture Automatic Waste Feed Cut-Off	04/21/09	N/A	TBD
UMCDF-09-016-MISC(1N)	Redline Annual Update for CHB, HVAC, and MISC Systems	05/22/09	N/A	TBD
UMCDF-09-017-MISC(1N)	Redline Annual Update for DMIL, MDB, 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

[1] Initial (permittee) public comment period.
[2] Additional public comment period required/opened due to incompleteness of original PMR submittal
[3] DEQ (draft permit) public comment period.

Permitting Activity: None for the period September 29 through November 30, 2009.

Significant Events at Other Demilitarization Facilities

As of November 15, 2009, 68.4 percent of the national chemical agent stockpile tonnage has been destroyed.

Anniston Chemical Agent Disposal Facility, Alabama

The Anniston facility began processing 4.2 inch mortars of HD and HT mustard agent July 2, 2009. As of November 11, 2009, the facility has destroyed 52,642 mortars. Its mustard campaign may end in early 2012.

The facility experienced a small fire and a liquid leak October 20, 2009. Robotic equipment was removing a mortar fuse and burster in an explosive containment room. The fire and leak did not cause any injuries or damages. The munition was returned to storage for later demilitarization, and the systems contractor is conducting an analysis of the cause of the fire and leak.

Pine Bluff Chemical Agent Disposal Facility, Arkansas

The Pine Bluff facility started mustard processing December 7, 2008, and has processed 1,612 HT and 12 HD ton containers as of November 16, 2009. On November 7, 2009, the facility surpassed its milestone of destruction of over 50 percent of the chemical agent in its stockpile by agent weight.

Demolition of the former BZ disposal building began October 31, 2009, and is expected to continue through December 2009.

Tooele Chemical Agent Disposal Facility, Utah
The Tooele facility is treating mustard ton containers, and, as of November 15, 2009, has treated 4,410 containers.

The facility began using its new pollution abatement system carbon filter system October 14, 2009. The three sulfur-impregnated carbon filters, nearly 60 feet long and weighing more than 35 tons, were installed as part of an expansion to the existing pollution abatement system. The filters will be used to capture mercury that may remain after incineration of high-mercury mustard mortars and ton containers.

The facility has exceeded the one-hour carbon monoxide limits several times during its operations, the most recent of which November 19, 2009. Exceeding the federal carbon monoxide limit of 100 parts per million as a one-hour rolling average is an indication of incomplete combustion.

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 waste was shipped offsite October 22, 2009, to the Veolia facility in Port Arthur, Texas. Closure activities will occur over an 18- to 24-month period. Currently, demolition of the filter farm and utility buildings are underway.

Pueblo Chemical Agent Destruction Pilot Plant, Colorado
The Pueblo facility will use neutralization followed by biotreatment to destroy the 2,611-ton mustard stockpile of artillery and mortar projectiles. The overall design is complete and some construction is under way, but site-specific equipment is still being designed and fabricated. The startup target date has been changed 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.

Because of continuing schedule delays, the State of Colorado issued a hazardous waste compliance order in June 2008 mandating the destruction of chemical weapons at Pueblo by 2017, which is four years ahead of the Department of Defense's latest schedule for destruction at the site, but matches congressional mandates that were put in force less than a year ago. The order indicates the Pueblo Chemical Depot has long been out of compliance with state hazardous waste regulations that limit the amount of time hazardous waste may be stored. The Army appealed the order and the court found for the Army. The permit issued by the state October 17, 2008, allows the project to build the remainder of the plant.

Blue Grass Chemical Agent Destruction Pilot Plant, Kentucky

The Blue Grass pilot plant will use neutralization followed by supercritical water oxidation to destroy the 524-ton stockpile of nerve and mustard agents. Chemical agent operations are slated to begin 2017 and to be completed by 2023.

The design work is 95 percent complete and should be final in May 2010. The plant's first structural steel for the control and support building was placed September 17, 2009.

The metal parts treater, a specialty item for the plant, is being fabricated at the Parsons facility in Pasco, Washington. Testing of this and other plant-specific equipment will be conducted over a six-month period.

Three sarin ton containers, part of Operation Swift Solution and representing 0.2 percent of the stockpile, have been neutralized. When the campaign is completed, the operational facilities will close and the temporary structures and equipment will be shipped back to Aberdeen Proving Grounds in Maryland.

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