

## MODULE I - STANDARD PERMIT CONDITIONS

### I.A. EFFECT OF PERMIT

I.A.1. The permittee is allowed to store and treat hazardous waste in accordance with the permit conditions and, as a generator of hazardous waste, in accordance with 40 CFR §262 Subparts A through D and the appendix to Part 262. The permittee is allowed to store hazardous waste in containers, treat and store hazardous waste in tanks, treat hazardous waste in miscellaneous treatment units, and treat hazardous waste by incineration at the Umatilla Chemical Agent Disposal Facility (UMCDF). Any other treatment, storage, or disposal of hazardous waste not authorized in this permit or by 40 CFR §262, and for which a permit is required under Section 3005 of the Resource Conservation and Recovery Act (RCRA) and Oregon Revised Statute (ORS) 466.095, is prohibited.

I.A.2. Pursuant to 40 CFR §270.4, compliance with this permit constitutes compliance, for purposes of enforcement, with the Oregon Administrative Rules (OAR) and Subtitle C of RCRA, as amended by Hazardous and Solid Waste Amendments (HSWA), except for those requirements not included in this permit which become effective by statute, or are promulgated under 40 CFR §268 restricting the placement of hazardous wastes in or on the land. Issuance of this permit does not convey any property rights of any sort nor any exclusive privilege; nor does it authorize any injury to persons or property, or invasion of other private rights, or any infringement of state or local law or regulations. [40 CFR §270.30[g], 40 CFR 270.32(b)(2)]

### I.B. DEFINITIONS

All definitions contained in 40 CFR Parts 124, 260-264, 266, 268, 270, as adopted by OAR 340-100-0002, and OAR 340-100-0010 are hereby incorporated by reference into this permit, except that any of the definitions used below shall supersede any definition of the same term given in the regulations. Where terms are not defined in the regulations or in the permit, the meaning associated with such terms shall be the standard dictionary definition or their generally accepted scientific or industrial meaning.

For purposes of this permit, the following definitions shall apply:

<b><u>TERM</u></b>	<b><u>DEFINITION</u></b>
<b>“ACAMS Cycle”</b>	The period of time it takes an ACAMS to complete one sample and purge mode in an approved method.
<b>“Active Life”</b>	This term shall mean the time period between permit issuance and certification of closure of the hazardous waste management site.
<b>“Agency”</b>	This term shall mean the U.S. Environmental Protection Agency, Region 10.
<b>“Agent Free”</b>	This term shall mean that a waste meets the agent-free requirements defined in the Waste Analysis Plan, included as Attachment 2 of this permit.
<b>“Application”</b>	This term shall mean the hazardous waste Part B permit application dated July 2006 and updated with change pages on November 21, 2006, any subsequent revisions approved by the Department, and any additional or updated information subsequently requested by the Department for use in issuing this renewal permit (ORQ 000 009 431-01).
<b>“Boilover”</b>	This term shall be defined as occurring when any one or more of the Permit Attachment 4, Table 1, parameter setpoints is/are exceeded and occurs in parallel with an event during which material physically comes out of the ton container.
<b>“BRA Operating Day”</b>	This term shall mean twenty-four (24)-hour periods initiated by Brine Reduction Area (BRA) treatment operations for any length of time.
<b>“Campaign Agent”</b>	This term shall mean HD blister agent.

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**“Cascade Event”**

This term shall be defined as an event in which an AWFCO, as identified in Tables 5-5, 6-3, 6-7, 6-11, 7-2, 7-4, or 7-6, is necessarily followed by another AWFCO or AWFCOs that arise from the same event. A cascade event ends when all AWFCOs in the cascade have cleared.

**“Chemical Agent”**

This term shall include the nerve agents VX or GB (Sarin) or the blister agent (HD).

**“Chemical Agent Heel”**

Any chemical agent or other residue remaining in ton containers after pumpable liquids have been removed.

**“Chemical Agent Rinsate”**

Liquid slurry generated by the addition of water to ton containers with chemical agent heels.

**“Chemical Stockpile Disposal Program” (CSDP)”**

This term shall mean the program created by the Department of Defense to enact the requirements of PL 99-145 requiring the disposal of the nation’s stockpile of unitary chemical weapons.

**“Chemical Stockpile Emergency Preparedness Program” (CSEPP)”**

This term shall mean the program established by Congress to enhance the emergency preparedness in communities surrounding U.S. Army chemical weapons stockpile sites.

**“Child Ton Container”**

See “Recipient Ton Container”

**“Contamination”**

This term shall mean the presence of any hazardous constituent in a concentration that exceeds the naturally occurring concentration of that constituent in the immediate vicinity of UMCDF or UMCD.

**“Continuous Monitoring”**

For all incinerator system operating parameters, except pressure in the primary and secondary chamber, this term requires the operating parameter be sampled without interruption, and the detector response be evaluated by the monitoring system at least once each 15 seconds. For the primary and secondary chamber pressure operating parameters,

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this term requires the pressure be sampled without interruption, and the pressure switch response be evaluated by the monitoring system at least once per second.

**"Continuous Recording"**

For all incinerator system operating parameters, except pressure in the primary and secondary chamber, this term requires at least a one-minute value be recorded on the Process Data and Recording (PDAR) system that is calculated as the average values over the previous 60 seconds. The rolling one-hour average will be calculated by taking the average of the sixty (60) most recent one minute values during hazardous waste treatment. For the primary and secondary chamber pressure operating parameters, this term requires the recording of a value on the PDAR system at least once each 30 seconds. In the event the automatic waste feed cut-off system setpoint is exceeded, the pressure will be recorded at least once per second until the pressure drops below the automatic waste feed cut-off setpoint.

**"Co-Operator"**

This term shall mean the Washington Demilitarization Company, LLC.

**"Co-permittee"**

This term shall mean the Washington Demilitarization Company, LLC.

**"Corrective Action"**

This term shall mean all corrective steps, actions, measures, etc. necessary to protect human health and the environment from all releases of hazardous waste or hazardous constituents from any solid waste management unit at UMCDF or UMCD, regardless of the time at which waste was placed in the unit. Corrective action may address releases to air, soils, surface water, or groundwater.

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**“Daily”**

As applied to a “daily” requirement at a hazardous waste unit, this term shall mean every calendar day except for those days that there is no active hazardous waste management at that particular unit. For purposes of this definition, active waste management shall mean storage of hazardous waste in containers and tanks, and treatment of hazardous waste in incinerators and/or Subpart X units.

**“Department”**

This term shall mean the Eastern Region Office in Hermiston of the Oregon Department of Environmental Quality (with the address as specified in Permit Condition I.Z.1. of this permit).

**“DFS Operating Day”**

This term shall refer to twenty-four (24) hour periods initiated by Deactivation Furnace System (DFS) treatment operations, for any length of time.

**“Director”**

This term shall mean the Director of the Oregon Department of Environmental Quality (DEQ) or a designated representative. For purposes of this permit, the Director’s designated representative is the Chemical Demilitarization Program Administrator.

**“Donor Ton Container”**

This term, specific to HD ton container treatment operations in the bulk drain system, shall mean the ton container in which solid heel waste is mobilized by the heel transfer system and then transferred to another (recipient) ton container. This term is synonymous with parent ton container.

**“Extent of Contamination”**

This term shall mean the horizontal and vertical area in which the concentrations of hazardous constituents in the environmental media being investigated are above detection limits or background concentration indicative of the region, whichever is appropriate, as determined by the Department.

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**“General Population Limit” (GPL)** The maximum chemical agent concentration to which members of the general population may be continually exposed 24 hours per day, seven days per week for a 70-year lifetime, expressed as a time-weighted average (see Table 1-1).

**“Government-furnished equipment” (GFE)** This term shall refer to hazardous waste management unit (HWMU) equipment that will be delivered to UMCDF as a prefabricated assembly.

**“Hazardous Waste”** This term shall mean hazardous waste as defined in ORS 466.005(7), 40 CFR Part 261, OAR 340-100-0010(2)(t), and OAR 340-101.

**“Hazardous Constituent”** This term shall mean a constituent listed in OAR 340-101 and 40 CFR Part 261 Appendix VIII and including hazardous constituents released from solid waste, hazardous waste, and hazardous waste constituents that are reaction by-products.

**“Heel”** This term shall mean the amount, by weight, of residue remaining in a munition or container after the munition or container has undergone the chemical agent draining process.

**“High-Temperature Monitoring”** This term shall refer to agent monitoring of the Metal Parts Furnace discharge airlock at temperatures greater than 600°F for GB and VX and greater than 700°F for HD.

**"Higher-Level Waste"** Agent-related process wastes stored in J-Block pending further processing at UMCDF are designated as having either a "higher level" or a "lower level" of agent contamination. Higher-level waste is agent-contaminated waste that, utilizing sampling or process knowledge, exceeds 1.0 VSL for any agent.

**“Hourly Rolling Average”** This term shall mean the arithmetic mean of the 60 most recent one-minute readings recorded.

<b><u>TERM</u></b>	<b><u>DEFINITION</u></b>
<b>“Inspector”</b>	This term shall mean the designated representative of the “Manager” delegated routine UMCDF or UMCD oversight.
<b>“LIC1 Operating Day”</b>	This term shall refer to twenty-four (24)-hour periods initiated by Liquid Incinerator (LIC) 1 operations for any length of time.
<b>“LIC2 Operating Day”</b>	This term shall refer to twenty-four (24)-hour periods initiated by LIC2 operations for any length of time.
<b>“Local Reuse Authority”</b>	This term shall refer to the local reuse authority (LRA), which is the common name for the Umatilla Army Depot Reuse Authority (UMADRA).
<b>“Low-Temperature Monitoring”</b>	This term shall mean agent monitoring of the Metal Parts Furnace (MPF) discharge airlock (DAL) at temperatures less than or equal to 600°F for GB and VX and less than or equal to 700°F for HD.
<b>"Lower-Level Waste"</b>	Agent-related process wastes stored in J-Block pending further processing at UMCDF are designated as having either a "higher level" or a "lower level" of agent contamination. Lower-level waste is agent-contaminated waste that, utilizing process knowledge or sampling, is determined to be equal to or less than 1.0 VSL for any agent.
<b>“Manager”</b>	This term shall mean the Department of Environmental Quality’s (DEQ’s) Chemical Demilitarization Program Administrator.
<b>“MPF Operating Day”</b>	This term shall refer to twenty-four (24)-hour periods initiated by Metal Parts Furnace (MPF) operations for any length of time.

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**“Munition Casing”**

This term shall mean the shell of a ton container which contained chemical agent and/or reactant and is a solid waste and a characteristic hazardous waste until it has been treated in accordance with and meets the agent-free requirements of this permit.

**“Noncampaign Agent”**

This term shall mean GB and/or VX chemical agent(s).

**“Operating Day”**

This term shall mean twenty-four (24)-hour period during which operations are initiated and occur for any length of time.

**“Operating Record”**

This term shall mean all of the required records kept at the Umatilla Chemical Agent Disposal Facility, which may be kept in either electronic format, written format, or a combination of the two and must be immediately accessible for viewing and printing a hard copy.

**“Operator”**

This term shall mean the U.S. Army as represented by the Umatilla Chemical Depot

**“Owner”**

This term shall mean the U.S. Army as represented by the Umatilla Chemical Depot

**“Parent Ton Container”**

See “Donor Ton Container”

**“Permit”**

This term shall mean this hazardous waste treatment and storage Permit No. ORQ 000 009 431-01 issued by the Department pursuant to ORS 466.015(c) and OAR 340 Divisions 105 and 106.

**“Permittee”**

This term shall mean the U.S. Army as represented by the Umatilla Chemical Depot. Duties of the permittee shall also mean duties of the permittee and co-permittee.

**“PFS Online Day”**

This term shall refer to any twenty-four (24)-hour period during which the PFS unit is exposed to flue gas for any length of time.

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**“Recipient Ton Container”**

This term, specific to HD ton container treatment operations in the heel transfer system station of the bulk drain system, shall mean the ton container to which solid heel waste from a donor ton container has been/will be transferred. This term is synonymous with child ton container.

**“Regional Administrator or Director”**

In cases where the permittee is required to comply with a specific provision of 40 CFR Part 264, it shall be interpreted to mean the Chemical Demilitarization Program Administrator of the Oregon Department of Environmental Quality, Eastern Region.  
(See OAR 340-100-0010[2][dd])

**“Release”**

This term shall mean any spilling, leaking, pouring, emitting, emptying, discharging, injecting, escaping, leaching, pumping, or disposing into the environment of any chemical agent or hazardous waste or hazardous constituent.

**“Room Category”**

See “ventilation category”

**“Short-Term Exposure Limit”  
(STEL)**

The maximum chemical agent concentration to which unprotected workers may be exposed for time periods not exceeding 15 minutes in duration (see Table1-1).

**“Site”**

This term shall include, but is not limited to, the land or water area where the UMCDF or any of its activities is/are physically located or conducted, including adjacent land used in connection with the facility or activity (OAR 340-100-0010[2][ff]). “Site,” as used in this permit, shall be synonymous with “Umatilla Chemical Agent Disposal Facility (UMCDF) and/or “facility.” “UMCDF” and “facility,” as used in this permit, shall include this definition of “site.”

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**“Solid Waste”**

Any discarded material as defined in 40 CFR 261.2 and OAR 340-100-0010(2)(ee).

**“Solid Waste Management Unit”  
(SWMU)**

This term shall mean any unit which has been used for the treatment, storage, or disposal of solid waste at any time, irrespective of whether the unit is or ever was intended for the management of solid waste. SWMUs include areas that have been contaminated by routine and systematic releases of hazardous waste or hazardous constituents, excluding one-time accidental spills that are immediately remediated and cannot be linked to solid waste management activities (e.g., product or process spills).

**“Spent Decontamination Solution”  
(SDS)**

This term shall mean caustic or bleach solutions that have been used to neutralize, or potentially neutralize, chemical agent.

**“Standing Operating Procedure”  
(SOP)**

This term shall mean a written description of the procedures by which a process, machine, etc. shall be operated. An SOP may be written by the manufacturer and/or the Army.

**“Tank System”**

This term shall mean and include the tank(s) and all associated primary and secondary sumps, pumps, valves, containment systems, associated piping and any other appurtenances.

**“Umatilla Chemical Depot”  
(UMCD)**

This term shall mean the U.S. Army Umatilla Chemical Depot that is located in Umatilla and Morrow Counties near Hermiston, Oregon, as shown in Figure 1 in Module VIII of this permit, including all structures, appurtenances, and improvements under the control of the owner or operator. For the purposes of implementing corrective action, it includes all contiguous property under the control of the owner or operator.

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**“Umatilla Chemical Agent Disposal Facility” (UMCDF)**

This term shall mean the Umatilla Chemical Agent Disposal Facility, and contiguous property under control of the owner or operator, located on the Umatilla Chemical Depot. This term shall include all structures, appurtenances, and improvements under the control of the owner or operator.

**“Unit”**

This term shall include but is not limited to, any landfill, surface impoundment, waste pile, land treatment unit, incinerator, injection well, tank, container storage area, septic tank, drain field, wastewater treatment unit, elementary neutralization unit, transfer station, miscellaneous treatment unit, or recycling unit.

**“Vapor Screening Level” (VSL)**

An “instantaneous” (one ACAMS cycle) airborne exposure limit (AEL) equivalent in concentration to the STEL, but independent of time (see Table 1-1). It is used for emergency response and decontamination purposes.

**“Ventilation Category”**

The Munitions Demilitarization Building is divided into areas defined by categories based on the anticipated type and degree of contamination as follows:

- Category A - Toxic process area under negative pressure; routine contamination with either chemical agent liquid or vapor; a high-hazard area.
- Category A/B - An A/B area meets all design criteria for an A area, but in typical service acts as a B area (i.e., only a vapor chemical agent hazard is present), but under some circumstances, a liquid chemical agent hazard may be present, hence the need for design to meet A area requirements.
- Category B - Toxic process area under negative pressure, high probability of chemical agent vapor contamination resulting from routine operations; a high-hazard area.
- Category C - Work area under negative pressure and subject to inadvertent vapor contamination; a negligible hazard area.
- Category D - Work area under ambient pressure not subject to contamination; a negligible hazard area. These areas are adjacent to or open to the out-of-doors.
- Category E - Work area under positive pressure that will not be subject to contamination; a negligible hazard area.

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**DEFINITION**

**“Worker Population Limit” (WPL)** The maximum chemical agent concentration to which unprotected workers may be exposed to during an eight- or 12-hour work shift, expressed as a time-weighted average (see Table 1-1).

**“Work Shift”** This term shall mean the normal scheduled work hours, not to exceed 12 hours, per shift and is based on a multi-shift, 24-hour work day.

**I.C. PERMIT ACTIONS**

I.C.1. This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition. [40 CFR §270.30(f); OAR Divisions 105 and 106]

I.C.2. In accordance with ORS 466.170, the Commission may revoke this permit after public hearing upon a finding that the permittee has violated any provision of ORS 466.005 to 466.385 and 466.992 or rules adopted pursuant thereto or any material condition of the permit, subject to review under ORS Chapter 183.

I.C.3. In accordance with ORS 466.200, if the Department or Commission finds that there is reasonable cause to believe that a clear and immediate danger to the public health, welfare or safety or to the environment exists from continued operation of the site, the Department may order the operation of the site halted by written notice to the permittee. Noncompliance with the Department’s written notification shall be a violation of this permit condition. Resumption of operations shall be initiated only upon written approval of the Department. [ORS 466.200, 40 CFR 270.32(b)(2)]

I.C.4. Reopener

If Congress or the President makes substantial changes in the chemical weapons demilitarization program or in CSEPP, the Commission reserves the right to reopen the permit, after appropriate opportunity for the permittee and, at the discretion of the Commission, government officials and the

public to be heard. If the Commission determines to reopen the permit, it may remove or modify conditions or impose additional conditions, relating to the reason for reopening the permit.

I.D. **SEVERABILITY**

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected thereby. Invalidation of any State of Oregon or federal statutory or regulatory provision, which forms the basis for any condition of this permit does not affect the validity of any other State of Oregon or federal statutory or regulatory basis for said condition.

I.E. **DUTY TO COMPLY**

The permittee must comply with all conditions of this permit except that the permittee need not comply with the conditions of this permit to the extent and for the duration such noncompliance is authorized in an emergency permit (issued under 40 CFR §270.61, OAR 340-105-0061, ORS 466.095[3]). Any permit noncompliance, except under the terms of an emergency permit, constitutes a violation of ORS Chapter 466 and OAR Chapter 340, and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. [40 CFR §270.30(a); OAR 340-105-0030(1)]

I.F. **DUTY TO REAPPLY**

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit. [40 CFR §270.30(b)] The permittee shall submit such permit application at least 180 calendar days prior to the expiration date of this permit, unless the Department has granted permission for a later date (but no later than the expiration date of the existing permit), in accordance with 40 CFR §270.10(h) and OAR 340-105-0010(4).

I.G. **PERMIT EXPIRATION**

This permit and all conditions therein shall be effective for ten years from the effective date of this permit. [40 CFR §270.50(a)]

I.H. **CONTINUATION OF EXPIRING PERMIT**

This permit and the incorporated permit attachments, and all conditions herein shall continue in force until the effective date of a new permit, if the permittee has submitted a timely, complete application under 40 CFR §270.14 and the applicable sections in 40 CFR 270.15 to 270.29 and such application is a complete (under 40 CFR 270.10[c]) application for a new permit; and through no fault of the permittee, the Department does not issue or deny a new permit with an effective date under 40 CFR §124.15 on or before the expiration date of this permit. If the Permittee fails to submit a timely, complete application as required under Permit Condition I.F, then those permit terms and conditions necessary to conduct and complete closure and corrective action will remain in effect beyond this permit's expiration date until the Department terminates the terms and/or conditions or the permit is revoked and reissued. [40 CFR 270.32(b); OAR 340-105-0010(4), OAR 340-105-0051]

I.I. **OBLIGATION FOR CORRECTIVE ACTION**

Owners or operators of Hazardous Waste Management Units must have all necessary permits during the active life (and the closure periods) of the unit, and for any period necessary to comply with the corrective action requirements (see Module VIII) of this permit. The corrective action obligations required by this permit will continue regardless of whether the Umatilla Chemical Agent Disposal Facility continues to operate or ceases operation and closes. The Umatilla Chemical Agent Disposal Facility is obligated to complete facility-wide corrective action regardless of the operational status of the Umatilla Chemical Agent Disposal Facility. (40 CFR 264.101; ORS 466.105[10])

I.J. **NEED TO HALT OR REDUCE ACTIVITY NOT A DEFENSE**

It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. [40 CFR §270.30(c)]

I.K. **DUTY TO MITIGATE**

In the event of noncompliance with this permit, the permittee shall take all reasonable steps to minimize releases to the environment, and shall carry out such measures as are reasonable to prevent significant adverse impacts on human health or the environment. [40 CFR §270.30(d)]

I.L. **PROPER OPERATION AND MAINTENANCE**

I.L.1. The permittee shall, at all times, properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee so as to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, adequate laboratory and process controls, including appropriate quality assurance procedures, and following standard operating procedures (SOPs) and training procedures that are enforceable under ORS 466.990. This condition requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit. [40 CFR §270.30(e), §270.32; ORS 466.105(7)]

I.L.2. In accordance with ORS 466.180(1), the Department or Commission may limit, prohibit, or otherwise restrict storage and treatment operations at the UMCDF upon receipt of information that indicates noncompliance with Permit Condition I.L.1. The Department shall invoke such restrictions by written notification that specifies actions that the permittee must take to comply. Noncompliance with the Department's written notification shall be a violation of this permit condition.

I.L.3. Compliance with the terms of this permit does not constitute a defense to any action brought under ORS 466.180, 466.185, 466.190, 466.200, 466.210, 466.225, or 465; Sections 3007, 3008, 3013, and 7003 of RCRA (40 U.S.C. 6934 and 6973); Section 106(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) (42 U.S.C. 9606[a]), as amended by the Superfund Amendments and Reauthorization Act of 1986; or any other federal or state law governing protection of public health or the environment from any imminent and substantial endangerment to human health or the environment. [40 CFR §264.4] Specific exclusions from compliance with this permit are found at 40 CFR 270.4. [OAR 340-104-0004]

I.M. **DUTY TO PROVIDE INFORMATION**

The permittee shall furnish to the Department, within a reasonable time, any relevant information which the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Department upon request, copies of all records, including plans, data, and waste analyses, and tests required under OAR 340 Division 104 and/or required by this permit, and the records shall be made available at all reasonable times for inspection, by any officer, employee, or representative of the Department as authorized by ORS 466.185. [40 CFR §270.30(h), §270.32, ORS 466.105(5), OAR 340-104-0074]

I.N. **INSPECTION AND ENTRY**

I.N.1. Upon the presentation of credentials and other documents as may be required by law, the permittee shall allow the Department, or an authorized representative, to [40 CFR §270.30(i)]:

- i. Enter at reasonable times upon the permittees' premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
- ii. Have access to and copy, at reasonable times, any records, including plans, that must be kept under the conditions of this permit;
- iii. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
- iv. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by RCRA or state law, any substances or parameters at any location.

I.O. **MONITORING AND RECORDS**

I.O.1. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The methods used to obtain representative samples to be analyzed must be the appropriate method from Appendix I of 40 CFR Part 261 or the methods as specified in the Waste

Analysis Plan included as Attachment 2 of this permit. Laboratory methods must be those specified in Test Methods for Evaluating Solid Waste: Physical/Chemical Methods (SW-846, latest edition), Methods for Chemical Analysis of Water and Wastes (EPA-600/4-79-020), or the methods as specified in the attached Waste Analysis Plan included as Attachment 2 of this permit. [40 CFR §270.30(j)(1); 40 CFR §270.32(b)]

All methods used to obtain representative samples to be analyzed pursuant to this permit shall be reviewed and approved by the Department in accordance with 40 CFR §270.42.

I.O.2. The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports and records required by this permit, and records of all data used to complete the application for this permit, for a period of at least three (3) years from the date of the sample, measurement, report, application, certification, or record or for periods elsewhere specified in this permit. The permittee shall retain records from all surface water sampling, seep sampling, soil sampling, sediment sampling, groundwater monitoring wells, and associated groundwater surface elevations, for the active life of the facility or, if corrective action is instituted, until three (3) years past the end of corrective action instituted to address releases of hazardous waste or hazardous waste constituents from any solid waste management unit. These periods may be extended by the request of the Department at any time and are automatically extended during the course of any unresolved enforcement action regarding this facility. [40 CFR §264.74(b) and §270.30(j)(2)]

I.O.3. Records of monitoring information shall include [40 CFR §270.30(j)(3); 40 CFR §270.32(b)]:

- i. The date, exact place, and time of sampling or measurements;
- ii. The name, title, and affiliation of the individual(s) who performed the sampling or measurements;
- iii. The date(s) analyses were performed;
- iv. The name, title, and affiliation of the individual(s) who performed the analyses;

- v. The analytical techniques or methods used; and
- vi. The results of such analyses.

I.O.4. The permittee shall submit all monitoring results at the intervals specified elsewhere in this permit.  
[40 CFR §270.30(I)(4)]

I.O.5. All references to ACAMS monitors include the co-located DAAMS at that ACAMS/DAAMS station identified in Appendix B to the Laboratory Analysis and Monitoring Plan in Permit Attachment 2 (Waste Analysis Plan) Appendix C. The ACAMS and DAAMS shall be functional and correctly operating, calibrated, maintained, operated (sampling), and analyzed in accordance with the requirements of Permit Attachment 2 (Waste Analysis Plan) Appendices C and D during demilitarization activities.

I.P. **REPORTING PLANNED CHANGES**

As soon as possible, prior to any planned physical alteration or addition, the permittee shall give notice to the Department of any planned physical alterations or additions to the areas at the UMCDF.  
[40 CFR §270.30(1)(1)]

I.Q. **REPORTING ANTICIPATED NONCOMPLIANCE**

The permittee shall give advance notice to the Department of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements as soon as possible after the anticipated noncompliance has been identified. The permittee may not treat, store, or dispose of hazardous waste in the modified portion of the facility, until the requirements of Condition I.R have been met. Advance notice shall not constitute a defense for any noncompliance. [40 CFR §270.30(1)(2), §270.32(b)]

I.R. **CERTIFICATION OF CONSTRUCTION OR MODIFICATION**

I.R.1. The permittee may not treat or store hazardous waste in any new unit or in any modified portion of the facility, including government-furnished equipment (GFE), except as provided in 40 CFR §270.42, until:

- i. The permittee has submitted to the Department by certified mail or hand delivery a certification of construction signed by the permittee and a qualified professional engineer stating that the unit has been constructed or modified in compliance with this permit and applicable regulations; [40 CFR §264.601, §264.602, §270.30(1)(2)(i), 270.32(b)(2)] and
  - a. The Department has inspected the modified or newly constructed unit or facility and has notified the permittee in writing that it finds it is in compliance with the conditions of this permit; [40 CFR §270.30(1)(2)(ii)(A)] or
  - b. If, within 15 calendar days of the date of submission of the certification in Permit Condition I.R.1.i, the permittee has not received written notice from the Department of its intent to inspect, prior inspection is waived and the permittee may commence treatment, and storage of hazardous waste. [40 CFR §270.30(1)(2)(ii)(B)]

I.R.2. The above mentioned certification of construction must include at a minimum:

- i. As-built drawings;
- ii. Narrative descriptions and delineation of any changes to proposed drawings;
- iii. All required professional certifications;
- iv. All quality assurance/quality control (QA/QC) documentation; and
- v. All required physical testing results.

I.S. **TRANSFER OF PERMIT**

This permit shall be issued or transferred to a new owner or operator only if it is modified or revoked and reissued pursuant to 40 CFR §270.40 and OAR 340-105-0040. Prior to transferring the UMCDF permit to any person, the permittee shall notify the new owner or operator, in writing, of the requirements of 40 CFR Parts 264 and 270, OAR Chapter 340, and this permit. [40 CFR §270.30(1)(3)]

I.T. **COMPLIANCE SCHEDULES**

The permittee shall submit to the Department reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule in this permit no later than fourteen (14) calendar days following each schedule date. [40 CFR §270.33(a)(3) and §270.30(1)(5)]

I.U. **TWENTY-FOUR HOUR REPORTING**

I.U.1. The permittee shall immediately report to the Manager or Regional Administrator any noncompliance or situation which may endanger human health or the environment as soon as the permittee becomes aware of the circumstances. The report may be made verbally or by immediate written notification (e.g., e-mail, facsimile), and shall include, but is not limited to:. [40 CFR 270.30(1)(6); OAR 340-105-0030]

- i. Noncompliance with Permit Condition II.A.1.
- ii. Any release to the environment of any chemical agent (i.e., GB, VX, and HD) or any chemical agent residue which results in the following:
  - a. Any release to the atmosphere from the combined stack for the Liquid Incinerators, the Deactivation Furnace, and the Metal Parts Furnace; the stack for the Brine Reduction Area; or from any stack for the air filtration system if the confirmed stack emission levels exceed the maximum allowable stack concentrations identified for any individual chemical agent in Table 1-1 of this permit.

- b. Chemical agent concentrations, at the UMCDF site boundary or at any of the UMCDF or UMCD perimeter monitoring stations, exceeding the General Population Limits specified in Table 1-1 of this permit for each chemical agent.
  - c. Any unprotected workers exposed to chemical agent concentrations, equal to or exceeding the Short-Term Exposure Limit (STEL) specified in Table 1-1 of this permit as measured by any chemical agent monitor [i.e., Automatic Continuous Air Monitoring System (ACAMS)/Depot Area Air Monitoring System (DAAMS)] within the UMCDF site.
  - d. Chemical agent concentrations, within the UMCDF boundary, but outside the MDB, exceeding the STEL specified in Table 1-1 of this permit, as measured by any chemical agent monitor. This applies to chemical agent concentrations confirmed downstream of the rear stack vents of the J-Block igloos.
- iii. Any nonconfirmed indication that a release to the atmosphere under Permit Conditions I.U.1.ii.a, I.U.1.ii.b, and I.U.1.ii.d has occurred. The permittee shall verbally report to the Department within four hours of when a chemical agent monitor detects a nonconfirmed emission level that indicates a release to the atmosphere, if the emission levels have not been verified as a chemical agent monitor anomaly (i.e., false positive) within that same four hours.
- iv. Any confirmed:
- a. Release of chemical agent of a reportable quantity as defined in OAR 340-142-0050.
  - b. Chemical agent detection greater than or equal to the Worker Population Limit (WPL) but less than STEL (as specified in Table 1-1 of this permit) in an area in which unprotected workers may have been exposed.
- v. Information concerning the release of any hazardous waste which may cause an endangerment to public drinking water supplies.

- vi. Any information of a release or discharge of hazardous waste or of a fire or explosion at the UMCDF, which could threaten the environment or human health outside the facility.

I.U.2. The description of the occurrence and its cause shall include, at a minimum:

- i. Name, title, and telephone number of individual reporting;
- ii. Name, address, and telephone number of the owner or operator;
- iii. Name, address, and telephone number of the UMCDF;
- iv. Date, time, and type of incident;
- v. Location and cause of incident;
- vi. Name and quantity of material(s) involved;
- vii. The extent of injuries, if any;
- viii. An assessment of actual or potential hazard to the environment and human health outside the facility, where this is applicable;
- ix. Description of any emergency action taken to minimize the threat to human health and the environment;
- x. Estimated quantity and disposition of recovered material that resulted from the incident; and
- xi. Any other information necessary to fully evaluate the situation and to develop an appropriate course of action.

I.U.3. Within five (5) calendar days of the time the permittee is required to provide notification, as specified in Permit Condition I.U.1, the permittee shall provide to the Department a written submission in accordance with 40 CFR §270.30(1)(6)(iii).

- i. The written submission shall include, but not be limited to the following:
  - a. Name, address, and telephone number of the individual reporting;
  - b. A description of the incident and cause (include location, extent of injuries, if any, and an assessment of actual or potential hazard to the environment and human health outside the UMCDF, where this is applicable);
  - c. The period(s) in which the incident occurred (including exact dates and times);
  - d. Whether the results of the incident remain a threat to human health and the environment (whether the noncompliance has been corrected and/or the release has been adequately cleaned up); and
  - e. If not corrected, the anticipated time it is expected to continue; and the steps taken or planned to reduce, eliminate, and prevent recurrence of the incident, and/or the steps taken or planned to adequately clean up the release.
- ii. The permittee need not comply with the five (5)-calendar-day written notice requirement if the Department waives the requirement and the permittee submits a written report within fifteen (15) calendar days from the time the permittee is required to provide verbal notification, as specified in Permit Condition I.U.1.

I.V. **OTHER NONCOMPLIANCE**

The permittee shall report to the Manager or the Regional Administrator all other instances of noncompliance not reported under Permit Conditions I.Q, I.R, I.S, I.T, and I.U at the time monitoring reports are submitted, but no less frequently than quarterly. The reports shall contain the information required in Permit Condition I.U.1 and I.U.2. [40 CFR §270.30(1)(10)]

I.W. **OTHER INFORMATION**

If the permittee becomes aware that it failed to submit any relevant facts or submitted incorrect information in a permit application, permit modification, or in any report to the Department, it shall

promptly submit such facts or information [40 CFR §270.30(1)(11)]. In addition, upon request, the permittee shall furnish to the Department any information related to compliance with the permit.

I.X. **SIGNATORY AND CERTIFICATION REQUIREMENT**

All applications, reports, or information submitted to the Department, shall be signed and certified by the Chemical Materials Activity Site Project Manager and the Project General Manager for Washington Demilitarization Company, LLC, or by a duly authorized representative for these persons, in accordance with 40 CFR §270.11. [40 CFR 270.30(k)]

I.Y. **CONFIDENTIAL INFORMATION**

Any information submitted by the permittee to the Administrator or to the Director, Manager, or Inspector may be claimed as trade secret or confidential by the permittee in accordance with the applicable provisions of OAR 340-100-0003 [OAR 340-105-0012].

I.Z. **REPORTS, NOTIFICATIONS, AND SUBMISSIONS**

I.Z.1. All applications, reports, or information submitted to the Department shall be sent to:

Oregon Department of Environmental Quality	Phone: (541) 298-7255
400 E. Scenic Drive, Suite 307	Fax: (541) 298-7330
The Dalles, OR 97058	

I.AA. **DOCUMENTS TO BE MAINTAINED AT THE UMCDF**

I.AA.1. The permittee shall maintain at the facility, until closure is completed and certified by a qualified professional engineer, the following documents and amendments, revisions, and modifications to these documents:

- i. Waste Analysis Plan (Attachment 2 of this permit), as required by 40 CFR §264.13(b) and this permit.

- ii. Inspection schedules and logs (Attachment 3 of this permit), as required by 40 CFR §264.15(b) and this permit.
- iii. Personnel training plan (Permit Attachment 10) and personnel training documents and records, as required by 40 CFR §264.16(d) and (e), ORS 466.105(6), and this permit.
- iv. Contingency Plan (Permit Attachment 9), as required by 40 CFR §264.53(a), ORS 466.105(4), and this permit.
- v. Operating Record, as required by 40 CFR §264.73 and this permit.
- vi. Closure Plan (Permit Attachment 8) and closure records, sampling results, and reports, as required by 40 CFR §264.112(a) and this permit.
- vii. Copy of this permit, permit attachments, the permit application, and the permit application attachments.
- viii. Facility construction certification documentation, facility modification certification, and as-built drawings for the UMCDF Site Hazardous Waste Management Units identified under Permit Condition I.R.
- ix. Independent tank system assessment, installation, and repair certifications, as required by 40 CFR §264.192(g).

I.BB. **PERMIT CONDITIONS AND ATTACHMENTS**

If any of the attachments to this permit are found to conflict with any of the permit conditions in Modules I through IX of this permit, the permit conditions will take precedence.

**TABLE 1-1 CHEMICAL AGENT EXPOSURE LIMITS AND CHEMICAL AGENT STACK LIMITS**

CHEMICAL AGENT LIMIT <sup>1</sup>	CHEMICAL AGENT CONCENTRATIONS (mg/m <sup>3</sup> )		
	VX	GB	HD
Maximum Instantaneous Allowable Stack Concentration (ASC) <sup>2,3</sup>	0.0003 (3.0E-4)	0.0003 (3.0E-4)	0.03 (3.0E-2)
General Population Limit (GPL) <sup>3,4</sup>	0.0000006 (6.0E-7)	0.000001 (1.0E-6)	0.00002 (2.0E-5)
Workplace Short-Term Exposure Limit (STEL) <sup>3,5</sup>	0.00001 (1.0E-5)	0.0001 (1.0E-4)	0.003 (3.0E-3)
Vapor Screening Level (VSL) <sup>7</sup>			
12-hour Worker Population Limit (WPL) <sup>3,6</sup>	0.00000067 (6.7E-7)	0.00002 (2.0E-5)	0.00027 (2.7E-4)

<sup>1</sup> Public Law 91-121/441 (USC 1512) mandates that the United States Department of Health and Human Services (HHS) review the plans for transporting and/or disposing of lethal chemical agents and make recommendations for protecting human health and safety. HHS delegated review and recommendation authority to the Centers for Disease Control and Prevention (CDC).

<sup>2</sup> The Department of Army proposed the maximum ASC indicated in Table 1-1. HHS reviewed the concentrations and announced in the March 15, 1988, Federal Register (53 FR 8504) (corrected in 53 FR 11002, April 4, 1988) that the concentrations “met HHS criteria and appear to be more restrictive than limits set on a health base alone,” and therefore made no recommendation changes.

<sup>3</sup> New airborne exposure limits (AELs) for VX and GB (GPL, STEL, and WPL) were promulgated by the CDC October 9, 2003, in the Federal Register (68 FR 58348). CDC’s interim recommendations for new HD AELs (GPL, STEL, and WPL) were promulgated on May 3, 2004, (69 FR 24164). Per CDC’s recommendation UMCDF conducted site-specific air modeling to confirm that the ASC was still protective in consideration of the new AELs for chemical agents (see Permit Modification UMCDF-04-027-MON(2) for information concerning UMCDF’s implementation of the new AELs).

<sup>4</sup> The GPL for GB and VX is based on a 24-hour time-weighted average. The GPL for HD is based on a 12-hour time-weighted average.

<sup>5</sup> The STELs for all chemical agents are based on a 15-minute time-weighted average. A worker may have four GB STEL exposures per day provided there is a minimum of 60 minutes between successive exposures at the STEL concentration. A worker may have only one HD or VX STEL exposure per day.

<sup>6</sup> The WPLs promulgated by the CDC in 2003 (see note 3 above) were based on an 8-hour time-weighted average. The WPLs in use at the UMCDF are based on a 12-hour time-weighted average to reflect standard work shifts (Permit Modification UMCDF-04-027-MON[2]).

<sup>7</sup> The VSL is the same concentration as the STEL. However, this is an “instantaneous” (single-cycle ACAMS) concentration reading independent of time used for emergency response and decontamination purposes.

## MODULE II - GENERAL FACILITY CONDITIONS

### II.A. **DESIGN AND OPERATION OF FACILITY** [40 CFR 264.31; 270.32(b)]

- II.A.1. The permittee shall design, construct, maintain, and operate the UMCDF to minimize the possibility of a fire, explosion, or any unplanned sudden or nonsudden release of hazardous waste or hazardous waste constituents to air, soil, groundwater, or surface water which could threaten human health or the environment.
- II.A.2. The permittee shall construct, maintain, and operate all Hazardous Waste Management Units in accordance with the approved designs and specifications that are included in Attachment 12, except for minor changes deemed necessary by the permittee to facilitate proper construction of the Hazardous Waste Management Units or changes to allow for decontamination and dismantling of equipment as allowed in accordance with 40 CFR 264.112(e). Minor deviations from the approved designs or specifications necessary to accommodate proper construction shall be noted on the as-built drawings and the rationale for those deviations shall be provided in written narrative form to the Department and shall not constitute a permit modification.
- II.A.3. Operational Limitations During Adverse and Severe Weather Conditions
- i. The permittee shall only load, transport, or treat ton containers during weather conditions that are not considered adverse or inclement for the operation of concern as specified in this permit condition. Whenever adverse and inclement weather conditions require implementation of this permit condition, the duration and circumstances for implementation shall be documented in the facility operating record.
  - ii. The UMCD safety manager is responsible for evaluating and determining if the safe loading and transport of ton containers can occur under various adverse and inclement weather conditions at the UMCD. The safety manager, or his designee, shall evaluate inclement weather conditions, e.g. precipitation, icing, sand storms, etc., on a case-by-case basis and in accordance with the most current revision of the related operational

procedures, to determine whether or not munitions may safely be loaded and transported to the UMCDF.

- iii. The UMCDF shift safety representative is responsible for evaluating and determining if the safe processing of ton containers can occur under various adverse and inclement weather conditions at the UMCD or UMCDF. The shift safety representative shall evaluate inclement weather conditions, e.g., precipitation, icing, and storms, etc. on a case-by-case basis, and in accordance with the most current revision of the related standard operating procedures, to determine whether or not munitions may safely be processed at the UMCDF. For the purpose of this permit condition, processing is defined as (1) demilitarization operations that access or treat agent, and (2) initiation of waste feed to the Brine Reduction Area and the incinerators. Waste material already introduced into the Brine Reduction Area and the incinerator systems for treatment may be processed to completion, except as prohibited by Permit Condition II.A.3.iv.
- iv. No waste treatment operations shall commence and ton containers shall not be loaded, transported, or treated during the following conditions. EONCs that have already been partially or completely loaded may be transported to the UMCDF if determined it is safe to do so. Waste material already fed into the Brine Reduction Area and the incinerator systems for treatment may be processed to completion unless the adverse weather conditions or any other conditions require emergency shutdown of the facility before treatment can be completed.

Condition	UMCD to UMCD Treatment	UMCD Treatment
Transportation Risk Assessment <sup>1</sup>	Risk indicates transportation should be halted <sup>2</sup>	N/A
Lightning	Observed within 3 miles of the UMCD	N/A
Wind	Beaufort Wind Scale No. 11 or higher <sup>3,4</sup>	Beaufort Wind Scale No. 12 or higher <sup>3,5</sup>
Tornado	Tornado warning <sup>3,6</sup>	Tornado warning <sup>3,7</sup>

Footnotes:

- <sup>1</sup>“Risk Tradeoff Analysis for Umatilla, All Munitions,” Science Applications International Corporation, March 17, 2006 (DEQ Item No. 06-1100).
- <sup>2</sup>The UMCD operational procedure risk assessment information indicates munitions transportation should be halted due to public risk factors.
- <sup>3</sup>As forecasted/issued by the National Weather Service.
- <sup>4</sup>Beaufort Wind Scale No. 11 is defined as winds 64 to 72 mph, causing widespread damage.
- <sup>5</sup>Beaufort Wind Scale No. 12 is defined as winds 73 mph or higher, of hurricane force causing widespread damage.
- <sup>6</sup>Issued for the UMCD area with a rating of FO or greater on the Fujita-Pearson (FPP) rating scale (an FPP rating of FO is for tornadoes with wind intensity of  $\geq 40$  mph, path length  $\geq 0.3$  miles, and path width  $\geq 6$  yards).
- <sup>7</sup>Issued for the UMCD area with a rating F1 or greater on the FPP rating scale (an FPP rating of F1 is for tornadoes with wind intensity of  $\geq 73$  mph., path length  $\geq 1.0$  miles, and path width  $\geq 18$  yards)

II.A.4. Comprehensive Monitoring

- i. The permittee shall conduct quarterly monitoring of air, soil, water, and biota in Zone 1 (within the fence line of the UMCD), Zone 2 (UMCD fence line out to a fifty-kilometer radius from the UMCD common stack), and Zone 3 (locations beyond the fifty-kilometer radius) in accordance with Attachment 5 of this permit (Comprehensive Monitoring Program [CMP] Sampling and Analysis Plan [SAP]).
- ii. Modifications to Permit Attachment 5 must be submitted as a permit modification in accordance with 40 CFR 270.42. Modifications to Data Validation Methodology do not require a permit modification, but must be submitted to the Department for review and approval prior to implementation.
- iii. The permittee shall conduct sampling events on a quarterly basis, without interruption, until completion of demilitarization.
- iv. The permittee shall submit data reports of CMP sampling and analysis activities within 90 days of the completion of each quarter’s field sampling activities. In accordance with Attachment 5 of this permit, the permittee shall also submit an annual report to the Department at the completion of the first four quarters of baseline monitoring, and annually thereafter.

- a. A copy of the quarterly and annual reports shall be placed in the Hermiston Public Library.
- b. All CMP data reports shall note any deviations from the CMP SAP (Attachment 5 of this permit) or the Data Validation Methodology. Modifications to approved plans and procedures must have prior Department approval in accordance with Permit Condition II.A.4.ii, as applicable.

II.A.5 Building Ventilation Systems

- i. All Category A, A/B, B, and C areas of the Munitions Demilitarization Building, and areas of the laboratory in which agent may be present, shall be equipped with a ventilation system capable of:
  - a. Collecting and monitoring ventilation air from the work area that may contain chemical agent vapors prior to being exhausted to the ambient air,
  - b. Providing the air mixing necessary for the efficient monitoring of work areas with chemical agent detection devices, and
  - c. Providing negative pressure within the work areas, with areas with the highest potential of agent contamination at a greater negative pressure than the lower contamination level areas, thus causing air to flow from areas of least contamination to the areas of highest contamination, to eliminate the release of chemical agent vapors from the building.

II.B. **RECEIPT OF OFFSITE WASTE AND SHIPMENT OF ONSITE WASTE**

- II.B.1. The permittee is not authorized to accept and shall not receive hazardous waste, chemical agent, or munitions containing chemical agents from offsite, except from the UMCD. The chemical agent or munitions containing chemical agents shall be limited to those identified as being within the UMCD stockpile as of February 12, 1997. [OAR 340-105-0041]

- II.B.2. Any chemical agent-related material and/or demilitarization waste being transferred to an off-site RCRA Subtitle C permitted hazardous waste disposal facility (or RCRA Subtitle C permitted smelting facility in the case of munition casings) must meet the agent-free criteria in Attachment 2 of this permit.
- II.B.3. The permittee shall process, in accordance with this permit, all chemical agents, and chemical agent-contaminated materials currently stored or otherwise located at the Umatilla Chemical Depot.
- II.B.4. Except when shipped offsite in accordance with Permit Condition II.B.5, the permittees shall process all UMCDF pollution abatement system brines generated from the treatment of chemical agent, or chemical agent-contaminated materials, in the Brine Reduction Area in accordance with Module V of this permit.
- II.B.5. The permittee may ship pollution abatement system brines to an off-site RCRA Subtitle C permitted hazardous waste management facility when:
- i. The pollution abatement system brines have been determined to meet the agent-free criteria as defined in the Waste Analysis Plan (Attachment 2), and
  - ii. If brines are transferred directly from the pollution abatement system to an off-site shipment tanker truck or any other means of off-site shipment, it shall be done inside the UMCDF double fence, sampled in accordance with the Waste Analysis Plan (Attachment 2), and verified agent free before exiting the UMCDF double fence.
- II.C. **GENERAL WASTE ANALYSIS**
- II.C.1. The permittee shall comply with all requirements in accordance with 40 CFR §264.13 and shall follow the Waste Analysis Plan procedures and methods-(Attachment 2 to this permit).
- II.C.2. The permittee may not accept an unidentified waste for storage or treatment until it has been completely characterized.
- II.C.3. [RESERVED]

II.C.4. Munition casings that previously contained chemical agent and which have undergone standard thermal treatment in the MPF in accordance with this permit, may be considered empty containers in accordance with 40 CFR 261.7(b)(3)(ii). Munition casings that the permittee determines qualify as an empty container shall be recycled directly to a smelting facility in accordance with the scrap metal requirements of 40 CFR 261.6(a)(3)(ii) or managed as listed hazardous waste and sent to either a RCRA Subtitle C permitted smelting facility for treatment/destruction, or to a RCRA Subtitle C permitted hazardous waste disposal facility. All other munition casings shall be managed as a listed hazardous waste and sent to a RCRA-permitted Subtitle C hazardous waste smelting or disposal facility. Additionally, no munition casings shall be sent off-facility until they are confirmed agent-free in accordance with the requirements of Attachment 2 of this permit.

II.D. **SECURITY PROCEDURES**

II.D.1. The permittee shall comply with the security procedures set forth under 40 CFR §264.14(b) and (c) and as described in Permit Attachment 6. A map of the UMCDF site depicting the location of fencing and gates for the UMCDF site and the entire UMCD Facility is located in Permit Attachment 9 (Contingency Plan).

II.E. **GENERAL INSPECTION REQUIREMENTS [40 CFR 264.15, OAR 340-105-0140]**

II.E.1. The permittee shall comply with all requirements under 40 CFR §264.15 (a) and (b) and follow the inspection procedures and schedules included as Attachment 3 of this permit.

II.E.2. The permittee shall remedy any deterioration or malfunction (of equipment or structures) discovered during an inspection as required by 40 CFR §264.15(c).

II.E.3. The permittee shall record all inspection reports in the operating record-as required by 40 CFR §264.15(d).

II.E.4. The permittee shall inspect the CHB and MDB floors in accordance with Permit Attachment 3 (Inspection Schedule), and shall initiate repair of all chips and cracks in the epoxy coatings on the floors of the CHB UPA within 72 hours of detection.

II.E.5. The UMCDF independent oversight process for the demilitarization construction activities, health and safety operations, and chemical agent process/handling operations at the UMCDF site was accepted by the Department June 9, 2000 (DEQ Item No. 00-0797). All reports generated by independent oversight activities and/or independent investigations shall be submitted to the Department within 30 days of receipt by the permittees. With written direction from the Department, the permittee shall place such inspection reports in a public repository in Hermiston, Oregon. In the case of special independent investigations caused by unique and nonroutine incidents, the permittee shall notify the Department of the initiation of the investigation within 24 hours of the time the permittee becomes aware of the investigations. Upon request by the Department or Commission, the permittee shall provide an updated report describing the independent oversight program that incorporates all appropriate additions and changes in response to any deficiencies or requested changes. An independent oversight review shall be conducted on a periodic basis and when specifically requested by the Department or Commission. If the Commission is not satisfied with the independent oversight program or the results of the independent investigations, the Commission may issue an order to halt immediately all operations.

II.F. **TRAINING PLAN**

II.F.1. The permittee shall train all personnel who handle hazardous waste in hazardous waste management, safety procedures, and emergency procedures, as applicable to their job description in accordance with 40 CFR §264.16, ORS 466.105(6), and the Training Plan (Permit Attachment 10). Training records and documents shall be maintained as specified in 40 CFR §264.16(d) and (e) and the Training Plan.

II.G. **PREPAREDNESS AND PREVENTION**

II.G.1. The permittee shall comply with the preparedness and prevention requirements of 40 CFR §264 Subpart C (264.30 through 264.37) as described in Permit Attachment 6.

II.G.2. The permittee shall operate and perform preventative maintenance, inspections, and repair of the equipment listed in Table 2-1, at a minimum, in accordance with manufacturer's specifications and in accordance with the Inspection Schedule (Attachment 3). The permittee shall maintain

records of inspections, preventative maintenance and repair activities on this equipment (with schedules reflecting minimum and planned frequency for the performance of these preventative maintenance activities) in the operating record of each permitted hazardous waste management unit in accordance with Condition I.O of this permit.

II.H. **CONTINGENCY PLAN** [40 CFR §§264.37, 264.52-56; ORS 466.105(4)]; 340-104-0001, 340-104-0056]

II.H.1. The permittee shall comply with the requirements of 40 CFR §264 Subpart D and the Contingency Plan in Permit Attachment 9.

II.H.2. If chemical agent is detected by UMCD or UMCDF site perimeter monitors above the General Population Limits in Table 1-1 of this permit, the permittee shall, in addition to implementing the Contingency Plan (Permit Attachment 9) perform a staged shutdown of all incineration operations at the UMCDF site including waste feed cutoffs, in accordance with UMCDF standard operating procedures.

II.H.3. The permittee shall not reinstate process operations after shutdown under either Condition II.H.2 of this permit or shutdown as a result of a contingency event requiring immediate reporting as identified in Permit Condition I.U.1, unless the Contingency Plan Section 6.9.3 requirements have been met.

II.H.4. CSEPP Readiness

The permittee shall submit by January 31 and July 31 of each year until all chemical agent at UMCD has been destroyed, a written progress report to the Department on the status of the Chemical Stockpile Emergency Preparedness Program (CSEPP). The report shall evaluate CSEPP's readiness for responding to an incident at the Umatilla Chemical Depot and should address at a minimum, status of community emergency sirens and distribution of tone alert radios of the Alert Notification System (ANS); the ability to provide offsite chemical agent monitoring and decontamination during an incident, offsite triage and treatment of casualties; and, the state of enhanced sheltering and positive pressurization of buildings, such as schools and hospitals, where substantial numbers of persons can be expected to gather daily. [40 CFR §270.32(b)(2)]

II.H.5. OC Positive Pressure

For the UMCD Operations Center (OC) that gathers or disseminates information used to respond to off-Depot releases, the permittee shall have a positive-pressurized OC that is adequately staffed 24 hours a day, 7 days a week. For purposes of this permit, “positive-pressurized” shall mean that ambient nonair vapors cannot enter during times of emergency training, in the event of an actual emergency, or when tested on request by a Department inspector.

II.H.6. Control Room Positive Pressure

The permittee shall have a positive-pressurized Control Room (CON) that is adequately staffed 24 hours a day, 7 days a week until UMCDF demilitarization operations have been completed or as otherwise allowed by the Contingency Plan (Permit Attachment 9) or Closure Plan (Permit Attachment 8).

II.I. **RECORDKEEPING AND REPORTING**

II.I.1. In addition to the recordkeeping and reporting requirements specified elsewhere in this permit, the permittee shall comply with the following:

- i. The permittee shall maintain a written and/or electronic operating record at the UMCDF in accordance with 40 CFR §264.73 and in accordance with the record retention and other requirements of Permit Condition I.AA.1. The electronic operating record shall include, but is not limited to, the electronic records and data recorded in the Process Data Acquisition Recording System (PDARS) and Laboratory Information Management System (LIMS).
- ii. The permittee shall, by March 31 of each year, submit to the Department a certification that the permittee has a program in place to reduce the volume and toxicity of hazardous waste generated by the UMCDF to the degree determined by the permittee to be economically practicable; and that the proposed method of treatment, storage, or disposal is the most practicable method currently available to the permittee which minimizes the

present and future threat to human health and the environment. [40 CFR §264.73(b)(9); ORS 466.105(2)]

- iii. The permittee shall submit an annual report covering the activities of each permitted hazardous waste management unit to the Department in accordance with OAR 340-102-0041 and OAR 340-104-0075.
- iv. The permittee shall submit to the Department any additional reports specified in accordance with 40 CFR §264.77.

## II.J. **CLOSURE**

### II.J.1. Amendment of the Closure Plan [40 CFR §264.112(c), §270.32, §270.33(a), §270.42]

- i. The permittee shall amend the Closure Plan, whenever the permittee finds it necessary and submit it to the Department for review and approval in accordance with 40 CFR §270.42.
- ii. The permittee shall amend the Closure Plan as required by 40 CFR §264.112(c) and shall submit it to the Department in a permit modification in accordance with 40 CFR §270.42.
- iii. The permittee shall amend the Closure Plan in accordance with 40 CFR §270.42 and the following compliance schedule to meet the requirements of 40 §CFR 264.112(b). [40 CFR §270.33] The amended Closure Plan must address, but not be limited to, sampling and closure procedures of surrounding soils where air dispersion modeling indicates deposition potentially resulting in levels of hazardous constituents above background and meet containment building closure requirements of 40 CFR 264.1102 for the CHB UPA and MDB. This amendment of the Closure Plan shall be accomplished as a continuation of the review and decision process on Permit Modification Request UMCDF-09-006-CLOS(3) submitted under previous Permit No. ORQ 000 009 431.
  - a. Final Compliance Schedule Date: The permittee shall submit to the Department a revised closure plan meeting the requirements of Permit Condition II.J.1.iii and acceptable to the DEQ no later than October 17, 2011.

- b. If the permittee does not meet the Permit Condition II.J.1.iii final compliance schedule date, the UMCDF shall halt all Brine Reduction Area (including off-site shipment of brines), bulk drain station, depressurization glove box, and rinsate collection system operations until such time as the Department approves a permit modification request that amends the Closure Plan to meet the requirements of Permit Condition II.J.1.iii. [40 CFR §270.33]

II.J.2. [RESERVED]

II.J.3. Each unit and the site shall be closed within the following timeframes: [40 CFR 264.113]

- i. Brine Reduction Area (BRA) and Deactivation Furnace System (DFS) hazardous waste management units (HWMUs):
  - a. The permittee must start closure of the BRA and the DFS within 60 days after the closure plan has been amended as required by Permit Condition II.J.1.iii.
  - b. The permittee must complete the BRA and DFS closure activities in accordance with the approved closure plan.
- ii. All other HWMUs:
  - a. The permittee must start closure of each HWMU within 90 days after receiving the final volume of hazardous wastes at each HWMU and in accordance with the approved closure plan. The permittee must treat or remove from the unit all hazardous wastes within 90 days after receiving the final volume of hazardous waste at each HWMU in accordance with the approved closure plan. The permittee may request a longer period for commencement of closure and removal of hazardous wastes in accordance with 40 CFR 264.113(a) and (c).
  - b. The permittee must complete the closure activities for each HWMU in accordance with the approved closure plan.

- iii. The Umatilla Chemical Agent Disposal Facility site:
  - a. The permittee must start UMCDF site closure within 90 days after receiving the final volume of hazardous wastes at the site and in accordance with the approved closure plan. The permittee must treat or remove from the site all hazardous wastes within 90 days after receiving the final volume of hazardous waste at the site in accordance with the approved closure plan. The permittee may request a longer period for commencement of closure and removal of hazardous wastes in accordance with 40 CFR 264.113(a) and (c).
  - b. The permittee must complete the closure activities for the facility in accordance with the approved closure plan.
  
- II.J.4. The permittee shall decontaminate or remove and dispose of all UMCDF site equipment, structures, and soils unless otherwise specified in 40 CFR 264.197 and as specified in the Closure Plan (Permit Attachment 8). [40 CFR 264.114]
  
- II.J.5. The permittee shall meet the general closure performance standard as specified in 40 CFR §264.111 during closure of all hazardous waste management units and the UMCDF. Compliance with 40 CFR §264.111 shall require closure of each hazardous waste management unit and the UMCDF in accordance with Permit Condition II.J and the Closure Plan (Permit Attachment 8).
  
- II.J.6. The permittee shall provide certification statements upon completion of decontamination to agent-free levels in accordance with the requirements of the Closure Plan, for each hazardous waste management unit or area and shall obtain DEQ approval before demolition of that unit or area may commence. If, within 15 calendar days of the date of submission of the certification the permittee has not received written notice from the Department of its intent to inspect, prior inspection is waived and the permittee may commence demolition of that unit or area.
  
- II.J.7. Minor deviations (e.g., incidental sampling location change due to an immovable impediment, insignificant schedule change due to circumstances beyond UMCDF control) from the permitted closure procedures necessary to accommodate proper closure shall be submitted to the Department in accordance with the Closure Plan (Permit Attachment 8). They shall also be

- described in a narrative form with the closure certification statement. The permittee shall describe the rationale for implementing minor changes as part of this narrative report. Within sixty (60) calendar days after completion of final closure the permittee must submit to the Department the certification statement and narrative report that the Umatilla Chemical Agent Disposal Facility has been closed in accordance with the specifications in the approved closure plan. The certification must be signed by the permittees and by a qualified professional engineer. Documentation supporting the professional engineer's certification may be requested by the Department at any time before it accepts the certification of closure. [40 CFR 264.115; 270.32(b)]
- II.J.8. In the event that any hazardous waste management unit or any portion of the UMCDF cannot be clean closed by removing hazardous waste, hazardous waste constituents, contaminated subsoil, and any contaminated groundwater as specified in the Closure Plan, the permittee shall submit a modified closure and post-closure plan for that to the Department, as a permit modification request in accordance with ORS 466.215 and 40 CFR §270.42 within thirty (30) calendar days of the date that the Department notifies the permittee in writing that the unit shall be closed as a landfill, subject to the requirements of 40 CFR §264.310 in accordance with 40 CFR §264.118(a).
- II.J.9. Following submittal of all successful closure decontamination certifications in accordance with Permit Condition II.J.6, the permittee shall dismantle, remove, and properly manage the disposal of the Munitions Demilitarization Building (MDB) to an approved disposal facility in accordance with Permit Attachment 8. All other structures (e.g., buildings, parking areas, underground structures, fences, etc.) within the boundary of the UMCDF shall also be properly managed and removed to a disposal facility. Any area where structures have been removed shall be restored, to the extent reasonably practicable, to its original condition (ORS 466.105[8]) in accordance with Permit Attachment 8. If the local reuse authority (LRA) identifies a beneficial use for any of the structures, except the MDB, the permittee may request a modification to this permit condition as a Class 2 or 3 modification request in accordance with 40 CFR §270.42(b) and 40 CFR §270.32(b)(2) to accommodate such use.
- II.J.10. At closure of the containment building portion of the MDB and CHB, the permittee shall remove and decontaminate all waste residues, contaminated containment system components,

contaminated subsoils, and structures and equipment contaminated with waste and leachate and manage them as hazardous waste.

II.J.11 The permittee shall notify the Administrator in accordance with 40 CFR 264.112(d) at least 45 calendar days prior to the date it expects to begin closure of the UMCDF.

II.K. **FINANCIAL ASSURANCE FOR FACILITY CLOSURE**

In accordance with 40 CFR §264.140(c), the permittee is exempt from the closure financial assurance specified in 40 CFR §264.143.

II.L. **COST ESTIMATE FOR FACILITY CLOSURE**

In accordance with 40 CFR § 264.140(c) the permittee is exempt from the cost estimate requirements specified in 40 CFR §264.142.

II.M. **LIABILITY REQUIREMENTS**

The co-permittee or its parent company, shall maintain and keep current liability policies of comprehensive general liability (CGL), umbrella liability and following form excess liability, architects and engineers professional liability and contractor's pollution policy and following form excess liability, first catastrophic excess liability, and second catastrophic insurance. A policy compendium shall be sent to the Department by February 12 of each year, which shall include, at a minimum, a description of each applicable policy and the definition of "insured" for each policy. [ORS 466.150(3)]

The co-permittee shall include a statement signed by the chief executive officer or treasurer of Washington Group International, Inc. attesting that the compendium represents liability coverage equal to, or in excess of, the amounts submitted to demonstrate compliance on July 11, 1997.

II.N. **OPERATION OF PERMITTED INSTRUMENTS**

II.N.1. The permittee shall maintain, calibrate, and operate the process monitoring equipment and instruments specified in this permit in accordance with the requirements of this permit. Process

monitoring equipment and instruments specified in this permit shall be fully functional and correctly operating:

- i. While treating hazardous waste and
- ii. Until cessation of monitoring is allowed in accordance with the requirements of this permit, including, but not limited to, the Closure Plan (Permit Attachment 8), as revised in accordance with Permit Condition II.J.1.iii.

II.O. **MUNITIONS DEMILITARIZATION BUILDING AND LABORATORY HVAC SYSTEM OPERATION** [40 CFR 264 Subparts BB, CC, and DD; 270.32(b)]

II.O.1. The MDB and laboratory filter systems shall be online and operational during demilitarization activities at the UMCDF, except as allowed in the Closure Plan (Permit Attachment 8).

- i. At least four MDB HVAC filter units shall be online and operational at all times when any hazardous waste or hazardous waste constituents are present in the MDB.
- ii. At least seven MDB HVAC filter units shall be online and operational before commencing hazardous waste treatment operations within the MDB. If less than seven MDB HVAC filter units are online and operational during hazardous waste treatment operations, the UMCDF shall be allowed to complete treatment of any wastes already fed to the MPF, but all remaining hazardous waste treatment operations shall be immediately halted and shall not be resumed until at least seven MDB HVAC filter units are online and operational.
- iii. The laboratory HVAC filter system shall be online and operational whenever chemical agent is present in the laboratory.
- iv. During power upsets or failure of the HVAC system, the facility shall follow the Attachment 9 (Contingency Plan) and site procedures for maintaining negative pressure.

- II.O.2. The MDB filter system shall be monitored as follows:
- i. Chemical agent monitoring will be performed in accordance with Table 2-2 and Permit Attachment 2 (WAP), Appendix C.
  - ii. Continuous pressure drop monitoring and data recording will be performed across each prefilter and high-efficiency particulate air filter element
  - iii. The ACAMS specified in Table 2-2 are allowed to be off-line for calibration or routine maintenance (e.g., daily challenges) for up to 90 minutes provided the alternative monitor(s), either the on-line filters or the stack ACAMS, is/are monitoring the ventilation exhaust.
- II.O.3. The laboratory filter system shall be monitored as follows:
- i. Chemical agent monitoring will be performed in accordance with Table 2-3 and Permit Attachment 2 (WAP), Appendix C.
  - ii. Continuous pressure drop monitoring and data recording will be performed across each prefilter and high-efficiency particulate air filter element.
  - iii. The ACAMS specified in Table 2-3 is allowed to be offline for calibration or routine maintenance (e.g., daily challenges) for up to 90 minutes provided the alternative monitor(s), either the online filters or the stack ACAMS, is/are monitoring the ventilation exhaust.
- II.O.4. The MDB filter system shall be maintained according to Table 2-2 of this permit.
- II.O.5. The laboratory filter system shall be maintained according to Table 2-3 of this permit.
- II.O.6. During normal operations, the MDB and laboratory carbon banks shall be changed out as follows.
- i. All MDB carbon banks shall be changed out in accordance with Table 2-2 of this permit.  
All laboratory carbon banks shall be changed out in accordance with Table 2-3 of this permit.

- ii. Should the ACAMS monitoring between banks 3 and 4 of the filter record an agent reading at or above 1.0 VSL (0.0001 mg/m<sup>3</sup> for GB, 0.00001 mg/m<sup>3</sup> for VX, 0.003 mg/m<sup>3</sup> for HD) (as confirmed by DAAMS sample analysis), then banks 1 through 3 of that specific filter unit will be replaced with fresh carbon. The filter unit may be operated for an additional three months following the agent detection; in this case, bank 4 carbon must also be replaced.

II.O.7. Prefilters and high-efficiency particulate air filters in the MDB and laboratory filter systems shall be changed when the pressure drop across the filter element exceeds 10-inches water column.

II.O.8. The MDB and laboratory filter systems shall be leak-checked in accordance with site procedures at the following minimum frequencies:

- i. Initial set-up of filter unit leak check:
  - a. Carbon trays shall be leak checked prior to installation.
  - b. Carbon banks shall be leak checked once carbon trays are in place in the unit.
- ii. Leak check frequency after initial set-up of filter unit:
  - a. Whenever an element of the bank is installed, modified, or replaced, the carbon banks and filter elements shall be leak checked before that filter is placed online.

II.O.9. The heating, ventilation, and air conditioning stack that services the carbon filter operation must be monitored in accordance with Tables 2-2 and 2-3. For the campaign and the prior noncampaign chemical agents being monitored the emissions from the carbon filter operation shall not exceed the following concentrations:

	<u>Chemical Agent - Concentration (mg/m<sup>3</sup>)</u>		
	<u>VX</u>	<u>GB</u>	<u>HD</u>
<u>Maximum Hourly Rolling Average Stack Emission</u>	0.00006	0.00006	0.006
<u>Maximum Instantaneous Stack Emission</u>	0.0003	0.0003	0.03

II.O.10. [RESERVED]

II.O.11. The high-efficiency gas absorber filter on an MDB or laboratory secondary containment vestibule will be replaced after detection of confirmed agent leakage to the vestibule at or above 0.2 VSL prior to being returned to service.

II.P. **AIR EMISSION STANDARDS [40 CFR 264 Subparts AA, BB, and CC)**

II.P.1. The permittee shall comply with the requirements of this permit including, but not limited to Module IX and Attachments 2 and 3.

II.P.2. Prior to installing or using any equipment subject to the requirements of 40 CFR §264 Subparts AA, BB, or CC, the permittee shall supply the specific Part B information required pursuant to 40 CFR §270.24, and shall obtain a permit modification in accordance with the provisions of 40 CFR §270.42.

II.P.3. The permittee shall comply with the monitoring, recordkeeping, and reporting requirements in 40 CFR Part 264 Subparts AA, BB, and CC and Permit Module IX and Attachments 2 and 3 to this permit.

II.Q. **ORS 466.065 RENEWAL REQUIREMENTS**

II.Q.1. The permittee shall comply with all applicable federal and Oregon technological requirements for treating hazardous waste in accordance with ORS 466.065(2).

II.Q.2. The permittee shall maintain the property line setback as specified in OAR 340-120-0010(e)(A) by having at least a 250-foot separation between active waste management areas and facilities, and property boundaries [ORS 466.065(3)].

II.Q.3. The permittee, and the copermitttee and its parent company, shall comply with all applicable federal and Oregon requirements for financial and technical capability to properly construct and operate the UMCDF [ORS 466.065(4)].

II.R. **PAS CARBON FILTER UNIT**

The permittee shall maintain and operate the Pollution Abatement System (PAS)/PAS filter systems for each incinerator in accordance with the appropriate drawings of Attachment 12 to this permit . Removal of any component of the PAS filter systems, including but not limited to, the quench tower, venturi scrubber, packed scrubber tower, demister, or carbon filter system shall be a Class 3 permit modification and shall require Commission approval.

II.S. **EMPLOYEE WHISTLEBLOWER PROTECTIONS**

II.S.1. The permittees shall have a program in place to prominently:

- i. Advise workers of their obligation to report good faith concerns regarding the safety of workers, the public, or the environment, and related noncompliance with permit requirements;
- ii. Notify workers of their obligation to convey such concerns to the Department if those concerns are not otherwise sufficiently resolved; and
- iii. Assure all workers that they will not be disadvantaged in any way by communicating such concerns in good faith.

II.S.2 By July 31 of each year, the permittees shall provide a written certification that the program required by Condition II.S.1 of this permit remains in place and shall provide verification that all employee training required by the program has been conducted and maintained current.

**TABLE 2-1 UMCDF SITE PROCESS AREAS AND EQUIPMENT**

UNPACK AREA

Conveyor Systems  
Airlock

ROCKET PROCESS SYSTEM

Computerized Process Control System Interlocks  
Monorail With Lifting Device System  
Indexing Drum  
Rotary Metering Input Assembly  
Isolation Dampeners  
Blast Gates/Doors  
Airhole puncher  
Drain puncher  
Rocket Shear Machine/Burster Size Reduction Machine  
Conveyor System

MINE PROCESS SYSTEM

Computerized Process Control System Interlocks  
Monorail with Lifting Device System  
Conveyor/Airlock Systems  
Blast Gates/Doors  
Isolation Dampeners  
Mine Machine  
Drain Station  
Fuzewell Adaptor Removal Station

**TABLE 2-1 UMCDF SITE PROCESS AREAS AND EQUIPMENT**

PROJECTILE AND MORTAR PROCESSING SYSTEMS

Computerized Process Control System Interlocks  
Monorail with Lifting Device System  
Conveyor Systems  
Blast Gates/Doors  
Isolation Dampeners  
Projectile/Mortar Disassembly Machines  
Multiposition Loader  
Lift Station  
Pick-&-Place Device

**Table 2-2 Monitoring and Carbon Change Out of MDB Ventilation System<sup>2</sup>**

Operating Condition	Required Monitoring and Data Recording	Corrective Action
<b>Filter Mid-Bed (Between Carbon Banks 3 and 4)</b>		
Normal (less than 1.0 VSL for GB, VX, or HD <sup>1</sup> confirmed by DAAMS)	A single ACAMS configured for the campaign agent will be used to monitor the mid-bed between carbon banks 3 and 4. DAAMS will sample between carbon banks 3 and 4 and the vestibule to provide campaign agent confirmation and prior noncampaign agent monitoring. Sampling between beds 3 and 4 is used to determine compliance with the 1.0 VSL carbon change-out criteria. The prior noncampaign agent DAAMS will be sampled continuously and one sample analyzed weekly. <sup>3,5</sup>	N/A
At or above 1.0 VSL for GB, VX, or HD <sup>1</sup> confirmed by DAAMS	The filter unit is removed from service and carbon banks 1, 2, and 3 will be replaced prior to return of the unit to service. ACAMS and DAAMS monitoring is discontinued until the unit is returned to service.  The permittees may operate the filter unit up to 3 months prior to taking it out of service as identified in the corrective action. Monitoring will continue as described in the “normal condition” (specified above) during this period.	In the event campaign or prior noncampaign agent is confirmed at or above 1.0 VSL for GB, VX, or HD between carbon banks 3 and 4, the filter unit may be operated up to 3 months. After 3 months, the filter unit will be removed from service and the carbon in banks 1, 2, 3, and 4 will be replaced prior to the unit returning to service. The carbon in carbon banks 1, 2, 3, or 4 will be replaced with carbon from banks 5 or 6; or carbon banks 1, 2, 3, or 4 will be replaced with fresh carbon. Clean carbon will be placed in carbon banks 5 or 6 if used to replace carbon banks 1, 2, 3, or 4.
Standby Unit	The mid-bed will be continuously monitored for the campaign and noncampaign agent between carbon banks 3 and 4 using a single DAAMS station. <sup>3,5</sup>	N/A
<b>Secondary Containment Vestibules</b>		
Normal (less than 0.2 VSL for GB, VX, or HD <sup>4</sup> confirmed by DAAMS)	The sequential ACAMS used to monitor between carbon banks 3 and 4 also monitors the vestibule. DAAMS configured for the campaign agent will sample and shall provide analyte confirmation at the vestibule. Monitoring for the prior noncampaign agent will be accomplished via DAAMS. The prior noncampaign agent DAAMS will continuously sample and one sample analyzed weekly. <sup>3,5</sup>	N/A
At or above 0.2 VSL for GB, VX, or HD <sup>4</sup> confirmed by DAAMS		In the event campaign or prior noncampaign agent is confirmed at or above 0.2 VSL for GB, VX, or HD in the vestibule, the filter unit will be removed from service, and the HEGA filter will be replaced prior to the unit returning to service.
Standby Unit	The off-line vestibule will be monitored using the sequencing ACAMS configured for the campaign agent. A single DAAMS station will be co-located and will sample and shall provide analyte confirmation. Monitoring for the prior noncampaign agent will be accomplished via DAAMS. The prior noncampaign agent DAAMS will continuously sample and one sample analyzed weekly. <sup>3,5</sup>	N/A

All federal Title 40 CFR citations are citations to the Title 40 CFR adopted as Oregon rule by OAR 340-100-0002 and as altered by OAR Chapter 340, Divisions 100-106, 109, 111, 113, 120, 124, and 142. See the preface introduction for further explanation.

**Table 2-2 Monitoring and Carbon Change Out of MDB Ventilation System<sup>2</sup>**

Operating Condition	Required Monitoring and Data Recording	Corrective Action
<b>Stack</b>		
All operating conditions	The stack will be continuously monitored for the campaign agent using an ACAMS. A co-located DAAMS will provide analyte confirmation for the campaign agent. A single ACAMS will be used to continuously sample for each prior noncampaign agent. A co-located DAAMS will provide analyte confirmation for the prior noncampaign agent. At the filter stack, all ACAMS must be online when any of the filter bank ACAMS are undergoing the daily challenge or maintenance. Conversely, all the operating filter bank ACAMS must be online when any of the filter stack ACAMS are undergoing the daily challenge or maintenance.	If agent levels are greater than 0.2 VSL for GB, VX, or HD, then suspend chemical agent processing and replace all carbon in the on-line units.

Footnotes:

- <sup>1</sup> 1.0 VSL corresponds to an agent reading of at or above 0.0001 mg/m<sup>3</sup> for GB, 0.00001 mg/m<sup>3</sup> for VX, or 0.003 mg/m<sup>3</sup> for HD.
- <sup>2</sup> DAAMS sampling shall be conducted in accordance with permit and procedure requirements. For confirmation DAAMS locations, if unable to confirm or refute by DAAMS due to broken tubes, etc., the co-located ACAMS becomes the compliance instrument of record.
- <sup>3</sup> The 12-hour continuous DAAMS sampling may be reduced to a sample time duration (of less than 12 hours) to avoid exceeding the dynamic range of the gas chromatograph for the DAAMS sample analysis.
- <sup>4</sup> 0.2 VSL corresponds to an agent reading of 0.00002 mg/m<sup>3</sup> for GB, 0.000002 mg/m<sup>3</sup> for VX, 0.0006 mg/m<sup>3</sup> for HD.
- <sup>5</sup> In accordance with UM-PL-017, Laboratory Quality Control Plan.

**Table 2-3 Monitoring and Carbon Changeout of Laboratory Ventilation System**

Operating Condition	Required Monitoring and Data Recording	Corrective Action
On-line filter unit (less than 1 VSL in mid-bed)	<u>Mid-bed</u> : The on-line filter unit will be monitored with a single ACAMS configured for the campaign agent and sequences to the vestibule. Co-located DAAMS configured for campaign agent will provide analyte confirmation. DAAMS stations will be used to continuously monitor for noncampaign agents.	N/A
	<u>Vestibule</u> : The single sequential ACAMS used to monitor between carbon banks 1 and 2 also monitors the vestibule. Co-located DAAMS will provide campaign agent confirmation.	
Agent detected above 1 VSL between carbon banks 1 and 2	<u>Mid-bed</u> : The filter unit will be taken off-line.	The unit will be taken off-line and the carbon in both banks will be replaced.
	<u>Vestibule</u> : The vestibule will be monitored using a single ACAMS configured for the campaign agent. Co-located DAAMS will provide campaign agent confirmation.	
Stand-by carbon filter unit (mid-bed below 1 VSL)	<u>Mid-bed</u> : The mid-beds will be continuously monitored using a DAAMS station configured for the campaign agent*.	N/A
	<u>Vestibule</u> : The vestibule will be continuously monitored using a single ACAMS configured for the campaign agent. Co-located DAAMS will provide campaign agent confirmation.	
Stack - all operating conditions	The stack will be continuously monitored for the campaign agent using a single ACAMS. Co-located DAAMS will provide campaign agent confirmation. DAAMS will be used to continuously monitor for noncampaign agents. The noncampaign agent DAAMS station will only be analyzed if agent is confirmed in the mid-bed of the on-line filter unit. For noncampaign GB and HD DAAMS, any lab stack confirmation $\geq 0.2$ VSL (0.00002 mg/m <sup>3</sup> for GB, 0.0006 mg/m <sup>3</sup> for HD) will be taken as an indication of an instantaneous exceedance of 0.0003 mg/m <sup>3</sup> for GB and 0.03 mg/m <sup>3</sup> for HD. For noncampaign VX DAAMS, any lab stack confirmation $\geq 1.0$ VSL (0.00001 mg/m <sup>3</sup> VX) will be taken as an indication of an instantaneous exceedance of 0.0003 mg/m <sup>3</sup> for VX.	If agent levels are greater than 0.2 ASC for GB/VX and 0.2 VSL for HD, then remove on-line filter units from service and replace carbon. Standby filter unit will be put on-line. If standby filter is not available, laboratory operations for chemical agents will cease.

GB: VSL = 0.0001 mg/m<sup>3</sup> (17 parts per trillion by volume); ASC = 0.0003 mg/m<sup>3</sup> (52 parts per trillion by volume)  
 VX: VSL = 0.00001 mg/m<sup>3</sup> (0.9 parts per trillion by volume); ASC = 0.0003 mg/m<sup>3</sup> (27 parts per trillion by volume)  
 HD: VSL = 0.003 mg/m<sup>3</sup> (462 parts per trillion by volume)  
 \*The DAAMS tubes will be analyzed if ACAMS readings in the vestibule or lab stack are 1.0 VSL or greater.

## MODULE III - CONTAINER STORAGE

Ton Containers shall be stored at the UMCDF under the provisions of 40 CFR 264 Subpart I (Containers) and 40 CFR 264 Subpart DD (Containment Buildings). The HD-filled ton containers are containers per the definition of container in 40 CFR 260.10. These items will be stored in the Container Handling Building (CHB) and Munitions Demilitarization Building (MDB) and shall be managed pursuant to the requirements of 40 CFR 264.175 and 40 CFR 264.1101. Wastes stored in J-Block and secondary wastes stored in the MDB shall be stored in accordance with 40 CFR 264.175.

### III.A. **BUILDING DESIGN AND OPERATION (40 CFR §260.10, §264.175; 264.1101, §268.50)**

- III.A.1. The permittee shall design, construct, and maintain the CHB, MDB, secondary containment systems and coated concrete floors, walls, and sump systems as specified in all applicable drawings and specifications in Attachment 12 to this permit, Table 4-4, and shall comply with the requirements of this permit to meet the 40 CFR §264.1101 liquid barrier requirements.
- III.A.2. The ton containers containing chemical agents are containers (40 CFR 260.10) with free liquids. The ton container bodies provide the primary containment barrier and shall be maintained to meet the 40 CFR 264.1101 containment building liquid barrier requirements. These items will be stored in the CHB and MDB and will be managed pursuant to the requirements of Permit Conditions III.C and III.D and 40 CFR 264.175 and 40 CFR 264.1101.
- III.A.3. The permittee shall manage containers and waste storage areas in accordance with the requirements of Permit Attachment 6.
- III.A.4. The permittee shall operate the CHB in accordance with the following requirements and as specified elsewhere in this permit.
- i. The CHB first floor permitted container storage area shall consist of the CHB east and west storage areas as designated in Figure 3-1. EONCs shall not be stored within the unloading

areas, the conveyor corridor, or the lift areas of the CHB. The second floor permitted storage area consists of the CHB UPA as shown in Figure 3-2.

- ii. The CHB shall only be used to store EONCs on the three conveyors located in the north end of the CHB UPA prior to demilitarization operations in the MDB.
- iii. The CHB and the EONCs stored within the CHB shall be monitored for the presence of agent as follows:
  - a. The CHB shall be continuously monitored for the presence of agent by ACAMS and DAAMS per the requirements of Permit Attachment 2 (Waste Analysis Plan), Appendix C and
  - b. The interior of the EONCs shall be monitored for the presence of agent by chemical agent monitoring through a port in the EONC and in accordance with Attachment 3 (Inspection Schedule).
- iv. EONC contents shall be limited to a maximum of two HD ton containers . The EONCs must be received at one of the two UMCDF CHB unloading areas (Figure 3-1).
  - a. The EONCs provide secondary containment for the HD ton containers contained within the EONCs and shall be maintained in accordance with the requirements of this permit, including, but not limited to, Permit Attachment 13.
  - b. The coated flooring and sumps within the CHB UPA that provide secondary containment shall be maintained in accordance with the requirements of this permit and 40 CFR §264.175.
  - c. The sumps identified in Table 4-3 shall be maintained in accordance with the design specifications of Table 4-4 and other applicable requirements of this permit.

- v. The EONCs shall be monitored, managed, and transferred from the CHB to the CHB UPA. EONCs containing leaking ton containers shall be managed on a first-priority basis in accordance with Permit Condition III.D.
- vi. While storing HD ton containers within the CHB UPA, the integrity of the primary (ton container bodies) and secondary (EONC) containment (barriers) must be maintained to meet the containment building liquid barrier requirements of 40 CFR 264.1101 and the requirements of this permit. Leaking containers must be managed in accordance with Permit Condition III.C.
- vii. EONCs shall only be opened in the CHB UPA after interior monitoring of the EONCs for leaking ton containers (presence of agent) in accordance with Permit Condition III.A.4.iii.b has been completed and as allowed in accordance with Permit Condition III.D.1.i.

III.A.5. MDB Permitted Storage

The permittee shall operate the MDB in accordance with the following requirements and as otherwise required by this permit.

- i. Wastes stored in the MDB may contain free liquids and will be stored in accordance with 40 CFR 264.175.
- ii. Only the areas identified in Table 3-2 shall be used for MDB permitted storage of HD ton containers in the event of process upset, and only the areas identified in Table 3-3 shall be used for the permitted storage of secondary waste in the MDB.
- iii. Leaking ton containers shall not be stored in the MDB permitted storage areas and shall be processed in accordance with Permit Condition III.C.2.

III.A.6. J-Block Permitted Storage

The J-Block permitted secondary waste container storage area consists of 58 igloos (Igloos J-1723 through J-1774 and J-1777 through J-1782).

- i. The permittee shall maintain the J-Block permitted storage units as specified in all applicable drawings and specifications in Attachment 12 and Permit Condition III.A.6.viii.
- ii. Wastes stored in J-Block may contain free liquids and will be stored in accordance with 40 CFR 264.175.
- iii. Prior to transfer to J-Block from the MDB, the exterior of all containers holding agent-contaminated or potentially agent-contaminated waste must be monitored for the presence of agent. The containers must be tented for at least four hours, after which the air space within the tented area must be monitored by ACAMS for the presence of agent for at least two complete ACAMS cycles in accordance with Permit Attachment 2 (Waste Analysis Plan). Only waste with container exterior levels below 0.2 VSL shall be transferred to and stored in J-Block.
- iv. The J-Block igloos in which secondary wastes are stored are subject to the 40 CFR §264 Subpart I monitoring, inspection, and labeling requirements.
- v. The permittee shall not store more than 21,780 gallons of hazardous waste in each J-Block igloo.
- vi. Nonprocess wastes stored in J-Block shall be stored in accordance with 40 CFR §268.50(a)(2)(i) and Permit Condition III.A.6.vii.
- vii. The permittees shall segregate wastes stored in permitted J-Block igloos in accordance with the following requirements.

- a. Nonprocess waste, as defined in Attachment 2, shall not be stored in the same J-Block igloos as process waste.
  - b. Single-agent-contaminated waste shall be segregated (stored in separate igloos) by chemical agent type.
  - c. Multiagent-contaminated wastes shall be stored together and shall be segregated from single-agent-contaminated wastes.
  - d. Agent-contaminated process wastes shall be segregated by the degree of contamination in accordance with their designation as either "higher-level wastes" or "lower-level wastes" as defined in Module I.
  - e. Residue from thermal processing, if stored, shall be segregated from other process wastes, and shall be further segregated, as appropriate, by source, type, or destination.
- viii. Prior to the initial placement of "higher-level waste" in a J-Block igloo, the following modifications will be made to each igloo to prevent any potential agent migration.
- a. Drain plugs will be installed. The plugs have been designed to accommodate air-sampling lines, so sampling can be accomplished without removing the drain plugs.
  - b. The main entrance door will be sealed with a neoprene gasket.
  - c. The vent closure panel on the entrance door will be sealed with a neoprene gasket.
  - d. The rear stack vent closure panel will be sealed with a neoprene gasket.
  - e. The entrance door and rear stack vents will be closed while storing higher-level waste.
  - f. A sampling port will be installed in the rear stack to allow air monitoring within the rear stack immediately downstream of the rear vent closure panel.

- ix. The permittees shall conduct chemical agent monitoring using Real-Time Analytical Platforms (RTAP) for J-Block igloos storing chemical agent-contaminated hazardous waste as follows.
  - a. Igloos containing "higher-level waste" shall be monitored on a weekly basis and/or prior to any entry.
  - b. Individual igloos containing "higher-level waste" shall be monitored for those chemical agents contained in the waste stored therein.
  - c. The interior space air will be monitored down to 0.25 of the Vapor Screening Level (VSL) established for each agent as defined in Module I, Table 1-1.
  
- x. If air monitoring indicates the presence of agent in the igloo at or above 0.25 of the VSL, the following actions will be taken.
  - a. Prior to installing the filter (see Item b below), the air within the rear stack immediately downstream of the rear stack vent will be monitored as indicated in Permit Condition III.A.6.ix to determine if there has been a release of agent to the environment. Detection of agent within the stack and downstream of the closed rear stack vent at or above 0.25 of the VSL established for each agent would constitute migration of agent of a reportable quantity (OAR 340-142-0050), and the appropriate notifications would be made in accordance with Permit Condition I.U.
  - b. Prior to opening the igloo, a powered 1000-cfm or M6 filter unit will be placed on the igloo rear stack.
  - c. The rear stack vent will be opened and the filter turned on.
  - d. The entrance door vent will be opened.

- e. The filter unit will be operated to attempt to lower the agent readings within the subject J-Block igloos before entry, and the interior air will continue to be monitored during the entry. Based on the RTAP agent readings, the appropriate level of personal protective equipment will be donned and measures taken to preclude a release to the environment before the igloo will be opened for entry. Visual inspection and interior air sampling will be conducted to locate the source of the leak.
- f. Any leaking container(s) will be overpacked.
- g. After the igloo door is closed and additional interior space air monitoring confirms agent is not present at or above 0.25 VSL, both igloo vents will be closed again and the filter may be removed.
- xi. An inventory record of hazardous waste stored in J-Block will be maintained. The inventory will be updated when new waste is received or existing waste is removed. The inventory must include current information about the quantity and location of all hazardous wastes and containers located in J-Block. Inventory records and inspection forms will be maintained as part of the UMCDF operating record. [40 CFR §§264.17, 264.73, 264.175, 264.177, 264 Subpart CC, §270.32(b)]

III.B. **PERMITTED AND PROHIBITED WASTE IN THE PERMITTED STORAGE AREAS**

- III.B.1. The permittee shall store only the ton containers containing the hazardous wastes listed in Table 3-1 and secondary waste identified in Attachment 2 of this permit in the permitted storage areas within the CHB and MDB in accordance with the terms of this permit. Ton containers will be stored in the permitted storage areas of the CHB only when contained within an EONC. Secondary waste shall be stored in containers in the permitted storage areas of the MDB.
- III.B.2. The CHB first floor permitted container storage area shall consist of the east and west storage areas within the CHB as designated in Figure 3-1 of this permit. The permittee shall not store EONCs within the unloading areas, the conveyor corridor, or the lift areas of the CHB as designated in Figure

3-1 of this permit. The second floor permitted storage area consists of the CHB UPA as shown in Figure 3-2.

- III.B.3. The permittee shall not store more than 24 EONCs in each of the east or west storage areas or more than a total of 48 EONCs in the first floor permitted storage area of the CHB at any one time. The permittee shall not store more than three EONCs in the second floor CHB UPA at any one time.
- III.B.4. The permittee shall not exceed the maximum allowable number of ton containers per individual EONC as specified in Table 3-2 and shall not exceed the maximum allowable number of ton containers or volume of waste in the permitted storage area of the CHB and MDB as specified in Tables 3-2 and Table 3-3.
- III.B.5. The MDB permitted container storage area consists of the areas listed in the Table 3-2 located on the first and second floors of the MDB. The permittee shall not store ton containers at locations other than those identified or above the maximum quantity identified in Table 3-2.
- III.B.6. The MDB permitted secondary waste storage area consists of the areas listed in Table 3-3. The permittee shall not store secondary waste in permitted storage at locations other than those identified or above the maximum quantity identified in Table 3-3.
- III.B.7. The permittee shall store only the hazardous wastes listed in Attachment 2 of this permit or waste codes listed in Attachment 1 of this permit in the permitted J-Block igloos in accordance with the terms of this permit. Ton containers that have not been treated in the Metal Parts Furnace or Deactivation Furnace System or neat agent shall not be stored in the permitted J-Block igloos.
- III.B.8. Nonprocess waste, as defined in Attachment 2, shall be stored in accordance with 40 CFR 268.50(a)(2).

III.C. **MANAGEMENT OF EONCS AND CONTAINERS (40 CFR §264.173)**

- III.C.1. All ton containers must be transported to the UMCDF within an EONC. The permittee shall keep each received ton container within an EONC until it is transferred to the CHB UPA/TMA. The

permittee shall design, construct, and maintain all EONCs used for ton container transportation and storage in accordance with Permit Attachment 13.

- III.C.2. The permittee shall deliver (EONCs to the CHB only during daylight hours. Leaking ton containers will be processed before all other ton containers in accordance with Permit Condition III.D unless the permittee receives verbal or written approval from the Department Administrator. The permittee shall keep all EONCs closed during storage and transport. The permittee shall not handle or store EONCs in a manner which may rupture the EONC or containers or cause it to leak.
- III.C.3. EONCs containing leaking ton containers shall not be returned to the UMCD (i.e., K-Block) for storage or accumulation without Department approval. No agent F998 or F999 agent-contaminated material shall be sent from the UMCD to the UMCD K-Block to be stored or accumulated unless expressly approved in writing by the Department in advance. The permittee shall comply with any written requirements in the Department approval.
- III.C.4. The permittee shall not place any ton container in an EONC that previously held HD ton containers in which a leak was detected unless the EONC has been completely decontaminated and recertified.
- III.C.5. The permittee shall ensure that each EONC and/or container is clearly marked to identify its contents and the date each period of accumulation began as specified in 40 CFR §268.50(a)(2)(i). Items stored within the MDB permitted areas will be tracked in accordance with a DEQ-approved tracking system.
- III.C.6. Containers containing hazardous waste shall be closed at all times except when hazardous wastes are being added or removed or when managed in accordance with Permit Condition V.C.10. [40 CFR §264.173]
- III.C.7. Secondary waste in permitted storage shall be stored in containers.
- III.C.8. The permittee shall store hazardous waste in containers in good condition (e.g., no severe rusting or apparent structural defects). Upon detection of a leaking container, the permittee must transfer the hazardous waste from the leaking container to a container that is in good condition or manage the waste in some other way that complies with the requirements of 40 CFR §264.171. Containers that

have been punched at the Bulk Drain Station shall be managed in accordance with the requirements of 40 264 Subpart DD.

III.D. **CONDITION OF EONCS AND CONTAINERS [40 CFR §260.10, §264.171]**

III.D.1. If an EONC holding hazardous waste is not in good condition (e.g., severe rusting, apparent structural defects) or if the EONC contains a leaking ton container, the permittee shall handle the EONC as follows:

- i. HD Ton Containers (EONC Interior  $\geq 0.2$  VSL and  $< 40$  VSL): For EONCs with chemical agent concentrations less than 40 times the VSL and greater than 0.2 times the VSL as defined in Module I, Table 1-1, and containing HD ton containers, the permittee shall as soon as possible, but no later than within 24 hours; or, if the permittee can demonstrate to the Department that is not possible, at the earliest practicable time, unload the ton container from the EONC in the CHB UPA and transfer the HD ton container to the depressurization glove box in accordance with the requirements of Permit Condition V.B.
- ii. HD Ton Containers (EONC Interior  $\geq 40$  VSL): For EONCs with chemical agent concentrations greater than or equal to 40 times the VSL and containing HD ton containers, the permittees shall receive Department approval prior to processing.

III.D.2. If an EONC is not in good condition as specified in Permit Condition III.D.1, the EONC shall not be used to transport chemical agent-containing ton containers. Defective EONCs which have been decontaminated, repaired and recertified according to the manufacturer's specifications may be reused.

III.D.3. Containers that are not in good condition shall be overpacked or the waste transferred to a container in good condition.

III.E. **COMPATIBILITY OF WASTE WITH EONCS AND CONTAINERS**

The permittee shall assure that the EONCs, ton containers, secondary waste containers, and primary sumps, etc. used to contain hazardous waste are made of or lined with materials which will not react with, and are otherwise compatible with, the hazardous waste to be stored, so that the ability of the container to contain the waste is not impaired.

III.F. **CONTAINMENT SYSTEM [40 CFR §264.175; §264.1101]**

III.F.1. The CHB UPA containment system consists of the bermed floor area, all CHB sumps listed in Table 4-3 of this permit and any associated trenches. The containment system for the CHB first floor permitted storage area is the EONCs.

III.F.2. The MDB containment system consists of the following:

- i. Primary containment for all of the permitted storage areas within the MDB, except the areas specified below, consists of the coated concrete flooring and sumps systems.
  - a. **MDB UPA and TMA “C” Airlock** – Items within the MDB UPA and TMA “C” airlock shall be stored within containers (ton containers and/or, EONCs). The containers provide the primary containment.
  - b. **Liquid Secondary Waste** – Primary containment for liquid secondary waste in permitted storage in the MDB shall be the container.
- ii. Secondary containment for the permitted storage areas within the MDB, except the for the MDB UPA and TMA “C” Airlock as specified below, is provided by the coated concrete vaults in which the primary sump liners are placed. The vaults shall be provided with leak-detection instrumentation and shall be sloped to promote drainage.
  - a. **MDB UPA and TMA “C” Airlock** - Secondary containment shall be provided by the coated flooring and sump systems in these areas. The sumps shall have dedicated pumps

and level indication in order to detect and remove any accumulated liquids within 24 hours of detection or in accordance with Permit Condition IV.I.3. [40 CFR §264.196(b)]

**b. Liquid Secondary Waste:**

1. Secondary containment for liquid secondary waste in permitted storage in the MDB shall be the coated concrete flooring.
2. Up to 85 gallons of liquid secondary waste may be stored in the TMA "C" permitted storage area on the coated concrete floor. Secondary containment for liquid secondary waste in excess of 85 gallons in the TMA "C" permitted storage area shall be provided through the use of spill pallets. In accordance with 40 CFR 264.175(b)(3) the minimum secondary containment capacity, in this case, a spill pallet, shall equal the volume of either the largest single container stored on the pallet, or 10% of the total container volume on the pallet, whichever is greater.

III.F.3. Secondary containment in J-Block will be provided through the use of spill pallets. In accordance with 40 CFR 264.175(b)(3) the minimum secondary containment capacity, in this case, a spill pallet, must equal the volume of either the largest single container stored on the pallet, or 10% of the total container volume on the pallet, whichever is greater. Any liquid found in J-Block spill pallets or elsewhere within the igloo must be transferred into containers for characterization and storage.

III.F.4. The permittee shall remove all materials or liquids in the CHB UPA and MDB containment systems daily or in as timely a manner as is necessary to prevent overflow of the collection system and decontaminate affected containers and ton containers, as applicable. The permittee shall send the liquids collected from the CHB UPA and MDB containment systems to a spent decontamination holding tank for treatment in the LICs, except as allowed by the Closure Plan (Permit Attachment 8). A dedicated sump pump system may not leave a residual liquid depth of more than three inches. All sumps evacuated using a vacuum truck shall not leave pumpable residual liquids in the sump. (40 CFR 264.175[b][5])

- III.F.5. Upon detection of a condition that has led to the release of a hazardous waste (e.g., upon detection of leakage from primary containment/barrier), the permittee shall perform all of the following in accordance with 40 CFR §264.1101(c):
- i. Enter a record of the discovery in the facility operating record.
  - ii. Immediately remove the portion of the containment building affected by the condition from service.
  - iii. Determine what steps must be taken to repair the containment building, remove any leakage from the secondary collection system, and establish a schedule for accomplishing the clean up and repairs.
  - iv. Within 7 days after the discovery of the condition notify the DEQ of the condition, and within 14 working days provide a written notice to the DEQ with a description of the steps taken to repair the containment building and the schedule for accomplishing the work.
  - v. Upon completing all repairs and clean up, the permittee shall notify the DEQ in writing and provide a verification, signed by a qualified, registered professional engineer, that the repairs and clean up have been completed according to the written plan submitted in accordance with Permit Condition III.F.5.iv.
- III.F.6. Inspect and record in the facility operating record, at least once every seven calendar days, data gathered from monitoring and leak detection equipment as well as the containment building and the area immediately surrounding the containment building to detect signs of releases of hazardous waste. [40 CFR 264.1101(c)(4)]

III.G. **INSPECTION SCHEDULES AND PROCEDURES**

III.G.1. All containers and permitted storage areas containing hazardous waste will be inspected in accordance with Attachment 3.

III.G.2. Secondary waste containers in permitted storage, excluding waste containers in the TMA "C" area, will be stored in a manner that enables the container label to be read from an observation corridor or through the use of the closed-circuit television system.

III.H. **CLOSURE**

At closure of the permitted storage areas, the permittee shall remove all hazardous waste and hazardous waste constituents from the areas, including the applicable secondary containment system, in accordance with the procedures in the Closure Plan as revised in accordance with Permit Condition II.J.1.

III.I. **SPECIAL REQUIREMENTS FOR REACTIVE OR IGNITABLE WASTES AND INCOMPATIBLE WASTES [40 CFR §264.176, 264.177]**

The permittee shall properly manage incompatible wastes and take precautions to prevent accidental reaction or ignition of wastes in accordance with Permit Condition III.A, and as otherwise required by 40 CFR §264.176 and 264.177.

III.J. **SUBPART CC MONITORING REQUIREMENTS [40 CFR §264.1080-1090]**

The permittee shall comply with the requirements of Permit Condition II.P and Module IX.

**TABLE 3-1 HAZARDOUS WASTES TO BE STORED IN THE PERMITTED AREA OF THE CHB AND THE MDB**

Description of Hazardous Waste	Oregon, EPA Hazardous Waste I.D. Numbers
Mustard agent - HD	D001 <sup>a</sup> , D002-D011, D022, D028, D043, P998
Secondary waste described in Attachment 2 of this permit <sup>b</sup>	Hazardous Waste I.D. numbers listed in Attachment 1 to this permit

<sup>a</sup> Hydrogen gas in pressurized HD ton containers

<sup>b</sup> Permitted storage for secondary waste only in the MDB

1 **TABLE 3-2 MAXIMUM ALLOWABLE TON CONTAINER PER EONC AND MAXIMUM ALLOWABLE TON CONTAINERS IN THE**  
 2 **CHB AND MDB**  
 3

Munition	CHB				MDB						
	Max TCs/EONC		Max TCs		Maximum Allowable TCs						
	1 <sup>st</sup> Floor Storage Area	UPA	1 <sup>st</sup> Floor Storage Area	UPA	UPA	ECV	ECR	UBSA/Munitions Corridor	MPB	LBSA	LMC
HD Ton Containers	2	2	96	11 <sup>a</sup>	16	2	N/A	13	4	10	1

4 Footnotes:

5 <sup>a</sup> The maximum number of ton containers in the CHB UPA is six, with an additional five ton containers permitted inside the depressurization glove box, for a total of 11

6 Abbreviations:

7 CHB Container Handling Building  
 8 ECR Explosive Containment Room  
 9 ECV Explosive Containment Vestibule  
 LBSA Lower Buffer Storage Area  
 LMC Lower Munitions Corridor  
 MDB Munitions Demilitarization Building  
 MPB Munitions Processing Bay  
 TC Ton Container  
 UBSA Upper Buffer Storage Area

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13

**TABLE 3-3 MAXIMUM ALLOWABLE SECONDARY WASTES IN THE MDB**

Waste	MDB Area <sup>a, b</sup>		
	Maximum Allowable Secondary Waste Storage		
	TMA "A/B" Decon Area <sup>c</sup>	TMA "A" Area	TMA "C" Area <sup>d</sup>
Secondary Waste	440 gal	660 gal	1,980 gal

Footnotes:

- <sup>a</sup> Exact locations for permitted secondary waste storage is clearly marked to differentiate permitted storage from 90-day storage.
- <sup>b</sup> RESERVED
- <sup>c</sup> Permitted storage limited to containers being staged for loading of their contents into waste incineration containers.
- <sup>d</sup> Permitted storage limited to containers being transferred from J-Block back to the UMCDF.

Abbreviations:

- MDB Munitions Demilitarization Building
- TMA Toxic Maintenance Area

**FIGURE 3-1 PERMITTED STORAGE AREAS IN THE CHB**

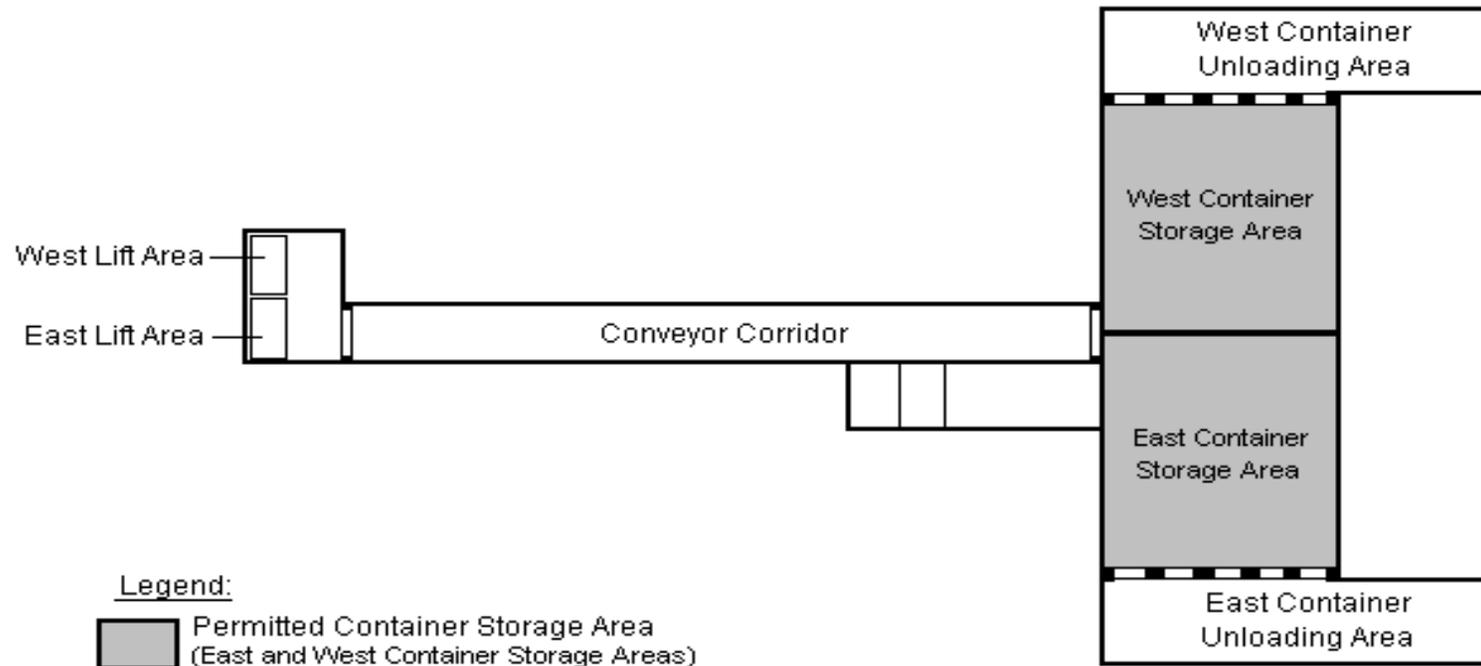
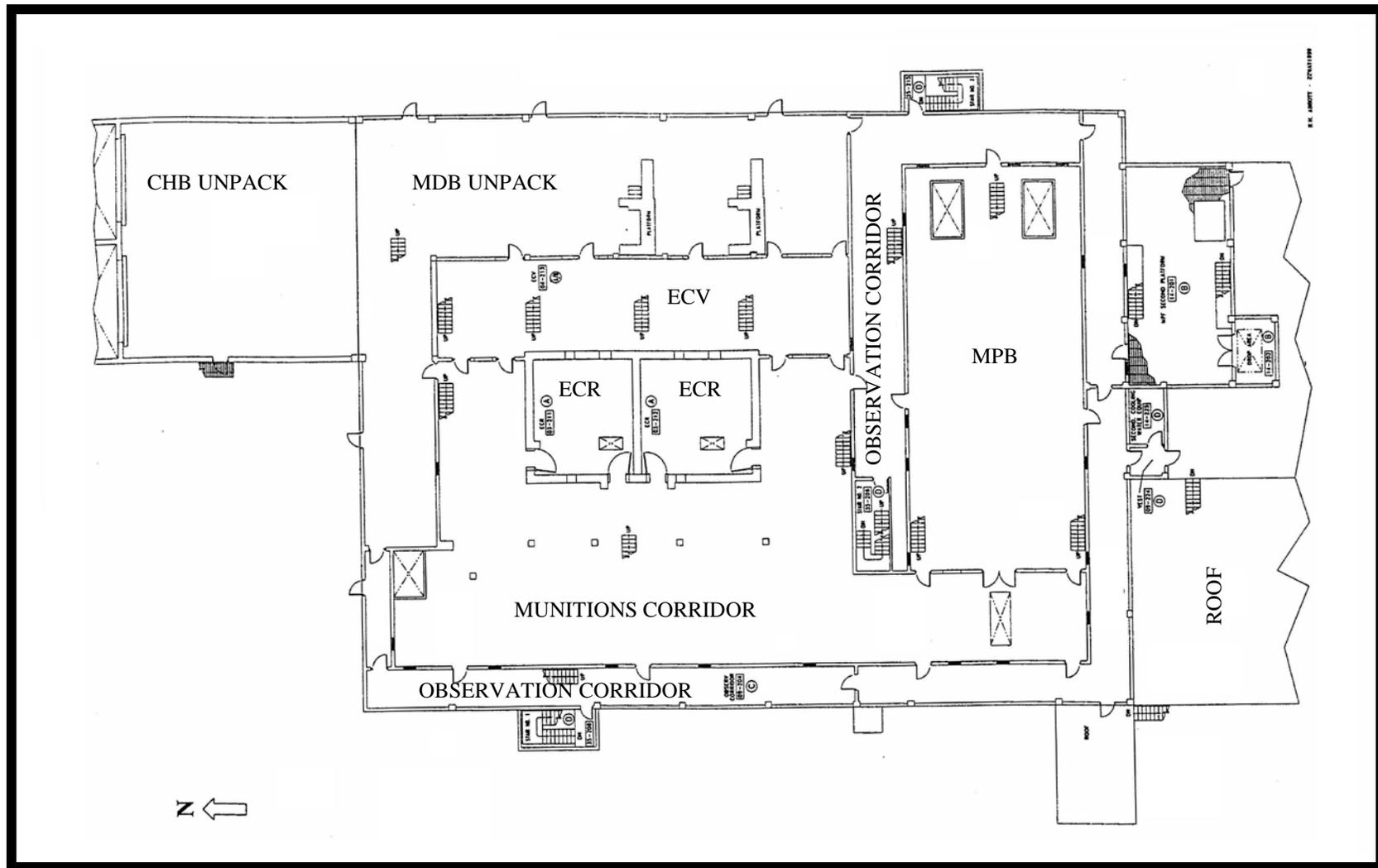


FIGURE 3-2 CHB UNPACK PERMITTED STORAGE AREA & RELATION OF CHB UNPACK TO MDB



## MODULE IV - TANK SYSTEMS

### IV.A. PERMITTED AND PROHIBITED WASTE STORAGE

IV.A.1. The permittee shall store only the specified hazardous wastes in the specified tank systems identified in Tables 4-1 and 4-2 of this permit.

### IV.B. TANK SYSTEM DESIGN, CONSTRUCTION, AND MAINTENANCE [40 CFR §§264.192, 264.193]

IV.B.1. The permittee shall design, construct, and maintain the agent collection tank system (ACS) consisting of agent holding tanks (ACS-TANK-101, ACS-TANK-102, and ACS-TANK-108), the spent decontamination holding tank system (SDS) consisting of SDS holding tanks (SDS-TANK-101 and SDS-TANK-102), the spill tank system (ACS-TANK-401A and ACS-TANK-401B), the HD rinsate feed collection system (RCS) (RCS-TANK-101A and RCS-TANK-101B) and ancillary equipment, and the brine surge tank system (BRA-TANK-101, BRA-TANK-102, BRA-TANK-201, and BRA-TANK-202) as specified in all applicable drawings, specifications, and the RCRA Tank Assessment in Permit Attachment 12.

IV.B.2. The permittee shall design, construct, and maintain the primary containment and secondary containment sump systems identified in Tables 4-2, 4-3, 5-2, and 5-3 of this permit as specified in:

- i. All applicable drawings, specifications, and the RCRA Tank Assessment in Permit Attachment 12; and
- ii. Table 4-4 of this permit.

IV.B.3. The permittee shall provide the external corrosion protection for the tank systems identified in Tables 4-1, 4-2, and 4-3 of this permit using the applicable methods in Permit Attachment 12.

IV.B.4. After the initial installation and certifications per Permit Conditions I.R, IV.C.4, IV.C.5, IV.C.6, and IV.C.7 the permittee shall not, except for alterations that are considered minor in accordance with 40 CFR §270.42, alter any hazardous waste tank system until such time the Department has:

- i. Received certification from a qualified professional engineer, that attests to the structural integrity and the suitability of the altered tank system for handling the specified hazardous waste in accordance with 40 CFR §264.192.
- ii. Approved the design and specifications of the altered tank system; and
- iii. Received and approved a permit modification in accordance with 40 CFR §270.42.

IV.C. **TANK SYSTEM INSTALLATION [40 CFR §264.192]**

- IV.C.1. The permittee shall fabricate, install, and maintain the agent collection tank system consisting of the agent holding tanks (ACS-TANK-101, ACS-TANK-102, and ACS-TANK-108), the spent decontamination holding tank system consisting of the SDS holding tanks (SDS-TANK-101 and SDS-TANK-102), the spill tank system (ACS-TANK-401A and ACS-TANK-401B), and the HD rinsate feed collection system (RCS-TANK-101A and RCS-TANK-101B) in accordance with the Permit Attachment 12 specifications, RCRA Tank Assessment, and applicable drawings.
- IV.C.2. The permittee shall fabricate, install, and maintain the brine surge tank system (BRA-TANK-101, BRA-TANK-102, BRA-TANK-201, BRA-TANK-202) in accordance with the Permit Attachment 12 specifications, RCRA Tank Assessment, and applicable drawings.
- IV.C.3. The permittee shall fabricate, install, and maintain the primary containment sump systems listed in Table 4-2 of this permit in accordance with the Permit Attachment 12 specifications, RCRA Tank Assessment, and applicable drawings.
- IV.C.4. In accordance with Permit Condition I.R, the permittee shall obtain and submit to the Department a certification of construction from a qualified professional engineer. The certification shall be submitted prior to use of each tank system for treatment or storage purposes. The certification of construction from the qualified professional engineer will also attest that proper installation procedures were used for each tank system listed in Tables 4-1 and 4-2 of this permit. The independent tank system installation inspection and subsequent written certification, shall consider, but not be limited to, the following tank system installation documentation: [40 CFR §264.192(b)]

- i. Field installation report with date of installation;
- ii. Approved welding procedures;
- iii. Welder qualifications and certifications;
- iv. Hydro-test reports in accordance with the American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section VIII, Division 1;
- v. Tester credentials;
- vi. Field inspector credentials;
- vii. Field inspection reports;
- viii. Field waiver reports; and
- ix. Noncompliance reports and corrective action (including field waiver reports) and repair reports.

IV.C.5. The permittee shall obtain and submit to the Department prior to use of each tank system for treatment or storage purposes, a written certification from a qualified professional engineer attesting to the structural integrity and suitability of each tank system for handling the specified hazardous waste. The independent tank system structural integrity/suitability certification documentation submitted to the Department for the agent collection tank system consisting of agent holding tanks (ACS-TANK-101, ACS-TANK-102, and ACS-TANK-108), the spent decontamination holding tank system consisting of SDS holding tanks (SDS-TANK-101 and SDS-TANK-102), and spill tank system (ACS-TANK-401A and ACS-TANK-401B), and the HD rinsate feed collection system (RCS-TANK-101A and RCS-TANK-101B) shall include, but not be limited to, the following manufacturing design, fabrication, and testing documentation. [40 CFR §264.192(a)]

- i. Shop drawings with dimensional and capacity data;
- ii. Vessel wall thickness and nozzle reinforcement calculations;
- iii. Vessel structural support calculations;

- iv. Approved welding procedures;
- v. Welder qualifications and certifications;
- vi. Material reports and mill certifications;
- vii. Results of X-ray testing;
- viii. Tester credentials;
- ix. Noncompliance reports and corrective actions;
- x. Hydrotest reports;
- xi. ASME code data reports;
- xii. Shop inspection reports; and
- xiii. Shop inspector credentials.

IV.C.6. The permittee shall obtain and submit to the Department, prior to the use of each tank system for treatment or storage purposes, a written certification from a qualified professional engineer attesting to the structural integrity and suitability of each tank system for handling the specified hazardous waste. The independent tank system structural integrity/suitability certification documentation submitted to the Department for the brine surge tanks (BRA-TANK-101, BRA-TANK-102, BRA-TANK-201, and BRA-TANK-202) shall include, but not be limited to, the following manufacturing design, fabrication, and testing documentation:

- i. Shop drawings with dimensional and capacity data;
- ii. Design calculations, including seismic and wind loading;
- iii. Approved welding procedures;
- iv. Welder qualifications and certifications;
- v. Material reports and mill certifications;

- vi. Results of nondestructive examinations (NDE);
- vii. Qualifications of NDE inspectors;
- viii. Noncompliance reports and corrective actions;
- ix. Leak test reports;
- x. Shop inspection reports; and
- xi. Shop inspector credentials.

IV.C.7. The permittee shall obtain and submit to the Department, prior to the use of each tank system for treatment or storage purposes, a written certification from a qualified professional engineer attesting to the structural integrity and suitability of the primary containment system sumps listed in Table 4-2 for handling the specified hazardous waste. The independent tank system structural integrity/suitability certification documentation submitted to the Department for the primary containment system sumps listed in Table 4-2 of this permit shall include, but not be limited to, the following manufacturing design, fabrication, and testing documentation:

- i. Shop drawings with dimensional and capacity data;
- ii. Approved welding procedures;
- iii. Material reports and mill certifications;
- iv. Shop inspection reports; and
- v. Shop inspector credentials.

IV.C.8. As specified in Permit Conditions IV.C.4, IV.C.5, IV.C.6, and IV.C.7 for each hazardous waste tank system identified in Tables 4-1, 4-2, and 4-3, the permittee shall:

- i. Maintain the installation documentation on file at the UMCDF until such time that the tank system is certified closed in accordance with Permit Condition II.J; and

- ii. At any time, provide the installation documentation by certified mail, express mail, or hand delivery to the Department within fifteen (15) days upon receipt of written request.

IV.D. **GENERAL OPERATING REQUIREMENTS [40 CFR §264.193, §264.194]**

- IV.D.1. The permittee shall not place hazardous wastes, treatment reagents, or other materials in the tank system(s) if they could cause the tank, its ancillary equipment, or the containment system(s), to rupture, leak, corrode, or otherwise fail.
- IV.D.2. The permittee shall operate and maintain the tank systems and tank system spill controls and overflow protection controls in accordance with the RCRA Tank Assessment (Permit Attachment 12) and 40 CFR §264.194.
- IV.D.3. With the exception of the spill tank system (ACS-TANK-401A and ACS-TANK-401B), the permittee shall install and maintain tank level transmitters indicating an alarm at low level, low-low level, high level, and high-high level. High-high level alarms shall correspond to the maximum allowable liquid height given in Table 4-1 of this permit. For the spill tank system (ACS-TANK-401A and ACS-TANK-401B), the permittee shall install a local level indicator (sight gauge) and a tank level transmitter indicating an alarm at high-high level.
- IV.D.4. The permittee shall install and maintain primary containment and secondary containment level transmitters for the sumps listed in Tables 4-2 and 4-3 of this permit that will indicate and send alarms to the control room at a low-level, high level, and a high-high level.
- IV.D.5. The permittee shall ensure that each tank is clearly marked with a description of its contents. The operating record shall contain the quantity of each hazardous waste received, and the date of accumulation for each tank as recorded and maintained in accordance with 40 CFR §264.73 and 40 CFR §268.50 (a)(2)(ii).
- IV.D.6. The secondary containment systems shall be operated to prevent any migration of wastes outside of the system at any time and shall be capable of detecting and collecting releases and accumulated liquids until the collected material is removed.
- IV.D.7. All process monitors required, pursuant to Permit Conditions IV.B, IV.C, IV.D, IV.E, IV.F, IV.G, IV.H, and IV.I and Tables 4-1, 4-2, 4-3, and 4-4 of this permit shall be equipped with operational

alarms to warn of deviation, or imminent deviation, from the limits specified in Table 4-1 of this permit.

IV.E. **AGENT COLLECTION TANK SYSTEM OPERATING CONDITIONS [40 CFR §264.193, §264.194]**

- IV.E.1. The agent collection tank system consists of three agent holding tanks (ACS-TANK-101, ACS-TANK-102, and ACS-TANK-108), secondary containment sumps (MDB-SUMP-150 and MDB-SUMP-151), pumps (ACS-PUMP-101, ACS-PUMP-102, ACS-PUMP-201, ACS-PUMP-401, and ACS-PUMP-402), associated piping, and ancillary equipment. This tank system extends from the collection points in the Munitions Demilitarization Building to the inlet of the Liquid Incinerators, located in the same building.
- IV.E.2. The agent holding tanks (ACS-TANK-101, ACS-TANK-102, and ACS-TANK-108) shall serve as secondary agent spill tanks during emergency situations.
- IV.E.3. When agent is stored in both ACS-TANK-101 and ACS-TANK-102, the permittee shall maintain sufficient secondary containment in the toxic cubicle sump by 1) prohibiting placement of decontamination solution into toxic cubicle secondary containment unless the decontamination solution is removed during egress from the room and 2) immediately ceasing agent drain operations when the toxic cubicle sump high-high setpoint is reached and shall not resume agent drain operations until the liquid level is lowered below the high-high setpoint.
- IV.E.4. The permittee is not allowed to intentionally or negligently reach the Table 4-1 high-high levels. However, if ACS-TANK-101, ACS-TANK-102, and ACS-TANK-108 all reach their Table 4-1 high-high levels, an automatic feed cut-off shall be initiated to immediately cease all agent draining activities. The permittee shall not resume agent draining operations until one of the tanks has sufficient capacity to collect drained agent without reaching the Table 4-1 high-high level. The permittee shall report the incident to the Department within 24 hours of occurrence.

IV.F. **SPENT DECONTAMINATION HOLDING TANK SYSTEM AND SPILL TANK SYSTEM OPERATING CONDITIONS [40 CFR §§264.193, 264.194]**

- IV.F.1. The spent decontamination holding tank system consists of two spent decontamination holding tanks (SDS-TANK-101 and SDS-TANK-102), two spill tanks (ACS-TANK-401A and ACS-TANK-401B),

secondary containment sump (as listed in Table 4-3 of this permit), pumps (SDS-PUMP-171, SDS-PUMP-172, and SDS-PUMP-271), trenches, associated piping, and ancillary equipment. The spill tank system consists of two identical tanks (ACS-TANK-401A and ACS-TANK-401B), which share supply and discharge piping to operate as a single vessel, and a spill transfer pump (ACS-PUMP-105). This tank system extends from the sumps on the first and second floors of the Munitions Demilitarization Building to the inlets of the Liquid Incinerators.

- IV.F.2. When liquid chemical agent is being managed at the UMCDF, the permittee shall keep the spill tank system (ACS-TANK-401A and ACS-TANK-401B) empty, and shall utilize this tank system in the event of an ACS or SDS tank failure.
- IV.F.3. The permittee shall not initiate feed of spent decontamination solution to an SDS tank if the tank is at or above the Table 4-1 high-high level.
- IV.F.4. The permittee shall not process any ton containers which have not passed the bulk drain stations at the time of a waste spill until such time that the circumstance(s) which resulted in the waste spill has been rectified and the spill tanks are empty, as specified in Permit Condition IV.F.2.

IV.G. **BRINE SURGE TANK AND BRINE TRANSFER/TANKER LOADING SYSTEM OPERATING CONDITIONS [40 CFR §§264.192, 264.194]**

- IV.G.1. The brine surge tank system consists of four brine surge tanks (BRA-TANK-101, BRA-TANK-102, BRA-TANK-201, BRA-TANK-202), secondary containment sump, vault, pumps, heating system, two brine transfer/tanker loading stations, associated piping (including the piping for the brine transfer stations), and ancillary equipment.
- IV.G.2. The permittee shall begin the procedure to switch waste feed from the BRA tank receiving waste to the empty BRA tank when the receiving tank's high level of seventeen (17) feet is reached.
- IV.G.3. The permittee shall not pump brines to a brine surge tank unless the tank contents are at or below the high-high level setpoint of Table 4-1.

IV.H. **HD RINSATE FEED COLLECTION SYSTEM OPERATING CONDITIONS**

- IV.H.1. The HD rinsate feed collection tank system consists of two rinsate holding tanks (RCS-TANK-101A

and RCS-TANK-101B), HD rinsate recirculation pumps (RCS-PUMP-103A and RCS-PUMP-103B), rinsate LIC feed pumps (RCS-PUMP-101 and RCS-PUMP-102), rinsate LIC feed filters (RCS-FILT-102A and RCS-FILT-102B), associated piping, and ancillary equipment. This equipment will include four rinsate tank feed filters (RCS-FILT-101A/B/C/D). This equipment may be used in various sequences and/or combinations to allow recirculation of rinsate through specific components as needed to obtain the desired results. Should a component of the RCS be deemed unnecessary or require bypass to perform maintenance activities, various configurations of the system, including bypass of the affected component(s), may be performed. The permittee shall maintain, calibrate, and operate process monitoring equipment as specified in Table 4-5 of this permit, while managing hazardous waste in the rinsate feed collection tank system.

IV.H.2. The permittee shall sample and analyze the waste in the rinsate feed collection system in accordance with the Waste Analysis Plan in Attachment 2 of this permit.

IV.I. **OPERATING PROCEDURES FOR PRIMARY CONTAINMENT SUMPS AND TRENCHES**  
**[40 CFR §§264.192, 264.194, 264.196]**

IV.I.1. Primary containment sumps are only those sumps that are designed to collect and transport routine and systematic discharges of hazardous waste and are considered to be hazardous waste tanks. The primary sump system consists of the sumps listed in Table 4-2 of this permit.

IV.I.2. The permittee shall operate and maintain the primary sump system in accordance with the RCRA Tank Assessment (Permit Attachment 12).

IV.I.3. If any primary sump system indicates that the primary metal liner has leaked liquids into interstitial spaces, either by interstitial probe monitoring or visual inspection, the permittee shall immediately stop the flow of hazardous waste into the sump, inspect the system, and make the necessary repairs in accordance with 40 CFR §264.196. In addition to the Permit Condition IV.J requirements, the permittee shall visually inspect the concrete liner for any signs of deterioration of the coatings, leakage, corrosion, or cracking of the concrete, and make the necessary repairs before returning it to use. Results of this inspection shall be placed in the operating record in accordance with Permit Condition II.I.1.i.

- IV.I.4. All primary sumps shall have a dedicated sump pump. All liquids evacuated from these sumps shall be pumped to the spent decontamination holding tanks or spill tanks, as appropriate.
- IV.I.5. All primary sumps shall have dedicated sump level indicators. The permittee shall maintain a liquid level in any of the primary containment sumps listed in Table 4-2 of this permit of no higher than the level indicated by the low-level alarm from the bottom of the sump.
- IV.J. **OPERATING PROCEDURES FOR SECONDARY CONTAINMENT SUMPS AND TRENCHES [40 CFR §§264.192, 264.193, 264.194, 264.196]**
- IV.J.1. Secondary containment sumps are only those sumps that are designed to provide, or act as part of, the secondary containment system for a primary containment vessel storing hazardous waste. The secondary containment sumps consist of all sumps listed in Table 4-3 of this permit.
- IV.J.2. The permittee shall operate and maintain the secondary containment sumps in accordance with the RCRA Tank Assessment (Permit Attachment 12) and as follows.
- i. The permittee shall detect and monitor the presence of liquid in the sumps by level sensors. The leak-detection system shall be operated to detect the failure of the primary or secondary containment structure or releases of any waste within 24 hours.
  - ii. The toxic cubicle collection sump located directly below ACS-TANK-101 shall normally be reserved for agent spill capacity. It may be used for collection of spent decontamination solution resulting from decontamination of equipment and entrants. The spent decontamination solution will be transferred to a spent decontamination solution holding tank using the dedicated sump pump.
  - iii. When agent is being stored in both ACS-TANK-101 and ACS-TANK-102 simultaneously, the permittee shall ensure sufficient secondary containment is maintained in the toxic cubicle sump and shall immediately cease and prohibit any agent draining operations to either of these tanks if the toxic cubicle sump high-high alarm setpoint is reached during the use of both tanks, until the sump liquid level is lowered below the low-level alarm setpoint levels in the RCRA Tank Assessment.

- iv. While storing hazardous waste in the Brine Surge Tanks, in order to be able to detect leaks and spills, the permittee shall use the sump heater to melt and clear ice and snow that accumulates in the Brine Surge Tank system secondary containment sump.
- v. The permittee shall remove any material spilled or released to the Brine Surge Tank system sump no later than 24 hours after the spill or release has occurred. The removed material shall be characterized in accordance with the Waste Analysis Plan (Attachment 2). Accumulated precipitation shall be managed in accordance with Permit Attachment 6. Contaminated liquids will be pumped to the Brine Surge Tank system.

IV.J.3. The permittee shall consider any materials or liquids detected in the secondary sumps to be hazardous waste until the permittee has sampled and analyzed the materials or liquids for chemical agent, TCLP metals, TCLP organics and any other suspected hazardous waste or hazardous waste constituents, in accordance with the methods of the Waste Analysis Plan in Attachment 2 of this permit.

IV.J.4. The permittee shall send liquids that are determined to be hazardous waste and nonagent contaminated to either the SDS tanks, if generated within the MDB, or to an approved TSDF. For materials or liquids determined not to be hazardous waste, they will be managed as nonhazardous waste but must be evacuated from the sump.

IV.J.5. The permittee shall remove all materials or liquids in the secondary sumps within 24 hours or in as timely a manner as is possible and may leave a residual liquid depth of no more than 3 inches. The DEQ will be notified if for any reason the sump cannot be emptied within 24 hours.

IV.K. **RESPONSE TO LEAKS OR SPILLS [40 CFR §264.196]**

IV.K.1. In the event of a leak or a spill from a hazardous waste tank system, or if a hazardous waste tank system becomes unfit for continued use, the permittee shall remove the system from service immediately and complete the following actions:

- i. Immediately stop the flow of hazardous waste into the system and inspect the system to determine the cause of the release.
- ii. Remove waste and accumulated precipitation from the system within twenty-four (24) hours after detection of the leak or, if the permittee can demonstrate that is not possible, at the

earliest practicable time, remove as much of the waste as is necessary to prevent further release of hazardous waste

- iii. If the collected material is a hazardous waste, it shall be managed in accordance with all applicable requirements of 40 CFR Part 264.
- iv. Contain visible releases to the environment. The permittee shall immediately conduct a visual inspection of the release and, based on that inspection: (1) prevent further migration of the leak or spill to soils or surface water and (2) remove and properly dispose of any visible contamination of the soil or surface water.
- v. Close the system in accordance with the closure plan unless the following actions are taken:
  - a. For a release caused by a spill that has not damaged the integrity of the system, the permittee shall remove the released waste and make any necessary repairs to fully restore the integrity of the system before returning the tank system to service.
  - b. For a release caused by a leak from the primary tank system to the secondary containment system, the permittee shall repair the primary system prior to returning it to service.
  - c. For a release to the environment caused by a leak from a component of a tank system without secondary containment, the permittee must provide the component of the system from which the leak occurred with secondary containment that satisfies the requirements of 40 CFR 264.193 before returning it to service, unless the source of the leak is an aboveground portion of a tank system that can be inspected visually. If the source is an aboveground component that can be inspected visually, the component must be repaired and may be returned to service without secondary containment as long as the requirements of 40 CFR 264.196(f) are met. Additionally, if a leak has occurred in any portion of a tank system component that is not readily accessible for visual inspection, the entire component must be provided with secondary containment in accordance with 40 CFR 264.193 prior to being returned to use.

- d. If the permittee replaces a component of the tank system to eliminate the leak, that component must satisfy the requirements for new tank systems or components in 40 CFR §264.192 and 40 CFR §264.193.

- IV.K.2. For all extensive repairs to eliminate leaks or restore the integrity of the tank system, the tank system shall not be returned to service until the permittee obtains a certification by an qualified professional engineer in accordance with 40 CFR §270.11(d) that the repaired system is capable of handling hazardous wastes without release for the intended life of the system. Examples of extensive repairs are: installation of an internal liner; repair of a ruptured tank; or, repair or replacement of a secondary containment vault.
- IV.K.3. The permittee shall submit to the Department all certifications of extensive repairs to correct leaks within seven (7) calendar days from returning the hazardous waste tank systems to use.
- IV.K.4. The permittee shall collect waste from spills or releases in a sump in the area and shall pump the waste to a similarly classified tank. Waste from a spill or leak from munitions, the Agent Collection Tank, or Spent Decontamination Holding Tank Systems shall be collected in a sump in the area. Pumpable quantities of chemical agent shall be transferred directly to the spill tanks (ACS-TANK-401A and ACS-TANK-401B). Unpumpable quantities of chemical agent shall be decontaminated in accordance with the Waste Analysis Plan and transferred to the Spent Decontamination Holding Tank System. Spent decontamination solution shall be transferred to the Spent Decontamination Holding Tanks.
- IV.K.5. The permittee shall manage the tank systems and respond to releases in accordance with the requirements of Permit Attachment 6.

IV.L. **RECORDKEEPING AND REPORTING** [40 CFR §264.196]

- IV.L.1. The permittee shall verbally report to the Department within twenty-four (24) hours of detection, when a leak or spill occurs from a hazardous waste tank system to the environment, in accordance with Permit Condition I.U.
- IV.L.2. Releases from a hazardous waste tank system that are contained within a secondary containment system shall be reported as required in Permit Condition IV.M.1 and shall be recorded in the Operating Record required by Permit Condition II.I.1.i.

- IV.L.3. In addition to complying with the requirements of Permit Condition I.U.1, within thirty (30) calendar days of detecting a release to the environment from a hazardous waste tank system, the permittee shall submit a written report detailing, at a minimum, the following to the Department:
- i. Likely route of migration of the release;
  - ii. Characteristics of the surrounding soil (soil composition, geology, hydrogeology, and climate);
  - iii. Results of any monitoring or sampling conducted in connection with the release. If sampling or monitoring data relating to the release are not available within 30 days, the permittee must submit these data as soon as they become available and shall provide the Department with a schedule of when the results will be available. This schedule must be provided before the required thirty (30) calendar day submittal period expires;
  - iv. Proximity of down gradient drinking water, surface water, and populated areas; and
  - v. Description of response actions taken or planned.
- IV.L.4. The permittee shall obtain, and keep on file at the UMCDF, the written statements by those persons required to certify the design and installation of the tank system as specified in Permit Condition IV.C.4 until such time that the tank system is certified closed in accordance with Permit Condition II.J.7.
- IV.L.5. The permittee shall keep on file at the UMCDF, the written hazardous waste tank system assessments in accordance with 40 CFR §264.192 of each hazardous waste tank system's integrity and suitability for handling hazardous waste, until such time that the hazardous waste tank system is certified closed in accordance with Permit Condition II.J.
- IV.L.6. The permittee shall maintain at the UMCDF a record of the results of leak tests and integrity tests conducted, in accordance with Permit Conditions IV.C.4 or IV.K.2.
- IV.L.7. In the event that a hazardous waste tank (including primary containment sumps) exceeds the maximum allowable capacity designated for that tank in Tables 4-1 and 4-2 of this permit, the

permittee shall document in the operating record, as required by Permit Condition II.I.1.i, the following information:

- i. The date and time of occurrence;
- ii. Identify the tank by the identification number specified in Tables 4-1 and 4-2 of this permit;
- iii. Indicate if any other available tank storage volume, within the system, is available and identify such tank by the tank identification number, specified in Tables 4-1 and 4-2;
- iv. Indicate if the tank system automatically switched the feed or if an operator manually switched the feed from the high-level tank to the tank with the available storage;
- v. If no additional storage capacity was available within the storage system, indicate if the associated collection and/or treatment activities were automatically cut off.
- vi. Indicate if the high-high level tank(s)' intake valves were automatically closed;
- vii. Indicate if any associated incinerator automatic waste feed cutoff interlocks were required. Identify the required interlock and whether the interlocks were successfully activated; and
- viii. Describe the operating control procedures that allowed the tank system to reach the high-high level volume (e.g., why the operator was not successful in managing the waste within the high level volume, that is the working capacity).

IV.M. **CLOSURE [40 CFR §264.197]**

- IV.M.1. The permittee shall close the hazardous waste tank systems listed in Tables 4-1 and 4-2 of this permit in accordance with the closure plan Permit Attachment 8.
- IV.M.2. At closure, all waste residues; contaminated containment system components (liners, etc.); and contaminated soils, structures, and equipment shall be decontaminated and removed in accordance with the Closure Plan as approved by the Department in accordance with Permit Condition II.J.1. These items shall be managed as hazardous waste.

IV.N. **SPECIAL TANK PROVISIONS FOR IGNITABLE OR REACTIVE WASTES**

**[40 CFR §264.198]**

The permittee shall comply with the requirements of Permit Attachment 6 and 40 CFR §264.198.

IV.O. **SPECIAL TANK PROVISIONS FOR INCOMPATIBLE WASTES [40 CFR §264.199]**

IV.O.1. The permittee shall not store incompatible wastes in a tank. The permittee shall not place hazardous waste in a tank system that previously held incompatible material that has not been decontaminated.

IV.O.2. The permittee shall only place HD chemical agent in the agent collection tank systems.

IV.P. **SUBPART BB/CC AIR EMISSION REQUIREMENTS [40 CFR §§264.200, 264.1050, 264.1080]**

The permittee shall comply with the requirements of Permit Condition II.P, Modules II and IX, and 40 CFR §264 Subpart BB (40 CFR §264.1050-1065) and Subpart CC (40 CFR §264.1080-1090) air emission standard requirements.

**TABLE 4-1 HAZARDOUS WASTE STORAGE TANK SYSTEMS PERMITTED FOR USE DURING DEMILITARIZATION [40 CFR §264.192]**

Tank I.D. Number	Maximum Allowable Capacity <sup>2</sup> (gallons)	Maximum Allowable Liquid Height <sup>1,3</sup> (feet)	Dimensions of Tank (feet) L.D.X T/T	Secondary Containment Required (gallons)	Permitted Hazardous Waste Activity	Permitted Hazardous Waste Codes
ACS-TANK-101	582	7.5	3.5 Diameter 8.0 Height	660	Storage of drained agent	D002 to D011, D022, D028, D043, P998
ACS-TANK-102	1,130	8.75	4.5 Diameter 9.5 Height	1,309		D002 to D011, D022, D028, D043, P998, F998
ACS-TANK-108	2,168	9.25	6.0 Diameter 10.25 Height	2,379		
ACS-TANK-401A	1,130	8.75	4.5 Diameter	1,300	Storage of spilled agent, spent decontamination solution	D002, D004 to D011, D012, D014, D015, D018 to D022, D027 to D037, D039 to D043, F002, F003, F005, P998
ACS-TANK-401B			9.5 Height			Residue of Demilitarization – F998, F999
RCS-TANK-101A	610	6.0	4.0 Diameter	687	Storage and recirculation of HD rinsate	D002 to D011, D022, D028, D043, P998
RCS-TANK-101B			6.5 Height			
SDS-TANK-101	2,168	9.25	6.0 Diameter 10.25 Height	2,379	Storage of spent decontamination solution, lab waste, and UMCD liquid waste	D002, D004 to D011, D012, D014, D015, D018 to D022, D027 to D037, D039 to D043, F002, F003, F005, P998
SDS-TANK-102						Perchloroethylene-U210, D039 Monochlorobenzene-U037, D021 Hexachloroethane-D034, U131 Residue of Demilitarization – F998, F999
BRA-TANK-101	42,629	18.25	20.0 Diameter 20.0 Height	47,000	Liquids from incinerator pollution abatement systems	D004 to D011, D012, D014, D015, D018 to D022, D027 to D037, D039 to D043, P998
BRA-TANK-102						Perchloroethylene-U210, D039
BRA-TANK-201						Monochlorobenzene-U037, D021
BRA-TANK-202						Hexachloroethane-D034, U131 Residues of Demilitarization-F998, F999

<sup>1</sup> High-High Level Alarms

<sup>2</sup> Maximum allowable capacity is defined as the high-high level switch setpoint to tank empty.

<sup>3</sup> Maximum allowable liquid height is defined as the high-high level switch setpoint to the lower tank tangent line.

**TABLE 4-2 HAZARDOUS WASTE PRIMARY CONTAINMENT SUMP<sup>1</sup> SYSTEMS [40 CFR §264.192]**

Sump I.D. Number <sup>2</sup>	Maximum Allowable Sump Capacity (gallons)	Dimensions of Sump (feet)	Maximum Allowable Liquid Height <sup>5</sup> (inches)	Secondary Containment Volume (gallons)	Location Reference		
					Drawing <sup>3</sup> Column-Row	Floor	Room <sup>4</sup>
MDB-SUMP-135	89	2.3x2.3x2.25	3.0	134	L-3	1	TMA
MDB-SUMP-154	89	2.3x2.3x2.25	3.0	134	L-6	1	TMA
MDB-SUMP-153	89	2.3x2.3x2.25	3.0	134	P-5	1	DECON
MDB-SUMP-184	89	2.3x2.3x2.25	3.0	134	Q-6	1	M-CR
MDB-SUMP-179	89	2.3x2.3x2.25	3.0	134	M-6	1	M-CR
MDB-SUMP-190	89	2.3x2.3x2.25	3.0	134	M-9	1	BSA
MDB-SUMP-164	89	2.3x2.3x2.25	3.0	134	M-11	1	BSA
MDB-SUMP-134	89	2.3x2.3x2.25	3.0	134	T-6	1	M-CR-AL
MDB-SUMP-125	89	2.3x2.3x2.25	3.0	134	L-5	1P	AL
MDB-SUMP-110	89	2.3x2.3x2.25	3.0	134	B-10	2	ECV
MDB-SUMP-109 <sup>6</sup>	89	2.3x2.3x2.25	3.0	134	D-10	2	ECV
MDB-SUMP-108 <sup>6</sup>	89	2.3x2.3x2.25	3.0	134	J-10	2	ECV
MDB-SUMP-107	89	2.3x2.3x2.25	3.0	134	C-6	2	ECR
MDB-SUMP-106	89	2.3x2.3x2.25	3.0	134	H-6	2	ECR
MDB-SUMP-116	89	2.3x2.3x2.25	3.0	134	B.1-3	2	M-CR
MDB-SUMP-115	89	2.3x2.3x2.25	3.0	134	D-3	2	M-CR
MDB-SUMP-114	89	2.3x2.3x2.25	3.0	134	H-3	2	M-CR
MDB-SUMP-113	89	2.3x2.3x2.25	3.0	134	M-3	2	M-CR
MDB-SUMP-117	89	2.3x2.3x2.25	3.0	134	N-3	2	M-CR
MDB-SUMP-174	89	2.3x2.3x2.25	3.0	134	D-6	2	M-CR
MDB-SUMP-169	89	2.3x2.3x2.25	3.0	134	H-6	2	M-CR
MDB-SUMP-112	89	2.3x2.3x2.25	3.0	134	B-7	2	M-CR
MDB-SUMP-189	89	2.3x2.3x2.25	3.0	134	K-7	2	M-CR
MDB-SUMP-118	89	2.3x2.3x2.25	3.0	134	B-5	2	M-CR

**TABLE 4-2 HAZARDOUS WASTE PRIMARY CONTAINMENT SUMP<sup>1</sup> SYSTEMS [40 CFR §264.192]**

Sump I.D. Number <sup>2</sup>	Maximum Allowable Sump Capacity (gallons)	Dimensions of Sump (feet)	Maximum Allowable Liquid Height <sup>5</sup> (inches)	Secondary Containment Volume (gallons)	Location Reference		
					Drawing <sup>3</sup> Column-Row	Floor	Room <sup>4</sup>
MDB-SUMP-149	89	2.3x2.3x2.25	3.0	134	L-6	2	MPB
MDB-SUMP-168	89	2.3x2.3x2.25	3.0	134	N-6	2	MPB
MDB-SUMP-148	89	2.3x2.3x2.25	3.0	134	L-8	2	MPB
MDB-SUMP-146	89	2.3x2.3x2.25	3.0	134	N-8	2	MPB
MDB-SUMP-175	89	2.3x2.3x2.25	3.0	134	M-11	2	MPB
MDB-SUMP-147	89	2.3x2.3x2.25	3.0	134	L-11	2	MPB
MDB-SUMP-145	89	2.3x2.3x2.25	3.0	134	N-11	2	MPB
MDB-SUMP-124	89	2.3x2.3x2.25	3.0	134	B.1-4	2P	M-CR-AL
MDB-SUMP-126	89	2.3x2.3x2.25	3.0	134	L-8	2P	MPB-AL

<sup>1</sup> Hazardous waste sumps (meeting the RCRA definition of a tank) must comply with all applicable hazardous waste tank system requirements (40 CFR §264.190).

<sup>2</sup> MDB = Munitions Demilitarization Building

<sup>3</sup> Reference building column-row numbers from Drawings UM-01-G-504, -505, -506, -507, -508, -509, -510, -511 and UM-02-D-503.

<sup>4</sup> TMA = Toxic Maintenance Area, DECON = Decontamination, M-CR = Munition Corridor, BSA = 1<sup>st</sup> Floor Buffer Storage Area, M-CR-AL = Munitions Corridor Airlock, AL = Airlock, ECV = Explosive Containment Room Vestibule, ECR = Explosive Containment Room, MPB= Munitions Processing Bay, MPB-AL = Munitions Processing Bay Airlock

<sup>5</sup> Low-level alarm height. This is the maximum level at which the low-level alarm shows on the Control Room screen and prompts the Control Room operator to energize the sump pump. When the alarm clears, the PLC will automatically turn off the sump pump.

<sup>6</sup> These sumps are constructed to primary sump standards; however, they have been redesignated as secondary sumps for the purposes of providing leak detection for the RCS tanks (see Table 4-3).

**TABLE 4-3 HAZARDOUS WASTE SECONDARY CONTAINMENT SUMPS SYSTEMS [40 CFR §264.192]**

Sump I.D. Number <sup>1</sup>	Maximum Allowable Sump Capacity (gallons)	Dimensions of Sump (feet)	Secondary Containment Volume (gallons)	Location Reference		
				Drawing <sup>2</sup> Column-Row	Floor	Room <sup>3</sup>
MDB-SUMP-151	511	4.42x4.42x3.5	none required	J-8	1	TOX
MDB-SUMP-150	85	2.25x2.25x2.25	none required	H-7	1	SDS
MDB-SUMP-108	89	2.3x2.3x2.25	None required	J-10	2	ECV
MDB-SUMP-109	89	2.3x2.3x2.25	None required	D-10	2	ECV
BRA SUMP-103	85	2.25x2.25x2.25	none required	diked area	1	BRA out-side
MDB-SUMP-101	85	2.25x2.25x2.25	None required	B-14	2	MDB UPA
MDB-SUMP-102	85	2.25x2.25x2.25	None required	D-14	2	MDB UPA
MDB-SUMP-103	85	2.25x2.25x2.25	None required	H-14	2	MDB UPA
MDB-SUMP-104	85	2.25x2.25x2.25	None required	A-8	2	MDB UPA
CHB-SUMP-199	85	2.25x2.25x2.25	None required	R-5.5	2	CHB UPA
CHB-SUMP-200	85	2.25x2.25x2.25	None required	R-7.8	2	CHB UPA
MDB-SUMP-152	85	2.25x2.25x2.25	None required	P-3	1	TMA "C" AL

<sup>1</sup> MDB = Munition Demilitarization Building, PUB = Process Utility Building, OUT = outside, CHB = Container Handling Building, TMA = Toxic Maintenance Area

<sup>2</sup> Reference building column-row numbers from Drawings UM-01-G-504, -505, -506, -507, -508, -509, -510, -511, UM-07-G-506, and UM-02-G-502

<sup>3</sup> TOX = Toxic Cubicle, SDS = Spent Decontamination Solution, area, BRA = Brine Reduction Area, UPA = Unpack Area, AL = Airlock

**TABLE 4-4 SUMPS SYSTEM DESIGN STANDARDS [40 CFR §264.192]**

Sump and Trench <sup>1</sup> Design Standards	Sump Systems		
	Primary Containment Sumps	Secondary Containment Sumps	Toxic Cubicle Sumps
<b>PRIMARY CONTAINMENT:</b>			
Construction Material:	Welded carbon steel	Welded carbon steel	Welded carbon steel
Sump Capacity, gallons	89	85	512
Specified Shell Thickness, (inches)	3/16 steel	3/16 steel	3/16 steel
Dimensions, feet:	2.3 X 2.3 X 2.25	2.25 X 2.25 X 2.25	4.42 X 4.42 X 3.5
Grating, (inches)	Reinforced fiberglass	Reinforced fiberglass	Reinforced fiberglass
Protective Coating	Chemically resistant durable epoxy coating	Chemically resistant durable epoxy coating	Chemically resistant durable epoxy coating
<b>SECONDARY CONTAINMENT</b>			
Minimum Capacity, gallons	134	not applicable	512 required
Corrosion Liner Material	concrete	not applicable	concrete
Liner Thickness	6 inch		6 inch
Protective Coating	Chemically resistant durable epoxy coating	Chemically resistant durable epoxy coating	Chemically resistant durable epoxy coating
<b>LEAK DETECTION SYSTEM:</b>			
	Visually inspect and by level detector	Visually inspect and by level detector	Visually inspect and by level detector

<sup>1</sup>Standards apply to trenches (for sump collection system designed with trench).

**TABLE 4-5 RINSATE COLLECTION SYSTEM TANKS INSTRUMENTS**

Item No.	Control Parameter	Measuring Device	Location	Calibrated Instrument Range	Operating Range or Setpoint	Instrument Loop Accuracy	Calibration Method No. and Frequency <sup>a</sup>
RCS-1	Rinsate Temperature 64-TIT-9853	Resistance Temperature Detector	RCS Tank 101A	0-200°F	<125°F	±2°F	Inst. Calib Para. 2.5 (180 days)
RCS-2	Rinsate Temperature 64-TIT-9854		RCS Tank 101B				

<sup>a</sup> See Attachment 11 for “Process Instrument Calibration.”

## MODULE V - MISCELLANEOUS TREATMENT UNITS

### V.A. REQUIREMENTS FOR MISCELLANEOUS TREATMENT UNITS LOCATED IN THE BRINE REDUCTION AREA

#### V.A.1. Permitted and Prohibited Waste Treatment

- i. Subject to the terms of this permit, the permittee shall treat only brines from the brine surge tanks in the miscellaneous treatment units identified in Table 5-1 of this permit.

#### V.A.2 BRA Miscellaneous Treatment Unit Design, Construction, and Maintenance

- i. The permittee shall design, construct, install, and maintain the BRA drum dryers (BRA-DDYR-101, BRA-DDYR-102, and BRA-DDYR-201) as specified in Table 5-1 and all applicable drawings and design specifications in Permit Attachment 12.
- ii. The permittee shall design, construct, install, and maintain the BRA exchangers (BRA-EXCH-101 and BRA-EXCH-201), the BRA evaporators (BRA-EVAP-101 and BRA-EVAP-201), and ancillary equipment as specified in Table 5-1 and all applicable drawings and design specifications in Permit Attachment 12.
- iii. All process monitors required, pursuant to Permit Condition V.A.9, shall be equipped with alarms operated to warn of deviation, or imminent deviation, from the limits specified in Tables 5-4 and 5-5 of this permit.
- iv. The permittee shall design, construct, install, test, and maintain all process monitoring and control instrumentation specified in Table 5-4 of this permit in accordance with the applicable design requirements of Permit Attachment 12. The process monitoring and control instrumentation listed in Table 5-4 must be functional and correctly operating when treating hazardous waste in the BRA miscellaneous treatment units.
- v. The permittee shall design, construct, install, and maintain the secondary containment sump systems identified in Table 5-2 as specified in Table 5-2A of this permit, the applicable

design specifications in Permit Attachment 12, and in accordance with Permit Condition IV.B.2.

- vi. The permittee shall design, construct, install, and maintain the primary containment catch pans identified in Table 5-3 as specified in Table 5-3A of this permit and in accordance with the applicable drawings and design specifications in Permit Attachment 12 .

V.A.3. BRA Miscellaneous Treatment Unit Installation

- i. For each hazardous waste miscellaneous treatment unit identified in Table 5-1, the permittee shall:
  - a. Maintain the installation documentation on file at the UMCDF until such time that the miscellaneous treatment unit is certified closed in accordance with Permit Condition II.J; and
  - b. At any time, provide the installation documentation by certified mail, express mail, or hand delivery to the Department within fifteen (15) days upon written request.
- ii. Prior to operating a hazardous waste miscellaneous treatment unit, the permittee shall comply with Permit Condition I.R.

V.A.4. [RESERVED]

V.A.5. BRA Performance Standards

- i. The particulate matter emissions from the BRA shall not exceed 34.3 mg/dscm (0.015 grains/dscf). [40 CFR §270.32(b)(2)].
- ii. The following metal emission rates from the BRA shall not be exceeded: [40 CFR §264.601, §266.106 and §270.32 (b)(2)]

Arsenic:	1.81E-05	gms/sec	Antimony:	1.65E-05	gms/sec
Barium:	1.40E-04	gms/sec	Lead:	1.01E-04	gms/sec

Chromium:	5.22E-05	gms/sec	Mercury:	2.47E-05	gms/sec
Beryllium:	1.65E-05	gms/sec	Silver:	1.65E-05	gms/sec
Cadmium:	2.22E-05	gms/sec	Thallium:	3.30E-05	gms/sec
Boron:	1.20E-02	gms/sec	Cobalt:	1.65E-04	gms/sec
Copper:	1.65E-04	gms/sec	Manganese:	6.57E-05	gms/sec
Nickel:	1.65E-04	gms/sec	Phosphorus:	6.1E-03	gms/sec
Selenium:	1.65E-05	gms/sec	Tin:	3.30E-04	gms/sec
Vanadium:	1.15E-04	gms/sec	Zinc:	1.65E-04	gms/sec

- iii. The treatment effectiveness will be at least an 80-percent reduction, by weight, of the feed brine. The treatment effectiveness will be determined by the following calculation:

$$\text{Treatment Effectiveness} = \frac{\text{lbs Brine (into drum dryer)} - \text{lbs Liquid (captured in catch pan)}}{\text{lbs Brine (into drum dryer)}} \times 100 \%$$

- a. Brine salt must pass the paint filter liquids test (SW-846 Method 9095) or be included as catch pan liquids in the calculation above
- iv. The permittee shall continuously monitor emissions of the campaign agent with an ACAMS from the BRA stack. The permittee shall monitor emissions of prior noncampaign agent(s) with a DAAMS from the BRA stack. The emission levels shall not exceed the following concentrations [40 CFR §264.601, and §270.32(b)(2)]:

	<u>Chemical Agent - Concentration (mg/m<sup>3</sup>)</u>		
	<u>VX</u>	<u>GB</u>	<u>HD</u>
<u>Maximum Instantaneous Stack Emission</u>	0.0003	0.0003	0.03

- v. The hydrogen chloride (HCl) emissions from the BRA shall not exceed 2.99E-03 grams/second [40 CFR §264.601, and §270.32(b)(2)].
- vi. Compliance with the operating conditions specified in Permit Condition V.A.7 shall be regarded as compliance with the required performance standards identified in Permit Conditions V.A.5.i through V.A.5.v. However, if it is determined that during the effective

period of this permit that compliance with the operating permit conditions in V.A.7, is not sufficient to ensure compliance with the performance standards specified in Permit Conditions V.A.5.i through V.A.5.v, the permit may be modified, revoked, or reissued, pursuant to 40 CFR §270.41, §270.42, and OAR 340-105-0041 and OAR 340-106-0005.

V.A.6. Limitations of BRA Waste Feed

- i. Prior to treatment of a batch of brine in the BRA, the brine shall be analyzed in accordance with the requirements of the Waste Analysis Plan in Attachment 2. The brine must be verified to satisfy the following parameters.
  - a. Agent-free analysis in accordance with the Waste Analysis Plan (Permit Attachment 2).
  - b. pH between 5.5 and 10 (to account for the increase in brine pH during evaporative treatment, the upper pH limit for brine feed in the treatment process is 11.5)
  - c. Specific gravity between 1.00 and 1.17 sgu
- ii. The feed rate of brine to each drum dryer shall not exceed 5.8 gpm (ROHA). The feed rates of metal and hydrogen chloride to the BRA shall not exceed the following limits:

**METAL FEED RATES**

<u>Metal</u>	<u>Feed Rate</u>	<u>Metal</u>	<u>Feed Rate</u>
Antimony (Sb):	2.78E-01 lbs/hr	Manganese (Mn):	6.69E-02 lbs/hr
Arsenic (As):	1.88E+00 lbs/hr	Mercury (Hg):	1.73E-04 lbs/hr
Barium (Ba):	1.12E-01 lbs/hr	Nickel (Ni):	2.17E-01 lbs/hr
Beryllium (Be):	9.06E-03 lbs/hr	Phosphorus (P):	5.97E+02 lbs/hr
Boron (B):	3.86E+00 lbs/hr	Selenium (Se):	3.05E-02 lbs/hr
Cadmium (Cd):	3.73E-01 lbs/hr	Silver (Ag):	2.83E-02 lbs/hr
Chromium (Cr)-Total:	4.41E+00 lbs/hr	Thallium (Tl):	3.64E-02 lbs/hr
Cobalt (Co):	2.15E-01 lbs/hr	Tin (Sn)	5.66E-01 lbs/hr
Copper (Cu):	2.83E-01 lbs/hr	Vanadium (V):	6.36E-02 lbs/hr
Lead (Pb):	2.14E+01 lbs/hr	Zinc(Zn):	2.78E+00 lbs/hr

**CHLORINE/CHLORIDE FEED RATES**

Hydrogen Chloride	1.64E-02 lbs/hr
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V.A.7. BRA Operating Conditions

- i. The permittee shall operate the BRA miscellaneous treatment units to maintain the system and process parameters within the ranges or setpoints specified in Table 5-4 of this permit.
- ii. The permittee shall operate the miscellaneous treatment units to automatically cut-off and/or lock out the brine feed to the miscellaneous units when the monitored operating conditions deviate from the setpoints given in Table 5-5 of this permit.
- iii. The permittee shall not place hazardous wastes, treatment reagents, or other materials in the miscellaneous treatment unit(s) if they could cause the miscellaneous treatment unit(s) to rupture, leak, corrode, or otherwise suffer damage or failure.
- iv. The permittee shall operate the BRA miscellaneous treatment units, including the primary and secondary containment sump systems, to prevent spills and overflows in accordance with Section V.A of this module; Permit Attachment 12, RCRA Tank Assessment; and Permit Attachment 6.
- v. Each of the two Brine Reduction Area evaporator package systems consist of a flash evaporator (BRA-EVAP-101, BRA-EVAP-201), a heat exchanger (BRA-EXCH-101 and BRA-EXCH-201), and auxiliary equipment that includes two circulation pumps (one a spare) and associated piping. The evaporator package systems shall be used to concentrate the brines. The permittee shall operate the Brine Reduction Area evaporator package system as designed and as successfully demonstrated during the performance test.
- vi. Three drum dryers will be used to dry either fresh brine or brine that has been first concentrated in the evaporator package(s). The drum dryers shall be operated to dry the concentrated brine to produce solid, dry brine salts. The permittee shall operate the Brine Reduction Area drum dryers (BRA-DDRY-101, BRA-DDRY-102, and BRA-DDRY-201) as designed and as successfully demonstrated during the performance test.

- vii. The BRA baghouse filter bags shall be monitored for particulate breakthrough by trending the pressure differential data collected on PDAR and performing opacity observations in accordance with EPA Method 9. This condition shall be met by complying with the June 2004 BRA Baghouse Monitoring Plan that establishes the criteria for trending the pressure differential data, performing the opacity observations, and taking corrective actions in the event of indications of particulate breakthrough.
- viii. Steam shall be supplied to each heat exchanger and each drum dryer from the boilers in the Process Utility Building.
- ix. The BRA heating and ventilation system shall be operated as designed and as successfully demonstrated during the performance test.
- x. Emissions from the Brine Reduction Area evaporator packages and drum dryers shall be controlled by the Brine Reduction Area pollution abatement system ( BRA PAS). The BRA PAS shall remove particulates, and the stack shall be monitored to demonstrate compliance by confirming the absence of chemical agent using ACAMS. The BRA PAS shall be operated as designed and as successfully demonstrated during the performance test. [40 CFR 264.601(c)(2), 270.23(a)(2); OAR 340-104-0001]

V.A.8. Operating Procedures for BRA Primary Containment Catch Pans and Secondary Containment Sumps

- i. The primary containment catch pans and secondary containment sumps shall consist of all the catch pans listed in Table 5-3 and all the sumps listed in Table 5-2 of this permit.
- ii. The permittee shall operate the primary containment catch pans and secondary containment sumps as designed and as successfully demonstrated during the performance test.
- iii. The permittee shall consider any materials or liquids detected in the secondary sumps or trenches to be a hazardous waste until the permittee has sampled and analyzed the materials or liquids for TCLP metals and any other suspected hazardous waste or hazardous waste constituents, in accordance with the methods of the Waste Analysis Plan in Attachment 2 of this permit. The permittee shall send those liquids that are determined to be hazardous waste

to that brine surge tank currently being filled. Materials or liquids that are determined through analysis to be nonhazardous must be evacuated from the sump in accordance with Permit Condition V.A.8.iv.

- iv. The permittee shall remove all materials or liquids in the secondary containment sumps by either a vacuum truck or dedicated sump pumps. The dedicated sump pump system may leave a residual liquid depth of no more than 3/4 inch. All sumps evacuated using a vacuum truck shall be pumped to a point where there is no free-standing liquid in the bottom of the sump.

V.A.9. BRA Monitoring Requirements

- i. Upon receipt of a written request from the Department, the permittee shall perform sampling and analysis of the waste and exhaust emissions to verify that the operating requirements established in the permit achieve the performance standards delineated in this permit.
- ii. All monitoring, recording, maintenance, calibration, and test data shall be recorded and the records for each miscellaneous treatment unit shall be placed in the Operating Record for each respective unit, in accordance with Permit Condition II.I.
- iii. The permittee shall maintain, calibrate, and operate process monitoring, control, and recording equipment as specified in Table 5-4 and 5-5 of this permit, while treating hazardous waste.
- iv. Brine shall not be fed to the BRA evaporator packages or drum dryers if any of the monitoring instruments listed in Table 5-4 and 5-5 of this permit fails to operate properly.
- v. The Automatic Continuous Air Monitoring System (ACAMS) and Depot Area Air Monitoring System (DAAMS) monitoring the BRA stack (Table 5-5, BRA-8) may be operated as follows:
  - a. Before commencing hazardous brine feed to the BRA, the ACAMS and DAAMS shall be operational.

- b. During the treatment of hazardous brine, the ACAMS and DAAMS may be taken offline to conduct calibrations and routine maintenance (i.e., challenges) provided:
  - 1. The brine being treated has been determined to be agent free; and
  - 2. At least three hours of ACAMS monitoring for a batch of brine (up to two full surge tanks) has occurred with no detected agent emissions.
- c. During the treatment of hazardous brine, if the ACAMS/DAAMS is off-line for calibration or routine maintenance, the AWFCO system shall be activated if the instrument is not operational within 90 minutes.
- vi. The presence of liquid in the sumps shall be detected and monitored by a level indicator.

V.A.10. BRA Waste Feed Cut-Off Requirements

- i. The permittee shall operate the systems, specified in Table 5-5 of this permit, to automatically cut-off and or lock out the hazardous waste feed to the BRA evaporator packages and/or drum dryers when the monitored operating conditions deviate from the setpoints specified in Table 5-5 of this permit.
- ii. In the event of a malfunction of the automatic waste feed cut-off systems listed in Table 5-5 of this permit, the permittee shall immediately cut-off and/or lock out the waste feed manually, and perform staged shutdown of the BRA evaporator packages and drum dryers in accordance with standing operating procedures. The permittee shall not restart the miscellaneous treatment unit until the problem causing the malfunction has been identified and corrected. Waste feed may not restart until the failed operating condition which caused the feed cut-off or lock out is/are restored to permit limits and all other parameters are within permit limits.
- iii. The permittee shall manually cut-off and/or lock out the waste feed, and perform staged shutdown of the BRA, in accordance standing operating procedures, when the operating conditions deviate from the limits specified in Permit Condition V.A.7, unless the deviation

automatically activates the waste feed cut-off and/or lock out sequence specified in Permit Condition V.A.10.i.

- iv. If the number of automatic waste feed cut-offs from an individual parameter on Table 5-5 for the BRA is activated greater than twice within any operating day, the permittee shall be required to, at a minimum, verbally provide to the Department the information required in Permit Condition V.A.13.x by the close of the following business day.
- v. After any automatic waste feed cut-off, the permittee shall be required to establish and maintain operating limits as specified in Table 5-5 for at least 15 minutes prior to restart of hazardous waste feed to the BRA.
- vi. If any of the following automatic waste feed cut-offs from Table 5-5, for the BRA occur at a maximum frequency of five times per parameter within 30 BRA operating days in succession, the permittee is required to verbally notify the Department of the: BRA 4, BRA 5, BRA 6, BRA 7, BRA 8, and BRA 9. These waste feed cut-offs, whether automatically or manually activated, are counted if the specified setpoints are deviated from while waste or waste residues continue to be processed in the incinerator chambers.
- vii. In the event of a power failure, all brine evaporation and drying operations and the BRA PAS shall immediately stop. The ACAMS and DAAMS on the BRA stack shall continue to monitor during a loss of power.

V.A.11. Response to BRA Leaks or Spills [40 CFR §264.602; 264.196; 264.197]

- i. In the event of a leak or a spill from a hazardous waste miscellaneous treatment unit, the permittee shall remove the unit from service immediately and complete the following actions:
  - a. Stop the flow of hazardous waste into the unit and inspect the unit to determine the cause of the release.
  - b. Remove the waste and accumulated precipitation from the unit within 24 hours of the detection of the leak, to prevent further release and allow inspection and repair of the

unit. If the permittee finds that it will be impossible to meet this time period, the permittee shall notify the Department and demonstrate that a longer time period is required.

- c. If the collected material is a hazardous waste, it shall be managed in accordance with all applicable requirements of 40 CFR Parts 262-264 and this permit.
- d. Contain visible releases to the environment. The permittee shall immediately conduct a visual inspection of all releases to the environment and, based on that inspection, shall:
  - (1) prevent further migration of the leak or spill to soils or surface water;
  - (2) remove and properly dispose of any visible contamination of the soil or surface water; and
  - (3) follow the actions dictated by the Contingency Plan in Permit Attachment 9.
- e. Close the unit in accordance with the Closure Plan (Permit Attachment 8) unless the following actions are taken:
  1. For a release caused by a spill that has not damaged the integrity of the unit, the permittee shall remove the released waste and make any necessary repairs to fully restore the integrity of the unit before returning the miscellaneous treatment unit to service.
  2. For a release caused by a leak from the primary containment sump system to the secondary containment sump system, the permittee shall repair the primary containment sump system prior to returning it to service.
  3. For a release to the environment caused by a leak from an aboveground portion of the ancillary equipment that does not have secondary containment, the permittee shall repair the miscellaneous treatment unit or ancillary equipment before returning it to service.
  4. If the permittee replaces a component of the miscellaneous treatment unit to eliminate the leak, that component must satisfy the requirements for new miscellaneous treatment units or components in accordance with 40 CFR §264.601.

- ii. For all major repairs to eliminate leaks or restore the integrity of the miscellaneous treatment unit, the permittee shall obtain a certification by an independent, qualified, registered professional engineer that the repaired unit is capable of handling hazardous wastes without release for the intended life of the unit before returning the unit to service. Examples of major repairs are: installation of an internal liner, repair of a ruptured unit, and repair or replacement of a secondary containment vault.
- iii. The permittee shall submit to the Department all certifications of major repairs to correct leaks within seven (7) calendar days from returning the hazardous waste miscellaneous treatment unit(s) to use.

V.A.12 [RESERVED]

V.A.13. BRA Recordkeeping and Reporting

- i. The permittee shall verbally report to the Department within twenty-four (24) hours of detection, when a leak or spill occurs from a hazardous waste miscellaneous treatment unit to the environment, in accordance with Permit Condition I.U.
- ii. Releases from hazardous waste miscellaneous treatment units, other than anticipated operational and maintenance releases identified in Permit Condition V.A.8.ii, that are contained within a secondary containment system shall be reported as required in Permit Condition V.A.13.i and shall be recorded in the operating record as required by Permit Condition II.I.1.i and I.AA.
- iii. In addition to complying with the requirements of Permit Condition I.U.2, within thirty (30) calendar days of detecting a release to the environment from a hazardous waste miscellaneous treatment unit, the permittee shall submit a written report detailing, at a minimum, the following to the Department:
  - a. Likely route of migration of the release;

- b. Characteristics of the surrounding soil (including soil composition, geology, hydrogeology, wind direction, and climate);
  - c. Results of any monitoring or sampling conducted in connection with the release. If the permittee finds it will be impossible to meet the required 30-calendar-day submittal period, the permittee shall provide the Department with a schedule of when the results will be available. This schedule must be provided before the required thirty (30)-calendar-day submittal period expires;
  - d. Proximity of downgradient drinking water, surface water, and populated areas; and
  - e. Description of response actions taken or planned.
- iv. The permittee shall obtain, and keep on file at the UMCDF, the written statements by those persons required to certify the design and installation of the hazardous waste miscellaneous treatment units as specified in Permit Conditions I.R and V.A.3, until such time that the miscellaneous treatment unit is certified closed in accordance with Permit Condition II.J.7.
  - v. The permittee shall keep on file at the UMCDF, the written hazardous waste miscellaneous treatment unit assessments in accordance with 40 CFR §264.601 of each hazardous waste miscellaneous treatment unit's integrity and suitability for handling hazardous waste, until such time that the hazardous waste miscellaneous treatment unit is certified closed in accordance with Permit Condition II.J.7.
  - vi. The permittee shall maintain at the UMCDF, a record of the results of leak tests and integrity tests conducted, in accordance with Permit Conditions I.R, V.A.3, and V.A.11.ii.
  - vii. In the event that a hazardous waste miscellaneous treatment unit exceeds the maximum allowable capacity designated for that unit in Table 5-1 of this permit, the permittee shall document in the operating record, as required by Permit Condition II.I.1.i and I.AA, the following information:
    - a. The date and time of occurrence;

- b. Identify the unit by the identification number specified in Table 5-1 of this permit;
  - c. Indicate if any other available miscellaneous treatment unit within the system was available, and identify such unit by the unit identification number specified in Table 5-1 of this permit;
  - d. If no additional treatment capacity was available within the miscellaneous treatment unit system, indicate if the associated collection and/or treatment activities were automatically or manually cut-off; and
  - e. Indicate if any associated BRA surge tank's or BRA evaporator package's automatic waste feed cut-off interlocks were required. Identify the required interlock and whether the interlocks were successfully activated.
- viii. The permittee shall document and record the results of each miscellaneous treatment unit's waste analysis required by Attachment 2 of this permit.
- ix. The permittee shall record and maintain in the operating record for each miscellaneous treatment unit all monitoring and inspection data compiled under the permit conditions, in accordance with Permit Condition II.I.1.i.
- x. The permittee shall record in the operating record the date, time, and duration of all automatic waste feed cut-offs and/or lockouts, including the triggering parameters, reason for the deviation, and corrective measures taken to prevent recurrence of the incident. The permittee shall also record all incidents of the automatic waste feed cut-off function failures, including the corrective measures taken to correct the condition that caused the failure.

V.A.14. Special Provisions for Ignitable or Reactive Wastes

- i. The permittee shall not place ignitable or reactive waste in the miscellaneous treatment units, secondary containment systems, or primary containment catch pans listed in Tables 5-1, 5-2, and 5-3 of this permit.

V.A.15. Special Provisions for Incompatible Wastes

- i. The permittee shall not place hazardous wastes in a miscellaneous treatment unit that previously held incompatible material that has not been decontaminated.
- ii. The permittee shall only place in the miscellaneous treatment units the brine generated from the treatment of agent(s) GB, VX, and HD provided monitoring is performed in accordance with Permit Condition V.A.5.iv.
- iii. The permittee shall not accept any corrosive (40 CFR §261.22) brines that could deteriorate the evaporator packages, drum dryers, piping, or ancillary equipment for brine reduction operations in the Brine Reduction Area.

**V.B REQUIREMENTS FOR DEPRESSURIZATION GLOVE BOX**

V.B.1. Permitted and Prohibited Waste Treatment

- i. Subject to the terms of this permit, the permittees shall use the depressurization glove box miscellaneous treatment unit, located in the Container Handling Building and Munitions Demilitarization Building Unpack Areas, listed in Table 5-6 to treat HD ton containers by venting the pressurized containers to remove the ignitability characteristic code, D001.
- ii. All ton containers shall be treated for the ignitability characteristic in the depressurization glove box before treatment at the bulk drain stations. Within 24 hours of discovery of any HD ton container that cannot be processed under the conditions of this section (V.B.1) and the conditions of Section V.B.4, the permittee shall notify the Department and 1) properly manage the ton container in the Munitions Demilitarization Building; and 2) request and receive approval for further processing.

V.B.2 Miscellaneous Treatment Unit Design, Construction, and Maintenance

- i. The permittee shall comply with the glove box design and installation requirements, and shall maintain the unit, as specified in all applicable drawings and specifications in Permit Attachment 12.

- ii. The permittee shall comply with the design and installation requirements for the exhaust filter units (CHB-FILT-402 and CHB-FILT-403), and shall maintain the units, as specified in all applicable drawings and specifications in Permit Attachment 12.
- iii. The permittee shall not treat HD ton containers in the glove box until the permittees have demonstrated compliance with the facility modification certification requirements as specified in Permit Condition I.R. All glove box installation and modification records shall be maintained as part of the facility operating record in accordance with Permit Condition II.I.

V.B.3. Miscellaneous Treatment Unit Installation

- i. The permittee shall install the depressurization glove box (CHB-GLBX-401) in accordance with all applicable drawings in Permit Attachment 12.
- ii. The permittee shall install the exhaust filter units (CHB-FILT-402 and CHB-FILT-403) in accordance with all applicable drawings in Permit Attachment 12.
- iii. After the initial installation and certifications per Permit Conditions I.R, V.B.3.i, and V.B.3.ii, the permittee shall not, except for alterations that are considered minor in accordance with 40 CFR §270.42, alter a miscellaneous treatment unit until such time that the Department has:
  - a. Received certification from an independent, registered professional engineer, that attests to the structural integrity and the suitability of the altered miscellaneous treatment unit for handling the specified hazardous waste; [40 CFR §264.601, §264.602 and 40 CFR §270.32(b)(2)]
  - b. Approved the design and specifications of the altered miscellaneous treatment unit; and
  - c. Received and approved a permit modification in accordance with 40 CFR §270.42.
- iv. In accordance with Permit Condition I.R, the permittee shall obtain and submit to the Department a certification of construction from an independent, qualified, registered

professional engineer. The certification shall be submitted prior to use of the miscellaneous treatment unit for treatment purposes. The certification of construction from the qualified, registered professional engineer will also attest that proper installation procedures were used for the depressurization glove box. The independent miscellaneous treatment unit installation inspections, and subsequent written certifications, shall consider, but not be limited to, the following miscellaneous treatment unit installation documentation:

- a. Field installation report with date of installation;
  - b. Approved welding procedures;
  - c. Welder qualifications and certifications;
  - d. Hydrotest reports in accordance with the American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section VIII, Division 1;
  - e. Tester credentials;
  - f. Field inspector credentials;
  - g. Field inspection reports;
  - h. Field waiver reports; and
  - i. Noncompliance reports and corrective action (including field waiver reports) and repair reports.
- v. The permittee shall obtain and submit to the Department, prior to use of the miscellaneous treatment unit for treatment purposes, a written certification from an independent, qualified, registered professional engineer attesting to the structural integrity and suitability of the miscellaneous treatment unit for handling the specified hazardous waste. The independent structural integrity/suitability certification documentation submitted to the Department for the depressurization glove box (CHB-GLBX-401) and exhaust filter units (CHB-FILT-402 and

CHB-FILT-403) shall include, but not be limited to, the following manufacturing design, fabrication, and testing documentation:

- a. Shop drawings with dimensional and capacity data;
  - b. Vessel wall thickness and nozzle reinforcement calculations;
  - c. Vessel structural support calculations;
  - d. Approved welding procedures;
  - e. Welder qualifications/certifications;
  - f. Material reports and mill certifications;
  - g. Results of X-ray testing;
  - h. Tester credentials;
  - i. Noncompliance reports and corrective actions;
  - j. Hydrotest reports;
  - k. ASME code data report;
  - l. Shop inspection reports; and
  - m. Shop inspector credentials.
- vi. As specified in Permit Conditions V.B.3.i through V.B.3.v, for the miscellaneous treatment unit, the permittees shall maintain the following:
- a. Maintain the installation documentation on file at the UMCDF until such time that the miscellaneous treatment unit is certified closed in accordance with Permit Condition II.J; and

- b. At any time, provide the installation documentation by certified mail, express mail, or hand delivery to the Department within fifteen (15) days upon written request.
- vii. Prior to operating the hazardous waste miscellaneous treatment unit, the permittee shall comply with Permit Condition I.R and Permit Conditions V.B.3.i through V.B.3.vi.

V.B.4. Operating Conditions

- i. The permittee shall not place hazardous wastes, treatment reagents, or other materials in the miscellaneous treatment unit(s) if they could cause the miscellaneous treatment unit to rupture, leak, corrode, or otherwise fail.
- ii. One exhaust filter unit shall be online while HD ton containers are present inside the glove box.
- iii. Up to five HD ton containers may be placed into the glove box.
- iv. Each ton container shall be treated individually until all of the ton containers in the unit are vented.
- v. The roof panel must be secured to the glove box while the pressure-relief device is in use.
- vi. The roof panel may be removed from the glove box if:
  - a. The concentration of chemical agent as measured by the ACAMS in the glove box exhaust duct is below 0.2 VSL;
  - b. Hydrogen is at or below 5% of the lower explosive limit (LEL);
  - c. Differential pressure between the glove box and the room is at or below 0.1 inches water column; and
  - d. The glove box exhaust damper is closed.
- vii. If chemical agent is detected in the stack at or above 0.2 VSL, venting operations shall cease.

- viii. If chemical agent is confirmed in the stack at or above 0.2 VSL, replace both carbon beds in the online filter unit and leak test the unit before resuming venting operations and before the unit is returned to service.
- ix. If chemical agent is detected at or above 1.0 VSL in the online exhaust filter unit mid-bed, ventilation flow shall be switched to the standby exhaust filter unit.
- x. If chemical agent is confirmed by DAAMS in the filter unit mid-bed at or above 1.0 VSL, replace the first carbon bed in that filter unit and leak test the unit before it is returned to service.
- xi. If combustible gas monitors indicate the presence of hydrogen at 25% of the LEL venting operations shall cease.
- xii. Ton containers shall not be placed in the glove box if the glove box is not in good condition in accordance with 40 CFR §264.171.
- xiii. Treatment operations shall be undertaken only if all of the following conditions are met:
  - a. The ACAMS and DAAMS are operational
  - b. The SDS system and SDS pump are available
  - c. The exhaust filter unit is online and operating normally with airflows within allowable limits
  - d. No alarms associated with glove box operations are activated
  - e. The pressure-relief device is available and in operable condition
  - f. Plant air is available
  - g. Nitrogen is available
  - h. Rubber gloves are available, and replacement plugs, decontamination solution, and tools are available in the glove box.

V.B.5. Monitoring Requirements

- i. All monitoring, recording, maintenance, calibration, and test data shall be recorded and the records for the depressurization glove box miscellaneous treatment unit, including the

exhaust filter units shall be placed in the Operating Record for each respective unit, in accordance with Permit Condition II.I.

- ii. The Automatic Continuous Air Monitoring System (ACAMS) and Depot Area Air Monitoring System (DAAMS) monitoring the exhaust filter units shall be operated as follows:
  - a. All ACAMS and the DAAMS associated with the exhaust filter units and stack shall be operational before the HD ton containers are vented in the glove box.
  - b. During the venting of the pressurized HD ton containers in the glove box, the online exhaust filter unit mid-bed ACAMS may be taken offline to conduct calibrations and routine maintenance (i.e., challenges) provided the ACAMS on the glove box exhaust stack is operational.
  - c. The exhaust stack ACAMS shall continuously monitor emissions of HD during venting operations. The maximum allowable concentration in the exhaust stack for HD shall not exceed  $0.03 \text{ mg/m}^3$ . [40 CFR §264.601 and §270.32(b)(2)]
  - d. During the venting of the ton containers in the glove box, the ACAMS station on the exhaust stack may be taken offline for up to 90 minutes to conduct calibrations and routine maintenance (i.e., challenges) provided the ACAMS station on the online exhaust filter unit mid-bed ACAMS station is operational. If the calibration/maintenance process exceeds 90 minutes, glove box ton container venting operations shall cease until the exhaust stack ACAMS station is operational.
  - e. While ton containers are in the glove box, the glove box exhaust duct ACAMS must be operational prior to removing the lid.
- iii. The permittee shall maintain, calibrate, and operate process monitoring equipment as specified in Table 5-7 of this permit while treating hazardous waste.

- iv. Continuous pressure drop monitoring and data recording will be performed across each prefilter and high-efficiency particulate air filter element.

V.B.6. Response to Leaks or Spills

- i. In the event of a leak or a spill from the depressurization glove box miscellaneous treatment unit, the permittee shall remove the unit from service immediately and complete the following actions:
  - a. Stop the placement of ton containers into the glove box.
  - b. Pump out the glove box drain pan within 24 hours, or in as timely a manner as is possible to prevent harm to human health and the environment, if the permittee can demonstrate that the removal of the waste cannot be accomplished within 24 hours.  
[40 CFR §§264.193(c)(4), 264.602]
  - c. Remove the waste within 24 hours of the detection of the leak, if possible, to prevent further release, and allow inspection and repair of the unit. If the permittee determines that it will be impossible to meet this time period, the permittee shall notify the Department and demonstrate that a longer time period is required.
  - d. If the collected material is a hazardous waste, it shall be managed in accordance with all applicable requirements of 40 CFR Parts 262-264 and this permit.
  - e. Contain visible releases to the environment. The permittee shall immediately conduct a visual inspection of all releases to the environment and based on that inspection, shall:
    - (1) prevent further migration of the leak or spill to soils or surface water;
    - (2) remove and properly dispose of any visible contamination of the soil or surface water; and
    - (3) follow actions dictated by the Contingency Plan in Permit Attachment 9 for the type of waste released.

- f. Close the unit in accordance with the Closure Plan (Permit Attachment 8) unless the following actions are taken:
  - 1. For a release caused by a spill that has not damaged the integrity of the unit, the permittee shall remove the released waste and make any repairs to restore the integrity of the unit before returning the unit to service.
  - 2. If the permittee replaces a component of the miscellaneous treatment unit to eliminate the leak, that component must satisfy the requirements for new miscellaneous treatment units or components in accordance with 40 CFR §264.601.
- ii. For all major repairs to eliminate leaks or restore the integrity of the miscellaneous treatment unit, the permittee shall obtain a certification by an independent, qualified, registered professional engineer that the repaired unit is capable of handling hazardous wastes without release for the intended life of the unit before returning the unit to service.
- iii. The permittee shall submit to the Department all certifications of major repairs to correct leaks within seven (7) calendar days from returning the hazardous waste miscellaneous treatment unit to use.

V.B.7 Recordkeeping and Reporting

- i. The permittee shall verbally report to the Department within twenty-four (24) hours of detection when a leak or spill occurs from a hazardous waste miscellaneous treatment unit to the environment in accordance with Permit Condition I.U.
- ii. Releases from hazardous waste miscellaneous treatment unit that are contained within a secondary containment system shall be reported as required in Permit Condition V.B.8.i and shall be recorded in the operating record as required by Permit Condition II.I.1.i.
- iii. In addition to complying with the requirements of Permit Condition I.U.2, within thirty (30) calendar days of detecting a release to the environment from a hazardous waste

miscellaneous treatment unit, the permittee shall submit a written report detailing, at a minimum to the Department:

- a. Likely route of migration of the release;
  - b. Characteristics of the surrounding soil (including soil composition, geology, hydrogeology, wind direction, and climate);
  - c. Results of any monitoring or sampling conducted in connection with the release. If the permittee finds it will be impossible to meet the required 30-calendar-day submittal period, the permittee shall provide the Department with a schedule of when the results will be available. This schedule must be provided before the required thirty (30)-calendar-day submittal period expires;
  - d. Proximity of downgradient drinking water, surface water, and populated areas; and
  - e. Description of response actions taken or planned.
- iv. The permittee shall submit a demonstration of the effectiveness of treatment in accordance with 40 CFR §270.23(d). This demonstration shall be submitted within 30 calendar days of the start of treatment operations.
  - v. The permittee shall obtain, and keep on file at the UMCDF, the written statements by those persons required to certify the design and installation of the hazardous waste miscellaneous treatment unit as specified in Permit Condition V.B.3, until such time that the miscellaneous treatment unit is certified closed in accordance with Permit Condition II.J.7.
  - vi. The permittee shall keep on file at the UMCDF, the written hazardous waste miscellaneous treatment unit assessments in accordance with 40 CFR §264.601 of the hazardous waste miscellaneous treatment unit's integrity and suitability for handling hazardous waste, until such time that the hazardous waste miscellaneous treatment unit is certified closed in accordance with Permit Condition II.J.7.

- vii. The permittee shall maintain at the UMCDF a record of the results of leak tests and integrity tests conducted, in accordance with Permit Conditions V.B.3 or V.B.6.ii.
- viii. The permittee shall record and maintain in the operating record all monitoring and inspection data compiled under the permit conditions in accordance with Permit Condition II.I.1.i.

V.B.8. Special Provisions for Ignitable or Reactive Wastes]

The permittee shall take precautions to prevent accidental ignition of wastes in accordance with Permit Attachment 6.

V.B.9. Special Provisions for Incompatible Wastes

The permittee shall not place incompatible wastes in the depressurization glove box miscellaneous treatment unit.

**V.C. BULK DRAIN STATION MISCELLANEOUS TREATMENT UNITS**

V.C.1. Permitted and Prohibited Waste Treatment

- i. Subject to the terms of this permit, the permittee shall use the bulk drain station miscellaneous treatment units listed in Table 5-8 to drain all pumpable liquid mustard (HD) agent from ton containers.
- ii. After the liquid agent is drained, the undrainable residual contents, referred to as the heel, must comply with the permitted Metal Parts Furnace (MPF) feed rate limits. Ton containers with a heel greater than the MPF permitted feed limits (high-heel ton containers) shall be treated with the heel transfer system (HTS-RDS-101 and HTS-RDS-102), a component of each BDS treatment unit, using high-pressure hot water to mobilize a portion of the contents and transfer the resulting waste to an additional ton container to reduce the level of heel to meet permitted MPF feed limits in Table 6-4 and Permit Condition VII.C.3.i.
- iii. The contents of a recipient ton container may be transferred to another recipient or donor ton container, but must comply with the permitted feed rates before being fed to the MPF.

- iv. The permittee is prohibited from treating any HD ton containers in the BDSs that exhibit the ignitability characteristic (hazardous waste code D001).
- v. The permittee is prohibited from conducting any treatment operations utilizing the BDSs not identified in Permit Conditions V.C.1.i through V.C.1.iii.
- vi. The permittee is prohibited from conducting any HD ton container heel reduction/treatment operations not identified in Permit Conditions V.C.1.i through V.C.1.iii.

V.C.2 BDS Design, Installation, and Maintenance Requirements

- i. There are two BDSs, each of which consists of a munitions transfer conveyor, main frame assembly, a punch-and-drain station, and a heel transfer system rinse-and-drain station. The permittee shall comply with the Bulk Drain Station (MMS-BDS-101 and MMS-BDS-102) design and installation requirements, and shall maintain the units, as specified in all applicable drawings and specifications in Permit Attachment 12.
- ii. The permittee shall not treat HD ton containers in either BDS until the permittees have demonstrated compliance with the facility modification certification requirements as specified in Permit Condition I.R. All BDS installation and modification records shall be maintained as part of the facility operating record in accordance with Permit Condition II.I.
- iii. Prior to operating the BDS units, the permittee conduct a function test of the units and provide notification and documentation to the Department.

V.C.3. Operating Conditions

- i. Prior to transferring waste from a ton container (donor ton container), a second ton container (recipient ton container) shall be staged at the other BDS to receive waste from the donor ton container prior to treatment with the heel transfer system.
- ii. The permittee shall maintain, calibrate, and operate process monitoring, control, and recording equipment as specified in Table 5-9 of this permit, and the process equipment must be functional and correctly operating while treating hazardous waste.

- iii. The permittee shall not place hazardous wastes, treatment reagents, or other materials in the BDS(s) if they could cause the BDS(s) to rupture, leak, corrode, or otherwise fail.
- iv. The permittee shall maintain sensors and interlocks identified in Table 5-10 so that they are functional and correctly operating when the associated BDS is operating. The permittee is allowed to complete processing of any partially processed HD ton container when a sensor or interlock ceases to function.
- v. At the BDS, ton containers shall be punched and drained of liquid agent. After the first punch, the ton container shall be moved to the drain station. Each HD ton container shall be drained of liquid agent to ensure all but residual chemical agent and solid residue have been removed, even if the weight of the ton container is within the MPF permitted feed limits prior to being fully drained.
- vi. The permittee shall use the BDS weigh scales (49-WIT-152 and 49-WIT-252) to determine the quantity of liquid agent drained from each ton container processed in the BDSs.
- vii. The permittee shall use the BDS scales (49-WIT-152 and 49-WIT-252), before and after draining, to weigh and quantify the amount of residual heel remaining in the HD ton container.
- viii. The residual heel quantity in a ton container shall be weighed utilizing the BDS scales identified in Table 5-9 (BDS-1 or BDS-2) that are associated with the BDS on which it was treated (donor) or filled (recipient) prior to being transferred to the MPF to ensure compliance with MPF permitted feed limits.
- ix. If residual heel, as weighed in accordance with Permit Condition V.C.3.vii, is greater than 40 pounds, the HD ton container will be advanced to the heel transfer system (HTS) station for further treatment. Following the initial HTS treatment, if the residual unmobilized heel is greater than the permitted MPF feed limits, additional HTS treatments will be conducted until the donor ton container net weight is below the Metal Parts Furnace waste feed limit.
  - a. The HTS shall use a spray wand through which high-pressure, hot water (HPHW) will be sprayed inside the ton container to mobilize all or a portion of the residual heel.

- b. The quantity of high-pressure hot water used by the HTS to mobilize the donor ton container contents shall be monitored to prevent overflow of the container and recorded by PDAR to document and record the amount of water added to the ton container and utilized as rinsate. The quantity of water utilized by the HTS shall be used to calculate the percent water content of the rinsate in each ton container. Once HTS operations are complete, the resulting rinsate shall have a composition of between 36% and 98% water.
- c. The recipient ton container staged at the opposite BDS to receive waste transferred from a donor ton container shall be monitored through the BDS weight scales or calculations to prevent it from being overfilled.
- x. Within 24 hours of discovery of any HD ton container that cannot be processed under the conditions of this section (V.C.3), the permittee shall notify the Department and 1) properly manage the ton container in the Munitions Demilitarization Building; and 2) request and receive approval for further processing.
- xi. The permittee shall operate the BDSs to prevent spills and overflows by following site standing operating procedures and by immediately ceasing operations at the applicable BDS if any of the applicable Table 5-9 instruments, Table 5-10 sensors and/or interlocks, or other monitored parameters indicates the equipment is not operating properly, is not in the correct position, or could otherwise result in a spill or overflow.
- xii. The permittee shall not conduct treatment operations in the BDS unless the Munitions Demilitarization Building heating, ventilation, and air conditioning system (cascade ventilation system); the spent decontamination system and associated Munitions Processing Bay sump systems; and agent monitoring systems in the Munitions Processing Bay are operational and operating in accordance with permit requirements.
- xiii. The permittee shall operate the BDS to maintain the system and process parameters within the ranges or setpoints specified in Table 5-9 of this permit. Each occurrence of an

instrument operating outside of the Table 5-9 operating and/or calibrated ranges shall be reported at least quarterly to the Department.

V.C.4. Monitoring Requirements

- i. All bulk drain station miscellaneous treatment unit operating, monitoring, recording, maintenance, calibration, and test data shall be recorded manually or by PDAR, and the records shall be placed in the operating record in accordance with Permit Condition II.I.
- ii. The permittee shall monitor and record the waste throughput for each BDS by use of PDAR and the manual records maintained by the Control Room operators. The permittee shall use the BDS scales (Table 5-9, BDS-1 or BDS-2) to weigh the ton containers, before and after draining, to quantify the amount of agent removed in the BDSs.
- iii. The number of times a ton container is used in the heel transfer system will be monitored and recorded in the operating record and shall be limited to a maximum ten times.

V.C.5. Response to Leaks or Spills

- i. Secondary containment for spills and leaks during BDS treatment operations is provided by the MDB epoxy-coated concrete floors, sumps, and sump liners in accordance with Permit Condition III.F and Module IV. Any liquid waste material leaked or spilled on the floor shall be cleaned up and sent to the Spent Decontamination System collection systems. Any solid waste material leaked or spilled on the floor shall be cleaned up and properly disposed of. The MDB secondary containment and the Munitions Demilitarization Building cascade ventilation system provides engineering controls to prevent a release of HD to the environment.
- ii. The permittee shall comply with the requirements of Permit Condition I.U and Permit Attachment 9 (Contingency Plan) when there has been a release from the BDSs that escapes engineering controls; or a fire, explosion, or detonation from the operation of the BDSs.

- iii. In the event of a leak or a spill from a bulk drain station miscellaneous treatment units resulting in a release to the environment, the permittee shall remove the unit from service immediately and complete the following actions:
  - a. Remove the bulk drain station from service.
  - b. Remove the waste within 24 hours of the detection of the leak, if possible, to prevent further release, and allow inspection and repair of the unit. If the permittee determines that it will be impossible to meet this time period, the permittee shall notify the Department and demonstrate that a longer time period is required.
  - c. If the collected material is a hazardous waste, it shall be managed in accordance with all applicable requirements of 40 CFR Parts 262-264 and this permit.
  - d. Contain visible releases to the environment. The permittee shall immediately conduct a visual inspection of all releases to the environment and based on that inspection, shall:
    - (1) prevent further migration of the leak or spill to soils or surface water;
    - (2) remove and properly dispose of any visible contamination of the soil or surface water; and
    - (3) follow actions dictated by the Contingency Plan in Permit Attachment 9 for the type of waste released.
  - e. Close the unit in accordance with the Closure Plan (Permit Attachment 8) unless the following actions are taken:
    - 1. For a release caused by a spill that has not damaged the integrity of the unit, the permittee shall remove the released waste and make any repairs to restore the integrity of the unit before returning the unit to service.
    - 2. If the permittee replaces a component of the miscellaneous treatment unit to eliminate the leak, that component must satisfy the requirements for new miscellaneous treatment units or components in accordance with 40 CFR §264.601.

- iv. For all major repairs to eliminate leaks or restore the integrity of the miscellaneous treatment unit, the permittee shall obtain a certification by an independent, qualified, registered professional engineer that the repaired unit is capable of handling hazardous wastes without release for the intended life of the unit before returning the unit to service.
- v. The permittee shall submit to the Department all certifications of major repairs to correct leaks within seven (7) calendar days from returning the hazardous waste miscellaneous treatment unit to use.

V.C.6 Inspections Schedules and Procedures

The permittee shall inspect the bulk drain system miscellaneous treatment units in accordance with the Inspection Schedule, Attachment 3, of this permit.

V.C.7 Recordkeeping and Reporting

- i. The permittee shall verbally report to the Department within twenty-four (24) hours of detection when a leak or spill occurs from a BDS miscellaneous treatment unit to the environment in accordance with Permit Condition I.U.
- ii. Releases from a BDS miscellaneous treatment unit that are contained within a secondary containment system shall be reported as required in Permit Condition V.C.7.i and shall be recorded in the operating record as required by Permit Condition II.I.
- iii. In addition to complying with the requirements of Permit Condition I.U.2, within thirty (30) calendar days of detecting a release to the environment from a hazardous waste miscellaneous treatment unit, the permittee shall submit a written report detailing, at a minimum to the Department:
  - a. Likely route of migration of the release;
  - b. Characteristics of the surrounding soil (including soil composition, geology, hydrogeology, wind direction, and climate);

- c. Results of any monitoring or sampling conducted in connection with the release. If the permittee finds it will be impossible to meet the required 30-calendar-day submittal period, the permittee shall provide the Department with a schedule of when the results will be available. This schedule must be provided before the required thirty (30)-calendar-day submittal period expires;
  - d. Proximity of downgradient drinking water, surface water, and populated areas; and
  - e. Description of response actions taken or planned.
- iv. The permittee shall maintain and keep on file any documentation associated with the testing of the bulk drain station miscellaneous treatment units, as specified in Permit Conditions V.C.2.iii and V.C.2.iv, until such time that the miscellaneous treatment unit is closed in accordance with Permit Condition II.J.
  - v. The permittee shall obtain, and keep on file at the UMCDF, the written statements by those persons required to certify the design and installation of the hazardous waste miscellaneous treatment unit as specified in Permit Condition V.C.2.ii, until such time that the miscellaneous treatment unit is closed in accordance with Permit Condition II.J.
  - vi. The permittee shall keep on file at the UMCDF, the written BDS miscellaneous treatment unit assessments in accordance with 40 CFR §264.601 of the hazardous waste miscellaneous treatment unit's integrity and suitability for handling hazardous waste, until such time that the hazardous waste miscellaneous treatment unit is closed in accordance with Permit Condition II.J.
  - vii. The permittee shall record and maintain in the operating record all operating, monitoring, and inspection data compiled under the permit conditions in accordance with Permit Condition II.I.

V.C.8. Special Provisions for Ignitable or Reactive Wastes

- i. Ignitable wastes (D001) shall not be treated in the Munitions Processing Bay.
- ii. The permittee shall take precautions to prevent accidental ignition of wastes in accordance with Permit Attachment 6.

V.C.9. Special Provisions for Incompatible Wastes

The permittee shall not place incompatible wastes in the bulk drain station miscellaneous treatment units.

V.C.10. Management of Ton Containers

After treatment in accordance with Permit Condition V.B or Permit Condition III.C, the ton containers shall remain closed until they are punched by the BDS. Once a ton container has commenced BDS treatment operations, if it cannot be subsequently processed through the Metal Parts Furnace through normal processing timeframes, typically one to five (1 to 5) days, the ton container will be managed in accordance with Table 9-2 and the 40 CFR Subpart DD requirements as described in Module III.

V.C.11. Air Emission Standards

The BDS miscellaneous treatment units and ancillary equipment shall comply with the air emission standards in accordance with Permit Condition II.P and Module IX.

**TABLE 5-1 BRA HAZARDOUS WASTE MISCELLANEOUS TREATMENT UNITS PERMITTED FOR USE DURING TRIAL BURNS, POST-TRIAL BURN PERIODS, AND NORMAL OPERATIONS**

Unit I.D. Number	Maximum Allowable Capacity (gallons)	Dimensions of Unit (feet)	Permitted Hazardous Waste Activity	Permitted Hazardous Waste Codes <sup>1,2</sup>
BRA-DDRY-101	N/A	3.5' dia. X 12.0' drum length	Dehydration of brine from BRA evaporator packages	TC Metals (D004-D011), D012, D014, D015, D018 to D022, D027 to D037, D039 to D043 Monochlorobenzene-U037, D021 Blister Agent - P998 Residues of Demilitarization-F998, F999
BRA-DDRY-102				
BRA-DDRY-201				
BRA-EVAP-101	1,060 gallons shut-in maximum	4.5' dia. by 8.0' length (not including bottom cone)	Increase the specific gravity of the brine from the brine surge tanks	TC Metals (D004-D011), D012, D014, D015, D018 to D022, D027 to D037, D039 to D043 -U210, D039 Monochlorobenzene-U037, D021 Blister Agent - P998 Residues of Demilitarization-F998, F999
BRA-EVAP-201				
BRA-EXCH-101	950 gallons/min. maximum recirculation rate	1,300 square feet of heat transfer area	Raise the temperature of the brine from the brine surge tanks	TC Metals (D004-D011), D012, D014, D015, D018 to D022, D027 to D037, D039 to D043 Monochlorobenzene-U037, D021 Blister Agent - P998 Residues of Demilitarization-F998, F999
BRA-EXCH-201				

<sup>1</sup> TC Organics are presumed to be absent due to successful incineration to below regulatory levels under the TC rule, but sampling and analysis will be conducted to verify their absence in the brine surge tank according to the Waste Analysis Plan included as Attachment 2 of this permit.

<sup>2</sup> TC = Toxicity Characteristic

<b>TABLE 5-2</b>					
<b>BRA HAZARDOUS WASTE SECONDARY CONTAINMENT SUMP SYSTEMS</b>					
<b>Sump I.D Number</b>	<b>Maximum Allowable Capacity (gallons)<sup>2</sup></b>	<b>Dimensions of Sump (feet)</b>	<b>Location Reference</b>		
			<b>Drawing<sup>1</sup> Column - Row</b>	<b>Floor</b>	<b>Room</b>
BRA-SUMP-104	85	2.25 x 2.25 x 2.25	G-6	1	BRA
BRA-SUMP-204	85	2.25 x 2.25 x 2.25	G-6	1	BRA

- 1 Reference building column-row numbers from Drawing UM-02-D-501 in Permit Attachment 12.  
 2 Sump is equipped with low-level alarm controls to automatically turn on and off the sump pump.

<b>TABLE 5-2A</b>	
<b>BRA SECONDARY CONTAINMENT SUMP SYSTEM DESIGN STANDARDS</b>	
<b>Sump Design Standards</b>	<b>Secondary Containment Sumps</b>
<b>PRIMARY LINER:</b>	
Construction Material:	welded carbon steel
Sump Liner Capacity, (gallons)	85
Specified Shell Thickness, (inches)	3/16 steel
Grating Material	reinforced fiberglass
Dimensions, feet:	2.25 X 2.25 X 2.25
Protective Coating:	Chemically Resistant Durable Epoxy Coating
<b>LEAK DETECTION SYSTEM:</b>	Low- and High-level alarms

<b>TABLE 5-3 BRA DRUM DRYER CATCH PAN HAZARDOUS WASTE PRIMARY CONTAINMENT SYSTEMS</b>					
<b>I.D Number</b>	<b>Maximum Allowable Capacity (gallons)<sup>2</sup></b>	<b>Dimensions of Containment System (feet)</b>	<b>Location Reference</b>		
			<b>Drawing<sup>1</sup> Column - Row</b>	<b>Floor</b>	<b>Room</b>
DDRY-CHPAN-101	197	Reference Table 5-3A	C-3	1	BRA
DDRY-CHPAN-102	197	Reference Table 5-3A	C-3	1	BRA
DDRY-CHPAN-201	197	Reference Table 5-3A	C-3	1	BRA

- 1 Reference building column-row numbers from Drawing UM-02-D-501 in Permit Attachment 12.  
 2 Capacity of the primary containment systems, including sump, to within one-inch of the top of the catch pans.

<b>TABLE 5-3A BRA DRUM DRYER CATCH PAN PRIMARY CONTAINMENT SUMP SYSTEM DESIGN STANDARDS</b>	
<b>Sump Design Standards</b>	<b>Secondary Containment Sumps</b>
<b>PRIMARY LINER:</b>	
Construction Material	welded stainless steel
Capacity (gallons)	228
Specified Shell Thickness (inches)	1/4 steel
Grating Material	Stainless steel
Nominal Internal dimensions (feet)	0.5 x 3'-10"x 13.3
<b>LEAK DETECTION SYSTEM</b>	Visual

- 1 Nominal dimensions of the catch pans, which have a sloped base. There is also a 1.1' x 1.5' x 3.0' sump built in as an integral component of each catch pan.

**TABLE 5-4 BRINE REDUCTION AREA INSTRUMENT AND PROCESS DATA**

Item No.	Control Parameter	Measuring Device	Location	Calibrated Instrument Range	Operating Range or Setpoint	Instrument Loop Accuracy	Calibration Method No. and Frequency <sup>a</sup>
1	Brine Feed: Brine Flow Rate to Evap. Pack. BRA-EVAP-101/201 23-FIT-837 23-FIT-835	Electro-magnetic Flowmeter	In-Line	0-50 gpm	0-35.6 gpm (ROHA)	±1 gpm	Inst. Calib. Para. 2.3 180 Days
2	Heat Exchangers: BRA-EVAP 101B//201B Brine Temp. 23-TIT-832/23-TIT-890	Thermocouple	In-Line	100-400°F	150-300°F	±4°F	Inst. Calib. Para. 2.4 180 Days
3	Heat Exchanger: BRA-EVAP-101B/201B Brine Density 23-DIT-834/23-DIT-887	Magnetically Vibrated Tube	In-Line	0.85-2.0 SG	0.90-1.17 SG	±0.03 SG	Inst. Calib. Para. 2.4 180 Days
4	Heat Exchangers BRA-EVAP-101B/201B Steam Entering: Flow Rate 23-FIT-830/23-FIT-888	Orifice & D/P Cell	In-Line	0-13,000 lb/hr	0-12,750 lb/hr	±250 lb/hr	Inst. Calib. Para. 2.3 180 Days
5	Heat Exchangers BRA-EVAP-101B/201B Steam Entering: Temperature (High Alarm) 23-TSH-919/23-TSH-724	Filled System	In-Line	235-375°F	300°F	±2°F	Inst. Calib. Para. 2.4 180 Days
6	Flash Evaporators: BRA-EVAP 101A/201A Level 23-LIT-757/23-LIT-720	D/P Cell	Flash Chamber	0-100% (0-60 in)	15-90% (9-54 in)	±1 in	Inst. Calib. Para. 2.4 180 Days
7	Drum Dryers: BRA-DDYR-101/102/201 Brine Flow Rate to Drum Dryer 23-FT-851/ 23-FT-872/ 23-FT-903	Electro-magnetic Flowmeter	In-Line	0-7 gpm	0-5.8 gpm (ROHA)	±0.1 gpm	Inst. Calib. Para. 2.3 180 Days
8	Drum Dryers: BRA-DDYR-101/102/201 Temp. of Brine to Drum Dryer 23-TISHH-110	Filled System	In-Line	0-400°F	0-250°F	±4°F	Inst. Calib. Para. 2.3 180 Days

**TABLE 5-4 BRINE REDUCTION AREA INSTRUMENT AND PROCESS DATA**

Item No.	Control Parameter	Measuring Device	Location	Calibrated Instrument Range	Operating Range or Setpoint	Instrument Loop Accuracy	Calibration Method No. and Frequency <sup>a</sup>
9	Drum Dryers: BRA-DDYR-101/ 102/201 Liquid Level in Nip 23-LT-758/ 23-LT-759/ 23-LT-760	RF Capacitance	Vessel	0-14 in.	0-12 in.	±0.5 in	Inst. Calib. Para. 2.3 180 Days
10	Drum Dryers: BRA-DDYR- 101/102/201 Speed of Drum Drive Motors 23- SI-854/23-SI- 875/23-SI-906	Frequency Transmitter	Drum Drive	0-14 rpm	1-13 rpm	±0.2 rpm	Inst. Calib. Para. 2.3 180 Days
11	Intentionally Left Blank						
12	BRA PAS: Dryer BRA-SEPA-105 Knockout Box - Bottom Temp. of Heater 27-TIT- 190	Thermocouple	Bottom of Knockout Box	0-500°F	90-150°F	±5°F	Inst. Calib. Para. 2.4 180 Days
13	BRA PAS: Burner BRA- BURN-110 - Operation (online/ offline) 27-BSLL- 170	Flame Detector	Burner	N/A	N/A	N/A	N/A
14	Intentionally Left Blank						
15	BRA PAS: Baghouses BRA- SEPA- 101/102/103/104 - Air Stream Temp. (Inlet) 27-TT-172	Thermocouple	In-Line	0-500°F	200-350°F	±5°F	Inst. Calib. Para. 2.4 180 Days
16	BRA PAS: Baghouses BRA- SEPA- 101/102/103/104 - Pressure Differential across Bags 27-PDT- 143/27-PDT- 144/27-PDT- 145/27-PDT-186	D/P Cell	Vessel	0-30 in. w.c.	0.3-12 in. w.c.	±0.2 in w.c.	Inst. Calib. Para. 2.4 180 Days
17	BRA PAS: BRA- STAK-102 Exhaust Stack - Flow Rate 27- FIT-151	Thermal convective mass flow measurement	Stack	0-48,000 scfm	8,000-37,682 scfm	±2880 scfm	Inst. Calib. Para. 2.4 180 Days

**TABLE 5-4 BRINE REDUCTION AREA INSTRUMENT AND PROCESS DATA**

Item No.	Control Parameter	Measuring Device	Location	Calibrated Instrument Range	Operating Range or Setpoint	Instrument Loop Accuracy	Calibration Method No. and Frequency <sup>a</sup>
18	Level Switch in Baghouse 27-LSH-93/27-LSH-94/27-LSH-95/27-LSH-96	RF Capacitance	Baghouse	N/A	72 in.	N/A	Inst. Calib. Para. 2.2 180 Days
19 <sup>c,d</sup>	BRA Stack Exhaust gas chemical agent MON-ACAM-1521	Gas Chromatography	Stack	WAP, Appendix C	WAP, Appendix C	± 1% Repeatability	WAP, Appendix C
20	Intentionally Left Blank						
21	Drum Dryers-BRA-DDYR-101/102/201 Stream Pressure 23-PIT-821/23-PIT-822/23-PIT-823	Diaphragm	In-Line	0-200 psig	10-150 psig	± 2.0 psig	Inst. Calib. Para. 2.3 180 Days

NOTES:

- <sup>a</sup> See Permit Attachment 11 for "Process Instrument Calibration," "Oxygen and Carbon Monoxide Analyzer Calibration," and "'In-Situ' Continuous Emission Monitoring Systems." See also Operating and QA/QC procedures found in "Laboratory Quality Assurance Program for the Chemical Stockpile Disposal Program, Additional operating and QA/QC plans and procedures for the Automatic Continuous Air Monitoring System and Depot Area Air Monitoring System (DAAMS) are in Appendices C and D of the Waste Analysis Plan (Permit Attachment 2).
- <sup>b</sup> D/P = differential pressure N/A = not applicable
- <sup>d</sup> The ACAMS may be taken off-line to conduct calibrations and routine maintenance in accordance with Permit Condition V.A.9.v.
- <sup>d</sup> Continuous monitoring

**TABLE 5-5**  
**BRA MISCELLANEOUS TREATMENT UNITS WASTE FEED CUTOFF/LOCKOUT PARAMETERS**

Item Number	Tag Number	Process Data Description	Setpoints
BRA-1a	23-DSHH-834	Brine specific gravity in EVAP-101 recirculation loop high-high	1.17 sgu
BRA-1b	23-DSHH-887	Brine specific gravity in EVAP-201 recirculation loop high-high	
BRA-2a	23-DALL-834	Brine specific gravity in EVAP-101 recirculation loop low-low (drying phase only)	1.02 sgu
BRA-2b	23-DALL-887	Brine specific gravity in EVAP-201 recirculation loop low-low (drying phase only)	
BRA-3a	23-FQAHH-851	Total brine feed rate to drum dryer DDYR-101	5.8 gpm (ROHA) to be adjusted periodically or as necessary to comply with final metals and chlorine limitations.
BRA-3b	23-FQAHH-872	Total brine feed rate to drum dryer DDYR-102	
BRA-3c	23-FQAHH-903	Total brine feed rate to drum dryer DDYR-201	
BRA-4	27-TAHH-172	Temperature of exhaust gas into baghouse high-high	350°F
BRA-5	27-PDAHH-143B 27-PDAHH-144B 27-PDAHH-145B 27-PDAHH-186B	Differential pressure of the baghouse high-high	12 in. w.c.
BRA-6	27-PDALL-143B 27-PDALL-144B 27-PDALL-145B 27-PDALL-186B	Differential pressure of the baghouse low-low	0.3 in. w.c.
BRA-7	27-BSLL-170	Loss of burner flame	Flame loss

**TABLE 5-5**  
**BRA MISCELLANEOUS TREATMENT UNITS WASTE FEED CUTOFF/LOCKOUT PARAMETERS**

Item Number	Tag Number	Process Data Description	Setpoints
BRA-8	MON-ACAM-1521	Chemical agent emission high-high based on instantaneous measurement in BRA stack	GB 0.0003 mg/m <sup>3</sup> VX 0.0003 mg/m <sup>3</sup> HD 0.03 mg/m <sup>3</sup>
BRA-9a	23-LAHH-720	Flash evaporator EVAP-101 level high-high	90% (54 inches)
BRA-9b	23-LAHH-757	Flash evaporator EVAP-201 level high-high	
BRA-10	27-FAHH-151	BRA stack exhaust flow rate high-high	3 or 4 baghouses online = 37,682 scfm 2 baghouses online = 25,121 scfm 1 baghouse online = 12,561 scfm
BRA-11a	23-FAHH-835	Brine flow to EVAP-101 high-high	35.6 gpm (ROHA)
BRA-11b	23-FAHH-837	Brine flow to EVAP-201 high-high	

**TABLE 5-6 DEPRESSURIZATION GLOVE BOX HAZARDOUS WASTE MISCELLANEOUS TREATMENT UNIT  
 PERMITTED FOR USE DURING HD OPERATIONS**

Unit I.D. Number	Maximum Allowable Capacity	Dimensions of Unit (feet)	Materials of Construction	Permitted Hazardous Waste Activity	Permitted Hazardous Waste Codes
CHB-GLBX-401	5 HD ton containers each containing 170 gallons of HD blister agent	15' long x 10' wide x 6.3' high	Stainless steel and Hastelloy	Treat ignitability characteristic in pressurized HD ton containers	Ignitability Characteristic (D001) Reactive Characteristic (D003) TC Metals (D004-D011), TC Organics (D022, D028, D043) Blister Agent - P998

**TABLE 5-7 DEPRESSURIZATION GLOVE BOX (DGB) INSTRUMENT AND PROCESS DATA**

Item	Control Parameter	Measuring Device	Location	Calibrated Instrument Range	Operating Range or Setpoint	Instrument Loop Accuracy	Calibration Method No. and Frequency <sup>a</sup>
1 <sup>b</sup>	DGB mid-bed exhaust filter monitor MON-ACAM-262/ MON-ACAM-263	Gas chromatography	Glove box mid-bed exhaust filter units	WAP, Appendix C	WAP, Appendix C	±1% repeatability	WAP, Appendix C
2 <sup>b</sup>	DGB stack exhaust gas chemical agent monitor MON-ACAM-260	Gas chromatography	Glove box exhaust stack	WAP, Appendix C	WAP, Appendix C	±1% repeatability	WAP, Appendix C

<sup>a</sup> See Permit Attachment 11 for "Process Instrument Calibration," "Oxygen and Carbon Monoxide Analyzer Calibration," and "'In-Situ' Continuous Emission Monitoring Systems." See also Operating and QA/QC procedures found in "Laboratory Quality Assurance Program for the Chemical Stockpile Disposal Program, Additional operating and QA/QC plans and procedures for the Automatic Continuous Air Monitoring System and Depot Area Air Monitoring System (DAAMS) are in Appendices C and D of the Waste Analysis Plan (Permit Attachment 2).

<sup>b</sup> Continuous monitoring

**TABLE 5-8  
 BULK DRAIN STATION HAZARDOUS WASTE MISCELLANEOUS TREATMENT UNITS  
 PERMITTED FOR USE DURING HD OPERATIONS**

Unit I.D. Number	Maximum Allowable Capacity	Materials of Construction	Permitted Hazardous Waste Activity	Permitted Hazardous Waste Codes
MMS-BDS-101	1 HD ton container	Steel plate	Treat HD ton containers	Reactive Characteristic (D003)
MMS-BDS-102				TC Metals (D004-D011), TC Organics (D022, D028, D043) Blister Agent - P998 Residues of Demilitarization - F998

**TABLE 5-9  
 BULK DRAIN STATION HAZARDOUS WASTE MISCELLANEOUS  
 TREATMENT UNITS INSTRUMENT  
 AND PROCESS DATA**

Item No.	Control Parameter	Measuring Device	Location	Calibrated Instrument Range <sup>a</sup>	Operating Range or Setpoint	Instrument Loop Accuracy	Calibration Method No. and Frequency <sup>b</sup>
BDS-1	BDS-101 weight-indicating transmitter 49-WIT-152	Load Cell	In-Line	0-6,216 lbs	1-6,000 lbs	± 24 lbs (±0.64% repeatability)	Inst. Calib. Para. 2.9 90 days
BDS-2	BDS-102 weight-indicating transmitter 49-WIT-252						
BDS-3	HTS water temperature 066-TIT-9301	Thermocouple	In-Line	0-200°F	≤126°F	± 5°F	Inst Calib. Para. 2.5 180 days
BDS-4	HTS water pressure 066-PIT-9301	Diaphragm Transmitter	In-Line	0-3,500 psig	>2,200 psig	± 20 psig	Inst Calib. Para. 2.3 180 days
BDS-5	HTS water flow quantification transmitter 066-FQIT-9301	Flowmeter	In-Line	0-5 gal/min 0-50 gal total	Variable based on desired heel:water ratio	+0.5 gal/min + 2 gal	Inst Calib. Para. 2.4 180 days

<sup>a</sup> Calibrated range does not include the weight of the BDS conveyor

<sup>b</sup> See Permit Attachment 11 for "Process Instrument Calibration"

**TABLE 5-10  
 BULK DRAIN STATION MISCELLANEOUS TREATMENT UNITS SENSORS  
 AND INTERLOCKS**

Tag # <sup>b</sup>		Sensor Type	Function
Line A	Line B		
049-01-P2	049-02-P2	Inductive proximity sensors	Indicates the cradle is at the punch position <sup>a</sup>
049-01-P3	049-02-P3		Indicates the TC cradle is: <ul style="list-style-type: none"> <li>• at the agent drain position</li> <li>• in the first vent punch position</li> </ul>
049-01-P4	049-02-P4		Indicates the TC cradle is: <ul style="list-style-type: none"> <li>• at the HTS spray position</li> <li>• in the second vent punch position</li> </ul>
049-01-102A1 049-01-102A2 049-01-102A3 049-01-102A4	049-02-102A1 049-02-102A2 049-02-102A3 049-02-102A4		Indicates the transfer conveyor lift cylinders are extended
049-01-104B	049-02-104B		Indicates the agent drain tube is fully retracted
066-ZS-9101B	066-ZS-9201B		Indicates the HTS spray wand cylinder is fully retracted
066-ZS-9103B	066-ZS-9203B		Indicates the HTS waste drain tube cylinder is fully retracted

<sup>a</sup> Interlocks MDM-GATE-101 and -102

<sup>b</sup> Must be functional when the associated miscellaneous unit is operating

## **MODULE VI – SHORT-TERM INCINERATION - SHAKEDOWN, TRIAL BURN, AND POST-TRIAL BURN**

This module covers the incinerator shakedown, trial burn, and post-trial burn periods for each incinerator. For clarity, this module is organized as follows:

- Section VI.A - General Conditions During Shakedown, Trial Burn, and Post-Trial Burn for All Incinerators at the UMCDF Site
- Section VI.B - Liquid Incinerators (LICs)
- Section VI.C - Metal Parts Furnace (MPF)
- Section VI.D - Deactivation Furnace System (DFS)
- Section VI.E - Common Stack for LIC, MPF, and DFS
- Section VI.F - PAS Carbon Filter Unit

### **VI.A. GENERAL CONDITIONS DURING SHAKEDOWN, TRIAL BURN, AND POST-TRIAL BURN FOR ALL INCINERATORS AT THE UMCDF SITE**

#### **VI.A.1. Construction and Maintenance [40 CFR §264.31]**

- i. The permittee shall construct and maintain each incinerator in accordance with the applicable design plans and specifications contained in Permit Attachment 12.
- ii. All process monitors required, pursuant to Permit Conditions VI.B.4, VI.B.5, VI.C.4, VI.C.5, VI.D.4, and VI.D.5, shall be equipped with operational alarms to warn of deviation, or imminent deviation, from the limits specified in Tables 6-3, 6-7, 6-11, 6-15, 7-1a, 7-1b, 7-3, 7-5, and 7-7 of this permit.
- iii. Modifications to the design plans and specifications in Permit Attachment 12 for any incinerator shall be made in accordance with 40 CFR §270.42.
- iv. Prior to treating surrogate or chemical agent hazardous waste in any incinerator, the permittee shall install and test all process monitoring and control instrumentation specified in Tables

7-1a, 7-1b, 7-3, 7-5, and 7-7 of this permit for the incinerators in accordance with the applicable drawings and specifications Permit Attachment 12.

- v. The permittee shall not feed surrogate or chemical agent hazardous wastes into any incinerator until such time that the permittee has demonstrated compliance with the certification of construction or modification requirements, as specified in Permit Condition I.R.
- vi. The permittee shall maintain and operate each incinerator during shakedown, trial burn, and post-trial burn periods in accordance with the operating requirements specified in this permit. Each incinerator shall meet the applicable performance standards specified in Permit Conditions VI.B.1, VI.C.1, and VI.D.1 after exiting each incinerator's carbon filter system.
- vii. All air pollution control devices and capture systems for which this permit is issued shall be maintained and operated at all times in a manner so as to minimize the emissions of air contaminants and to minimize process upsets. Procedures for ensuring that the above equipment is properly operated and maintained so as to minimize the emission of air contaminants and process upsets shall be established.

VI.A.2. [RESERVED]

VI.A.3. Monitoring Requirements [40 CFR §264.347, §270.31]

- i. Upon receipt of a written request from the Department, the permittee shall perform sampling and analysis of the waste and exhaust emissions to verify that the operating requirements established in the permit achieve the performance standards delineated in this permit. [40 CFR §264.347(a)(3)]
- ii. All monitoring, recording, maintenance, calibration, and test data shall be recorded and the records for each incinerator shall be placed in the operating record for each respective incinerator, in accordance with Permit Condition II.I.
- iii. All continuous emissions monitoring systems (CEMS), Automatic Continuous Air Monitoring Systems (ACAMS) and Depot Area Air Monitoring System (DAAMS) monitors

identified in Appendix C to Permit Attachment 2 (Waste Analysis Plan) and as otherwise required by this permit shall be functional, correctly operating, and monitoring in accordance with the requirements of this permit during agent treatment and storage operations.

VI.A.4. Recordkeeping

- i. The permittee shall record and maintain in the operating record for each incinerator, all monitoring and inspection data compiled under the conditions of this permit, in accordance with Permit Condition II.I.
- ii. The permittee shall record in the operating record the date, time, and duration of all automatic waste feed cut offs and/or lock outs, including the triggering parameters, reason for the deviation, and corrective measures taken to prevent recurrence of the incident. The permittee shall also record all incidents of the automatic waste feed cut-off function failures, including the corrective measures taken to correct the condition that caused the failure. [40 CFR §264.347 and §264.345]
- iii. A quarterly report, as defined below, will be submitted to the Department each calendar quarter within 30 days following the end of the quarter. The report will include the following information:
  - a. Total operating time for each incinerator;
  - b. Date/time of all startups and shutdowns;
  - c. Date/time/duration/cause/corrective action taken for all shutdowns caused by malfunction of either process or control equipment;
  - d. Date/time/duration/cause/corrective action taken for all instances of waste feed cut off.

VI.A.5. Trial Burn and Emissions Demonstration Test Plan and Data Submission [40 CFR §264.340; §270.62; OAR 340-104-0340]

- i. The permittee shall operate and monitor each incinerator during the short-term periods (shakedown, trial burn, and post-trial burn; and ramp-up, emissions demonstration test

[EDT], and post-EDT) as specified in Module VI of this permit and in the trial burn or EDT plans for each different chemical agent, secondary waste, carbon, and HD rinsate, as applicable. [40 CFR §270.62] The rinsate EDT Plan is contained in Attachment 14 to this permit.

- ii. The individual trial burn plan for surrogate, secondary waste (for the MPF), agent-contaminated carbon, and each different chemical agent for each incinerator shall be resubmitted by the permittee as a permit modification as follows.

- a. [RESERVED]

- b. The carbon trial burn plan for the MPF shall be submitted at least 180 days prior to the start date of Phase 2, as defined in VI.A.6.iv, of Shakedown Period II.

All applicable public comment periods and notifications as required by 40 CFR §270.42 shall be followed.

- iii. The revised trial burn plans shall follow the procedures listed below:

- a. The revised trial burn plans for each incinerator shall define operating conditions and waste feed rates that will be used to determine incinerator performance in accordance with 40 CFR §264.343.
- b. The plans shall include ramp-up procedures during the shakedown periods.
- c. The revised plans shall address stack sampling for total organics in accordance with EPA document "Guidance for Total Organics Final Report," March 1996 EPA-600-R-96-036.
- d. Shakedown Period I and Phase 2 of Shakedown Period II shall not begin until permit modifications, in accordance with VI.A.5.ii, have been approved by the Department.
- e. The MPF secondary waste and carbon trial burns shall not begin until permit modifications, in accordance with Permit Condition VI.A.5.ii, have been approved by the Department.

- f. The LIC, DFS, and MPF trial burns shall not begin until permit modifications, in accordance with Permit Condition VI.A.5.ii, have been approved by the Department.
  
- iv. [RESERVED]
  
- v. The permittee shall submit a summary of all data collected during the trial burn or EDT to the Department upon completion of each trial burn period and EDT period. The permittee shall submit to the Department a test report within 90 calendar days of completion of each trial burn or EDT. All analyzed runs will be reported in the final report. All submissions shall be certified in accordance with 40 CFR §270.62(b)(8). The permittee shall submit a permit modification request proposing the changes to the post-trial burn and post-EDT period AWFCO settings and operational setpoints within 30 calendar days following the submission of the report.
  
- vi. If the preliminary calculations show that one or more of the performance standards listed in this permit for the respective incinerator were not met during the trial burn or EDT, the permittee shall immediately stop waste feed to the incinerator system. The Department shall be verbally notified within 24 hours of this discovery. As necessary, a revised post-trial burn or post-EDT feed rate shall be submitted to the Department for approval in writing, which will allow the permittee to treat the remaining hazardous wastes present in the tank systems.
  
- vii. If the preliminary calculations for any trial burn or EDT, or testing results from any sampling pursuant to VI.A.3.i, show that any emission rate for any constituent, for any incinerator listed in Table 6-12 is exceeded, then the permittee shall notify the Department within 24 hours of the discovery. If the increased emission is offset by a decreased emission from another constituent that is expected to be emitted at the same time, the permittee will submit additional risk information. Based on the notification and any additional information, the Director may submit in writing direction to the permittee to stop waste feed to the appropriate incinerator(s). The permittee shall stop waste feed to the appropriate incinerator(s) in the time specified in writing. Waste feed operation will resume upon written approval from the Department. [40 CFR §270.32(b)(2)]

- viii. The permittee shall be limited to extrapolation of metal feed rates to no more than three times the feed rates demonstrated during the LIC trial burns or EDT and MPF carbon trial burn when submitting the permit modification in Permit Condition VI.A.5.v.

VI.A.6. Shakedown and Ramp-Up [40 CFR §264.340; §270.62; OAR 340-104-340]

- i. Shakedown Period I and Phase 2, as defined in VI.A.6.iv, of Shakedown Period II for each incinerator shall be conducted in accordance with the approved trial burn plans provided for in Permit Condition VI.A.5. Phase 1 of Shakedown Period II for each incinerator shall be conducted in accordance with all conditions of the permit. Phases 1 and 2 of the MPF secondary waste shakedown period shall be conducted in accordance with all conditions of the permit.
- ii. Shakedown Period I for each incinerator started with the initial introduction of surrogate into the furnace system following construction and ended with the start of the surrogate trial burn. Shakedown Period I has been completed for all furnaces.
- iii. Shakedown Period II for each incinerator shall begin with the introduction of chemical agent, secondary waste, or carbon, as applicable, into the incinerator system and shall end with the start of the trial burn. There shall be a separate Shakedown Period II for each chemical agent for each incinerator, and there shall be a separate MPF Shakedown Period II for secondary waste and carbon.
- iv. Each shakedown period for the LICs, MPF, and the DFS shall include two phases (1 and 2). During Phase 1, each LIC, MPF, and the DFS shall operate at the shakedown Phase 1 and post-trial burn setpoints as specified in Tables 6-3, 6-7, and 6-11 of this permit, respectively. Phase 1 shall be completed and Phase 2 shall commence once Condition VI.B.3.iv is satisfied for the LICs, Condition VI.C.3.vi is satisfied for the MPF and Condition VI.D.3.iv is satisfied for the DFS. Phase 2 shall require each LIC, MPF, and the DFS to operate at the Shakedown Phase 2 and trial burn period setpoints as specified in Tables 6-3, 6-7, and 6-11 of this permit, respectively, until Condition VI.B.3.v is satisfied for the LIC, Condition VI.C.3.vii is satisfied for the MPF, and Condition VI.D.3.v is satisfied for the DFS.

- v. Each shakedown period shall not exceed 720 operating hours. The permittee may petition the Department for one extension of any shakedown period for up to 720 additional operational hours for the surrogate test or chemical agent tests in accordance with 40 CFR §270.62(a).
- vi. Prior to start of the ramp-up period, the permittee shall perform, on LIC2, a water test to evaluate the incinerator exhaust flow rate under water-only feed conditions. The ramp-up period for each incinerator shall begin with the initial introduction of rinsate into the furnace system and shall end with the start of the EDT. The ramp-up period for each incinerator shall be limited to 350 operational hours.

VI.A.7. [RESERVED]

VI.A.8. Reporting

- i. During the shakedown, trial burn, and post-trial burn periods; and during the rinsate ramp-up, EDT, and post-EDT periods; the permittee shall calibrate the oxygen (O<sub>2</sub>) and carbon monoxide (CO) continuous emission monitoring systems (CEMS) specified in this permit in accordance with the performance specifications for continuous emission monitoring systems referenced by 40 CFR 63 Appendix to Subpart EEE, and the mercury (Hg) CEMS specified in this permit in accordance with Permit Attachment 7.
- ii. During the shakedown, trial burn, and post-trial burn periods; and during the rinsate ramp-up, EDT, and post-EDT periods; the permittee shall submit a report of all quarterly CEMS calibration error (CE)/absolute calibration audit (ACA) and annual CEMS performance specification tests conducted in accordance with Condition VI.A.8.i of this permit within 30 calendar days of the end of the quarter in which the test was conducted.
- iii. The permittee shall submit to the Department an annual report every February first for the previous calendar year, which summarizes the QA/QC reliability problems experienced with hydrogen chloride (HCl), carbon monoxide, oxygen, and chemical agent stack gas monitors, chemical agent ventilation system monitors (laboratory and MDB), mercury (Hg) monitors, and ambient air chemical agent monitors during the previous year. This summary report shall include, but not be limited to, the following:

- a. Identification of the monitor experiencing the problem;
- b. Identification of the type of problem (e.g., borderline or deficient recoveries, plugging);
- c. Date problem experienced;
- d. Frequency of problem; and
- e. Corrective action implemented to correct the problem, and whether or not or to what degree the corrective action was successful.

VI.B. **LIQUID INCINERATORS (LICS)**

VI.B.1. **Performance Standards**

- i. During the shakedown, trial burn, and post-trial burn periods, each LIC must achieve and maintain a destruction and removal efficiency (DRE) of 99.9999% for the chemical agent listed below. During the HD shakedown, trial burn, and post-trial burn periods, each LIC must also achieve and maintain a DRE of 99.99% for the POHC monochlorobenzene.

**Chemical Agent**

GB, VX, and HD (Mustard), individually

**HD POHC**

Monochlorobenzene

The DRE shall be calculated by the method specified in 40 CFR §264.343(a)(1).

- ii. During the shakedown, trial burn, and post-trial burn periods; and during the rinsate ramp-up, EDT, and post-EDT periods; the particulate matter emissions from the each LIC, corrected to 7% oxygen in accordance with the formula given below [40 CFR §264.343(c)], shall not exceed 34.3 mg/dscm (0.015 grains/dscf).

$$P_c = P_m \times 14 / (21 - Y)$$

Where:  $P_c$  = corrected concentration of particulate matter

$P_m$  = measured concentration of particulate matter

$Y$  = measured  $O_2$  concentration in the stack gas

- iii. The hydrogen chloride (HCl) emissions from LIC1 and LIC2 shall not exceed  $1.91 \times 10^{-2}$  grams/second and neither LIC shall exceed 4 pounds/hour individually. [40 CFR §264.343(b) and §270.32(b)(2)]
- iv. During the shakedown, trial burn, and post-trial burn periods; and during the rinsate ramp-up, EDT, and post-EDT periods; the emission rates from each LIC shall not exceed the limits specified in Table 6-2. If an emission rate for any constituent is exceeded, the permittee shall notify the Department in accordance with Permit Condition VI.A.5.vii. The Department may direct the permittee to cease, and reinitiate waste feed operations for each LIC(s) in accordance with Permit Condition VI.A.5.vii. The permittee shall stop waste feed to the appropriate incinerator(s) in the time specified in writing. Waste feed operation may resume upon written approval from the Department. [40 CFR §264.345, 270.32(b)(2)]
- v. The emission limits of Permit Condition VI.B.1 and Table 6-2 shall be met by limiting feed into each LIC as specified in Table 6-1 and the Waste Analysis Plan (Permit Attachment 2). [40 CFR §264.345]
- vi. During the shakedown, trial burn, and post-trial burn periods; and during the rinsate ramp-up, EDT, and post-EDT periods; the permittee shall control emissions of products of incomplete combustion (PICs) from each LIC such that the carbon monoxide (CO) level in each LIC exhaust stream, corrected to 7% oxygen in accordance with the formula given below, shall not exceed 100 parts per million (ppm), dry volume, over an hourly rolling average. [40 CFR §264.347(a)(2) and §270.32(b)(2)]
- $$CO_c = CO_m \times (21 - 7)/(21 - O_m)$$
- Where:  $CO_c$  = corrected CO ppm (dry volume)  
 $CO_m$  = measured CO ppm (dry volume)  
 $O_m$  = measured %  $O_2$  (dry volume)
- vii. During the chemical agent shakedown, trial burn, and post-trial burn periods; and during the rinsate ramp-up, EDT, and post-EDT periods; the permittee shall continuously monitor

emissions of chemical agents from each LIC. The emission level shall not exceed the following concentrations: [40 CFR §270.32(b)(2)]

	<b>Chemical Agent - Concentration (mg/m<sup>3</sup>)</b>		
	<b><u>VX</u></b>	<b><u>GB</u></b>	<b><u>HD</u></b>
Maximum Instantaneous Allowable Stack Concentration (ASC)	0.0003	0.0003	0.03

Noncompliance with these emission limits shall be considered a violation of this permit Condition. [40 CFR §270.32(b)(2)]

- viii. During the shakedown, trial burn, and post-trial burn periods; and during the rinsate ramp-up, EDT, and post-EDT periods; compliance with the operating conditions specified in Permit Condition VI.B.3, shall be regarded as compliance with the required performance standards identified in Permit Conditions VI.B.1.i through VI.B.1.vii. However, if it is determined that during the effective period of this permit that compliance with the operating conditions in Permit Condition VI.B.3 is not sufficient to ensure compliance with the performance standards specified in Permit Conditions VI.B.1.i through VI.B.1.vii, the permit may be modified, revoked, or reissued, pursuant to 40 CFR §270.41. [40 CFR §270.32(b)(2)]

**VI.B.2. Limitation on Waste Feed [40 CFR §270.62(c)]**

- i. During the shakedown, trial burn, and post-trial burn periods; and during the rinsate ramp-up, EDT, and post-EDT periods; the permittee shall incinerate only the hazardous wastes in Table 6-1 of this permit in each LIC, in compliance with the operating requirements specified in Permit Condition VI.B.3.
- ii. After successful completion of the chemical agent trial burn the permittee shall be authorized to commence hazardous waste feed to each LIC up to 50% of the maximum agent feed rates indicated in Table 6-1 of this permit and shall not deviate from the operating conditions specified in Tables 6-3 and 7-1a and 7-1b of this permit. After successful completion of the EDT, the permittee shall be authorized to commence rinsate feed to each LIC up to 75% of the more restrictive of the maximum feed rates resulting from the water test required under

Permit Condition V.A.6.vi and demonstrated in the EDT, and shall not deviate from the operating conditions specified in Tables 6-3 and 7-1a and 7-1b of this permit.

- iii. After successful completion of the chemical agent trial burn, the permittee shall be authorized to commence hazardous waste feed to each LIC up to 75% of the maximum feed rates indicated in Table 6-1 of this permit upon submittal and Departmental approval of a written report in the format specified by the Department showing compliance with the performance standards in Permit Condition VI.B.1.
- iv. After successful completion of the chemical agent trial burn, and after successful completion of the rinsate EDT, the permittee shall be authorized to commence hazardous waste feed to each LIC up to 100% of the applicable maximum feed rates demonstrated during the previous trial burn or EDT for each LIC upon submittal and Departmental approval of the following:
  - a. A complete trial burn or EDT report.
  - b. A submittal proposing operating conditions for post-trial burn, post-EDT, and normal operating periods.
  - c. For a chemical agent trial burn, a health risk assessment report completed pursuant to Permit Condition II.N. For the rinsate EDT, an evaluation of the need to perform a post-EDT health risk assessment report considering the EDT results and the pre-EDT health risk assessment.
- v. The permittee shall not feed the following wastes to each LIC, during the shakedown and rinsate ramp-up periods.
  - a. Acutely toxic hazardous wastes listed in 40 CFR §261.33(e).
  - b. RCRA Hazardous Wastes FO20 through FO23, FO26, and FO27.
  - c. Any waste containing chemical agents except during Shakedown Period II.
  - d. Any wastes containing polychlorinated biphenyls (PCBs).

- vi. Decontamination solution, aqueous laboratory liquids, and UMCD liquid waste shall be fed to the secondary chamber of each LIC only when the operating conditions as specified in Condition VI.B.3 of this permit are satisfied.
- vii. During the trial burn and post-trial burn periods the spent decontamination solution, the Monitoring Support Building and Laboratory aqueous liquid wastes, and UMCD liquid waste shall be fed only into the secondary combustion chamber of each LIC with, or without, the chemical agent feed (or HD rinsate feed) to the primary combustion chamber.
- viii. During the shakedown, trial burn, and post-trial burn periods; and during the rinsate ramp-up, EDT, and post-EDT periods, the feed rates to each LIC shall not exceed the limits in Table 6-1 of this permit and shall be in accordance with Permit Condition VI.B.2.
- ix. During the chemical agent post-trial burn and post-EDT periods at each incinerator, the permittee shall incinerate only the chemical agent and HD rinsate that has been test-burned during the preceding chemical agent trial burn or EDT, as applicable, at the feed rates specified in Table 6-1 of this permit and in accordance with Permit Condition VI.B.2.
- x. During the shakedown, trial burn, and post-trial burn periods; and during the rinsate ramp-up, EDT, and post-EDT periods; the permittee shall conduct sufficient analysis of the waste treated in each LIC to verify that the waste feed is within the physical and chemical composition limits specified in this permit, in accordance with the approved trial burn plan and the Waste Analysis Plan requirements in Attachment 2 of this permit.
- xi. Only one chemical agent, HD rinsate, or waste containing one chemical agent or a combination of HD and GB agent or HD and VX agent, shall be fed to any LIC incinerator, at any given time. For the purpose of spent decontamination solution feed to the LIC, nondetect analytical results for laboratory liquid waste for noncampaign agents indicate that the laboratory liquid waste contains only the campaign agent.
- xii. Agent-contaminated hydraulic fluids and lubricating oils shall be fed only to the primary chamber of each LIC only when the operating conditions as specified in Condition VI.B.3 of

this permit are satisfied. Only process water will be fed into the secondary chamber while treating these wastes.

- xiii. During the rinsate ramp-up, EDT, and post-EDT periods, rinsate from identified high-mercury ton containers shall not be processed in any Liquid Incinerator.
- xiv. Prior to commencement of treatment of potentially three-agent- or GB-contaminated wastes, a permit modification request proposing multiagent monitoring the processing of multiagent-contaminated secondary wastes must be submitted to and approved by the Oregon Department of Environmental Quality.

VI.B.3. Operating Conditions

- i. During the rinsate ramp-up period, the permittee shall operate each LIC in order to maintain the system and process parameters listed in Tables 7-1a and 7-1b of this permit within the calibrated instrument ranges specified in the tables. Each occurrence of an instrument operating outside of the Table 7-1a and/or 7-1b operating and/or calibrated ranges shall be reported at least quarterly to the Department.
- ii. During the shakedown, trial burn, and post-trial burn periods; and during the rinsate ramp-up, EDT, and post-EDT periods; the permittee shall operate the automatic waste feed cut-off (AWFCO) systems, specified in Table 6-3 of this permit, to automatically cut off and/or lock out the hazardous waste feed to each LIC when the monitored operating conditions deviate from the setpoints specified in Table 6-3 of this permit.
- iii. [RESERVED]
- iv. The permittee shall not commence shakedown Phase 2 for each LIC until documentation has been submitted to the Department verifying that each LIC has operated at the shakedown and post-trial burn period setpoints in Table 6-3 of this permit and at a minimum of 75 percent of the feed rates in Table 6-1 of this permit for a minimum of 2 separate, 8-consecutive-hour periods.

- v. The permittee shall not commence any trial burn period until documentation has been submitted to the Department verifying that each LIC has operated at the planned trial burn operating setpoints in Table 6-3 of this permit and at a minimum of 90% of the feed rates in Table 6-1 of this permit for a minimum of an eight consecutive hour period on two consecutive operating days.
- vi. During the chemical agent shakedown Phase 1 and Phase 2 periods and during the rinsate ramp-up period, the permittee shall operate each LIC in order to maintain the system and process parameters listed in Tables 7-1a and 7-1b of this permit within the operating ranges or setpoints specified in the tables.
- vii. During the chemical agent trial burn and post-trial burn periods; and the rinsate ramp-up, emissions demonstration test (EDT), and post-EDT periods; the permittee shall operate each LIC in order to maintain the system and process parameters listed in Tables 7-1a and 7-1b of this permit within the operating ranges or setpoints specified in the tables.
- viii. During the shakedown, trial burn, and post-trial burn periods; and the rinsate ramp-up, EDT, and post-EDT periods, the permittee shall trend the performance of the mist eliminator vessel and implement corrective actions (if applicable) as follows:
  - a. Daily trending of the rolling hourly averages of differential pressure across the mist eliminator (“dP”), the flue gas flow rate (“flow rate”), and the dP/flow rate ratio will be conducted.
  - b. A daily evaluation of the trend data will be conducted to identify a potential malfunction of the mist eliminator candle media. A potential malfunction is defined as a sudden decrease in the dP at steady flow rates or a gradual decrease in the dP/flow rate ratio for a period of at least 12 hours in duration.
  - c. The trending will be conducted via the process data acquisition and recording system (PDAR) and maintained in the facility operating record.

- d. If the evaluation identifies a potential malfunction of the mist eliminator vessel, hazardous waste feed operations shall cease to the furnace system, and the mist eliminator vessel shall be removed from service for corrective action.
- e. Corrective action shall be taken in accordance with the following criteria.
  - 1. If the investigation reveals a correctable malfunction, the malfunction shall be corrected prior to placing the mist eliminator vessel into service for hazardous waste treatment operations.
  - 2. If the investigation reveals no correctable malfunction, the candle media shall be removed and successfully tested or replaced prior to placing the vessel into service for hazardous waste treatment operations.

VI.B.4. Monitoring Requirements [40 CFR §264.347, §270.31]

- i. During the shakedown, trial burn, and post-trial burn periods; and during the rinsate ramp-up, EDT, and post-EDT periods; the permittee shall maintain, calibrate, and operate process monitoring, control, and recording equipment, as specified in Tables 6-3, 7-1a, and 7-1b of this permit, while incinerating hazardous waste.
- ii. During the shakedown, trial burn, and post-trial burn periods; and during the rinsate ramp-up, EDT, and post-EDT periods; hazardous wastes shall not be fed to Liquid Incinerator 1 (LIC1) if any of the monitoring instruments listed in Tables 6-3 or 7-1a of this permit fails to operate properly, nor shall hazardous wastes be fed to Liquid Incinerator 2 (LIC2) if any of the monitoring instruments listed in Tables 6-3 or 7-1b of this permit fails to operate properly.
- iii. During the shakedown, trial burn and post-trial burn periods; and during the rinsate ramp-up, EDT, and post-EDT periods; the CO and O<sub>2</sub> concentration monitored in accordance with Table 6-3 of this permit shall be continuously monitored while incinerating hazardous waste.
- iv. [RESERVED]

- v. During the shakedown, trial burn, and post-trial burn periods; and during the rinsate ramp-up, EDT, and post-EDT periods; the ACAMS station (configured for each agent being treated) monitoring the exhaust gas on each LIC (Table 6-3, LIC-17 and LIC-39) shall be operated as follows:
  - a. Prior to commencing hazardous waste feed to the incinerator, LIC-17 and LIC-39 shall be operational and online.
  - b. During the treatment of waste, either LIC-17 or LIC-39 may be taken offline to conduct routine maintenance provided the other ACAMS station is operational and online.
  - c. During the treatment of waste, if either LIC-17 or LIC-39 is offline for maintenance and the online instrument is taken offline, the AWFCO system shall be activated.
  - d. During the treatment of waste, if either LIC-17 or LIC-39 is offline for maintenance and the AWFCO is activated, both instruments must be operational before resuming waste feed to the incinerator.
  - e. During the treatment of waste, if either LIC-17 or LIC-39 is offline for maintenance, the AWFCO system shall be activated if the instrument is not operational and online within 90 minutes.
  
- vi. During the shakedown, trial burn, and post-trial burn periods; and during the rinsate ramp-up, EDT, and post-EDT periods; the ACAMS monitoring the exhaust gas on each LIC (Table 6-3, LIC-17 and LIC-39) shall only be corrected to 7% oxygen:
  - a. When the ACAMS value is at 0.2 ASC or above, and
  - b. When the oxygen concentration in the PFS exhaust gas is greater than 7%.

VI.B.5. Waste Feed Cut-Off Requirements

- i. During the shakedown, trial burn, and post-trial burn periods; and during the rinsate ramp-up, EDT, and post-EDT periods; the permittee shall operate the systems, specified in Table 6-3 of this permit, to automatically cut off and/or lock out the hazardous waste feed to each LIC when the monitored operating conditions deviate from the setpoints specified in Table 6-3 of this permit.
- ii. During the shakedown, trial burn, and post-trial burn periods; and during the rinsate ramp-up, EDT, and post-EDT periods; the permittee shall manually cut off and/or lock out the waste feed, and perform the operator-initiated shutdown-to-idle procedures of each LIC, in accordance with the UMCDF standing operating procedures, when the operating conditions deviate from the setpoints specified in Table 6-3 unless the deviation automatically activates the waste feed cut off and/or lock out sequence specified in Permit Condition VI.B.5.i.
- iii. In the event of a malfunction of the automatic waste feed cut-off systems listed in Table 6-3 of this permit during the shakedown, trial burn or post-trial burn periods; and during the rinsate ramp-up, EDT, and post-EDT periods; the permittee shall immediately manually cut off and/or lock out the waste feed, and perform the operator-initiated shutdown-to-idle procedure of each LIC in accordance with the UMCDF standing operating procedures. The permittee shall not restart waste feed to the incinerator until the problem causing the malfunction has been identified and corrected. Waste feed shall not restart until the parameter(s) which caused the feed cut off or lock out is/are restored to permit limits and all other parameters are within permit limits.
- iv. If any of the following automatic waste feed cut-offs from Table 6-3, for either LIC, occurs at a maximum frequency of five times within 30 LIC operating days in succession, the permittee is required to verbally notify the Department of the occurrence: Item numbers LIC-01, LIC-03, LIC-06, LIC-09, LIC-10, LIC-11, LIC-12, LIC-15, LIC-16, LIC-17, LIC-18, LIC-22, LIC-24, LIC-26, LIC-27, LIC-28, LIC-30, LIC-31, LIC-37, LIC-39, and LIC-43. These waste feed cut offs, whether automatically or manually activated, are counted if the specified

setpoints are deviated from while waste or waste residues continue to be processed in the incinerator chambers.

VI.C. **METAL PARTS FURNACE (MPF)**

VI.C.1. **Performance Standards**

- i. During the shakedown, trial burn, and post-trial burn periods, the MPF shall achieve and maintain a destruction and removal efficiency (DRE) of 99.99% for GB and VX and 99.9999% for HD chemical agent, and a DRE of 99.99% for the HD POHC monochlorobenzene.

**Chemical Agent**

GB, VX, and HD (Mustard), individually

**HD POHC**

Monochlorobenzene

The DRE shall be calculated by the method specified in 40 CFR §264.343(a)(1). During the secondary waste trial burn shakedown, trial burn, and post-trial burn periods, DRE for chemical agent is not required to be demonstrated.

- ii. During the shakedown, trial burn and post-trial burn periods, the particulate matter emissions from the MPF, corrected to 7% oxygen in accordance with the formula given below [40 CFR §264.343(c)], shall not exceed 34.3 mg/dscm (0.015 grains/dscf). [40 CFR §270.32(b)(2)]

$$P_c = P_m \times 14 / (21 - Y)$$

Where:  $P_c$  = corrected concentration of particulate matter

$P_m$  = measured concentration of particulate matter ppm  
(dry volume)

$Y$  = measured  $O_2$  concentration in the stack gas

- iii. The hydrogen chloride (HCl) emission from the MPF shall not exceed  $8.16 \times 10^{-3}$  grams/second or 4 pounds/hour. [40 CFR §264.343(b), §270.32(b)(2)]

- iv. During the shakedown, trial burn, and post-trial burn periods, the emission rates from the MPF shall not exceed the limits specified in Table 6-6. If the permittee finds that an emission rate for any constituent is exceeded, the permittee shall notify the Department in accordance with Permit Condition VI.A.5.vii. The Department may direct the permittee to cease, and reinstate waste feed operations for the MPF in accordance with Permit Condition VI.A.5.vii. The permittee shall stop waste feed to the appropriate incinerator(s) in the time specified in writing. Waste feed operation will resume upon written approval from the Department. [40 CFR §264.345, 270.32(b)(2)]
- v. The emission limits of Permit Condition VI.C.1 and Table 6-6 shall be met by limiting feed into the MPF as specified in Table 6-4 and Permit Attachment 4. [40 CFR §264.345]
- vi. During the shakedown, trial burn and post-trial burn periods, the permittee shall control emission of products of incomplete combustion (PICs) from the MPF such that the carbon monoxide (CO) level in the MPF exhaust stream, corrected to 7% oxygen in accordance with the formula given below shall not exceed 100 parts per million (ppm), dry volume, over an hourly rolling average. [40 CFR §264.347(a)(2)]

$$CO_c = CO_m \times (21 - 7)/(21 - O_m)$$

Where:  $CO_c$  = corrected CO ppm (dry volume)

$CO_m$  = measured CO ppm (dry volume)

$O_m$  = measured %  $O_2$  (dry volume)

- vii. During the chemical agent shakedown, trial burn and post-trial burn periods, the permittee shall continuously monitor emissions of chemical agents from the MPF. The emission level shall not exceed the following concentrations:

	<b><u>Chemical Agent - Concentration (mg/m<sup>3</sup>)</u></b>		
	<b><u>VX</u></b>	<b><u>GB</u></b>	<b><u>HD</u></b>
Maximum Instantaneous Allowable Stack Concentration (ASC)	0.0003	0.0003	0.03

- viii. During the shakedown, trial burn, and post-trial burn periods, compliance with the operating conditions specified in Permit Condition VI.C.3 shall be regarded as compliance with the required performance standards identified in Permit Conditions VI.C.1.i through VI.C.1.vii. However, if it is determined that during the effective period of this permit that compliance with the operating conditions in Permit Condition VI.C.3 is not sufficient to ensure compliance with the performance standards specified in Permit Conditions VI.C.1.i through VI.C.1.vii., the permit may be modified, revoked, or reissued, pursuant to 40 CFR §270.41. [40 CFR §270.32(b)(2)]

VI.C.2. Limitation of Waste Feed [40 CFR 270.62(c)]

- i. During shakedown, trial burn and post-trial burn periods, the permittee shall incinerate only the hazardous wastes in Table 6-4 of this permit, in compliance with the operating requirements specified in Permit Condition VI.C.3.
- ii. After successful completion of the chemical agent trial burn the permittee shall be authorized to commence hazardous waste feed to the MPF up to 50% of the maximum post trial burn feed rates indicated in Table 6-4 of this permit and shall not deviate from the operating conditions specified in Tables 6-7 and 7-3 of this permit. Fifty (50) % of the maximum post-trial burn feed rate is limited by limiting the quantity of waste contained in a ton container, total waste for secondary waste, as well as the metal/chlorine feed rate, to 50% of the maximum permitted feed rates while feeding at or greater than the minimum feed interval time listed in Table 6-4.
- iii. After successful completion of the trial burn, the permittee shall be authorized to commence hazardous waste feed to the MPF up to 75% of the maximum feed rates indicated in Table 6-4 of this permit upon submittal and Departmental approval of a written report in the format specified by the Department showing compliance with the performance standards in Permit Condition VI.C.1. Seventy-five (75)% of the maximum post-trial burn feed rate is limited by limiting the quantity of total waste contained in a ton container, total waste for secondary waste, total waste for carbon, as well as the metal/chlorine feed rate, to 75% of the maximum

permitted feed rates while feeding at or above the minimum feed interval time listed in Table 6-4.

- iv. After successful completion of the trial burn, the permittee shall be authorized to commence hazardous waste feed to the MPF up to 100% of the feed rates demonstrated during the previous trial burn for the MPF upon submittal and Departmental approval of the following:
  - a. A complete trial burn report.
  - b. A submittal proposing operating conditions for post trial burn and normal operating periods.
  - c. A health risk assessment report completed pursuant to Permit Condition II.N.
- v. During the shakedown, trial burn, and post-trial burn periods, the permittee shall incinerate only the hazardous wastes listed in Table 6-4 of this permit, in compliance with the operating requirements specified in Permit Condition VI.C.3.
- vi. During the shakedown, trial burn, and post-trial burn periods, the feed rates to the MPF shall not exceed the limits in Table 6-4 of this permit and shall be in accordance with Permit Condition VI.C.2.
- vii. The permittee shall not feed the following wastes to the MPF.
  - a. Acutely toxic hazardous wastes listed in 40 CFR §261.33(e).
  - b. RCRA Hazardous Wastes FO20 through FO23, FO26, and FO27.
  - c. Any wastes containing PCBs.
- viii. Throughout operation, the permittee shall conduct sufficient analysis of the waste treated in the MPF to verify that the waste feed is within the physical and chemical composition limits specified in this permit, and in accordance with the Waste Analysis Plan requirements in Attachment 2 of this permit.

- a. Ton containers that have been processed through the MPF may not be reutilized as recipient ton containers until all visible ash and residues have been removed. Ton containers may only be reused as recipient ton containers a maximum of ten times.
- ix. Only one chemical agent, or waste containing one chemical agent or a combination of HD and GB agent or HD and VX agent, shall be fed to the Metal Parts Furnace, at any given time.
- x. Secondary waste shall be fed to the MPF only when the operating conditions as specified in Condition VI.C.3 of this permit are satisfied.
- xi. After successful completion of the secondary waste trial burn, the permittees shall be authorized to commence secondary waste feed to the MPF up to 75% of the maximum post-trial burn feed rates indicated in Table 6-4 and shall not deviate from the operating conditions specified in Tables 6-7 and 7-3 of this permit.

VI.C.3. Operating Conditions

- i. During the shakedown, trial burn, and post-trial burn periods, the permittee shall operate the MPF in order to maintain the system and process parameters listed in Table 7-3 of this permit within the calibrated instrument ranges specified in the Table. Each occurrence of an instrument operating outside of the Table 7-3 operating and/or calibrated ranges shall be reported at least quarterly to the Department.
- ii. During the shakedown, trial burn, and post-trial burn periods, the permittee shall operate the AWFCO systems, specified in Table 6-7 of this permit, to automatically cut off and/or lock out the hazardous waste feed to the MPF when the monitored operating conditions deviate from the setpoints specified in Table 6-7 of this permit.
- iii. [RESERVED]
- iv. Only one loaded tray containing the waste materials shall be fed into the MPF at any given time, with a minimum interval between each tray feed as specified in Table 6-4 of this permit.

- v. The combined masses of chemical agent, chemical agent heel, and rinsate in any ton container or tray fed to the MPF shall not exceed the limits provided in Table 6-4 of this permit or Conditions VI.C.2.ii or VI.C.2.iii, as applicable.
- vi. The permittee shall not commence the second shakedown phase until documentation has been submitted to the Department verifying that the MPF has operated at a minimum of 75% of the feed rates in Table 6-4 of this permit for a minimum of two separate, 8-consecutive-hour periods.
- vii. The permittee shall not commence any trial burn period until documentation has been submitted to the Department verifying that the MPF has operated at the planned trial burn operating setpoints in Table 6-7 of this permit and at a minimum of 90% of the feed rates in Table 6-4 of this permit for a minimum of an eight-consecutive-hour period on two consecutive days.
- viii. During the chemical agent, carbon, and secondary waste shakedown Phase 1 and Phase 2 periods, the permittee shall operate the MPF in order to maintain the system and process parameters listed in Table 7-3 of this permit within the operating ranges or setpoints specified in the table.
- ix. During the surrogate, chemical agent, carbon, and secondary waste trial burn and post-trial burn periods, the permittee shall operate the MPF in order to maintain the system and process parameters listed in Table 7-3 of this permit within the operating ranges or setpoints specified in the table.
- x. During the shakedown, trial burn, and post-trial burn periods, the permittee shall trend the performance of the mist eliminator vessel and implement corrective actions (if applicable) as follows:
  - a. Daily trending of the rolling hourly averages of differential pressure across the mist eliminator (“dP”), the flue gas flow rate (“flow rate”), and the dP/flow rate ratio will be conducted.

- b. A daily evaluation of the trend data will be conducted to identify a potential malfunction of the mist eliminator candle media. A potential malfunction is defined as a sudden decrease in the dP at steady flow rates or a gradual decrease in the dP/flow rate ratio for a period of at least 12 hours in duration.
- c. The trending will be conducted via the process data acquisition and recording system (PDAR) and maintained in the facility operating record.
- d. If the evaluation identifies a potential malfunction of the mist eliminator vessel, hazardous waste feed operations shall cease to the furnace system, and the mist eliminator vessel shall be removed from service for corrective action.
- e. Corrective action shall be taken in accordance with the following criteria.
  - 1. If the investigation reveals a correctable malfunction, the malfunction shall be corrected prior to placing the mist eliminator vessel into service for hazardous waste treatment operations.
  - 2. If the investigation reveals no correctable malfunction, the candle media shall be removed and successfully tested or replaced prior to placing the vessel into service for hazardous waste treatment operations.
- xi. During the shakedown, trial burn, and post-trial burn periods, ton containers and secondary waste shall be monitored with an ACAMS (Table 6-7, MPF-40) in the discharge airlock and will only be discharged to the cool-down conveyor if the ACAMS results are less than 0.2 Vapor Screening Level (VSL). All HD ton containers and secondary waste must undergo low-temperature monitoring in the discharge airlock (DAL) with an ACAMS (Table 6-7, MPF-40) at or below 700°F.
- xii. During the shakedown, trial burn, and post-trial burn periods, ton containers and secondary waste shall undergo low-temperature ACAMS monitoring for the appropriate agent(s) in the discharge airlock for a minimum of two complete ACAMS cycles. If low-temperature ACAMS agent monitoring results are equal to or greater than 0.2 VSL in the DAL, the ton

container or secondary waste in the DAL will be transferred back to Zone 3 and reheated to the Zone 3 operating temperature. Once the ton container/secondary waste has been reheated to the Zone 3 operating temperature, it shall remain in Zone 3 for a complete Zone 3 minimum residence time cycle.

- a. The residues of ton containers for which agent monitoring results are equal to or greater than 0.20 VSL in the DAL will be sampled in accordance with Section 2.2.5 of the Waste Analysis Plan and the results reported to the Department via facsimile or e-mail transmission no later than three business days after receiving said results. The results shall be formally transmitted to the Department under letter no later than 14 calendar days after receiving said results.
- xiii. During the shakedown, trial burn, and post-trial burn periods, ton containers and secondary waste shall only be transferred from the discharge airlock to the cooling conveyor if the cool-down area ACAMS (Table 6-7, MPF-41) monitoring results are less than 0.5 VSL.
- xiv. During the shakedown, trial burn, and post-trial burn periods, ton containers and secondary waste shall not be removed from the cool-down area enclosure unless the waste has undergone low-temperature ACAMS (Table 6-7, MPF-41) monitoring in the cool-down area for a minimum of 13 minutes plus one complete ACAMS cycle and the monitoring results are less than 0.5 VSL.
- xv. [RESERVED]
- xvi. During the shakedown, trial burn, and post-trial burn period, the following items shall be documented in the daily operating record:
  - a. The monitoring protocol, either high-temperature or low-temperature monitoring, for each tray of waste treated;
  - b. The time the tray entered the DAL;
  - c. The time the switch is activated to monitor the DAL instead of the filtered air;

- d. The ACAMS monitoring results in the DAL;
  - e. The time the sample line challenge started;
  - f. The time the tray exited the DAL into the cool-down area;
  - g. The ACAMS monitoring results on the cool-down area; and
  - h. MPF DAL and/or cool-down area DAAMS analysis results, if analyzed.
- xvii. The Zone 2 sparge air and discharge airlock air nozzle will be locked out during secondary waste processing.
- xviii. During the HD shakedown and post-trial burn periods the MPF shall be operated in accordance with the requirements of Permit Attachment 7.
- xix. No greater than 130 gallons shall be added with the water cooling spray system to the treated HD ton containers in the MPF DAL. HD ton containers will not be discharged from the MPF DAL to the cool-down area until MPF DAL temperature thermocouples 14-TIT-9801A/B/C/D and MPF DAL exhaust duct temperature thermocouple 14-TIT-9802 indicate 300°F or less.
- xx. No smoking ton containers will be discharged from the discharge airlock regardless of opacity.
- xxi. If a container boils over, as defined in Permit Condition I.B, during the shakedown, trial burn, or post trial burn period the following actions will occur:
- a. The permittees will complete a boilover recovery plan contained in Attachment 4 to this permit.
  - b. The Department on-call staff member will be notified not later than one hour after the start of the boil over.

- c. The residues of the ton container that boiled over will be sampled in accordance with Section 2.2.5 of the Waste Analysis Plan and the results reported to the Department via facsimile or e-mail transmission no later than three working days after receiving said results. The results shall be formally transmitted to the Department under letter no later than 14 calendar days after receiving said results.

VI.C.4. Monitoring Requirements [40 CFR §264.347, §270.31]

- i. During the shakedown, trial burn, and post-trial burn periods, the permittee shall maintain, calibrate, and operate process monitoring, control, and recording equipment, as specified in Tables 6-7 and 7-3 of this permit, while incinerating hazardous waste.
- ii. During the shakedown, trial burn, and post-trial burn periods, hazardous wastes shall not be fed to the MPF if any of the monitoring instruments listed in Tables 6-7 and 7-3 of this permit fails to operate properly.
- iii. During the shakedown, trial burn, and post-trial burn periods, the CO and O<sub>2</sub> concentration monitored in accordance with Table 6-7 of this permit shall be continuously monitored while incinerating hazardous waste.
- iv. During the shakedown, trial burn, post-trial burn periods, the ACAMS station (configured for each agent being treated) monitoring the exhaust gas on the MPF (Table 6-7, MPF-16, and MPF-35) and the ACAMS station (configured for each agent being treated) monitoring the MPF cool-down area (Table 6-7, MPF-41) shall be operated as follows:
  - a. Prior to commencing hazardous waste feed to the incinerator, MPF-16 and MPF-35 shall be operational and online.
  - b. During the treatment of waste, either MPF-16 or MPF-35 may be taken offline to conduct routine maintenance provided the other ACAMS station is operational and online.
  - c. During the treatment of waste, if either MPF-16 or MPF-35 is offline for maintenance and the online instrument is taken offline, the AWFCO system shall be activated.

- d. During the treatment of waste, if either MPF-16 or MPF-35 is offline for maintenance and the AWFCO is activated, both instruments must be operational before resuming feed to the incinerator.
- e. During the treatment of waste, if either MPF-16 or MPF-35 is offline for maintenance, the AWFCO system shall be activated if the instrument is not operational within 90 minutes.
- f. During the treatment of waste, MPF-41 may be taken off-line to conduct calibration and routine maintenance.
- g. In the event MPF-41 malfunctions or is taken off-line for calibration or maintenance, waste trays shall not be discharged from the discharge airlock onto the cooling conveyor.
- h. During the treatment of waste, if MPF-41 malfunctions or is off-line for calibration or maintenance, the AWFCO system shall be activated if the instrument is not operational and online within 90 minutes.
- i. During the treatment of waste, in the event MPF-41 is take offline, waste shall not be removed from the cool-down area enclosure until MPF-41 is operational and conducts low-temperature monitoring of the cool-down area for a minimum of 13 minutes plus one complete ACAMS cycle.
- v. During the carbon and secondary waste shakedown, trial burn, and post-trial burn periods, the secondary waste shall undergo low-temperature monitoring in the discharge airlock (Table 6-7, MPF-40) for two complete ACAMS cycles.
- vi. During the shakedown, trial burn, and post-trial burn periods, ton containers shall undergo low-temperature monitoring in the discharge airlock (DAL) with an ACAMS (Table 6-7, MPF-40) for two complete ACAMS cycles.
- vii. [RESERVED]

- viii. During the shakedown, trial burn, and post-trial burn periods, the discharge airlock ACAMS (Table 6-7, MPF-40) and the cool-down area ACAMS (Table 6-7, MPF-41) shall be challenged daily at 1.0 times the VSL and weekly at 0.2 times the VSL.
- ix. During the shakedown, trial burn, and post-trial burn periods, between the time waste is discharged from the DAL and the waste has been cleared from the cool-down area by low-temperature monitoring, the cool-down area enclosure exhaust filtration filters shall be operated and maintained as follows:
  - a. The pressure differential across the HEPA filters will be maintained greater than or equal to 0.50 inches w.c. and less than or equal to 4.0 inches w.c.
    - 1. In the event the operating parameter limit is exceeded, waste shall not be discharged from the DAL until the pressure differential returns to within this specified operating range.
    - 2. If the exceedance is due to plugged or breeched HEPA filters, the HEPA filters shall be replaced prior to discharge of waste from the DAL.
  - b. The pressure differential across the carbon filters will be maintained greater than or equal to .76 inches w.c. and less than or equal to 2.5 inches w.c.
    - 1. In the event the operating parameter limit is exceeded, waste shall not be discharged from the DAL until the pressure differential returns to within this specified operating range.
    - 2. If the exceedance is due to plugged or breeched carbon filters, the carbon filters shall be replaced prior to discharge of waste from the DAL.
  - c. The pressure differential across the prefilters, HEPA filters, and the carbon filters shall be recorded approximately every 4 hours in accordance with standing operating procedure requirements.

- d. The exhaust fan shall be operational. In the event the exhaust fan is not operational, the UMCDF shall stop waste feed to the MPF and halt further discharge of waste trays from the DAL. Waste feed shall not resume until operation of the exhaust fan is restored.
- e. In the event the low flow switch (76-FSL-9814) activates, the UMCDF shall automatically shutdown, at a minimum, one air supply handling unit.
- f. The exhaust flow rate shall be above the minimum exhaust flow switch (Tag No. 76-FSL-9814) setpoint of 16,000 cfm. In the event the low flow switch activates, the UMCDF shall stop feed to the MPF and halt further discharge of waste trays from the DAL. Waste feed shall not resume until the required exhaust flow rate is restored. During this period, cool-down area ACAMS (MPF-41) shall be switched to its spooled position to conduct local agent monitoring of waste trays within the cool-down area enclosure.
- x. During the shakedown, trial burn, and post-trial burn period, in the event chemical agent is confirmed in the cool-down area, the exhaust filtration system carbon filters shall be changed-out prior to discharging waste trays from the DAL
- xi. During the shakedown, trial burn, post-trial burn periods, the ACAMS monitoring the exhaust gas on the MPF (Table 6-7, MPF-16 and MPF-35) shall be corrected to 7% oxygen:
  - a. When the ACAMS value is at 0.2 ASC or above , and
  - b. When the oxygen concentration in the PFS exhaust gas is greater than 7%.
- xii. During the HD shakedown and post-trial burn periods, the mercury (Hg) concentration downstream of the MPF PFS shall be monitored by the mercury monitoring system in accordance with Permit Attachment 7.

VI.C.5. Waste Feed Cut-Off Requirements

- i. During the shakedown, trial burn, and post-trial burn periods, the permittee shall construct and maintain the systems, specified in Table 6-7 of this permit, to automatically cut off and/or

lock out the hazardous waste feed to the MPF when the monitored operating conditions deviate from the setpoints specified in Table 6-7 of this permit.

- ii. During the shakedown, trial burn, and post-trial burn periods, the permittee shall manually cut off and/or lock out the waste feed and perform the operator-initiated shutdown-to-idle procedures of the MPF, in accordance with the UMCDF standing operating procedures when the operating conditions deviate from the setpoints specified in Table 6-7 of this permit, unless the deviation automatically activates the waste feed cut off and/or lock out sequence specified in Permit Condition VI.C.5.i.
- iii. During the shakedown, trial burn and post-trial burn periods, in the event of a malfunction of the AWFCO systems listed in Table 6-7 of this permit, the permittee shall immediately manually, cut off and/or lock out the waste feed, and perform the operator-initiated shutdown-to-idle procedures of the MPF in accordance with the UMCDF standing operating procedures. The permittee shall not restart waste feed to the incinerator until the problem causing the malfunction has been identified and corrected. Waste feed shall not restart until the parameter(s) which caused the feed cut off or lock out is/are restored to permit limits and all other parameters are within permit limits.
- iv. If any of the following automatic waste feed cut-offs from Table 6-7, for the MPF occurs at a maximum frequency of five times within 30 MPF operating days in succession, the permittee is required to verbally notify the Department of the occurrence: Item numbers MPF-01, MPF-02, MPF-03, MPF-05, MPF-06, MPF-07, MPF-10, MPF-11, MPF-12, MPF-13, MPF-14, MPF-15, MPF-16, MPF-17, MPF-19, MPF-23, MPF-24, MPF-25, MPF-26, MPF-27, MPF-28, MPF-29, MPF-34, and MPF-43. These waste feed cut offs, whether automatically or manually activated, are counted if the specified setpoints are deviated from while waste or waste residues continue to be processed in the incinerator chambers.

VI.D. **DEACTIVATION FURNACE SYSTEM (DFS)**

VI.D.1. **Performance Standards**

- i. During the shakedown, trial burn, and post-trial burn periods, the DFS must achieve and maintain a destruction and removal efficiency (DRE) of 99.99% for the chemical agent.

**Chemical Agent**

GB and VX, individually

The DRE shall be calculated by the method specified in 40 CFR §264.343(a)(1).

- ii. During the shakedown, trial burn, and post-trial burn periods, the particulate matter emissions from the common stack, corrected to 7% oxygen in accordance with the formula given below [40 CFR §264.343(c)], shall not exceed 34.3 mg/dscm (0.015 grains/dscf). [40 CFR §270.32(b)(2)]

$$P_c = P_m \times 14 / (21 - Y)$$

Where:  $P_c$  = corrected concentration of particulate matter

$P_m$  = measured concentration of particulate matter ppm  
(dry volume)

$Y$  = measured O<sub>2</sub> concentration in the stack gas

- iii. The hydrogen chloride (HCl) emissions from the DFS shall not exceed  $1.16 \times 10^{-3}$  grams per second or 4 pounds/hour. [40 CFR §264.343(b), §270.32(b)(2)]
- iv. During the shakedown, trial burn, and post-trial burn periods, if the emission rates listed in Table 6-10 are exceeded, the permittee shall notify the Department in accordance with Permit Condition VI.A.5.vii. The emission limits shall be met by limiting feed rate into the DFS as specified in Table 6-8. [40 CFR §264.345]
- v. If the permittee submits a notification pursuant to Permit Condition VI.D.1.iv., the Director may submit in writing direction to the permittee to stop waste feed to the DFS in accordance

with Permit Condition VI.A.5.vii. Resumption of waste feed operations to the DFS shall be in accordance with Permit Condition VI.A.5.vii. [40 CFR §270.32(b)(2)]

- vi. During the shakedown, trial burn, and post-trial burn periods, the permittee shall control emission of products of incomplete combustion from the common stack such that the carbon monoxide (CO) level in the common stack, corrected to 7% oxygen in accordance with the formula given below shall not exceed 100 parts per million (ppm), dry volume, over an hourly rolling average. [40 CFR §264.347(a)(2), §270.32(b)(2)]

$$CO_c = CO_m \times (21 - 7)/(21 - O_m)$$

Where:  $CO_c$  = corrected CO ppm (dry volume)

$CO_m$  = measured CO ppm (dry volume)

$O_m$  = measured %  $O_2$  (dry volume)

- vii. During the chemical agent shakedown, trial burn and post-trial burn periods, the permittee shall continuously monitor and control emissions of chemical agents from the DFS. The emission level shall not exceed the following concentrations [40 CFR §270.32(b)(2)]:

	<u>Chemical Agent - Concentration (mg/m<sup>3</sup>)</u>		
	<u>VX</u>	<u>GB</u>	<u>HD</u>
Maximum Instantaneous ASC	0.0003	0.0003	0.03

- viii. During the shakedown, trial burn, and post-trial burn periods, compliance with the operating conditions specified in Permit Condition VI.D.3 shall be regarded as compliance with the required performance standards identified in Permit Conditions VI.D.1.i through VI.D.1.vii. However, if it is determined that during the effective period of this permit that compliance with the operating conditions in Permit Condition VI.D.3 is not sufficient to ensure compliance with the performance standards specified in Permit Conditions VI.D.1.i through VI.D.1.vii, the permit may be modified, revoked, or reissued, pursuant to 40 CFR §270.41. [40 CFR §270.32(b)(2)]

VI.D.2. Limitations on Waste Feed [40 CFR §270.62(c)]

- i. During the shakedown, trial burn, and post-trial burn periods, the permittee shall incinerate only the hazardous wastes in Table 6-8 of this permit in the DFS, in compliance with the operating requirements specified in Permit Condition VI.D.3.
- ii. After successful completion of the chemical agent trial burn the permittee shall be authorized to commence hazardous waste feed to the DFS up to 50% of the maximum feed rates indicated in Table 6-8 of this permit and shall not deviate from the operating conditions specified in Tables 6-11 and 7-5 of this permit.
- iii. After successful completion of the chemical agent trial burn, the permittee shall be authorized to commence hazardous waste feed to the DFS up to 75% of the maximum feed rates indicated in Table 6-8 of this permit upon submittal and Departmental approval of a report in the format specified by the Department showing compliance with the performance standards in Permit Conditions VI.D.1.
- iv. After successful completion of the chemical agent trial burn, the permittee shall be authorized to commence hazardous waste feed to the DFS up to 100% of the maximum feed rates demonstrated during the previous trial burn for the DFS upon submittal and Departmental approval of the following:
  - a. A complete trial burn report.
  - b. A submittal proposing operating conditions for post trial burn and normal operating periods.
  - c. A health risk assessment report completed pursuant to Permit Condition II.N.
- v. During the trial burn, the permittee shall incinerate only the hazardous wastes in Table 6-8 of this permit in the DFS, in compliance with the operating requirements specified in Condition VI.D.3 of this permit.

- vi. During the shakedown, trial burn, and post-trial burn periods, the feed rates to the DFS shall not exceed the limits in Table 6-8 of this permit and in accordance with Permit Condition VI.D.2.
- vii. Throughout operation, the permittee shall conduct sufficient analysis of the waste treated in the DFS to verify that the waste feed is within the physical and chemical composition limits specified in this permit, in accordance with the Waste Analysis Plan requirements in Attachment 2 of this permit.
- viii. Only one chemical agent, or waste containing one chemical agent, shall be fed to the deactivation furnace, at any given time.
- ix. Partially treated DFS ash, PCB-contaminated UMCD waste, ECR maintenance residue, and explosive-contaminated spill pillows shall be manually fed to the DFS feed gates only when the operating conditions as specified in Condition VI.D.3 of this permit are satisfied.

VI.D.3. Operating Conditions

- i. During the shakedown, trial burn, and post-trial burn periods, the permittee shall operate the DFS in order to maintain the system and process parameters listed in Table 7-5 of this permit within the calibrated instrument ranges specified in the table. Each occurrence of an instrument operating outside of the Table 7-5 operating and/or calibrated ranges shall be reported at least quarterly to the Department.
- ii. During the shakedown, trial burn, and post-trial burn periods, the permittee shall operate the AWFCO systems, specified in Table 6-11 of this permit, to automatically cut off and/or lock out the hazardous waste feed to the DFS when the monitored operating conditions deviate from the setpoints specified in Table 6-11 of this permit.
- iii. [RESERVED]
- iv. The permittee shall not commence shakedown Phase 2 until documentation has been submitted to the Department verifying that the DFS has operated at the shakedown Phase 1 and post-trial burn period setpoints in Table 6-11 of this permit and at a minimum of 75% of

the feed rates in Table 6-8 of this permit for a minimum of 2 separate, 8-consecutive-hour periods.

- v. The permittee shall not commence any trial burn period until documentation has been submitted to the Department verifying that the DFS has operated at the planned trial burn operating setpoints in Table 6-11 of this permit and at a minimum of 90% of the feed rates in Table 6-8 of this permit for a minimum of an eight consecutive hour period on two consecutive days.
- vi. The rate of movement of the heated discharge conveyor shall be controlled so as to provide a minimum solid retention time of 15 minutes inside the heated enclosure.
- vii. The rocket shear blade will be sprayed with a decontamination solution or process water at all times when a rocket piece is at the blast gate and the shear blade is in operation. The flow of the decontamination solution or process water to the rocket shear blade will be continuously monitored for low-flow conditions and the flow rate shall be recorded during rocket processing operations. The feed gate shall be periodically sprayed during rocket shearing operations. [40 CFR §270.32(b)(2)]
- viii. Other than the nose plugs and fin assemblies, the permittees shall segregate the fuzes from all other sheared munition pieces and shall not feed them to the DFS with any other sheared munition sections. The permittees shall ensure one complete revolution of the kiln occurs before and after feeding fuzes to the DFS. [40 CFR §270.32(b)(2)]
- ix. During the chemical agent shakedown Phase 1 and Phase 2 periods, the permittee shall operate the DFS in order to maintain the system and process parameters listed in Table 7-5 of this permit within the operating ranges or setpoints specified in the table.
- x. During the surrogate and chemical agent trial burn and post-trial burn periods, the permittee shall operate the DFS in order to maintain the system and process parameters listed in Table 7-5 of this permit within the operating ranges or setpoints specified in the table.
- xi. In the event an AWFCO listed in Table 6-11 of this permit occurs, any munition components remaining on the feed gates may be fed to the furnace.

- xii. During the shakedown, trial burn, and post-trial burn period, the permittee shall trend the performance of the mist eliminator vessel and implement corrective actions (if applicable) as follows:
- a. Daily trending of the rolling hourly averages of differential pressure across the mist eliminator (“dP”), the flue gas flow rate (“flow rate”), and the dP/flow rate ratio will be conducted.
  - b. A daily evaluation of the trend data will be conducted to identify a potential malfunction of the mist eliminator candle media. A potential malfunction is defined as a sudden decrease in the dP at steady flow rates or a gradual decrease in the dP/flow rate ratio for a period of at least 12 hours in duration.
  - c. The trending will be conducted via the process data acquisition and recording system (PDAR) and maintained in the facility operating record.
  - d. If the evaluation identifies a potential malfunction of the mist eliminator vessel, hazardous waste feed operations shall cease to the furnace system, and the mist eliminator vessel shall be removed from service for corrective action.
  - e. Corrective action shall be taken in accordance with the following criteria.
    1. If the investigation reveals a correctable malfunction, the malfunction shall be corrected prior to placing the mist eliminator vessel into service for hazardous waste treatment operations.
    2. If the investigation reveals no correctable malfunction, the candle media shall be removed and successfully tested or replaced prior to placing the vessel into service for hazardous waste treatment operations.

VI.D.4. Monitoring Requirements [40 CFR §264.347, §270.31]

- i. The permittee shall maintain, calibrate, and operate process monitoring, control, and recording equipment, as specified in Tables 6-11 and 7-5 of this permit, while incinerating hazardous waste.
- ii. Hazardous wastes shall not be fed to the DFS if any of the monitoring instruments listed in Tables 6-11 and 7-5 of this permit fails to operate properly.
- iii. During the shakedown, trial burn, and post-trial burn periods, the CO and O<sub>2</sub> concentration monitored in accordance with Table 6-11 of this permit shall be continuously monitored while incinerating hazardous waste.
- iv. During the shakedown, trial burn, and post-trial burn periods, the ACAMS station monitoring the exhaust gas on the DFS (Table 6-11, DFS-19 and DFS-40) and the ACAMS station monitoring the DFS cyclone enclosure (Table 6-11, DFS-20) shall be operated as follows:
  - a. Prior to commencing hazardous waste feed to the incinerator, DFS-19, DFS-20, and DFS-40 shall be operational.
  - b. During the treatment of waste, either DFS-19 or DFS-40 may be taken offline to conduct routine maintenance provided the other ACAMS station is operational.
  - c. During the treatment of waste, if either DFS-19 or DFS-40 is offline for maintenance and the online instrument is taken offline, the AWFCO system shall be activated.
  - d. During the treatment of waste, if either the DFS-19 or DFS-40 is offline for maintenance and the AWFCO is activated, both instruments must be operational before resuming waste feed to the incinerator.
  - e. During the treatment of waste, if either DFS-19 or DFS-40 is offline for maintenance, the AWFCO system shall be activated if the instrument is not operational within 90 minutes.
  - f. During the treatment of waste, DFS-20 may be taken off-line to conduct calibrations and routine maintenance.

- g. During the treatment of waste, if DFS-20 is off-line for calibration or maintenance, the AWFCO system shall be activated if the instrument is not operational within 90 minutes.
- v. When processing hazardous waste, the DFS HDC bin enclosure shall be monitored with an ACAMS for two complete ACAMS cycles prior to change out of a waste bin. In the event of an ACAMS alarm of greater than or equal to 0.2 VSL, the waste shall not be removed from engineering controls unless:
  - a. The ACAMS reading is refuted by DAAMS results or another analytical method acceptable to the Department, or
  - b. The waste is retreated by incineration.
- vi. During the shakedown, trial burn, and post-trial burn periods, the ACAMS station monitoring the exhaust gas on the DFS (Table 6-1, DFS-19 and DFS-40) shall only be corrected to 7% oxygen:
  - a. When the ACAMS value is at 0.2 ASC or above, and
  - b. When the oxygen concentration in the PFS exhaust gas is greater than 7%.

VI.D.5. Waste Feed Cut-Off Requirements

- i. The permittee shall construct and maintain the systems, specified in Table 6-11 of this permit, to automatically cut off and/or lock out the hazardous waste feed to the DFS when the monitored operating conditions deviate from the setpoint specified in Table 6-11 of this permit.
- ii. The permittee shall manually cut off and/or lockout the waste feed and perform the operator-initiated shutdown-to-idle procedures of the DFS, in accordance with the UMCDF standing operating procedures, when the operating conditions deviate from the setpoints specified in Table 6-11, unless the deviation automatically activates the waste feed cut off and/or lock out sequence specified in Permit Condition VI.D.5.i.

- iii. In case of a malfunction of the automatic waste feed cut-off systems listed in Table 6-11 of this permit, the permittee shall immediately manually cut off and/or lock out the waste feed, and perform the operator-initiated shutdown-to-idle procedures of the DFS in accordance with the UMCDF standing operating procedures. The permittee shall not restart waste feed to the incinerator until the problem causing the malfunction has been identified and corrected. Waste feed shall not restart until the parameter(s) which caused the feed cut-off or lock out is/are restored to permit limits and all other parameters are within permit limits.
- iv. If any of the following automatic waste feed cut-offs from Table 6-11, for the DFS occurs at a maximum frequency of five times within 30 DFS operating days in succession, the permittee is required to verbally notify the Department of the occurrence: Item numbers DFS-02, DFS-03, DFS-05, DFS-07, DFS-08, DFS-11, DFS-12, DFS-13, DFS-14, DFS-15, DFS-16, DFS-17, DFS-18, DFS-19, DFS-20, DFS-21, DFS-25, DFS-27, DFS-28, DFS-29, DFS-30, DFS-31, DFS-34, and DFS-39. These waste feed cut-offs, whether automatically or manually activated, are counted if the specified setpoints are deviated from while waste or waste residues continue to be processed in the incinerator chambers.

VI.E. **COMMON STACK FOR LIC, MPF, & DFS**

- VI.E.1. During the shakedown, trial burn and post-trial burn periods; and during the rinsate ramp-up, EDT, and post-EDT periods; the permittee shall install and maintain the CEMS for oxygen, carbon monoxide, and chemical agent, downstream of the LIC, MPF, and DFS pollution abatement system blowers and install and maintain the continuous exhaust gas monitoring systems for chemical agent emissions from the common stack.
- VI.E.2. During the shakedown, trial burn and post-trial burn periods; and during the rinsate ramp-up, EDT, and post-EDT periods; the exhaust gas monitoring systems specified in Condition VI.E.1 of this permit, shall be calibrated, inspected and operated in accordance with the applicable elements of Conditions VI.A.2 and VI.A.3 of this permit.
- VI.E.3. During the shakedown, trial burn and post-trial burn periods; and during the rinsate ramp-up, EDT, and post-EDT periods; the chemical agent emissions from the common stack, monitored as specified in Permit Condition VI.E.2 of this permit, shall not exceed the following concentrations:

Maximum Instantaneous Allowable Stack Concentration (ASC)	<u>Chemical Agent-Concentration (mg/m<sup>3</sup>)</u>		
	<u>VX</u>	<u>GB</u>	<u>HD</u>
	0.0003	0.0003	0.03

VI.E.4. During the shakedown, trial burn and post-trial burn periods; and during the rinsate ramp-up, EDT, and post-EDT periods; the waste feeds to all contributing incinerator(s) shall be automatically cut off or locked out when the chemical agent emission level in the common stack exceeds the values specified in Condition VI.E.3 of this permit.

VI.E.5. The permittee shall install and maintain “staggered” ACAMS and monitoring at the stack to allow for continuous sampling and therefore allow for quicker response to releases.

- i. The permittee shall program the “staggered” ACAMS on the common stack to require:
  - a. No less than two ACAMS be on line and monitoring the exhaust gas,
  - b. The two on-line ACAMS be operated in a “staggered” configuration to provide for continuous sampling of the exhaust gases.

VI.E.6. During the shakedown, trial burn, and post-trial burn periods; and during the rinsate ramp-up, EDT, and post-EDT periods; the waste feeds to the DFS, MPF, and two LICs shall be automatically cut off or locked out when:

- i. The conditions in Condition VI.E.5.i are not satisfied,
- ii. If either of the two on-line ACAMS monitoring the exhaust gases activate a malfunction alarm and the standby ACAMS station cannot be brought on-line in time to provide for continuous sampling of the exhaust gases.

VI.F. **PAS CARBON FILTER UNIT**

VI.F.1. The PAS carbon filter unit for any furnace system shall be in operation during the treatment of waste during the shakedown, trial burn, and post-trial burn periods and during the rinsate ramp-up, EDT, and post-EDT periods.

- VI.F.2. The PAS for each furnace system will be monitored as follows:
- i. An ACAMS shall monitor the exhaust stream prior to entering each PAS carbon filter unit in accordance with Permit Condition VI.A.1.vi.
  - ii. An ACAMS shall monitor downstream of the LICs, MPF, and DFS exhaust blowers in accordance with Permit Condition VI.E.1.
  - iii. The mercury monitoring system shall monitor downstream of the MPF PAS carbon filter unit in accordance with Permit Attachment 7.
- VI.F.3. Continuous pressure drop monitoring and data recording will be performed across the bank of prefilters, across each of the primary carbon beds, across the set of secondary carbon beds, and across the banks of high-efficiency particulate air (HEPA) filters upstream and downstream of the carbon banks within each filter unit.
- VI.F.4. Upon the detection of agent equal to or greater than the allowable stack concentration (1.0 ASC) by the ACAMS prior to the PFS carbon filter unit.
- i. Waste feed to the respective incinerator shall be cut off.
  - ii. If chemical agent is confirmed using DAAMS, waste feed shall not resume to the incinerator with the contaminated carbon filter unit on line unless the carbon within the unit has been replaced.
- VI.F.5. PAS carbon filter media requirements are:
- i. Sulfur-impregnated carbon (SIC) shall be used in the PFS unit downstream of the MPF and the LICs during HD ton container treatment operations.
  - ii. SIC or activated carbon shall be used in the PFS unit downstream of the MPF and LICs during secondary waste treatment operations.
- VI.F.6. The banks of prefilters and HEPA filters shall be replaced when the pressure drop across the respective banks exceeds six inches (6") of water column.

- VI.F.7. Upon the detection of agent equal to or greater than 0.2 ASC by the ACAMS following the PFS carbon filter unit:
- i. If agent is confirmed using DAAMS, waste feed shall not resume to the incinerator with the contaminated carbon filter unit on-line unless the carbon within the unit has been replaced.
- VI.F.8. A PFS carbon canister sample shall be collected every 90 PFS online days for activated carbon and every 30 PFS online days for SIC. The carbon canister sample shall be analyzed for butane activity using ASTM Method D-5742 with a drying temperature of 50°C and a drying time of 5 hours.
- i. If the initial sample analysis indicates that the butane activity is below 6.0, a second sample from the same canister shall be analyzed.
  - ii. If the second sample verifies that the butane activity is below 6.0, the carbon in the affected carbon filter unit shall be replaced within 30 PFS online days of collection of the original canister sample. If the carbon is not changed within 30 PFS online days of collection of the sample, the PFS unit will be taken offline until the carbon is replaced.
  - iii. For PFS units containing activated carbon, the activated carbon shall be replaced on or before 630 PFS online days or the PFS unit will be taken offline until the carbon is replaced.
  - iv. For PFS units containing SIC, the SIC shall be replaced on or before 210 PFS online days or the PFS unit will be taken offline until the carbon is replaced.

**TABLE 6-1 MAXIMUM FEED RATES TO EACH LIQUID INCINERATOR**

DESCRIPTION OF FEED	FEED-RATE				HAZARDOUS WASTE CODES	
	LIC1		LIC2			
<b>HAZARDOUS WASTES</b>						
	<b>Rinsate Ramp-Up and EDT Periods</b>	<b>Post Rinsate EDT Period<sup>3</sup></b>	<b>Rinsate Ramp-Up and EDT Periods</b>	<b>Post Rinsate EDT Period<sup>3</sup></b>		
HD Ton Container Rinsate	1,000 lbs/hr 33 lbs/2 min	1,000 lbs/hr 33 lbs/2 min	1,000 lbs/hr 33 lbs/2 min	1,000 lbs/hr 33 lbs/2 min	D002-D011, D022, D028, D043, P998	
	<b>Shakedown Phase 1 &amp; Post-Trial Burn Period</b>	<b>Shakedown Phase 2 &amp; Trial Burn Period</b>	<b>Shakedown Phase 1 &amp; Post-Trial Burn Period</b>	<b>Shakedown Phase 2 &amp; Trial Burn Period</b>		
HD Chemical Agent	Phase 1 <sup>2</sup>	1,335 lbs/hr. 48.1 lbs/2 min	1,335 lbs/hr 48.1 lbs/2 min	Phase 1 <sup>2</sup>	1,335 lbs/hr. 48.1 lbs/2 min	D002-D011, D022, D028, D043, P998
	Post-TB <sup>2</sup>	1,286 lbs/hr. 46.3 lbs/2 min		Post-TB <sup>2</sup>	1,305 lbs/hr. 47.0 lbs/2min.	
Decontamination Solution, Personnel Maintenance Building and Laboratory Aqueous Liquid Wastes <sup>4</sup>	Phase 1	2,200 lbs/hr <sup>1</sup> 79.2 lbs/2 min	2,200 lbs/hr <sup>1</sup> 79.2 lbs/hr	Phase 1	2,200 lbs/hr <sup>1</sup> 79.2 lbs/2 min	D002, D004-D012, D014, D015, D018-D022, D027- D037, D039-D043, F002, F003, F005, F998, F999, P998, P999
	Post-TB	2,107 lbs/hr <sup>1</sup> 75.9 lbs/2 min.		Post-TB	2,081 lbs/hr <sup>1</sup> 74.9 lbs/2min	
UMCD Liquid Waste <sup>1</sup>	Calculated in accordance with WAP Section 2.1.32, with a maximum of 2,023 lbs/hr, 72.8 lbs/2 min		N/A	Calculated in accordance with WAP Section 2.1.32, with a maximum of 2,023 lbs/hr, 72.8 lbs/2 min		D002, D004-D011, D018-D022, D027- D037, D039-D043, F998, F999
Agent-contaminated hydraulic fluids and lubricating oils	430 lb/hr. 15 lb/2 min.		N/A	430 lb/hr. 15 lb/2 min.		F998, F999, P998, P999

DESCRIPTION OF FEED	FEED-RATE		HAZARDOUS WASTE CODES
	LIC1	LIC2	
<b>METAL FEED RATES</b>			
Antimony:	2.77E-03 lbs/hr	2.77E-03 lbs/hr	
Arsenic:	1.47E+00 lbs/hr	1.47E+00 lbs/hr	
Barium:	7.80E-04 lbs/hr	7.80E-04 lbs/hr	
Beryllium:	1.52E-04 lbs/hr	1.52E-04 lbs/hr	
Boron:	1.52E-02 lbs/hr	1.52E-02 lbs/hr	
Cadmium:	7.70E-04 lbs/hr	7.70E-04 lbs/hr	
Chromium:	4.41E-02 lbs/hr	4.41E-02 lbs/hr	
Cobalt:	8.00E-03 lbs/hr	8.00E-03 lbs/hr	
Copper:	1.31E-01 lbs/hr	1.31E-01 lbs/hr	
Lead:	3.79E-02 lbs/hr	3.79E-02 lbs/hr	
Mercury:	7.70E-02 lbs/hr	7.70E-02 lbs/hr	
Manganese:	4.58E-01 lbs/hr	4.58E-01 lbs/hr	
Nickel:	1.35E-01 lbs/hr	1.35E-01 lbs/hr	
Phosphorus:	7.87E-03 lbs/hr	7.87E-03 lbs/hr	
Selenium:	1.52E-02 lbs/hr	1.52E-02 lbs/hr	
Silver:	4.56E-03 lbs/hr	4.56E-03 lbs/hr	
Thallium:	3.04E-03 lbs/hr	3.04E-03 lbs/hr	
Tin:	4.26E-03 lbs/hr	4.26E-03 lbs/hr	
Vanadium:	3.85E-03 lbs/hr	3.85E-03 lbs/hr	
Zinc:	1.15E-01 lbs/hr	1.15E-01 lbs/hr	
<b>CHLORINE/CHLORIDE FEED RATES</b>			
Total Chlorine/ Chloride	535 lbs/hr <sup>3</sup>	519 lbs/hr <sup>3</sup>	

Abbreviation:

EDT = Emissions Demonstration Test  
Post-TB = Post-Trial Burn

Footnotes:

- <sup>1</sup> In accordance with LIC-11 of Table 6-3.
- <sup>2</sup> During the HD shakedown and trial burn periods, 1,335 lbs/hr shall be the maximum feed rate for HD agent. The maximum feed rate for the post-trial burn period shall be 1,305 lbs/hr. This feed rate limit is for agent, and does not include the metals spiking solution used in the performance of the HD ATB. The metals feed rate for any metal shall not exceed the limits contained in this table.
- <sup>3</sup> This limit may change following the Emissions Demonstration Test. The metal feed rates shall not exceed the permitted limits container in this table.

**TABLE 6-2 ALLOWABLE EMISSION RATES FROM EACH LIQUID INCINERATOR**

Allowable Emission Rates (grams/second)			
Constituent	CAS No.	LIC1	LIC2
<b>ORGANICS</b>			
TEQ 2,3,7,8-PCDFs [Dioxin & Furan congeners]		9.75E-10	9.75E-10
1,1,2,2-Tetrachloroethane	79-34-5	3.20E-06	3.20E-06
1,1-Dichloroethane	75-34-3	1.71E-06	1.71E-06
2-Hexanone	591-78-6	8.60E-06	8.60E-06
Acetone	67-64-1	1.66E-01	1.66E-01
Benzene	71-43-2	2.89E-04	2.89E-04
Benzoic Acid	65-85-0	5.40E-04	5.40E-04
Benzyl Alcohol	100-51-6	5.60E-03	5.60E-03
Bis(2-ethylhexyl)phthalate	117-81-7	1.30E-03	1.30E-03
Bromodichloromethane		1.71E-06	1.71E-06
Bromoform	75-22-2	1.59E-05	1.59E-05
Carbon disulfide		3.25E-05	3.25E-05
Carbon Tetrachloride	56-23-5	1.10E-04	1.10E-04
Chlorobenzene	106-90-7	8.35E-06	8.35E-06
Chloroform	67-66-3	6.95E-05	6.95E-05
Chloromethane	74-87-3	2.50E-03	2.50E-03
m-Cresol	108-39-4	6.35E-04	6.35E-04
o-Cresol	95-48-7	5.85E-04	5.85E-04
p-Cresol	106-44-5	1.97E-04	1.97E-04
Di(n)octyl phthalate	117-84-0	6.15E-05	6.15E-05
Di-n-butyl Phthalate	84-74-2	3.12E-05	3.12E-05
Dibromochloromethane	124-48-1	1.71E-06	1.71E-06
(cis)1,3-Dichloropropene	542-75-6	8.10E-04	8.10E-04
(trans)1,3-Dichloropropene	542-75-6	1.71E-06	1.71E-06
Diethyl Phthalate	84-66-2	1.25E-04	1.25E-04
Dimethyl Phthalate	131-11-3	8.85E-04	8.85E-04
Ethylbenzene	100-41-4	4.96E-06	4.96E-06
Methyl chloroform	71-55-6	8.30E-05	8.30E-05
Methyl ethyl ketone	78-93-3	5.90E-04	5.90E-04
Methyl isobutyl ketone		1.11E-05	1.11E-05
Methylene chloride	75-09-2	1.88E-02	1.88E-02
Naphthalene	91-20-3	3.12E-05	3.12E-05
Propylene dichloride	78-87-5	9.40E-04	9.40E-04
Styrene	100-42-5	2.82E-04	2.82E-04
Tetrachloroethylene	127-18-4	5.75E-06	5.75E-06
Toluene	106-88-3	1.06E-02	1.06E-02
Vinyl acetate	108-05-4	2.44E-06	2.44E-06
Vinyl chloride	75-01-4	1.48E-05	1.48E-05
Total xylene	1330-20-7	2.25E-05	2.25E-05

**TABLE 6-2 ALLOWABLE EMISSION RATES FROM EACH LIQUID INCINERATOR**

<b>Allowable Emission Rates (grams/second)</b>			
<b>Constituent</b>	<b>CAS No.</b>	<b>LIC1</b>	<b>LIC2</b>
<b>METALS</b>			
Antimony	7440-36-0	6.45E-05	6.45E-05
Arsenic	7440-38-2	1.10E-04	1.10E-04
Barium	7440-39-3	8.85E-05	8.85E-05
Beryllium	7440-41-7	2.91E-05	2.91E-05
Boron	7440-42-8	3.17E-03	3.17E-03
Cadmium	7440-43-9	2.91E-05	2.91E-05
Chromium	7440-47-3	2.91E-05	2.91E-05
Cobalt	7440-48-4	3.64E-05	3.64E-05
Copper	7440-50-8	3.64E-05	3.64E-05
Lead	7439-2-1	1.52E-04	1.52E-04
Manganese	7439-96-5	4.73E-03	4.73E-03
Mercury	7440-97-6	3.10E-05	3.10E-05
Nickel	7440-02-0	1.91E-04	1.91E-04
Phosphorous	7440-14-0	2.05E-03	2.05E-03
Selenium	7782-49-2	4.43E-05	4.43E-05
Silver	7440-22-4	6.45E-05	6.45E-05
Tin	7440-31-5	2.29E-04	2.29E-04
Thallium	7440-28-0	2.91E-04	2.91E-04
Vanadium	7440-62-2	4.43E-05	4.43E-05
Zinc	7440-66-6	9.50E-04	9.50E-04
<b>ACID GASSES</b>			
Hydrogen Chloride		1.91E-02	1.91E-02
Hydrogen Fluoride		5.25E-02	5.25E-02
<b>OTHER CONSTITUENTS</b>			
Chlorine		2.29E-02	2.29E-02
Particulates		5.40E-02	5.40E-02

**TABLE 6-3 LIQUID INCINERATOR WASTE FEED CUT-OFF PARAMETERS**

Item Number	Process Data Description	LIC1			LIC2		
		Tag Number	Setpoints During Post-Trial Burn	Setpoints During Shakedown Phases 1 and 2 and Trial Burns	Tag Number	Setpoints During Post-Trial Burn	Setpoints During Shakedown Phases 1 and 2 and Trial Burns
LIC-01	Primary chamber pressure high-high	13-PSHH-233	-0.25 inch w.c.	-0.25 inch w.c.	13-PSHH-845	-0.25 inch w.c.	-0.25 inch w.c.
LIC-02	Primary chamber exhaust temperature high-high	13-TAHH-610	2,761°F	2,761°F	13-TAHH-710	2,768°F	2,768° F
LIC-03	Primary chamber exhaust temperature low-low	13-TSLL-610	2,604°F	2,500°F	13-TSLL-710	2,627° F	2,500°F
LIC-04	Process water/spent decontamination solution feed pressure low	13-PSL-51	45 psig	45 psig	13-PSL-765	45 psig	45 psig
LIC-05 <sup>e</sup>	Agent feed pressure low-low	13-PALL-113	5 psig (when agent feed rate >500 lb/hr)	5 psig (when agent feed rate >500 lb/hr)	13-PALL-761	5 psig (when agent feed rate >500 lb/hr)	5 psig (when agent feed rate >500 lb/hr)
LIC-06	Secondary chamber exhaust temperature low-low	13-TSLL-129	1,827°F	1,800°F	13-TSLL-782	1,833° F	1,800°F
LIC-07	Secondary chamber exhaust temperature high-high	13-TAHH-129	2,002°F	2,002°F	13-TAHH-782	2,008° F	2,008° F
LIC-08	Combustion air to secondary chamber burner pressure low-low	13-PSLL-200	30 inches w.c.	30 in. w.c.	13-PSLL-795	30 inches w.c.	30 in. w.c.
LIC-09	Secondary chamber exhaust pressure differential (flue gas flow rate) high-high	13-PDAHH-854	1.1 inch w.c.	1.29 in w.c.	13-FAHH-855 (calculated)	18,720 acfm	25,000 acfm

**TABLE 6-3 LIQUID INCINERATOR WASTE FEED CUT-OFF PARAMETERS**

Item Number	Process Data Description	LIC1				LIC2					
		Tag Number	Setpoints During Post-Trial Burn		Setpoints During Shakedown Phases 1 and 2 and Trial Burns		Tag Number	Setpoints During Post-Trial Burn		Setpoints During Shakedown Phases 1 and 2 and Trial Burns	
LIC-10 °	Surrogate and chemical agent feed rate high-high based on hourly rolling average	13-FAHH-127	Surrogate	1,160 lb/hr	Surrogate	1,160 lb/hr	13-FAHH-731	Surrogate	1,160 lb/hr	Surrogate	1,160 lb/hr
			GB	1,030 lb/hr	GB	1,060 lb/hr		GB	1,019 lb/hr	GB	1,060 lb/hr
			VX	680 lb/hr	VX	710 lb/hr		VX	680 lb/hr	VX	710 lb/hr
			HD	1,286 lb/hr	HD	1,335 lb/hr		HD	1,305 lb/hr	HD	1,335 lb/hr
	Agent-contaminated hydraulic fluid and lubricating oils		430 lb/hr		N/A			430 lb/hr		N/A	
	Surrogate and chemical agent feed rate high-high based on 2-minute rolling average	13-FAHH-127C	Surrogate	42 lb/2 min	Surrogate	42 lb/2 min	13-FAHH-731C	Surrogate	42 lb/2 min	Surrogate	42 lb/2 min
			GB	37 lb/2 min	GB	38.2 lb/2 min		GB	37.0 lb/2 min	GB	38.2 lb/2 min
			VX	24 lb/2 min	VX	25.6 lb/2 min		VX	24 lb/2 min	VX	25.6 lb/2 min
HD			46.3 lb/2 min		48.1 lb/2 min	HD		47.0 lb/2 min	HD	48.1 lb/2 min	
Agent-contaminated hydraulic fluid and lubricating oils			15 lb/2 min	N/A				15 lb/2 min	N/A		

**TABLE 6-3 LIQUID INCINERATOR WASTE FEED CUT-OFF PARAMETERS**

Item Number	Process Data Description	LIC1			LIC2		
		Tag Number	Setpoints During Post-Trial Burn	Setpoints During Shakedown Phases 1 and 2 and Trial Burns	Tag Number	Setpoints During Post-Trial Burn	Setpoints During Shakedown Phases 1 and 2 and Trial Burns
LIC-11	Process water/spent decontamination solution feed rate high-high based on 2-minute rolling average	13-FAHH-102A	75.9 lb/2 min	79.2 lb/2 min	13-FAHH-763A	74.9 lb/2 min	79.2 lb/2 min
	UMCD liquid waste feed rate high-high based on 2-minute rolling average		72.8 lb/2 min; to be processed at the primary chamber high setpoint for combustion air	N/A		72.8 lb/2 min; to be processed at the primary chamber high setpoint for combustion air	N/A
	Process water/spent decontamination solution feed rate high-high based on hourly rolling average	13-FAHH-102C	2,107 lb/hr*	2,200 lb/hr*	13-FAHH-763C	2,081 lb/hr*	2,200 lb/hr*
	UMCD liquid waste feed rate high-high based on hourly rolling average		*Maximum; to be adjusted lower periodically or as necessary to comply with final metals and chlorine limitations in accordance with Appendix A of Attachment 2 2,023 lb/hr, maximum; to be processed at the primary chamber high setpoint for combustion air	N/A		*Maximum; to be adjusted lower periodically or as necessary to comply with final metals and chlorine limitations in accordance with Appendix A of Attachment 2 2,023 lb/hr, maximum; to be processed at the primary chamber high setpoint for combustion air	N/A
LIC-12	CO concentration in PFS exhaust gas high-high	24-AAHH-78C	100 ppm corrected to 7% O <sub>2</sub> , dry basis based on 1-hour rolling average	100 ppm corrected to 7% O <sub>2</sub> , dry basis based on 1-hour rolling average	24-AAHH-716C	100 ppm corrected to 7% O <sub>2</sub> , dry basis based on 1-hour rolling average	100 ppm corrected to 7% O <sub>2</sub> , dry basis based on 1-hour rolling average
LIC-13	Primary atomizing air pressure low-low	13-PSLL-127C	55 psig	55 psig	13-PSLL-737C	55 psig	55 psig
LIC-14	Secondary atomizing air pressure low	13-PSL-58	65 psig	65 psig	13-PSL-809	65 psig	65 psig

**TABLE 6-3 LIQUID INCINERATOR WASTE FEED CUT-OFF PARAMETERS**

Item Number	Process Data Description	LIC1			LIC2		
		Tag Number	Setpoints During Post-Trial Burn	Setpoints During Shakedown Phases 1 and 2 and Trial Burns	Tag Number	Setpoints During Post-Trial Burn	Setpoints During Shakedown Phases 1 and 2 and Trial Burns
LIC-15	Venturi scrubber pressure drop low-low	24-PDALL-90	25 inches w.c.	20 inches w.c.	24-PDALL-814	24 inches w.c.	20 inches w.c.
LIC-16	Clean liquor flow rate to scrubber tower low-low	24-FALL-112	642 gpm	630 gpm	24-FALL-825	647 gpm	630 gpm
LIC-17	Chemical agent emission high-high based on instantaneous measurement	MON-ACAM-1631	GB or 0.0003 mg/m <sup>3</sup> VX	GB or 0.0003 mg/m <sup>3</sup> VX	MON-ACAM-1341	GB or 0.0003 mg/m <sup>3</sup> VX	GB or 0.0003 mg/m <sup>3</sup> VX
		MON-ACAM-163	HD 0.03 mg/m <sup>3</sup>	HD 0.03 mg/m <sup>3</sup>	MON-ACAM-134	HD 0.03 mg/m <sup>3</sup>	HD 0.03 mg/m <sup>3</sup>
LIC-18	Chemical agent emission high-high based on instantaneous measurement at the common stack	MON-ACAM-1291/2231/2251	GB or 0.0003 mg/m <sup>3</sup> VX	GB or 0.0003 mg/m <sup>3</sup> VX	MON-ACAM-1291/2231/2251	GB or 0.0003 mg/m <sup>3</sup> VX	GB or 0.0003 mg/m <sup>3</sup> VX
		MON-ACAM-129/223/225	HD 0.03 mg/m <sup>3</sup>	HD 0.03 mg/m <sup>3</sup>	MON-ACAM-129/223/225	HD 0.03 mg/m <sup>3</sup>	HD 0.03 mg/m <sup>3</sup>
	Continuous chemical agent monitoring at the common stack		<ul style="list-style-type: none"> <li>No less than two on-line ACAMS stations per agent (campaign and prior noncampaign) monitoring the exhaust gas with “staggered” sampling periods.</li> <li>No on-line ACAMS station in malfunction condition while in the sampling mode.</li> </ul>			<ul style="list-style-type: none"> <li>No less than two on-line ACAMS stations per agent (campaign and prior noncampaign) monitoring the exhaust gas with “staggered” sampling periods.</li> <li>No on-line ACAMS station in malfunction condition while in the sampling mode.</li> </ul>	
LIC-19	All brine surge tanks 101,102,201,202 unavailable	23-LSHH-02/06/702/706	Unavailable is when tank brine level is at 18'-3" or tank is selected for feed to the BRA		23-LSHH-02/06/702/706	Unavailable is when tank brine level is at 18'-3" or tank is selected for feed to the BRA	
LIC-20	Clean liquor to scrubber tower pH low-low	24-AALL-116	8.0 pH	7.0 pH	24-AALL-832	8.0 pH	7.0 pH
LIC-21	Clean liquor to scrubber tower pressure low-low	114-PALL-329	15 psig	15 psig	114-PALL-170	15 psig	15 psig
LIC-22	Quench tower exhaust gas temperature high-high	24-TSHH-89	225° F	225° F	24-TSHH-800	225° F	225° F

**TABLE 6-3 LIQUID INCINERATOR WASTE FEED CUT-OFF PARAMETERS**

Item Number	Process Data Description	LIC1			LIC2		
		Tag Number	Setpoints During Post-Trial Burn	Setpoints During Shakedown Phases 1 and 2 and Trial Burns	Tag Number	Setpoints During Post-Trial Burn	Setpoints During Shakedown Phases 1 and 2 and Trial Burns
LIC-23	Quench brine to venturi scrubber flow rate low-low	24-FALL-88	125 gpm	120 gpm	24-FALL-828	127 gpm	120 gpm
LIC-24	Brine density high-high	24-DAHH-83	1.1 sgu	1.2 sgu	24-DAHH-835	1.09 sgu	1.2 sgu
LIC-25	Scrubber tower sump liquid level high-high	24-LSHH-115	86 inches above bottom tangent line	86 inches above bottom tangent line	24-LSHH-818	86 inches above bottom tangent line	86 inches above bottom tangent line
LIC-26	Oxygen concentration in PFS exhaust gas high-high	24-AAHH-210A/210B	13% corrected to a dry basis	13% corrected to a dry basis	24-AAHH-717A/717B	13% corrected to a dry basis	13% corrected to a dry basis
LIC-27	Oxygen concentration in PFS exhaust gas low-low	24-AALL-210C	5.9% corrected to a dry basis (2-minute rolling average)	5.9% corrected to a dry basis (2-minute rolling average)	24-AALL-717C	5.5% corrected to a dry basis (2-minute rolling average)	5.5% corrected to a dry basis (2-minute rolling average)
LIC-28	Secondary chamber pressure high-high	13-PSHH-888	-0.25 inch w.c.	-0.25 inch w.c.	13-PSHH-896	-0.25 inch w.c.	-0.25 inch w.c.
LIC-29	Scrubber tower sump level low-low	24-LSLL-115	50 inches above bottom tangent line	50 inches above bottom tangent line	24-LSLL-818	50 inches above bottom tangent line	50 inches above bottom tangent line
LIC-30 <sup>b,e</sup>	Flame loss in primary chamber burner	13-BSLL-912	Flame loss	Flame loss	13-BSLL-908	Flame loss	Flame loss
LIC-31	Flame loss in secondary chamber burner	13-BSLL-909	Flame loss	Flame loss	13-BSLL-913	Flame loss	Flame loss
LIC-32	Slag discharge gate not closed	13-ZS-367B	Not Closed	Not Closed	13-ZS-567B	Not Closed	Not Closed
LIC-33	Prefilter differential pressure high-high	114-PDAHH-454A/487A/436A	4.0 inch w.c.	4.00 inch w.c.	114-PDAHH-436A/487A/454A	4.0 inch w.c.	4.00 inch w.c.
LIC-34	HEPA filter differential pressure high-high	114-PDAHH-454B/454H/436B/436H/487B/487H	3.0 inch w.c.	3.0 inch w.c.	114-PDAHH-436B/436H/487B/487H/454B/454H	3.0 inch w.c.	3.0 inch w.c.

**TABLE 6-3 LIQUID INCINERATOR WASTE FEED CUT-OFF PARAMETERS**

Item Number	Process Data Description	LIC1			LIC2		
		Tag Number	Setpoints During Post-Trial Burn	Setpoints During Shakedown Phases 1 and 2 and Trial Burns	Tag Number	Setpoints During Post-Trial Burn	Setpoints During Shakedown Phases 1 and 2 and Trial Burns
LIC-35	Temperature of gas to carbon filter system high-high	114-TSHH-533 (instantaneous)	180°F (instantaneous)	180°F (instantaneous)	114-TSHH-433 (instantaneous)	180°F (instantaneous)	180°F (instantaneous)
		114-TAHH-518 (ROHA)	167°F (rolling one-hour average)	180°F (rolling one-hour average)	114-TAHH-418 (ROHA)	163°F (rolling one-hour average)	180°F (rolling one-hour average)
LIC-36	Moisture of gas to carbon filter System (Either A or B or the average of the two measurements) high-high	114-MAHH-534A/B (instantaneous)	80% RH (instantaneous)	80% RH (instantaneous)	114-MAHH-434A/B (instantaneous)	80% RH (instantaneous)	80% RH (instantaneous)
		114-MAHH-534C (ROHA)	55% RH (rolling one-hour average)	55% RH (rolling one-hour average)	114-MAHH-434C (ROHA)	55% RH (rolling one-hour average)	55% RH (rolling one-hour average)
LIC-37	Carbon filter bypass valve not closed	114-ZS-550B	Not closed	Not closed	114-ZS-450B	Not closed	Not closed
LIC-38	Maximum Differential Pressure across the mist eliminator	24-PDAHH-147/164	20 in. w.c.	20 in. w.c.	24-PDAHH-867/164	20 in. w.c.	20 in. w.c.
LIC-39	Chemical agent emission high-high based on instantaneous measurement upstream of the PFS unit	MON-ACAM-3541/3561/3571	GB or 0.0003 mg/m <sup>3</sup> VX	GB or 0.0003 mg/m <sup>3</sup> VX	MON-ACAM-3541/3561/3571	GB or 0.0003 mg/m <sup>3</sup> VX	GB or 0.0003 mg/m <sup>3</sup> VX
		MON-ACAM-354/356/357	HD 0.03 mg/m <sup>3</sup>	HD 0.03 mg/m <sup>3</sup>	MON-ACAM-354/356/357	HD 0.03 mg/m <sup>3</sup>	HD 0.03 mg/m <sup>3</sup>
LIC-40	Relative humidity in PFS exhaust gas high-high	114-MAHH-109/209/113	55% RH (30 minute rolling average)	55% RH (30 minute rolling average)	114-MAHH-109/209/113	55% RH (30 minute rolling average)	55% RH (30 minute rolling average)
LIC-41 <sup>a</sup>	Moisture in any furnace PAS	024-MAH-078A/B, -207A/B, -669A/B, -716A/B	38% moisture (volume)	38% moisture (volume)	024-MAH-078A/B, -207A/B, -669A/B, -716A/B	38% moisture (volume)	38% moisture (volume)
LIC-42 <sup>f</sup>	Rinsate feed pressure low-low	64-PALL-9904	5 psig, when rinsate feed rate ≥500 lbs/hr	See Permit Attachment 14	64-PALL-9905	5 psig, when rinsate feed rate ≥500 lbs/hr	See Permit Attachment 14

**TABLE 6-3 LIQUID INCINERATOR WASTE FEED CUT-OFF PARAMETERS**

Item Number	Process Data Description	LIC1			LIC2		
		Tag Number	Setpoints During Post-Trial Burn	Setpoints During Shakedown Phases 1 and 2 and Trial Burns	Tag Number	Setpoints During Post-Trial Burn	Setpoints During Shakedown Phases 1 and 2 and Trial Burns
LIC-43 <sup>f</sup>	Rinsate feed rate high-high	64-FAHH-9894 (ROHA)	1,000 lbs/hr (rolling one-hour average)	See Permit Attachment 14	64-FAHH-9895 (ROHA)	1,000 lbs/hr (rolling one-hour average)	See Permit Attachment 14
		64-FAHH-9894C (2MRA)	33 lbs/2 mins (2-minute rolling average)	See Permit Attachment 14	64-FAHH-9895C (2MRA)	33 lbs/2 mins (2-minute rolling average)	See Permit Attachment 14

<sup>a</sup> The unit of record (UOR) will initiate an AWFCO for the LIC1, LIC2, MPF, and DFS. This alarm will not be active if the respective LIC induced-draft (ID) fans are not running. During quarterly CEMS maintenance, both units of the respective LIC can be offline if administrative controls are in place to monitor for high moisture in the PAS of the affected furnace and to stop hazardous waste feed to all furnaces if high moisture is indicated. Quarterly CEMS maintenance activities will not require cessation of hazardous waste processing in operational furnaces provided all other operational requirements are met.

<sup>b</sup> Waste feed cut-off parameter for loss of flame does not apply to HD rinsate feed to the LICs.

<sup>c</sup> For HD rinsate treatment operations, this applies to the post-EDT period.

<sup>d</sup> For HD rinsate treatment operations, this applies to the EDT ramp-up and test periods.

<sup>e</sup> Agent feed mode only

<sup>f</sup> Rinsate feed mode only

Abbreviation:

Post-TB = Post-Trial Burn

**TABLE 6-4 MAXIMUM FEED RATES TO THE METAL PARTS FURNACE**

TYPE OF MUNITION <sup>a</sup>	Chemical Agent	Maximum Units/Tray	Minimum Feed Interval Time between Trays (minutes)	Minimum Zone Timers (minutes)	Maximum Heel/Tray (lbs)
Ton Container	HD	1	131	Zone 1 131 Zone 2 131 Zone 3 16	Unmobilized heel 293.3 Total heel weight 423.3
<b>Footnote:</b>					
a. Hazardous Waste Codes D004, D005, D006, D007, D008, D009, D010, D011, D022, D028, D043, P998, P999, F998, and F999.					
<b>SURROGATES Maximum feed rate 172.25 lbs/hr</b>					
Monochlorobenzene (U037, D021)		101.65 lbs/hr			
Hexachloroethane (D034, U131)		70.6 lbs/hr			
<b>METAL FEED RATES</b>					
<b>Element</b>	<b>Maximum Metals Feed (lbs/tray)</b>				
	<b>Ton Container (HD)</b>				
Antimony (Sb)	6.04E-03				
Arsenic (As)	9.47E-01				
Barium (Ba)	6.38E-01				
Beryllium (Be)	3.84E-05				
Boron (B)	3.84E-03				
Cadmium (Cd)	3.29E-01				
Chromium (Cr) - Total	2.22E-01				
Cobalt (Co)	7.02E-03				
Copper (Cu)	8.60E-02				
Lead (Pb)	1.18E+00				
Manganese (Mn)	4.02E-01				
Mercury (Hg)	5.24E-01				
Nickel (Ni)	4.22E-01				
Phosphorus (P)	1.73E-02				
Selenium (Se)	1.18E-03				
Silver (Ag)	1.05E-03				
Thallium (Tl)	7.81E-04				
Tin (Sn)	1.41E-02				
Vanadium (V)	9.54E-04				
Zinc (Zn)	1.01E-01				
<b>CHLORINE FEED RATE</b>					
	<b>Maximum Chlorine Feed (lbs/tray)</b>				
	<b>Ton Container (HD)</b>				
Chlorine	198				

**TABLE 6-4 MAXIMUM FEED RATES TO THE METAL PARTS FURNACE**

<b>SECONDARY WASTE FEED RATES</b>					
<b>WASTE DESCRIPTION</b>	<b>MIN. FEED TIME INTERVAL (minutes)</b>		<b>MIN. RESIDENCE TIME (minutes)<sup>6</sup></b>	<b>MAXIMUM WASTE FEED (lb/tray)<sup>13</sup></b>	<b>NOTES</b>
	<b>Agent</b>				
	<b>GB/HD</b>	<b>VX</b>			
<b>Inert Secondary Waste</b>					
Noncombustible Waste (excludes aluminum greater than 12.5 lbs per feed)	30	34	80	3,500	1,2,7
Bulk Aluminum	30	34	80	1,000	1,5,7
Foam Core Panels	25	29	65	800	3,7
ACS, RCS, AQS, and SDS Residues (includes dirt)	45	49	125	300	1,7,9
Concrete – Rubble	69	73	197	600	1,11
Concrete – Scabbled	69	73	197	600	4
Concrete – Sludge	69	73	197	217	1,9
Silica Gel and silica gel/Vermiculite Blend	26	29	65	37	1,6,7,8,10
Vermiculite	36	39	93	11	1,6,7,9
Noncombustible Sorbents	69	73	197	80	1,12
<b>Combustible Secondary Waste</b>					
<b>WASTE DESCRIPTION</b>	<b>MIN. FEED TIME INTERVAL (minutes)</b>	<b>MIN. RESIDENCE TIME (minutes)<sup>6</sup></b>	<b>MAXIMUM WASTE FEED (lb/WIC)<sup>13</sup></b>	<b>MAXIMUM HEAT LOADING (MM Btu/WIC)</b>	
<ul style="list-style-type: none"> <li>• Ventilation System Filters (includes prefilters and HEPA filters)</li> <li>• DPE Suits (includes other types of low-heat plastics)</li> <li>• High-Heat Plastic (includes tyvek suits, polystyrene, polyethylene, and polypropylene materials)</li> <li>• Cellulose Waste (includes wood, cotton, and paper materials)</li> <li>• TAP Gear/Rubber</li> <li>• 3-M Maintenance Sorbents</li> <li>• Laboratory Solid Waste</li> </ul>	64.6	176	407	4.80	

Notes:

1. Secondary wastes will be placed in waste incineration containers (WICs) for processing.
2. Residence time is based on processing block metal. It is conservative for plate steel and loose parts, therefore, all three categories can be mixed in one load. Enclosed metal containers such as spray cans and compressed air tanks must be punctured prior to processing.
3. Panel sections consist of a foam core between metal skin layers. The maximum size of a waste feed panel is 3 ft. x 8 ft. Panels are supported vertically with faces parallel to the sides of the furnace and with a minimum 1-inch air gap between them.
4. Process in steel processing drums equipped with spider-leg fins, filled to maximum material depth 7". Place unsealed lids on the drums before processing.
5. Water sprays must be locked out during processing of aluminum waste.
6. The minimum furnace residence time is equal to furnace Zone 1 residence time + furnace Zone 2 residence time + furnace Zone 3 residence time. Furnace Zone 1 and 2 residence time = min. feed time interval. Furnace Zone 3 residence time = min. feed time interval - ACAMS time in discharge airlock.
7. Any of the secondary waste streams may be commingled, either in the same waste tray or by processing different trays of waste in Zones 1, 2, and 3 at the same time. The lowest permitted waste feed rate for any of the waste commingled shall not be exceeded. The longest residence time of any of the waste commingled shall be complied with. Total aluminum contained in the commingled waste is restricted to a maximum of 12.5 pounds per tray.
8. Waste to be spread evenly within containment pan of WIC to a maximum depth of 1".
9. Waste to be spread evenly within containment pan of WIC to a maximum depth of 1.5".
10. Silica gel/vermiculite blend may be any percent by volume mixture of silica gel and vermiculite.
11. Process in ultra WIC with containment pans and heat transfer fins. Material depth maximum 7".
12. Waste to be processed in ultra WIC equipped with containment pans and reinforced screen cover. Sorbents will be a maximum of two layers deep, with a maximum waste depth of 2.5".
13. The waste feed rates in this column address the maximum feed rate to achieve decontamination of the waste and do not ensure compliance with the emission limits in Table 6-6

**TABLE 6-4 MAXIMUM FEED RATES TO THE METAL PARTS FURNACE (Continued)**

<b>MAXIMUM METAL AND CHLORINE FEED RATES FOR SECONDARY WASTES TO THE METAL PARTS FURNACE</b>			
<b>Element</b>	<b>Maximum Metals Feed (lbs/hr) <sup>1</sup></b>	<b>Element</b>	<b>Maximum Metals Feed (lbs/hr) <sup>1</sup></b>
Antimony (Sb)	2.58E-02	Manganese (Mn)	4.42E-01
Arsenic (As)	2.32E-01	Mercury (Hg)	4.86E-04
Barium (Ba)	2.31E+00	Nickel (Ni)	1.26E+00
Beryllium (Be)	9.40E-04	Phosphorus (P)	5.17E+01
Boron (B)	3.96E+00	Selenium (Se)	5.98E-02
Cadmium (Cd)	1.18E+00	Silver (Ag)	4.52E-03
Chlorine	8.48E+01	Thallium (Tl)	3.39E-03
Chromium (Cr) - Total	6.80E-01	Tin (Sn)	2.66E-02
Cobalt (Co)	3.65E-02	Vanadium (V)	9.40E-03
Copper (Cu)	8.37E-02	Zinc (Zn)	4.88E-01
Lead (Pb)	4.20E+00		

Note: The maximum metal and chlorine feed rates shall not exceed the values listed in the table on a rolling one-hour average basis.

<sup>1</sup> Compliance with these feed limits is determined using the procedures in Section 9 of the Waste Analysis Plan (Attachment 2 of the Permit)

**TABLE 6-5 [RESERVED]**

**TABLE 6-6 ALLOWABLE EMISSION RATES FROM THE MPF**

Allowable Emission Rates (grams/second)		
Constituent	CAS No.	MPF
<b>ORGANICS</b>		
TEQ 2,3,7,8-PCDFs (Dioxin & Furan congeners)		9.08E-10
1,1,2,2-Tetrachloroethane	79-34-5	6.98E-07
1,1-Dichloroethane	75-34-3	8.47E-07
2-Hexanone	591-78-6	6.98E-07
Acetone	67-64-1	8.34E-05
Benzene	71-43-2	3.15E-04
Benzoic Acid	65-85-0	5.91E-04
Benzyl Alcohol	100-51-6	5.94E-03
Bis(2-ethylhexyl)phthalate	117-81-7	1.18E-03
Bromodichloromethane		6.98E-07
Bromoform	75-22-2	4.22E-05
Carbon disulfide		4.09E-05
Carbon Tetrachloride	56-23-5	1.28E-05
Chlorobenzene	106-90-7	1.71E-06
Chloroform	67-66-3	5.88E-06
Chloromethane	74-87-3	2.86E-05
m-Cresol	108-39-4	6.23E-05
o-Cresol	95-48-7	1.94E-03
p-Cresol	106-44-5	6.67E-05
Di(n)octyl phthalate	117-84-0	6.67E-05
Di-n-butyl Phthalate	84-74-2	6.67E-05
Dibromochloromethane	124-48-1	6.98E-07
(cis)1,3-Dichloropropene	542-75-6	6.98E-07
(trans)1,3-Dichloropropene	542-75-6	6.98E-07
Diethyl Phthalate	84-66-2	6.67E-05
Dimethyl Phthalate	131-11-3	1.35E-03
Ethylbenzene	100-41-4	1.64E-06
Methyl chloroform	71-55-6	1.65E-06
Methyl ethyl ketone	78-93-3	1.58E-04
Methyl isobutyl ketone		6.98E-07
Methylene chloride	75-09-2	1.38E-04
Naphthalene	91-20-3	6.67E-05
Propylene dichloride	78-87-5	6.98E-07
Styrene	100-42-5	5.24E-05
Tetrachloroethylene	127-18-4	6.98E-07
Toluene	106-88-3	4.15E-05
Vinyl acetate	108-05-4	6.98E-07
Vinyl chloride	75-01-4	5.65E-05
Total xylene	13 30-20-7	6.98E-07

**TABLE 6-6 ALLOWABLE EMISSION RATES FROM THE MPF**

<b>Allowable Emission Rates (grams/second)</b>		
<b>Constituent</b>	<b>CAS No.</b>	<b>MPF</b>
<b>METALS</b>		
Antimony	7440-36-0	1.19E-04
Arsenic	7440-38-2	8.51E-05
Barium	7440-39-3	2.35E-04
Beryllium	7440-41-7	2.38E-05
Boron	7440-42-8	2.29E-03
Cadmium	7440-43-9	5.73E-05
Chromium	7440-47-3	6.99E-05
Cobalt	7440-48-4	5.94E-05
Copper	7440-50-8	5.94E-05
Lead	7439-2-1	1.45E-04
Manganese	7439-96-5	1.56E-03
Mercury	7440-97-6	4.28E-05
Nickel	7440-02-0	1.38E-04
Phosphorous	7440-14-0	1.16E-03
Selenium	7782-49-2	7.23E-05
Silver	7440-22-4	1.19E-04
Tin	7440-31-5	1.19E-04
Thallium	7440-28-0	1.19E-05
Vanadium	7440-62-2	2.38E-05
Zinc	7440-66-6	2.09E-04
<b>ACID GASSES</b>		
Hydrogen Chloride		8.16E-03
Hydrogen Fluoride		1.93E-02
<b>OTHER CONSTITUENTS</b>		
Chlorine		2.57E-02
Particulates		5.04E-02

**TABLE 6-7 METAL PARTS FURNACE WASTE FEED CUT-OFF PARAMETERS**

Item Number	Tag Number	Process Data Description	Setpoints During Post-Trial Burn	Setpoints During Shakedown Phases 1 and 2 and Trial Burns
MPF-01	14-TAHH-152A	MPF temperature Zone 1 high-high	Ton containers 1,755°F Secondary wastes 1,755°F	Ton containers 1,755°F
MPF-02	14-TAHH-141A	MPF temperature Zone 2 high-high	Ton containers 1,743°F Secondary wastes 1,743°F	Ton containers 1,743°F
MPF-03	14-TAHH-153	MPF temperature Zone 3 high-high	Ton containers 1,733°F Secondary wastes 1,733°F	Ton containers 1,733°F
MPF-04	14-PALL-159	Natural gas to MPF pressure low-low	3.0 psig	3.0 psig
MPF-05	14-TAHH-65	MPF afterburner temperature high-high	2,113°F	2,200°F
MPF-06	14-TALL-65	MPF afterburner temperature low-low	Ton containers 1,892°F Secondary wastes 1,903°F	1,800°F
MPF-07	24-TSHH-223	Quench tower exhaust gas temperature high-high	225°F	225°F
MPF-08	24-LSHH-245	Scrubber tower sump liquid level high-high	60 inches (84 in. above bottom tangent line)	60 inches (84 in. above bottom tangent line)
MPF-09	24-LSSL-245	Scrubber tower sump liquid level low-low	24 inches (48 in. above bottom tangent line)	24 inches (48 in. above bottom tangent line)
MPF-10	14-TALL-152	MPF Zone 1 temperature low-low	Ton containers 1,255°F Combustible secondary wastes 1,380 °F Inert secondary wastes 1,380°F	Ton containers 900°F
MPF-11	14-PSLL-138	Combustion air pressure low-low	20 in. w.c.	20 in. w.c.
MPF-12	14-PDAHH-786	Afterburner flue gas flow rate high-high	0.38 in. w.c.	Ton containers 0.59 in w.c.
MPF-13	24-AAHH-669C	CO concentration in PFS exhaust gas high-high	100 ppm corrected to 7% O <sub>2</sub> , dry basis based on hourly rolling average	100 ppm corrected to 7% O <sub>2</sub> , dry basis based on hourly rolling average
MPF-14	24-PDALL-222	Venturi scrubber pressure drop low-low	Ton containers 20 in. w.c. Secondary wastes 24 in. w.c.	15 in. w.c.
MPF-15	24-FALL-248	Clean liquor to scrubber tower flow rate low-low	750 gpm	575 gpm

**TABLE 6-7 METAL PARTS FURNACE WASTE FEED CUT-OFF PARAMETERS**

Item Number	Tag Number	Process Data Description	Setpoints During Post-Trial Burn	Setpoints During Shakedown Phases 1 and 2 and Trial Burns
MPF-16	MON-ACAM-1671	Chemical agent emission high-high based on instantaneous measurements at the MPF ID fan exhaust duct	GB or VX 0.0003 mg/m <sup>3</sup>	GB or VX 0.0003 mg/m <sup>3</sup>
	MON-ACAM-167		HD 0.03 mg/m <sup>3</sup>	HD 0.03 mg/m <sup>3</sup>
MPF-17	MON-ACAM-1291/2231/2251	Chemical agent emission high-high based on instantaneous measurements at the common stack	GB or VX 0.0003 mg/m <sup>3</sup>	GB or VX 0.0003 mg/m <sup>3</sup>
	MON-ACAM-129/223/225		HD 0.03 mg/m <sup>3</sup>	HD 0.03 mg/m <sup>3</sup>
		Continuous chemical agent monitoring at the common stack	<ul style="list-style-type: none"> <li>• No less than two on-line ACAMS stations per agent (campaign and prior noncampaign) monitoring the exhaust gas with “staggered” sampling periods.</li> <li>• No on-line ACAMS station in malfunction condition while in the sampling mode.</li> </ul>	
MPF-18	23-LSHH-02/06/702/706	All brine surge tanks 101,102, 201, 202 unavailable.	Unavailable is when level high-high at 18'-3" or tank is selected for feed to the BRA	Unavailable is when level high-high at 18'-3" or tank is selected for feed to the BRA
MPF-19	14-PSHH-34	Furnace chamber pressure high-high	-0.15 in. w.c.	-0.15 in. w.c.
MPF-20	24-AALL-247	Clean liquor to scrubber tower pH low-low	8.1 pH units	7.4 pH units
MPF-21	114-PALL-358	Clean liquor to scrubber tower pressure low-low	25 psig	25 psig
MPF-22	24-FALL-218	Quench brine to venturi scrubber flow rate low-low	165 gpm	117 gpm
MPF-23	24-DAHH-216	Quench brine liquor density high-high	Ton containers 1.10 sgu Secondary Waste 1.08 sgu	1.16 sgu
MPF-24	PDAR	Munitions feed rate high	See Table 6-4 for maximum feed rate limits	See Table 6-4 for maximum feed rate limits
		Surrogate feed rate high	Surrogates 172.25 lbs/hr	Surrogates 172.25 lbs/hr
		Secondary waste feed rate high	See Table 6-4 for maximum feed rate limits	See Table 6-4 for maximum feed rate limits
MPF-25	24-AAHH-670A/B	Oxygen concentration in PFS exhaust gas high-high	15% corrected to a dry basis	15% corrected to a dry basis

**TABLE 6-7 METAL PARTS FURNACE WASTE FEED CUT-OFF PARAMETERS**

Item Number	Tag Number	Process Data Description	Setpoints During Post-Trial Burn	Setpoints During Shakedown Phases 1 and 2 and Trial Burns
MPF-26	24-AALL-670C	Oxygen concentration in PFS exhaust gas low-low	4.8% corrected to a dry basis (2-minute rolling average)	4.8% corrected to a dry basis (2-minute rolling average)
	24-AALL-670A/B	Oxygen concentration in PFS exhaust gas low-low (prior to opening the Zone 1 entry door)	6.2% corrected to a dry basis (instantaneous)	6.2% corrected to a dry basis (instantaneous)
MPF-27	14-PAHH-37	Afterburner pressure high-high	-0.15 in. w.c.	-0.15 in. w.c.
MPF-28	14-BSLL-883, -884, -885, -886, -887, -888, -889, -890, -891, -892	Flame loss in burnout chamber	<u>Zones 1 &amp; 2</u> all burners out or 3 burners out and zone temperature less than 1,400°F.  <u>Zone 3</u> all burners out or 1 burner out and zone temperature less than 1,400°F.	<u>Zones 1 &amp; 2</u> all burners out or 3 burners out and zone temperature less than 1,400°F.  <u>MPF Zone 3</u> all burners out or 1 burner out and zone temperature less than 1,400°F.
MPF-29	14-BSLL-893 14-BSLL-894	Flame loss in afterburner (both burners)	Flame loss (in both burners of the afterburner)	Flame loss (in both burners of the afterburner)
MPF-30	114-PDAHH-438A/487A	PFS Prefilter differential pressure high-high	4.00 inch w.c.	4.00 inch w.c.
MPF-31	114-PDAHH-438B/H, -487B/H	PFS HEPA filter differential pressure high-high	3.0 inch w.c.	3.0 inch w.c.
MPF-32	114-TAHH-419 (ROHA) 114-TSHH-97 (instantaneous)	Temperature of gas to carbon filter system high-high	161°F (rolling one-hour average) 180°F (instantaneous)	180°F (rolling one-hour average) 180°F (instantaneous)
MPF-33	114-MAHH-96C (ROHA) 114-MAHH-96A/B (instantaneous)	Moisture of gas to carbon filter system high-high Instantaneous (Either 96A or 96B) ROHA (either 96A or 96B or average of two measurements depending on online instruments)	55% RH (rolling one-hour average) 80% RH (instantaneous)	55% RH (rolling one-hour average) 80% RH (instantaneous)
MPF-34	114-ZS-93B	Carbon filter system bypass valve not closed	Not closed	Not closed

**TABLE 6-7 METAL PARTS FURNACE WASTE FEED CUT-OFF PARAMETERS**

Item Number	Tag Number	Process Data Description	Setpoints During Post-Trial Burn	Setpoints During Shakedown Phases 1 and 2 and Trial Burns
MPF-35	MON-ACAM-3551/3561	Chemical agent emission high-high based on instantaneous measurement upstream of the PFS unit	GB or VX 0.0003 mg/m <sup>3</sup>	GB or VX 0.0003 mg/m <sup>3</sup>
	MON-ACAM-355/356		HD 0.03 mg/m <sup>3</sup>	HD 0.03 mg/m <sup>3</sup>
MPF-36	24-PDAH-291/53	Mist eliminator differential pressure high-high	20 in. w.c.	20 in. w.c.
MPF-37	114-MAHH-110/113	Relative humidity in PFS exhaust gas high-high	55% RH (30-minute rolling average)	55% RH (30-minute rolling average)
MPF-38	14-TALL-141	MPF Zone 2 temperature low-low	Ton containers 1,410°F Combustible secondary waste 1,378°F Inert secondary waste 1,378°F	Ton containers 900 °F
MPF-39	14-TALL-153	MPF Zone 3 temperature low-low	Ton containers 1,400°F Combustible secondary waste 1,383°F Inert secondary waste 1,383°F	Ton containers 1,000 °F
MPF-40	MON-ACAM-290/393	Chemical agent emission high-high based on instantaneous measurements at the MPF discharge airlock	GB 0.00002 mg/m <sup>3</sup> (0.2 VSL) or VX 0.000002 mg/m <sup>3</sup> (0.2 VSL)	GB 0.00002 mg/m <sup>3</sup> (0.2 VSL) or VX 0.000002 mg/m <sup>3</sup> (0.2 VSL)
	MON-ACAM-2901/3931		HD 0.0006 mg/m <sup>3</sup> (0.2 VSL)	HD 0.0006 mg/m <sup>3</sup> (0.2 VSL)
MPF-41	MON-ACAM-476	Chemical agent emission high-high based on instantaneous measurements at the MPF cool down area	GB 0.00005 mg/m <sup>3</sup> (0.5 VSL) or VX 0.000005 mg/m <sup>3</sup> (0.5 VSL)	GB 0.00005 mg/m <sup>3</sup> (0.5 VSL) or VX 0.000005 mg/m <sup>3</sup> (0.5 VSL)
	MON-ACAM-4761		HD 0.0015 mg/m <sup>3</sup> (0.5 VSL)	HD 0.0015 mg/m <sup>3</sup> (0.5 VSL)
MPF-42 <sup>a</sup>	024-MAH-078A/B, -207A/B, -669A/B, -716A/B	Moisture in any furnace PAS	38% moisture (volume)	38% moisture (volume)
MPF-43	14-TAH-010	Primary chamber exhaust temperature high	Ton containers 2,385 °F Secondary wastes 1,875 °F	2,385 °F

<sup>a</sup> The unit of record (UOR) will initiate an AWFCO for the LIC1, LIC2, MPF, and DFS. This alarm will not be active if the respective MPF induced-draft (ID) fans are not running. During quarterly CEMS maintenance, both units of the MPF can be offline if administrative controls are in place to monitor for high moisture in the PAS of the affected furnace and to stop hazardous waste feed to all furnaces if high moisture is indicated. Quarterly CEMS maintenance activities will not require cessation of hazardous waste processing in operational furnaces provided all other operational requirements are met.

**TABLE 6-8 MAXIMUM FEED RATES TO THE DEACTIVATION FURNACE**

Type Munition And Chemical Agent* <sup>1</sup>	Maximum Units/Hr	Minimum Feed Int. (Sec)	Maximum Feed Rate (lb/hr)				
			VX	GB	HD	Exp.	Prop.
M 55 Rocket/M56 Warhead (GB), nongelled <sup>2</sup>	36.6	98.4	-	14.4 <sup>4,5</sup>	-	117.2	706.4
M 55 Rocket/M56 Warhead (VX) <sup>2</sup>	34.3	105	18.1	-	-	109.8	662.0
M 121 A1 Proj, 155 M(VX)	120	30	-	-	-	327.0	-
M 121 A1 Proj,155 M(GB)	120	30	-	-	-	327.0	-
M 426 Proj,8 inch (VX)	47	77	-	-	-	339.8	-
M 426 Proj,8 inch (GB)	47	77	-	-	-	339.8	-
M 23 Landmine(VX)	70	52	18.1	-	-	55.4	-
<b>SURROGATES</b> Maximum feed rate 258 lbs/hr							
Monochlorobenzene (U037, D021)							
Hexachloroethane (D034, U131)							
SECONDARY WASTES		Maximum Weight per Feed (lb)	Minimum Feed Int. (Sec.)	Maximum Feed Rate (lb/hr) <sup>3</sup>			
ECR Maintenance Residue		28.5	277	28.5			
Explosive Contaminated Spill Pillows		28.5	277	28.5			
PCB-Contaminated UMCD waste		28.5	600	171			
Partially treated DFS ash (nominal kiln exhaust gas temp of 1,575°F)		28.5	600	171			
Partially treated DFS ash (nominal kiln exhaust gas temp of 975°F)		22.8	600	137			
<b>METAL FEED RATES</b>							
Antimony:	1.91E-02 lbs/hr	Manganese:	8.85E-03lbs/hr				
Arsenic:	1.17E-02 lbs/hr	Mercury:	9.73E-05 lbs/hr				
Barium:	3.08E+00 lbs/hr	Nickel:	1.59E+00 lbs/hr				
Beryllium:	7.57E-05 lbs/hr	Phosphorus:	2.54E+01 lbs/hr				
Boron:	5.65E-01 lbs/hr	Selenium:	1.13E-02 lbs/hr				
Cadmium:	1.53E+00 lbs/hr	Silver:	8.64E-04 lbs/hr				
Chromium:	8.58E-01 lbs/hr	Thallium:	1.90E-02 lbs/hr				
Cobalt:	1.10E-03 lbs/hr	Tin:	3.79E-02 lbs/hr				
Copper	1.48E-02 lbs/hr	Vanadium:	7.63E-04 lbs/hr				
Lead:	9.68E+00 lbs/hr	Zinc:	2.12E-02 lbs/hr				
<b>CHLORINE/CHLORIDE FEED RATES</b>							
Total Chlorine	116.3 lbs/hr						

Notes:

- Hazardous Waste Codes: D002, D003, D004, D005, D006, D007, D008, D009, D010, D011, D022, D028, D030, D043, F999, P999
- Includes shipping and firing tubes without warheads
- Not to exceed maximum permitted agent feed rates for munitions
- In the event a rocket cannot be drained to a level that ensures the maximum permitted feed rate is not exceeded, the rockets will be processed as follows:
  - The rocket will be fed to the DFS after the GB agent rolling one-hour average feed rate drops to 0.0 lbs/hr.
  - No more rockets will be introduced into the DFS until the agent GB ROHA feed rate drops below the maximum permitted feed rate and the subsequent rocket will not result in exceeding the maximum permitted feed rate.
  - The Department will be notified prior to feeding a rocket that cannot be drained to a level that will ensure the permitted maximum feed rate is not exceeded
- Upon Department approval of a report showing compliance with the performance standards in accordance with Condition VI.D.2.iii, the permittees shall be authorized to feed GB agent at a rate of up to 14.0 lbs/hr (ROHA).

**TABLE 6-9 [RESERVED]**

**TABLE 6-10 ALLOWABLE EMISSION RATES FROM THE DFS**

Allowable Emission Rates (grams/second)		
Constituent	CAS No.	DFS
<b>ORGANICS</b>		
TEQ 2,3,7,8-PCDFs (Dioxin & Furan congeners)		6.69E-10
Total Polychlorinated Biphenyls (PCB cong)	1336-36-3	6.25E-07
1,1,2,2-Tetrachloroethane	79-34-5	7.33E-07
1,1-Dichloroethane	75-34-3	7.33E-07
2,4,6-Trinitrotoluene	118-96-7	2.55E-06
2,4-Dinitrotoluene	121-14-2	2.55E-06
2,6-Dinitrotoluene	606-20-2	2.55E-06
2-Hexanone	591-78-6	7.33E-07
Acetone	67-64-1	7.18E-02
Benzene	71-43-2	1.11E-04
Benzoic Acid	65-85-0	3.80E-04
Benzyl Alcohol	100-51-6	2.06E-03
Bis(2-ethylhexyl)phthalate	117-81-7	9.93E-05
Bromodichloromethane		3.31E-06
Bromoform	75-22-2	6.44E-05
Carbon disulfide		7.33E-07
Carbon Tetrachloride	56-23-5	7.33E-07
Chlorobenzene	106-90-7	2.35E-06
Chloroform	67-66-3	8.38E-05
Chloromethane	74-87-3	7.33E-07
m-Cresol	108-39-4	1.02E-05
o-Creso	95-48-7	1.21E-04
p-Cresol	106-44-5	1.02E-04
Di(n)octyl phthlate	117-84-0	1.02E-05
Di-n-butyl Phthalate	84-74-2	1.10E-05
Dibromochloromethane	124-48-1	4.89E-06
(cis)1,3-Dichloropropene	542-75-6	7.33E-07
(trans)1,3-Dichloropropene	542-75-6	7.33E-07
Diethyl Phthalate	84-66-2	9.93E-06
Dimethyl Phthalate	131-11-3	4.23E-04
Ethylbenzene	100-41-4	2.25E-05
HMX	2691-41-0	2.55E-06
Methyl chloroform	71-55-6	1.22E-04
Methyl ethyl ketone	78-93-3	7.33E-04
Methyl isobutyl ketone		7.33E-07
Methylene chloride	75-09-2	1.20E-02
Naphthalene	91-20-3	1.30E-05
Nitroglycerine	55-63-0	5.28E-04
Propylene dichloride	78-87-5	7.33E-07
RDX	121-82-4	2.55E-06
Styrene	100-42-5	1.11E-04
Tetrachloroethylene	127-18-4	7.33E-07
Toluene	106-88-3	6.17E-03

**TABLE 6-10 ALLOWABLE EMISSION RATES FROM THE DFS**

<b>Allowable Emission Rates (grams/second)</b>		
<b>Constituent</b>	<b>CAS No.</b>	<b>DFS</b>
Vinyl acetate	108-05-4	7.33E-07
Vinyl chloride	75-01-4	1.62E-06
Total xylene	1330-20-7	1.58E-05
<b>METALS</b>		
Antimony	7440-36-0	4.19E-05
Arsenic	7440-38-2	4.19E-05
Barium	7440-39-3	8.42E-05
Beryllium	7440-41-7	6.21E-06
Boron	7440-42-8	1.77E-03
Cadmium	7440-43-9	1.87E-05
Chromium	7440-47-3	4.04E-05
Cobalt	7440-48-4	1.68E-05
Copper	7440-50-8	5.39E-05
Lead	7439-2-1	4.42E-04
Manganese	7439-96-5	4.19E-03
Mercury	7440-97-6	5.24E-06
Nickel	7440-02-0	3.05E-05
Phosphorous	7440-14-0	9.35E-04
Selenium	7782-49-2	4.19E-05
Silver	7440-22-4	1.68E-05
Tin	7440-31-5	1.65E-04
Thallium	7440-28-0	8.42E-06
Vanadium	7440-62-2	4.19E-05
Zinc	7440-66-6	8.42E-04
<b>ACID GASSES</b>		
Hydrogen Chloride		1.16E-03
Hydrogen Fluoride		1.66E-02
<b>OTHER CONSTITUENTS</b>		
Chlorine		2.22E-02
Particulates		1.81E-02

**TABLE 6-11 DEACTIVATION FURNACE SYSTEM WASTE FEED CUT-OFF PARAMETERS**

Item Number	Tag Number	Process Data Description	Setpoints During Shakedown Phase 1 and Post-Trial Burn	Setpoints During Shakedown Phase 2 and Trial Burn
DFS-01	16-TAHH-182	Rotary retort temperature high-high (flue gas temperature before spray)	1,615°F	1,615°F
DFS-02	16-TAHH-08	Flue gas temperature after spray high-high	1,539°F	1,539°F
DFS-03	16-TALL-08	Flue gas temperature after spray low-low	949°F	949°F
DFS-04	16-XS-207, 16-XS-209	Jammed chute	Feed chute jammed	Feed chute jammed
DFS-05	16-PSHH-204	Pressure in rotary retort combustion chamber high-high	-0.1 inch w.c. (3-second delay)	-0.1 in. w.c. (3-second delay)
DFS-06	16-TAHH-51A, 51B, 51C, 51D, 51E	Temperature on rotary retort shell high-high	1,600°F	1,600°F
DFS-07	16-BSLL-850/851	Loss of flame in both burners of the Afterburner	Flame loss (both burners)	Flame loss (both burners)
DFS-08	16-TALL-42	Heated discharge conveyor temperature low-low	1,012°F	1012°F
DFS-09	16-XS-58 16-XS-821	Jam in discharge conveyor	Discharge chute jammed	Discharge chute jammed
DFS-10	16-SALL-57	Zero motion on heated discharge conveyor	≥ 36 sec (high speed) or ≥ 72 sec (low speed) between two signals	≥ 36 sec (high speed) or ≥ 72 sec (low speed) between two signals
DFS-11	16-PDAHH-813	Afterburner exhaust flow rate high-high	0.92 inch w.c.	0.92 in. w.c.
DFS-12	16-TALL-182	Rotary retort temperature low-low (flue gas temp before spray)	1,000°F	1,000°F
DFS-13	16-TALL-92	Afterburner temperature low-low	2,050°F	2,050°F
DFS-14	16-TAHH-92	Afterburner temperature high-high	2,200°F	2,200°F

**TABLE 6-11 DEACTIVATION FURNACE SYSTEM WASTE FEED CUT-OFF PARAMETERS**

Item Number	Tag Number	Process Data Description	Setpoints During Shakedown Phase 1 and Post-Trial Burn	Setpoints During Shakedown Phase 2 and Trial Burn
DFS-15	24-PDALL-08	Venturi scrubber pressure low-low	20 inch w.c.	20 inch w.c.
DFS-16	24-AAHH-207C	CO concentration in PFS exhaust gas high-high	100 ppm, corrected to 7% O <sub>2</sub> dry basis based on hourly rolling average	100 ppm, corrected to 7% O <sub>2</sub> dry basis based on hourly rolling average
DFS-17	PDAR	Munitions feed rate high	M121A1 (GB) 120 mun/hr	M121A1 (GB) 120 mun/hr
			M121A1 (VX) 120 mun/hr	M121A1 (VX) 120 mun/hr
			M426 (GB) 47 mun/hr	M426 (GB) 47 mun/hr
			M426 (VX) 47 mun/hr	M426 (VX) 47 mun/hr
			Land Mine 70 mun/hr	Land Mine 70 mun/hr
			M55/M56 (GB) 36.6 mun/hr	M55/M56 (GB) 38.5 mun/hr
			M55/M56 (VX) 36.6 mun/hr	M55/M56 (VX) 36.6 mun/hr
		Surrogates	258 lbs/hr	258 lbs/hr
		Secondary Wastes	ECR maintenance residue 28.5 lb/hr Explosive-contaminated spill pillows 28.5 lb/hr PCB-contaminated UMCD waste 171 lb/hr Partially treated DFS ash: 1,575°F nominal kiln exhaust gas temperature 171 lb/hr 975°F nominal kiln exhaust gas temperature 137 lb/hr	N/A
DFS-18	24-FALL-30	Clean liquor to scrubber tower flow rate low-low	1,475 gpm	1,475 gpm

**TABLE 6-11 DEACTIVATION FURNACE SYSTEM WASTE FEED CUT-OFF PARAMETERS**

Item Number	Tag Number	Process Data Description	Setpoints During Shakedown Phase 1 and Post-Trial Burn	Setpoints During Shakedown Phase 2 and Trial Burn
DFS-19	MON-ACAM-1831	Chemical agent emission high-high based on instantaneous measurements	GB 0.0003 mg/m <sup>3</sup> VX 0.0003 mg/m <sup>3</sup> HD 0.03 mg/m <sup>3</sup>	GB 0.0003 mg/m <sup>3</sup> VX 0.0003 mg/m <sup>3</sup> HD 0.03 mg/m <sup>3</sup>
DFS-20	MON-ACAM-297	Chemical agent emission high-high based on instantaneous measurements in cyclone enclosure	GB 0.0003 mg/m <sup>3</sup> VX 0.0003 mg/m <sup>3</sup> HD 0.03 mg/m <sup>3</sup>	GB 0.0003 mg/m <sup>3</sup> VX 0.0003 mg/m <sup>3</sup> HD 0.03 mg/m <sup>3</sup>
DFS-21	MON-ACAM-129/223/225	Chemical agent emission high-high based on instantaneous measurements at the common stack	GB 0.0003 mg/m <sup>3</sup>	GB 0.0003 mg/m <sup>3</sup>
	MON-ACAM-1291/2231/2251		VX 0.0003 mg/m <sup>3</sup>	VX 0.0003 mg/m <sup>3</sup>
	TBD		HD 0.03 mg/m <sup>3</sup>	HD 0.03 mg/m <sup>3</sup>
		Continuous chemical agent monitoring at the common stack	<ul style="list-style-type: none"> <li>• No less than two on-line ACAMS stations per chemical agent (campaign and prior noncampaign) monitoring the exhaust gas with “staggered” sampling periods.</li> <li>• No on-line ACAMS station in malfunction condition while in the sampling mode.</li> </ul>	
DFS-22	23-LSHH-02/06/702/706	All brine surge tanks 101,102,201,202 unavailable	Unavailable is when level high-high at 18'-3" or tank is selected for feed to the BRA	
DFS-23	24-AALL-34	Clean liquor to scrubber tower pH low-low	7.1 pH units	7.1 pH units
DFS-24	114-PALL-344	Clean liquor to scrubber tower pressure low-low	25 psig	25 psig
DFS-25	24-TSHH-01	Quench tower exhaust gas temperature high-high	225 °F	225 °F

**TABLE 6-11 DEACTIVATION FURNACE SYSTEM WASTE FEED CUT-OFF PARAMETERS**

Item Number	Tag Number	Process Data Description	Setpoints During Shakedown Phase 1 and Post-Trial Burn	Setpoints During Shakedown Phase 2 and Trial Burn
DFS-26	24-FALL-06	Quench brine to venturi scrubber flow rate low-low	260 gpm	260 gpm
DFS-27	24-DAHH-33	Brine density high-high	1.06 SG	1.06 SG
DFS-28	16-SAHH-602	Retort rotational speed high-high (all feeds except for secondary waste feed)	2.06 rpm	2.06 rpm
		Secondary waste feed	Shall not exceed 1 rpm	Shall not exceed 1 rpm
DFS-29	24-AAHH-206A/B	Oxygen concentration in PFS exhaust gas high-high	14% corrected to a dry basis	14% corrected to a dry basis
DFS-30	24-AALL-206C	Oxygen concentration in PFS exhaust gas low-low	7.7% corrected to a dry basis (2-minute rolling average)	7.7% corrected to a dry basis (2-minute rolling average)
DFS-31	16-PAHH-65	Afterburner pressure high-high	-0.1 inch w.c.	-0.1 in. w.c.
DFS-32	24-LSHH-10	Scrubber tower sump level high-high	69 inches above bottom tangent line	69 inches above bottom tangent line
DFS-33	24-LSLL-10	Scrubber tower sump level low-low	33 inches above bottom tangent line	33 inches above bottom tangent line
DFS-34	16-BSLL-844	Flame loss in rotary retort	Flame loss	Flame loss
DFS-35	114-PDAHH-440A/442A/454A/436A/438A/487A	PFS prefilter differential pressure high-high	4.0 inch w.c.	4.0 inch w.c.
DFS-36	114-PDAHH-440B/440H/442B/442H/454B/454H/436B/436H/438B/438H/487B/487H	PFS HEPA filter differential pressure high-high	3.0 inch w.c.	3.0 inch w.c.

**TABLE 6-11 DEACTIVATION FURNACE SYSTEM WASTE FEED CUT-OFF PARAMETERS**

Item Number	Tag Number	Process Data Description	Setpoints During Shakedown Phase 1 and Post-Trial Burn	Setpoints During Shakedown Phase 2 and Trial Burn
DFS-37	114-TAHH-417 (ROHA)	Temperature of gas to carbon filter system high-high	169°F (rolling one-hour average)	169°F (rolling one-hour average)
	114-TSHH-430 (instantaneous)		180°F (instantaneous)	180°F (instantaneous)
DFS-38	114-MAHH-431C (ROHA) 114-MAHH-431A/B (instantaneous)	Moisture of gas to carbon filter system (either 431A or 431B or the average of the two measurements)	55% RH (rolling one-hour average) 80% RH (instantaneous)	55% RH (rolling one-hour average) 80% RH (instantaneous)
DFS-39	114-ZS-449B	Carbon filter bypass valve not closed	Not closed	Not closed
DFS-40	MON-ACAM-3531/3561	Chemical agent emission high-high based on instantaneous measurement upstream of the PFS unit	VX 0.0003 mg/m <sup>3</sup>	VX 0.0003 mg/m <sup>3</sup>
	TBD		HD 0.03 mg/m <sup>3</sup>	HD 0.03 mg/m <sup>3</sup>
DFS-41	24-PDAHH-312/53	Mist eliminator differential pressure high-high	20 inch w.c.	20 inch w.c.
DFS-42	16-TAHH-182A	Rotary retort temperature high-high(before the spray)	1548°F (ROHA)	1548°F (ROHA)
DFS-43	114-MAHH-111/112/ 113/109/209/110	Relative humidity in PFS exhaust gas high-high	55% RH (30-minute rolling average)	55% RH (30-minute rolling average)
DFS-44 <sup>a</sup>	024-MAH-078A/B, -207A/B, -669A/B, -716A/B	Moisture in any furnace PAS	38% moisture (volume)	38% moisture (volume)

<sup>a</sup> The unit of record (UOR) will initiate an AWFCO for the LIC1, LIC2, MPF, and DFS. This alarm will not be active if the respective DFS induced-draft (ID) fans are not running. During quarterly CEMS maintenance, both units of the DFS can be offline if administrative controls are in place to monitor for high moisture in the PAS of the affected furnace and to stop hazardous waste feed to all furnaces if high moisture is indicated. Quarterly CEMS maintenance activities will not require cessation of hazardous waste processing in operational furnaces provided all other operational requirements are met.

**TABLE 6-12 ALLOWABLE EMISSION RATES**

Constituent	CAS No.	Emission Rates (g/sec)			
		LIC1	LIC2	DFS	MPF
<b>AGENTS</b>					
GB	107-44-8	As measured at the common stack, the combined LIC1, LIC2, DFS, and MPF emission rate must not exceed 4.29E-06.			
VX	50782-69-9				
HD (Mustard)	505-60-2				
<b>ORGANICS</b>					
TEQ 2,3,7,8-PCDFs (dioxin & furan congeners)		9.75E-10	9.75E-10	6.69E-10	9.08E-10
Total Polychlorinated Biphenyls [PCB cong]	1336-36-3			6.25E-07	
1,1,2,2-Tetrachloroethane	79-34-5	3.20E-06	3.20E-06	7.33E-07	6.98E-07 <sup>1</sup>
1,1-Dichloroethane	75-34-3	1.71E-06	1.71E-06	7.33E-07	8.47E-07 <sup>1</sup>
2,4,6-Trinitrotoluene	118-96-7			2.55E-06	
2,4-Dinitrotoluene	121-14-2			2.55E-06	
2,6-Dinitrotoluene	606-20-2			2.55E-06	
2-Hexanone	591-78-6	8.60E-06	8.60E-06	7.33E-07	6.98E-07 <sup>1</sup>
Acetone	67-64-1	1.66E-01	1.66E-01	7.18E-02	8.34E-05 <sup>1</sup>
Benzene	71-43-2	2.89E-04	2.89E-04	1.11E-04	3.15E-04
Benzoic Acid	65-85-0	5.40E-04	5.40E-04	3.80E-04	5.91E-04
Benzyl Alcohol	100-51-6	5.60E-03	5.60E-03	2.06E-03	5.94E-03
Bis(2-ethylhexyl)phthalate	117-81-7	1.30E-03	1.30E-03	9.93E-05	1.18E-03
Bromodichloromethane		1.71E-06	1.71E-06	3.31E-06	6.98E-07 <sup>1</sup>
Bromoform	75-22-2	1.59E-05	1.59E-05	6.44E-05	4.22E-05 <sup>1</sup>
Carbon disulfide		3.25E-05	3.25E-05	7.33E-07	4.09E-05
Carbon Tetrachloride	56-23-5	1.10E-04	1.10E-04	7.33E-07	1.28E-05 <sup>1</sup>
Chlorobenzene	106-90-7	8.35E-06	8.35E-06	2.35E-06	1.71E-06 <sup>1</sup>
Chloroform	67-66-3	6.95E-05	6.95E-05	8.38E-05	5.88E-06 <sup>1</sup>
Chloromethane	74-87-3	2.50E-03	2.50E-03	7.33E-07	2.86E-05 <sup>1</sup>
m-Cresol	108-39-4	6.35E-04	6.35E-04	1.02E-05	6.23E-05
o-Cresol	95-48-7	5.85E-04	5.85E-04	1.21E-04	1.94E-03
p-Cresol	106-44-5	1.97E-04	1.97E-04	1.02E-04	6.67E-05
Di(n)octyl phthlate	117-84-0	6.15E-05	6.15E-05	1.02E-05	6.67E-05
Di-n-butyl Phthalate	84-74-2	3.12E-05	3.12E-05	1.10E-05	6.67E-05
Dibromochloromethane	124-48-1	1.71E-06	1.71E-06	4.89E-06	6.98E-07 <sup>1</sup>
(cis)1,3-Dichloropropene	542-75-6	8.10E-04	8.10E-04	7.33E-07	6.98E-07 <sup>1</sup>
(trans)1,3-Dichloropropene	542-75-6	1.71E-06	1.71E-06	7.33E-07	6.98E-07 <sup>1</sup>
Diethyl Phthalate	84-66-2	1.25E-04	1.25E-04	9.93E-06	6.67E-05
Dimethyl Phthalate	131-11-3	8.85E-04	8.85E-04	4.23E-04	1.35E-03
Ethylbenzene	100-41-4	4.96E-06	4.96E-06	2.25E-05	1.64E-06 <sup>1</sup>
HMX	2691-41-0			2.55E-06	
Methyl chloroform	71-55-6	8.30E-05	8.30E-05	1.22E-04	1.65E-06 <sup>1</sup>
Methyl ethyl ketone	78-93-3	5.90E-04	5.90E-04	7.33E-04	1.58E-04 <sup>1</sup>
Methyl isobutyl ketone		1.11E-05	1.11E-05	7.33E-07	6.98E-07
Methylene chloride	75-09-2	1.88E-02	1.88E-02	1.20E-02	1.38E-04 <sup>1</sup>
Naphthalene	91-20-3	3.12E-05	3.12E-05	1.30E-05	6.67E-05
Nitroglycerine	55-63-0			5.28E-04	

All federal Title 40 CFR citations are citations to the Title 40 CFR adopted as Oregon rule by OAR 340-100-0002 and as altered by OAR Chapter 340, Divisions 100-106, 109, 111, 113, 120, 124, and 142. See the preface introduction for further explanation.

**TABLE 6-12 ALLOWABLE EMISSION RATES**

Constituent	CAS No.	Emission Rates (g/sec)			
		LIC1	LIC2	DFS	MPF
Propylene dichloride	78-87-5	9.40E-04	9.40E-04	7.33E-07	6.98E-07
RDX	121-82-4			2.55E-06	
Styrene	100-42-5	2.82E-04	2.82E-04	1.11E-04	5.24E-05
Tetrachloroethylene	127-18-4	5.75E-06	5.75E-06	7.33E-07	6.98E-07
Toluene	106-88-3	1.06E-02	1.06E-02	6.17E-03	4.15E-05 <sup>1</sup>
Vinyl acetate	108-05-4	2.44E-06	2.44E-06	7.33E-07	6.98E-07 <sup>1</sup>
Vinyl chloride	75-01-4	1.48E-05	1.48E-05	1.62E-06	5.65E-05
Total xylene	1330-20-7	2.26E-05	2.26E-05	1.58E-05	6.98E-07 <sup>1</sup>
<b>METALS</b>					
Antimony	7440-36-0	6.45E-05	6.45E-05	4.19E-05	1.19E-04
Arsenic	7440-38-2	1.10E-04	1.10E-04	4.19E-05	8.51E-05
Barium	7440-39-3	8.85E-05	8.85E-05	8.42E-05	2.35E-04
Beryllium	7440-41-7	2.91E-05	2.91E-05	6.21E-06	2.38E-05
Boron	7440-42-8	3.17E-03	3.17E-03	1.77E-03	2.29E-03
Cadmium	7440-43-9	2.91E-05	2.91E-05	1.87E-05	5.73E-05
Chromium	7440-47-3	2.91E-05	2.91E-05	4.04E-05	6.99E-05
Cobalt	7440-48-4	3.64E-05	3.64E-05	1.68E-05	5.94E-05
Copper	7440-50-8	3.64E-05	3.64E-05	5.39E-05	5.94E-05
Lead	7439-2-1	1.52E-04	1.52E-04	4.42E-04	1.45E-04
Manganese	7439-96-5	4.73E-03	4.73E-03	4.19E-03	1.56E-03
Mercury	7440-97-6	3.10E-05	3.10E-05	5.24E-06	4.28E-05
Nickel	7440-02-0	1.91E-04	1.91E-04	3.05E-05	1.38E-04
Phosphorous	7440-14-0	2.05E-03	2.05E-03	9.35E-04	1.16E-03
Selenium	7782-49-2	4.43E-05	4.43E-05	4.19E-05	7.23E-05
Silver	7440-22-4	6.45E-05	6.45E-05	1.68E-05	1.19E-04
Tin	7440-31-5	2.29E-04	2.29E-04	1.65E-04	1.19E-04
Thallium	7440-28-0	2.91E-04	2.91E-04	8.42E-06	1.19E-05
Vanadium	7440-62-2	4.43E-05	4.43E-05	4.19E-05	2.38E-05
Zinc	7440-66-6	9.50E-04	9.50E-04	8.42E-04	2.09E-04
<b>ACID GASSES</b>					
Hydrogen Chloride		1.91E-02	1.91E-02	1.16E-03	8.16E-03
Hydrogen Fluoride		5.25E-02	5.25E-02	1.66E-02	1.93E-02
<b>OTHER CONSTITUENTS</b>					
Chlorine		2.29E-02	2.29E-02	2.22E-02	2.57E-02
Particulates		5.40E-02	5.40E-02	1.81E-02	5.04E-02

<sup>1</sup> Allowable emission rates may be exceeded. The emission rates shall be validated in the post-trial burn risk assessment.

## **MODULE VII - INCINERATION - NORMAL OPERATION**

Three types of incinerators are used to deactivate and destroy the components of the waste generated from the Chemical Stockpile Disposal Program (CSDP). They are:

- Two (2) Liquid Incinerators (LICs),
- One (1) Metal Parts Furnace (MPF), and
- One (1) Deactivation Furnace System (DFS).

All of these incinerators are new and each one is provided with a pollution abatement system. One exhaust stack is shared by the LICs, MPF, and DFS (hereafter referred to as "common stack").

Liquid chemical agents drained from munitions, HD rinsate from ton containers, liquid laboratory wastes, and spent decontamination solutions are incinerated in each LIC. Explosives and propellants are incinerated in the DFS. In general, metal parts are decontaminated and detoxified in the MPF. Miscellaneous materials are incinerated in the DFS and MPF per the Waste Analysis Plan (Attachment 2 to the permit).

This module covers the incineration normal operation periods. For clarity, this module is organized as follows:

- Section VII.A - General Conditions for All Incinerators at the UMCDF Site
- Section VII.B - Liquid Incinerators (LICs)
- Section VII.C - Metal Parts Furnace (MPF)
- Section VII.D - Deactivation Furnace System (DFS)
- Section VII.E - Common Stack for LIC, MPF, and DFS
- Section VII.F - PAS Carbon Filter Unit

### **VII.A. GENERAL CONDITIONS FOR ALL INCINERATORS AT THE UMCDF SITE**

#### **VII.A.1. Requirements for Beginning Normal Operations**

Prior to commencing normal operations provided for in Module VII of this permit, all requirements provided in Module VI of this permit shall have been met by the permittee and approved by the Department, the trial burn results and the post-trial burn risk assessment shall have been evaluated

and approved by the Department, and the applicable numerical values represented with an asterisk (\*) in the conditions and tables of Module VII of this permit shall have been established.

VII.A.2. Limitation on Waste Feed

- i. Only one chemical agent, HD rinsate, or waste containing one chemical agent or a combination of HD and GB agent or HD and VX agent, shall be fed to the LICs and MPF at any given time. Only one chemical agent, or waste containing one chemical agent, shall be fed to the DFS at any given time. For the purpose of spent decontamination solution feed to the LIC, nondetect analytical results for laboratory liquid waste for noncampaign agents indicate that the laboratory liquid waste contains only the campaign agent.
- ii. The permittee shall not incinerate any chemical agent, agent-contaminated carbon, or any waste containing chemical agent, before treatment has been successfully demonstrated through a trial burn, in accordance with Module VI.
- iii. Prior to commencement of treatment of potentially three-agent- or GB-contaminated wastes, a permit modification request proposing multiagent monitoring to allow the processing of multiagent-contaminated secondary wastes must be submitted to and approved by the Oregon Department of Environmental Quality.

VII.A.3. [RESERVED]

VII.A.4. Monitoring Requirements [40 CFR §264.347, §270.31]

- i. Upon receipt of a written request from the Department, the permittee shall perform sampling and analysis of the waste and exhaust emissions to verify that the operating requirements established in the permit achieve the performance standards delineated in this permit. [40 CFR §264.347 (a)(3)]
- ii. All monitoring, recording, maintenance, calibration, and test data shall be recorded and the records for each incinerator shall be placed in the operating record for each respective incinerator, in accordance with Permit Condition II.I.

- iii. The permittee shall calibrate the oxygen (O<sub>2</sub>) and carbon monoxide (CO) continuous emission monitors (CEMS) specified in this permit in accordance with the Performance Specifications for Continuous Emission Monitoring Systems referenced in 40 CFR 63 Appendix to Subpart EEE, and the mercury (Hg) CEMS specified in this permit in accordance with Permit Attachment 7.
- iv. All continuous emissions monitoring systems (CEMS), Automatic Continuous Air Monitoring Systems (ACAMS) and Depot Area Air Monitoring System (DAAMS) monitors identified in Appendix C to Permit Attachment 2 (Waste Analysis Plan) and as otherwise required by this permit shall be functional, correctly operating, and monitoring in accordance with the requirements of this permit during agent treatment and storage operations.

VII.A.5. Reporting

- i. The permittee shall submit to the Department an annual report every February first for the previous calendar year, which summarizes the QA/QC reliability problems experienced with hydrogen chloride (HCl), carbon monoxide, oxygen, and chemical agent stack gas monitors, chemical agent ventilation system monitors (laboratory and MDB), mercury (Hg) monitors, and ambient air chemical agent monitors during the previous year. This summary report shall include, but not be limited to, the following:
  - a. Identification of the monitor experiencing the problem;
  - b. Identification of the type of problem (e.g., borderline or deficient recoveries, plugging);
  - c. Date problem experienced;
  - d. Frequency of problem; and
  - e. Corrective action implemented to correct the problem, and whether or not or to what degree the corrective action was successful.
- ii. The permittee shall submit a report of all quarterly CEM calibration error (CE)/absolute calibration audit (ACA) and annual CEM performance specification tests conducted in

accordance with Permit Condition VII.A.4.iii within 30 calendar days of the end of the quarter in which the test was conducted.

- iii. If any sampling and testing result show that any emission rate specified in Table 7-7 is exceeded, then the permittee shall notify the Department within 24 hours of the discovery. The permittee should submit additional risk information to indicate that the increased emission is offset by decreased emission from another constituent that is expected to be emitted at the same time. Based on the notification and any additional information, the Director may submit in writing direction to the permittee to stop waste feed to the appropriate incinerator(s). The permittee shall stop waste feed to the appropriate incinerator(s) in the time specified in writing. Waste feed operation may resume upon written approval from the Department [40 CFR §270.32(b)(2)].

VII.A.6. [RESERVED]

VII.A.7. Recordkeeping

- i. The permittee shall record and maintain, in the operating record for each incinerator, all monitoring and inspection data compiled under the requirements of this permit, in accordance with Permit Condition II.I.
- ii. The permittee shall record in the operating record the date, time, and duration of all automatic waste feed cut-offs and/or lockouts, including the triggering parameters, reason for the deviation, and corrective measures taken to prevent recurrence of the incident. The permittee shall also record all incidents of the automatic waste feed cut-off function failures, including the corrective measures taken to correct the condition that caused the failure. [40 CFR §264.345, §264.347]
- iii. A quarterly report, as defined below, will be submitted to the Department each calendar quarter within 30 days following the end of the quarter. The report will include the following information:
  - a. Total operating time for each incinerator;

- b. Date/time of all startups and shutdowns;
- c. Date/time/duration/cause/corrective action taken for all shutdowns caused by malfunction of either process or control equipment;
- d. Date/time/duration/cause/corrective action taken for all instances of waste feed cut off.

VII.A.8. General Operation

The permittee shall maintain and operate each incinerator in accordance with the operating requirements specified in this permit. Each incinerator shall meet the applicable performance standards specified in Permit Conditions VII.B.2, VII.C.2, and VII.D.2 after exiting each incinerator's carbon filter system.

VII.A.9. Construction and Maintenance [40 CFR §264.31]

- i. The permittee shall construct and maintain each incinerator in accordance with the applicable design drawings and specifications contained in Permit Attachment 12.
- ii. The permittee shall not feed surrogate or chemical agent hazardous wastes into any incinerator until such time that the permittee has demonstrated compliance with the certification of construction or modification requirements, as specified in Permit Condition I.R.
- iii. All air pollution control devices and capture systems for which this permit is issued shall be maintained and operated at all times in a manner to minimize the emissions of air contaminants and to minimize process upsets. Procedures for ensuring that the above equipment is properly operated and maintained to minimize the emission of air contaminants and process upsets shall be established.

VII.B. LIQUID INCINERATORS (LICs)

Each Liquid Incinerator (LIC) will be installed and used to burn liquid wastes. The LICs are provided with a Pollution Abatement System (PAS) that includes a quench tower, venturi scrubber, packed-bed scrubber tower, carbon bed filter, and mist eliminator. Both combustion chambers of

each LIC are refractory-lined and are equipped with natural gas burners, which are used to preheat and to maintain the required combustion temperature in each chamber while burning the liquid wastes. The stack emissions will be continuously monitored for the presence of chemical agents and other emissions. The LIC will shutdown automatically when the monitor detects the presence of chemical agent at the allowable stack concentration level (see Permit Condition VII.B.2.vii.).

VII.B.1. Maintenance

- i. All process monitors required, pursuant to Permit Conditions VII.B.4 and VII.B.5, shall be equipped with alarms operated to warn of deviation, or imminent deviation, from the limits specified in Permit Condition VII.B.4 and VII.B.5.
- ii. The permittee shall install and test all process monitoring and control instrumentation for each LIC in accordance with the design plans in Permit Attachment 12 and in accordance with the calibration, performance specifications, and maintenance procedures contained in Tables 7-1a and 7-1b of this permit.
- iii. Modifications to the LIC design drawings and specifications in Permit Attachment 12 shall be allowed only in accordance with 40 CFR §270.42.
- iv. The permittee shall maintain each LIC such that, when operated in accordance with the operating requirements specified in this permit, it will meet the performance standards specified in Permit Conditions VII.B.2.i through VII.B.2.vii.

VII.B.2. Performance Standards

- i. Each LIC must achieve and maintain a destruction and removal efficiency (DRE) of 99.9999% for the chemical agent. The DRE shall be calculated by the method specified in 40 CFR §264.343(a)(1).
- ii. The particulate matter emissions from each LIC, corrected to 7% oxygen in accordance with the formula given below [40 CFR §264(c)], shall not exceed 34.3 mg/dscm (0.015 grains/dscf). [40 CFR §264.343(c)]

$$P_c = P_m \times 14/(21 - Y)$$

Where:  $P_c$  = corrected concentration of particulate matter

$P_m$  = measured concentration of particulate matter

$Y$  = measured  $O_2$  in the stack gas

- iii. The hydrogen chloride (HCl) emission from each LIC shall not exceed  $1.91 \times 10^{-2}$  grams/second and neither LIC shall exceed 4 pounds/hour individually [40 CFR §264.343(b), §270.32(b)(2)].
- iv. The emission rates from each LIC shall not exceed the limits specified in Table 7-7. If the permittee finds that an emission rate for any constituent is exceeded, the permittee shall notify the Department in accordance with Permit Condition VII.A.5.iii. The Department may direct the permittee to cease, and reinitiate waste feed operations for each LIC(s) in accordance with Permit Condition VII.A.5.iii. [40 CFR §264.345, §270.32(b)(2)].
- v. The emission limits of Permit Condition VII.B.2 and Table 7-7 shall be met by limiting the feed as specified in Permit Condition VII.B.3.i and the Waste Analysis Plan (Permit Attachment 2). [40 CFR 264.345]
- vi. The permittee shall control emissions of products of incomplete combustion (PICs) from each LIC such that the carbon monoxide (CO) level in each LIC exhaust stream, corrected to 7% oxygen in accordance with the formula given below, shall not exceed 100 parts per million (ppm), dry volume, over an hourly rolling average [40 CFR §264.347(a)(2), §270.32(b)(2)].

$$CO_c = CO_m \times (21 - 7)/(21 - O_m)$$

Where:  $CO_c$  = corrected CO ppm (dry volume)

$CO_m$  = measured CO ppm (dry volume)

$O_m$  = measured %  $O_2$  (dry volume)

- vii. The permittee shall continuously monitor emissions of chemical agents from each LIC. The emission levels shall not exceed the following concentrations [40 CFR §270.32(b)(2)]:

	<u>Chemical Agent - Concentration (mg/m<sup>3</sup>)</u>		
Maximum Instantaneous Allowable Stack Concentration (ASC)	<u>VX</u>	<u>GB</u>	<u>HD</u>
	0.0003	0.0003	.03

- viii. Compliance with the operating conditions specified in Permit Condition VII.B.4 shall be regarded as compliance with the required performance standards identified in Permit Conditions VII.B.2.i through VII.B.2.vii. However, if it is determined that during the effective period of this permit that compliance with the operating conditions in Permit Condition VII.B.4 is not sufficient to ensure compliance with the performance standards specified in Permit Conditions VII.B.2.i through VII.B.2.vii, the permit may be modified, revoked, or reissued, pursuant to 40 CFR §270.41 [40 CFR §270.32(b)(2)].

VII.B.3. Limitation on Waste Feed [40 CFR §270.62(c)]

- i. The permittee shall incinerate only the following hazardous wastes at the stated feed rate in each LIC in compliance with the operating requirements specified in Permit Condition VII.B.4.

DESCRIPTION OF FEED	FEED RATE		HAZARDOUS WASTE CODES
	LIC1	LIC2	
HAZARDOUS WASTE HD Chemical Agent	1,286 lbs/hr. 46.3 lbs/2 min.	1,305 lbs/hr 47.0 lbs/2 min	D002-D011, D022, D028, D043, P998
HD rinsate	*1,000 lbs/hr *33 lbs/2 min	*1,000 lbs/hr *33 lbs/2 min	D002-D011, D022, D028, D043, P998
Decontamination Solution, Personnel Maintenance Building and Laboratory Aqueous Liquid Wastes	2,107 lbs/hr. <sup>1</sup> 75.9 lbs/2 min.	2,081 lbs/hr <sup>1</sup> 74.9 lbs/2 min	D002, D004-D012, D014, D015, D018-D022, D027- D037, D039-D043, F002, F003, F005, F998, F999, P998, P999
UMCD Liquid Waste <sup>1</sup>	Calculated in accordance with WAP Section 2.1.32, with a maximum of 2,023 lbs/hr., 72.8 lbs/min.	Calculated in accordance with WAP Section 2.1.32, with a maximum of 2,048 lbs/hr., 73.7 lbs/2 min.	D002,D004-D011, D018-D022, D027-D037, D039-D043, F998, F999
Agent-contaminated hydraulic fluids and lubricating oils.	430 lb/hr 15 lb/2 min.	430 lb/hr 15 lb/2 min.	F998, F999, P998, P999

DESCRIPTION OF FEED	FEED RATE		HAZARDOUS WASTE CODES
	LIC1	LIC2	
<b>METAL FEED RATES</b>			
Antimony:	1.79E-012.77E-03 bs/hr	2.77E-03 lbs/hr	
Arsenic:	*1.47E+00 lbs/hr	*1.47E+00 lbs/hr	
Barium:	7.80E-04 lbs/hr	7.80E-04 lbs/hr	
Beryllium:	1.52E-04 lbs/hr	1.52E-04 lbs/hr	
Boron:	1.52E-02 lbs/hr	1.52E-02 lbs/hr	
Cadmium:	7.70E-04 lbs/hr	7.70E-04 lbs/hr	
Chromium:	*4.41E-02 lbs/hr	*4.41E-02 lbs/hr	
Cobalt:	8.00E-03 lbs/hr	8.00E-03 lbs/hr	
Copper:	1.31E-01 lbs/hr	1.31E-01 lbs/hr	
Lead:	*3.79E-02 lbs/hr	*3.79 E-02 lbs/hr	
Mercury:	*7.70E-02 lbs/hr	*7.70E-02 lbs/hr	
Manganese:	*4.58E-01 lbs/hr	*4.58E-01 lbs/hr	
Nickel:	1.35E-01 lbs/hr	1.35E-01 lbs/hr	
Phosphorus:	7.87E-03 lbs/hr	7.87E-03 lbs/hr	
Selenium:	1.52E-02 lbs/hr	1.52E-02 lbs/hr	
Silver:	4.56E-03 lbs/hr	4.56E-03 lbs/hr	
Thallium:	*3.04E-03 lbs/hr	*3.04E-03lbs/hr	
Tin:	4.26E-03 lbs/hr	4.26E-03 lbs/hr	
Vanadium:	3.85E-03 lbs/hr	3.85E-03 lbs/hr	
Zinc:	1.15E-01 lbs/hr	1.15E-01 lbs/hr	
<b>CHLORINE/CHLORIDE FEED RATES</b>			
Total Chlorine/Chloride	*535 lbs/hr	*519 lbs/hr	

\* May be changed due to results of the HD rinsate emission demonstration test (see Module VI).

<sup>1</sup> In accordance with LIC-11 of Table 7-2.

- ii. The spent decontamination solution, Monitoring Support Building and laboratory aqueous liquid wastes, and UMCD liquid waste shall be fed only into the secondary combustion chamber of each LIC with, or without, the chemical agent or HD rinsate feed to each LIC primary combustion chamber, only when the operating conditions as specified in Condition VII.B.4 of this permit are satisfied.
- iii. The permittee shall conduct sufficient analysis of the waste treated in each LIC to verify that the waste feed is within the physical and chemical composition limits specified in this permit, in accordance with the Waste Analysis Plan in Attachment 2 of this permit.

- iv. Agent-contaminated hydraulic fluid and lubricating oils shall be fed only into the primary combustion chamber of each LIC only when the operating conditions as specified in Condition VII.B.4 of this permit are satisfied. Only process water will be fed into the secondary chamber while treating these wastes.
- v. Rinsate from identified high-mercury ton containers shall not be processed in any Liquid Incinerator.
- vi. The feed rates to each LIC shall not exceed the limits in Permit Condition VII.B.3.i and shall be in accordance with the requirements of Permit Condition VII.B.3.

VII.B.4. Operating Conditions

- i. The permittee shall operate each LIC in order to maintain the system and process parameters listed in Tables 7-1a and 7-1b of this permit within the calibrated ranges or setpoints specified in Tables 7-1a and 7-1b of this permit. Each occurrence of an instrument operating outside of the Table 7-1a and/or 7-1b operating and/or calibrated ranges shall be reported to the Department at least quarterly.
- ii. The permittee shall operate the AWFCO systems, specified in Table 7-2 of this permit, to automatically cut off and/or lock out the hazardous waste feed to each LIC when the monitored operating conditions deviate from the setpoints specified in Table 7-2 of this permit.
- iii. The permittee shall trend the performance of the mist eliminator vessel and implement corrective actions (if applicable) as follows:
  - a. Daily trending of the rolling hourly averages of differential pressure across the mist eliminator (“dP”), the flue gas flow rate (“flow rate”), and the dP/flow rate ratio will be conducted.
  - b. A daily evaluation of the trend data will be conducted to identify a potential malfunction of the mist eliminator candle media. A potential malfunction is defined as a sudden

decrease in the dP at steady flow rates or a gradual decrease in the dP/flow rate ratio for a period of least 12 hours in duration.

- c. The trending will be conducted via the process data acquisition and recording system (PDAR) and maintained in the facility operating record.
- d. If the evaluation identifies a potential malfunction of the mist eliminator vessel, hazardous waste feed operations shall cease to the furnace system, and the mist eliminator vessel shall be removed from service for corrective action.
- e. Corrective action shall be taken in accordance with the following criteria.
  - 1. If the investigation reveals a correctable malfunction, the malfunction shall be corrected prior to placing the mist eliminator vessel into service for hazardous waste treatment operations.
  - 2. If the investigation reveals no correctable malfunction, the candle media shall be removed and successfully tested or replaced prior to placing the vessel into service for hazardous waste treatment operations.

VII.B.5. Monitoring Requirements [40 CFR §264.347, §270.31]

- i. The permittee shall maintain, calibrate, and operate process monitoring, control, and recording equipment as specified in Tables 7-1a, 7-1b, and 7-2 of this permit, while incinerating hazardous waste.
- ii. Hazardous wastes shall not be fed to LIC1 if any of the monitoring instruments listed in Tables 7-1a or 7-2 of this permit fails to operate properly, nor shall hazardous wastes be fed to LIC2 if any of the monitoring instruments listed in Tables 7-1b or 7-2 of this permit fails to operate properly.
- iii. The CO and O<sub>2</sub> concentration monitored in accordance with Table 7-2 of this permit shall be continuously monitored while incinerating hazardous waste.

- iv. The ACAMS station monitoring the exhaust gas on each LIC (Table 7-2, LIC-17 and LIC-39) shall be operated as follows:
  - a. Prior to commencing hazardous waste feed to the incinerator, LIC-17 and LIC-39 shall be operational and online.
  - b. During the treatment of waste, either LIC-17 or LIC-39 may be taken offline to conduct routine maintenance provided the other ACAMS station is operational and online.
  - c. During the treatment of waste, if either LIC-17 or LIC-39 is offline for maintenance and the online instrument is taken offline, the AWFCO system shall be activated.
  - d. During the treatment of waste, if either LIC-17 or LIC-39 is offline for maintenance and the AWFCO is activated, both instruments must be operational and online before resuming waste feed to the incinerator.
  - e. During the treatment of waste, if either LIC-17 or LIC-39 is offline for maintenance, the AWFCO system shall be activated if the instrument is not operational and online within 90 minutes.
- v. The ACAMS monitoring the exhaust gas on each LIC (Table 7-2, LIC-17 and LIC-39) shall only be corrected to 7% oxygen:
  - a. When the ACAMS value is at 0.2 ASC or above, and
  - b. When the oxygen concentration in the PFS exhaust gas is greater than 7%.

VII.B.6. Waste Feed Cut-Off Requirements

- i. The permittee shall operate the systems, specified in Table 7-2 of this permit, to automatically cut-off and/or lock-out the hazardous waste feed to each LIC when the monitored operating conditions deviate from the setpoints specified in Table 7-2 of this permit.

- ii. The permittee shall manually cut off and/or lock out the waste feed and perform the operator-initiated shutdown-to-idle procedures of each LIC in accordance with UMCDF standing operating procedures when the operating conditions deviate from the setpoints specified in Table 7-2 unless the deviation automatically activates the waste feed cutoff and/or lock out sequence specified in Permit Condition VII.B.6.i.
- iii. In the event of a malfunction of the AWFCOs listed in Table 7-2 of this permit, the permittee shall immediately, manually, cut off and/or lock out the waste feed, and perform the operator-initiated shutdown-to-idle procedures of each LIC in accordance with UMCDF standing operating procedures. The permittee shall not restart waste feed to the incinerator until the problem causing the malfunction has been identified and corrected. Waste feed shall not restart until the parameter(s) that caused the feed cut off or lock out is/are restored to permit limits and all other parameters are within permit limits.
- iv. If the number of automatic waste feed cut-offs from an individual parameter on Table 7-2 for each LIC is activated greater than twice within any operating day, the permittee shall be required to, at a minimum, verbally provide to the Department the information required in Permit Condition VII.A.7.ii by the close of the following business day. After any automatic waste feed cut-off is tripped, the permittee shall be required to establish and maintain operating limits as specified in Table 7-2 for at least 15 minutes prior to restart of hazardous waste feed to each LIC.
- v. If any of the following automatic waste feed cut-offs from Table 7-2, for either LIC occurs at a maximum frequency of five times within 30 LIC operating days in succession, the permittee is required to verbally notify the Department of the occurrence : Item numbers LIC-01, LIC-03, LIC-06, LIC-09, LIC-10, LIC-11, LIC-12, LIC-15, LIC-16, LIC-17, LIC-18, LIC-22, LIC-24, LIC-26, LIC-27, LIC-28, LIC-30, LIC-31, LIC-37, LIC-39, and LIC-43. These waste feed cut-offs, whether automatically or manually activated, are counted if the specified setpoints are deviated from while waste or waste residues continue to be processed in the incinerator chambers.

VII.C. **METAL PARTS FURNACE (MPF)**

The Metal Parts Furnace (MPF) treats drained projectiles, bulk items, mine drums, cyclone residue, carbon high-efficiency particulate air (HEPA) filters, strainers, and carbon and other secondary waste contaminated by chemical agents. No explosives are fed to the MPF. The MPF is a direct-fired roller-hearth furnace with an afterburner. The chemical agent-contaminated metal parts are placed on trays and conveyed through the heated furnace to be pacified and become free of chemical agents. The vaporized chemical agents from the metal parts undergo thermal destruction in the furnace and the afterburner. The Pollution Abatement System is comprised of a quench tower, venturi scrubber, packed scrubber tower, mist eliminator, and a carbon bed.

VII.C.1. **Maintenance**

- i. All process monitors required, pursuant to Permit Conditions VII.C.4 and VII.C.5, shall be equipped with alarms operated to warn of deviation, or imminent deviation, from the limits specified in Permit Conditions VII.C.4 and VII.C.5.
- ii. The permittee shall install and test all process monitoring and control instrumentation for the MPF in accordance with the design plans in Permit Attachment 12 and in accordance with the calibration, performance specifications and maintenance procedures contained on Table 7-3 of this permit prior to treating hazardous waste in the MPF.
- iii. Modifications to the MPF design plans and specifications in Permit Attachment 12 shall be allowed only in accordance with 40 CFR §270.42.
- iv. The permittee shall maintain the MPF such that, when operated in accordance with the operating requirements specified in this permit, it will meet the performance standards specified in Permit Condition VII.C.2.

VII.C.2. **Performance Standards**

- i. The MPF shall achieve and maintain a destruction and removal efficiency (DRE) of 99.99% for GB and VX and 99.9999% for HD chemical agent. The DRE shall be calculated by the method specified in 40 CFR §264.343(a)(1).

- ii. The particulate matter emissions from the MPF, corrected to 7% oxygen in accordance with the formula given below [40 CFR §264.343(c)], shall not exceed 34.3 mg/dscm (0.015 grains/dscf). [40 CFR 270.32(b)(2)]

$$P_c = P_m \times 14/(21 - Y)$$

Where:  $P_c$  = corrected concentration of particulate matter  
 $P_m$  = measured concentration of particulate matter  
 $Y$  = measured  $O_2$  in the stack gas

- iii. The hydrogen chloride (HCl) emission from the MPF shall not exceed  $8.16 \times 10^{-3}$  grams/second or 4 pounds/hour [40 CFR §264.343(b), §270.32(b)(2)].
- iv. The emission rates from the MPF shall not exceed the limits specified in Table 7-7. If the permittee finds that an emission rate for any constituent is exceeded, the permittee shall notify the Department in accordance with Permit Condition VII.A.5.iii. The Department may direct the permittee to cease, and reinitiate waste feed operations for the MPF in accordance with Permit Condition VII.A.5.iii [40 CFR §264.345, 270.32(b)(2)].
- v. The emission limits of Permit Condition VII.C.2 and Table 7-7 shall be met by limiting the feed rates into the MPF as specified in Permit Condition VII.C.3.i and Permit Attachment 4 [40 CFR §264.345, 270.32(b)(2)].
- vi. The permittee shall control emission of products of incomplete combustion from the MPF such that the carbon monoxide (CO) level in the MPF exhaust stream, corrected to 7% oxygen in accordance with the formula given below shall not exceed 100 parts per million (ppm), dry volume, over an hourly rolling average. [40 CFR §264.347(a)(2)]

$$CO_c = CO_m \times (21 - 7)/(21 - O_m)$$

Where:  $CO_c$  = corrected CO ppm (dry volume)  
 $CO_m$  = measured CO ppm (dry volume)  
 $O_m$  = measured %  $O_2$  (dry volume)

- vii. The permittee shall continuously monitor emissions of chemical agents from the MPF. The emission level shall not exceed the following concentrations:

	<u><b>Chemical Agent - Concentration (mg/m<sup>3</sup>)</b></u>		
	<u><b>VX</b></u>	<u><b>GB</b></u>	<u><b>HD</b></u>
Maximum Instantaneous ASC	0.0003	0.0003	.03

- viii. Compliance with the operating conditions specified in Permit Condition VII.C.4 shall be regarded as compliance with the required performance standards identified in Permit Conditions VII.C.2.i through VII.C.2.vii. However, if it is determined that during the effective period of this permit that compliance with the operating conditions in Permit Condition VII.C.4 is not sufficient to ensure compliance with the performance standards specified in Permit Conditions VII.C.2.i through VII.C.2.vii, the permit may be modified, revoked, or reissued, pursuant to 40 CFR §270.41 [40 CFR §270.32(b)(2)].

VII.C.3. Limitation on Waste Feed [40 CFR §270.62(c)]

- i. The permittee shall incinerate only the following hazardous wastes at the stated feed rate in the MPF in compliance with the operating requirements specified in Permit Condition VII.C.4.

<b>MUNITION FEED RATES</b>							
<b>TYPE OF MUNITION<sup>7a</sup></b>	<b>Chemical Agent</b>	<b>Maximum Units/Tray</b>	<b>Minimum Feed Interval Time between Trays (minutes)</b>	<b>Minimum Zone Timers (minutes)</b>		<b>Maximum Heel/Tray (lbs)</b>	
Ton Container	HD	1	131	Zone 1	131	Unmobilized heel	293.3
				Zone 2	131	Total heel weight	423.3
				Zone 3	16		

Footnotes:

a. Hazardous Waste Codes D004, D005, D006, D007, D008, D009, D010, D011, D022, D028, D043, P998, P999, F998, and F999.

<b>METAL FEED RATES</b>	
<b>Element</b>	<b>Maximum Metals Feed (lbs/tray) Ton Container (HD)</b>
Antimony (Sb)	6.04E-03
Arsenic (As)	9.47E-01
Barium (Ba)	6.38E-01
Beryllium (Be)	3.84E-05
Boron (B)	3.84E-03
Cadmium (Cd)	3.29E-01
Chromium (Cr) - Total	2.22E-01
Cobalt (Co)	7.02E-03
Copper (Cu)	8.60E-02
Lead (Pb)	1.18E+00
Manganese (Mn)	4.02E-01
Mercury (Hg)	5.24E-01
Nickel (Ni)	4.22E-01
Phosphorus (P)	1.73E-02
Selenium (Se)	1.18E-03
Silver (Ag)	1.05E-03
Thallium (Tl)	7.81E-04
Tin (Sn)	1.41E-02
Vanadium (V)	9.54E-04
Zinc (Zn)	1.01E-01

<b>CHLORINE FEED RATES</b>	
	<b>Maximum Chlorine Feed (lbs/tray) Ton Container (HD)</b>
Chlorine	198.0

SECONDARY WASTE FEED RATES					
WASTE DESCRIPTION	MIN. FEED TIME INTERVAL (minutes)		MIN. RESIDENCE TIME (minutes) <sup>6</sup>	MAXIMUM WASTE FEED (lb/tray) <sup>13</sup>	NOTES
	Agent				
	GB/HD	VX			
<b>Inert Secondary Waste</b>					
Noncombustible Waste (excludes aluminum greater than 12.5 lbs per feed)	30	34	80	3,500	1,2,7
Bulk Aluminum	30	34	80	1,000	1,5,7
Foam Core Panels	25	29	65	800	3,7
ACS, AQS, and SDS Residues (includes dirt)	45	49	125	300	1,7,9
Concrete – Rubble	69	73	197	600	1,11
Concrete – Scabbled	69	73	197	600	4
Concrete – Sludge	69	73	197	217	1,9
Silica Gel and Silica Gel/Vermiculite Blend	26	29	65	37	1,6,7,8,10
Vermiculite	36	39	93	11	1,6,7,9
Noncombustible Sorbents	69	73	197	80	1, 12
<b>Combustible Secondary Waste</b>					
WASTE DESCRIPTION	MIN. FEED TIME INTERVAL (minutes)	MIN. RESIDENCE TIME (minutes) <sup>6</sup>	MAXIMUM WASTE FEED (lb/WIC) <sup>13</sup>	MAXIMUM HEAT LOADING (MM Btu/WIC)	
<ul style="list-style-type: none"> <li>• Ventilation System Filters (includes prefilters and HEPA filters)</li> <li>• DPE Suits (includes other types of low-heat plastics)</li> <li>• High-Heat Plastic (includes tyvek suits, polystyrene, polyethylene, and polypropylene materials)</li> <li>• Cellulose Waste (includes wood, cotton, and paper materials)</li> <li>• TAP Gear/Rubber</li> <li>• 3-M Maintenance Sorbents</li> <li>• Laboratory Solid Waste</li> </ul>	64.6	176	407	4.80	

Notes:

1. Secondary wastes will be placed in waste incineration containers (WICs) for processing.
2. Residence time is based on processing block metal. It is conservative for plate steel and loose parts, therefore, all three categories can be mixed in one load. Enclosed metal containers such as spray cans and compressed air tanks must be punctured prior to processing.
3. Panel sections consists of a foam core between metal skin layers. The maximum size of a waste feed panel is 3 ft. x 8 ft. Panels are supported vertically with faces parallel to the sides of the furnace and with a minimum 1-inch air gap between them.
4. Process in steel processing drums equipped with spider-leg fins, filled to maximum material depth 7". Place unsealed lids on the drums before processing.
5. Water sprays must be locked out during processing of aluminum waste
6. The minimum furnace residence time is equal to furnace Zone 1 residence time + furnace Zone 2 residence time + furnace Zone 3 residence time. Furnace Zone 1 or 2 residence time = min. feed time interval. Furnace Zone 3 residence time = min. feed time interval - ACAMS time in discharge airlock.
7. Any of the secondary waste streams may be commingled, either in the same waste tray or by processing different trays of waste in Zones 1, 2, and 3 at the same time. The lowest permitted waste feed rate for any of the waste commingled shall not be exceeded. The longest residence time of any of the waste commingled shall be complied with. Total aluminum contained in the commingled waste is restricted to a maximum of 12.5 pounds per tray.
8. Waste to be spread evenly within containment pan of WIC to a maximum depth of 1"
9. Waste to be spread evenly within containment pan of WIC to a maximum depth of 1.5"
10. Silica gel/vermiculite blend may be any percent by volume mixture of silica gel and vermiculite.
11. Process in ultra WIC with containment pans and heat transfer fins. Material depth maximum 7".
12. Waste to be processed in ultra WIC equipped with containment pans and reinforced screen cover. Sorbents will be a maximum of two layers deep, with a maximum waste depth of 2.5".
13. The waste feed rates in this column address the maximum feed rate to achieve decontamination of the waste and do not ensure compliance with the emission limits in Table 7-7.

<b>MAXIMUM METAL AND CHLORINE FEED RATES FOR SECONDARY WASTES TO THE METAL PARTS FURNACE</b>			
<b>Element</b>	<b>Maximum Metals Feed (lbs/hr)</b>	<b>Element</b>	<b>Maximum Metals Feed (lbs/hr)</b>
Antimony (Sb)	2.58E-02	Manganese (Mn)	4.42E-01
Arsenic (As)	2.32E-01	Mercury (Hg)	4.86E-04
Barium (Ba)	2.31E+00	Nickel (Ni)	1.26E+00
Beryllium (Be)	9.40E-04	Phosphorus (P)	5.17E+01
Boron (B)	3.96E+00	Selenium (Se)	5.98E-02
Cadmium (Cd)	1.18E+00	Silver (Ag)	4.52E-03
Chlorine	8.48E+01	Thallium (Tl)	3.39E-03
Chromium (Cr) - Total	6.80E-01	Tin (Sn)	2.66E-02
Cobalt (Co)	3.65E-02	Vanadium (V)	9.40E-03
Copper (Cu)	8.37E-02	Zinc (Zn)	4.88E-01
Lead (Pb)	4.20E+00		

Note: The maximum metal and chlorine feed rates shall not exceed the values listed in the table on a rolling one-hour average basis.

Compliance with these feed limits is determined using the procedures in Section 9 of the Waste Analysis Plan (Attachment 2 of the permit)

- ii. Throughout operation, the permittee shall conduct sufficient analysis of the waste treated in the MPF to verify that the waste feed is within the physical and chemical composition limits specified in this permit, and in accordance with the Waste Analysis Plan in Attachment 2 of this permit.
  - a. Ton containers that have been processed through the MPF shall not be reutilized as recipient TCs until all visible ash and residues have been removed. Ton containers shall only be reused as recipient ton containers a maximum of ten times.
- iii. The pounds per tray of the residual chemical agent contained in the MPF feed shall not exceed the limits provided in Condition VII.C.3.i of this permit.
- iv. The permittee shall not feed the following wastes to the MPF.
  - a. Acutely toxic hazardous wastes listed in 40 CFR §261.33(e).
  - b. RCRA Hazardous Wastes FO20 through FO23, FO26, and FO27.
  - c. Any wastes containing PCBs.

- v. Only one chemical agent, or waste containing one chemical agent or a combination of HD and GB agent or HD and VX agent, shall be fed to the Metal Parts Furnace, at any given time.
- vi. The feed rate to the MPF shall not exceed the limits in Permit Condition VII.C.3.i and shall be in accordance with the requirements of Permit Condition VII.C.3.
- vii. The permittee shall incinerate only the hazardous wastes listed in Permit Condition VII.C.3.i in compliance with the operating requirements specified in Permit Condition VII.C.4.

VII.C.4. Operating Conditions

- i. The permittee shall operate the MPF in order to maintain the system and process parameters listed in Table 7-3 of this permit within the calibrated ranges or setpoints specified in Table 7-3 of this permit. Each occurrence of an instrument operating outside of the Table 7-3 operating and/or calibrated ranges shall be reported to the Department at least quarterly.
- ii. The permittee shall operate the AWFCO systems, specified in Table 7-4 of this permit, to automatically cut off and/or lock out the hazardous waste feed to the MPF when the monitored operating conditions deviate from the setpoints specified in Table 7-4 of this permit.
- iii. Only one loaded tray containing the waste materials shall be fed into the MPF at any given time, with a minimum interval between each tray feed as specified in Condition VII.C.3.i.
- iv. The permittee shall trend the performance of the mist eliminator vessel and implement corrective actions (if applicable) as follows:
  - a. Daily trending of the rolling hourly averages of differential pressure across the mist eliminator (“dP”), the flue gas flow rate (“flow rate”), and the dP/flow rate ratio will be conducted .
  - b. A daily evaluation of the trend data will be conducted to identify a potential malfunction of the mist eliminator candle media. A potential malfunction is defined

as a sudden decrease in the dP at steady flow rates or a gradual decrease in the dP/flow rate ratio for a period of at least 12 hours in duration.

- c. The trending will be conducted via the process data acquisition and recording system (PDAR) and maintained in the facility operating record.
- d. If the evaluation identifies a potential malfunction of the mist eliminator vessel, hazardous waste feed operations shall cease to the furnace system, and the mist eliminator vessel shall be removed from service for corrective action.
- e. Corrective action shall be taken in accordance with the following criteria.
  - 1. If the investigation reveals a correctable malfunction, the malfunction shall be corrected prior to placing the mist eliminator vessel into service for hazardous waste treatment operations.
  - 2. If the investigation reveals no correctable malfunction, the candle media shall be removed and successfully tested or replaced prior to placing the vessel into service for hazardous waste treatment operations.
- v. Ton containers and secondary waste shall be monitored with an ACAMS (Table 7-4, MPF-40) in the discharge airlock (DAL) and will only be discharged to the cool-down conveyor if the ACAMS results are less than 0.2 VSL. All HD ton containers and secondary waste must undergo low-temperature monitoring in the discharge airlock with an ACAMS (Table 7-4, MPF-40) at or below 700°F.
- vi. Ton containers and secondary waste shall not be removed from the cool-down area enclosure unless the waste has undergone low-temperature ACAMS (Table 7-4, MPF-41) monitoring in the cool-down area for a minimum of 13 minutes plus one complete ACAMS cycle and the ACAMS monitoring results are less than 0.5 VSL.
- vii. Ton containers and secondary waste shall undergo low-temperature ACAMS monitoring for the appropriate agent(s) in the discharge airlock for a minimum of two complete ACAMS cycles. If low-temperature ACAMS agent monitoring results are equal to or greater than 0.2

VSL in the DAL, the ton container or secondary waste in the DAL will be transferred back to Zone 3 and reheated to the Zone 3 operating temperature. Once the ton container/secondary waste has been reheated to the Zone 3 operating temperature, it shall remain in Zone 3 for a complete Zone 3 minimum residence time cycle.

- a. The residues of ton containers for which agent monitoring results are equal to or greater than 0.20 VSL in the DAL will be sampled in accordance with Section 2.2.5 of the Waste Analysis Plan and the results reported to the Department via facsimile or e-mail transmission no later than three business days after receiving said results. The results shall be formally transmitted to the Department under letter no later than 14 calendar days after receiving said results.
- viii. Ton containers and secondary waste shall only be transferred from the discharge airlock to the cooling conveyor if the cool-down area ACAMS (Table 7-4, MPF-41) monitoring results are less than 0.5 VSL.
- ix. [RESERVED]
- x. The following items shall be documented in the daily operating record:
  - a. The low-temperature monitoring protocol for each tray of waste treated;
  - b. The time the tray entered the DAL;
  - c. The time the switch is activated to monitor the DAL instead of the filtered air;
  - d. The ACAMS monitoring results in the DAL;
  - e. The time the sample line challenge started;
  - f. The time the tray exited the DAL into the cool-down area; and
  - g. The ACAMS monitoring results on the cool-down area.
  - h. MPF DAL and/or cool-down area DAAMS analysis results if analyzed.

- xi. The MPF shall be operated in accordance with the requirements of Permit Attachment 7.
- xii. No greater than 130 gallons shall be added with the water cooling spray system to the treated HD ton containers in the MPF DAL. HD ton containers will not be discharged from the MPF DAL to the cool-down area until MPF DAL temperature thermocouples 14-TIT-9801A/B/C/D and MPF DAL exhaust duct temperature thermocouple 14-TIT-9802 indicate 300°F or less.
- xiii. No smoking ton containers will be discharged from the discharge airlock regardless of opacity.
- xiv. If a container boils over, as defined in Permit Condition I.B, the following actions will occur:
  - a. The permittees will complete a boilover recovery plan contained in Attachment 4 to this permit.
  - b. The Department on-call staff member will be notified not later than one hour after the start of the boil over.
  - c. The residues of the ton container that boiled over will be sampled in accordance with Section 2.2.5 of the Waste Analysis Plan and the results reported to the Department via facsimile or e-mail transmission no later than three working days after receiving said results. The results must be formally transmitted to the Department under letter no later than 14 calendar days after receiving said results.
- xv. The combined masses of chemical agent, chemical agent heel, and rinsate in any ton container or tray fed to the MPF shall not exceed the limits of Permit Condition VII.C.3.
- xvi. The Zone 2 sparge air and discharge airlock air nozzle will be locked out during secondary waste processing.

VII.C.5. Monitoring Requirements [40 CFR §264.347, §270.31]

- i. The permittee shall maintain, calibrate, and operate process monitoring, control, and recording equipment, as specified in Tables 7-3 and 7-4 of this permit, while incinerating hazardous waste.

- ii. Hazardous wastes shall not be fed to the MPF if any of the monitoring instruments listed in Tables 7-3 and 7-4 of this permit fails to operate properly.
- iii. The CO and O<sub>2</sub> concentration monitored in accordance with Table 7-4 of this permit shall be continuously monitored while incinerating hazardous waste.
- iv. The ACAMS station (configured for each agent being treated) monitoring the exhaust gas on the MPF (Table 7-4, MPF-16 and MPF-35) and the ACAMS station (configured for each agent being treated) monitoring the MPF cool-down area (Table 7-4, MPF-41) shall be operated as follows:
  - a. Prior to commencing hazardous waste feed to the incinerator, MPF-16 and MPF-35 shall be operational and online.
  - b. During the treatment of waste, either MPF-16 or MPF-35 may be taken offline to conduct routine maintenance provided the other ACAMS station is operational and online.
  - c. During the treatment of waste, if either MPF-16 or MPF-35 is offline for maintenance and the online instrument is taken offline, the AWFCO system shall be activated.
  - d. During the treatment of waste, if either MPF-16 or MPF-35 is offline for maintenance and the AWFCO is activated, both instruments must be operational and online before resuming waste feed to the incinerator.
  - e. During the treatment of waste, if either MPF-16 or MPF-35 is offline for maintenance, the AWFCO system shall be activated if the instrument is not operational and online within 90 minutes.
  - f. During the treatment of waste, MPF-41 may be taken off-line to conduct calibration and routine maintenance.
  - g. In the event MPF-41 malfunctions or is taken off-line for calibration or maintenance, waste trays shall not be discharged from the discharge airlock onto the cooling conveyor.

- h. During the treatment of waste, if MPF-41 malfunctions or is off-line for calibration or maintenance, the AWFCO system shall be activated if the instrument is not operational and online within 90 minutes.
- i. During the treatment of waste, in the event MPF-41 is taken offline, waste shall not be removed from the cool-down area enclosure until MPF-41 is operational and conducts low-temperature ACAMS monitoring of the cool-down area for a minimum of 13 minutes plus one complete ACAMS cycle.
- v. Carbon and secondary waste shall undergo low-temperature ACAMS monitoring in the discharge airlock (Table 7-4, MPF-40) for two complete ACAMS cycles.
- vi. Ton containers shall undergo low-temperature monitoring in the discharge airlock (DAL) with an ACAMS (Table 7-4, MPF-40) for two complete ACAMS cycles.
- vii. [RESERVED]
- viii. The discharge airlock ACAMS (Table 7-4, MPF-40) and the cool-down area ACAMS (Table 7-4, MPF-41) shall be challenged daily at 1.0 times the VSL and weekly at 0.2 times the VSL.
- ix. Between the time waste is discharged from the DAL and the waste has been cleared from the cool-down area by low-temperature ACAMS monitoring, the cool-down area enclosure exhaust filtration filters shall be operated and maintained as follows:
  - a. The pressure differential across the HEPA filters will be maintained greater than or equal to 0.5 inches w.c. and less than or equal to 4.0 inches w.c.
    - 1. In the event the operating parameter limits are exceeded, waste shall not be discharged from the DAL until the pressure differential returns to within this specified operating range.
    - 2. If the exceedance is due to plugged or breeched HEPA filters, the HEPA filters shall be replaced prior to discharge of waste from the DAL.

- b. The pressure differential across the carbon filters will be maintained greater than or equal to .76 inches w.c. and less than or equal to 2.5 inches w.c.
  - 1. In the event the operating parameter limits are exceeded, waste shall not be discharged from the DAL until the pressure differential returns to within this specified operating range.
  - 2. If the exceedance is due to plugged or breeched carbon filters, the carbon filters shall be replaced prior to discharge of waste from the DAL.
- c. The pressure differential across the prefilters, HEPA filters, and the carbon filters shall be recorded approximately every 4 hours in accordance with standing operating procedure requirements.
- d. The exhaust fan shall be operational. In the event the exhaust fan is not operational, the UMCDF shall stop waste feed to the MPF and halt further discharge of waste trays from the DAL. Waste feed shall not resume until operation of the exhaust fan is restored.
- e. In the event the low flow switch (76-FSL-9814) activates, the UMCDF shall automatically shutdown, at a minimum, one air supply handling unit.
- f. The exhaust flow rate shall be above the minimum exhaust flow switch (Tag No. 76-FSLL-9814) setpoint of 16,000 cfm. In the event the low-low switch activates, the UMCDF shall stop feed to the MPF and halt further discharge of waste trays from the DAL. Waste feed shall not resume until the required exhaust flow rate is restored. During this period, the cool-down area ACAMS (MPF-41) shall be switched to its spooled position to conduct local agent monitoring of waste trays within the cool-down area enclosure.
- x. In the event chemical agent is confirmed in the cool-down area, the exhaust filtration system carbon filters shall be changed-out prior to discharging waste trays from the DAL.
- xi. The ACAMS monitoring the exhaust gas on the MPF (Table 7-4, MPF-16 and MPF-35) shall only be corrected to 7% oxygen:

- a. When the ACAMS value is at 0.2 ASC or above, and
  - b. When the oxygen concentration in the PFS exhaust gas is greater than 7%.
- xii. The mercury (Hg) concentration downstream of the MPF PFS shall be monitored by the mercury monitoring system in accordance with Permit Attachment 7.

VII.C.6. Waste Feed Cut-Off Requirements

- i. The permittee shall construct and maintain the systems, specified in Table 7-4 of this permit, to automatically cut off and/or lock out the hazardous waste feed to the MPF when the monitored operating conditions deviate from the setpoint specified in Table 7-4 of this permit.
- ii. The permittee shall manually cut off and/or lock out the waste feed and perform the operator-initiated shutdown-to-idle procedures of the MPF, in accordance with UMCDF standing operating procedures, when the operating conditions deviate from the setpoints specified in Table 7-4, unless the deviation automatically activates the waste feed cutoff and/or lockout sequence specified in Permit Condition VII.C.6.i.
- iii. In the event of a malfunction of the AWFCO systems listed in Table 7-4 of this permit, the permittee shall immediately, manually, cut off and/or lock out the waste feed, and perform the operator-initiated shutdown-to-idle procedures of the MPF in accordance with UMCDF standing operating procedures. The permittee shall not restart waste feed to the incinerator until the problem causing the malfunction has been identified and corrected. Waste feed may not restart until the parameter(s) that caused the feed cut off or lock out is/are restored to within the permit limits and all other parameters are also within permit limits.
- iv. If the number of automatic waste feed cut-offs from an individual parameter on Table 7-4 for the MPF is activated greater than twice within any operating day, the permittee shall be required to at a minimum verbally provide to the Department the information required in Permit Condition VII.A.7.ii by the close of the following business day. After any automatic waste feed cut-off is tripped, the permittee shall be required to establish and maintain

operating limits as specified in Table 7-4 for at least 15 minutes prior to restart of hazardous waste feed to the MPF.

- v. If any of the following automatic waste feed cut-offs from Table 7-4 for the MPF occurs at a maximum frequency of five times within 30 MPF operating days in succession, the permittee is required to verbally notify the Department of the occurrence: Item numbers MPF-01, MPF-02, MPF-03, MPF-05, MPF-06, MPF-07, MPF-10, MPF-11, MPF-12, MPF-13, MPF-14, MPF-15, MPF-16, MPF-17, MPF-19, MPF-23, MPF-24, MPF-25, MPF-26, MPF-27, MPF-28, MPF-29, MPF-34, and MPF-43. These waste feed cut-offs, whether automatically or manually activated, are counted if the specified setpoints are deviated from while waste or waste residues continue to be processed in the incinerator chambers.

#### VII.D. **DEACTIVATION FURNACE SYSTEM (DFS)**

The DFS incinerates fuses, explosives and propellants from drained rockets, mines and other munitions. In addition, under certain conditions, the DFS may process potentially gelled rockets. The DFS consists of a rotary kiln, a cyclone, and an afterburner. The chemical agent-contaminated, highly reactive and explosive materials are fed into the retort and deactivated while the vaporized chemical agents undergo thermal destruction in the retort as well as in the afterburner. The Pollution Abatement System is of similar design to that of each LIC and MPF, and consists of a quench tower, venturi scrubber, packed scrubber tower, carbon bed filter, and a mist eliminator.

##### VII.D.1. **Maintenance**

- i. All process monitors required, pursuant to Permit Condition VII.D.4, shall be equipped with alarms operated to warn of deviation, or imminent deviation, from the limits specified in Permit Condition VII.D.4.
- ii. The permittee shall install and test all process monitoring and control instrumentation for the DFS in accordance with the design plans in Permit Attachment 12 and in accordance with the calibration, performance specifications and maintenance procedures contained in Table 7-5 of this permit, prior to handling hazardous waste in the DFS.

- iii. Modifications to the DFS design plans and specifications in Permit Attachment 12 shall be allowed only in accordance with 40 CFR §270.42.

VII.D.2. Performance Standards

- i. The DFS must achieve and maintain a destruction and removal efficiency (DRE) of 99.99% for the chemical agent. The DRE shall be calculated by the method specified in 40 CFR §264.343(a)(1).
- ii. The particulate matter emissions from the common stack, corrected to 7% oxygen in accordance with the formula given below [40 CFR §264.343(c)], shall not exceed 34.3 mg/dscm (0.015 grains/dscf).

$$P_c = P_m \times 14 / (21 - Y)$$

Where:  $P_c$  = corrected concentration of particulate matter  
 $P_m$  = measured concentration of particulate matter  
 $Y$  = measured  $O_2$  concentration in the stack gas

- iii. The hydrogen chloride (HCl) emission from the DFS shall not exceed  $1.16 \times 10^{-3}$  grams per second or 4 pounds/hour [40 CFR §264.343(b), §270.32(b)(2)].
- iv. The emission rates from the DFS shall not exceed the limits specified in Table 7-7. If the permittee finds that an emission rate for any constituent is exceeded, the permittee shall notify the Department in accordance with Permit Condition VII.A.5.iii. The Department may direct the permittee to cease, and reinitiate waste feed operations for the DFS in accordance with Permit Condition VII.A.5.iii. [40 CFR §270.32(b)(2)].
- v. The emission limits in Table 7-7 shall be met by limiting the feed rate into the DFS as specified in Permit Condition VII.D.3.i. [40 CFR §270.32(b)(2)].
- vi. The permittee shall control emission of PICs from the common stack such that the carbon monoxide (CO) level in the common stack, corrected to 7% oxygen in accordance with the

formula given below shall, not exceed 100 parts per million (ppm), dry volume, over an hourly rolling average [40 CFR § 264.347(a)(2), §270.32(b)(2)].

$$CO_c = CO_m \times (21 - 7)/(21 - O_m)$$

Where:  $CO_c$  = corrected CO ppm (dry volume)  
 $CO_m$  = measured CO ppm (dry volume)  
 $O_m$  = measured %  $O_2$  (dry volume)

- vii. The permittee shall continuously monitor and control emissions of chemical agents from the DFS. The emission levels shall not exceed the following concentrations [40 CFR §270.32(b)(2)]:

	<u>Chemical Agent - Concentration (mg/m<sup>3</sup>)</u>		
	<u>VX</u>	<u>GB</u>	<u>HD</u>
Maximum Instantaneous Allowable Stack Concentration (ASC)	0.0003	0.0003	0.03

- viii. Compliance with the operating conditions specified in Permit Condition VII.D.4 shall be regarded as compliance with the required performance standards identified in Permit Conditions VII.D.2.i through VII.D.2.vii. However, if it is determined that during the effective period of this permit that compliance with the operating conditions in Permit Condition VII.D.4 is not sufficient to ensure compliance with the performance standards specified in Permit Conditions VII.D.2.i through VII.D.2.vii, the permit may be modified, revoked, or reissued, pursuant to 40 CFR §270.41 [40 CFR §270.32(b)(2)].

VII.D.3. Limitation on Waste Feed

- i. Except during the short-term periods specified in Permit Conditions VI.D for shakedown, trial burn, and post-trial burn, the permittee shall incinerate only the following hazardous wastes at the stated feed rate in the DFS in compliance with the operating requirements specified in Permit Condition VII.D.4.

<b>MUNITIONS FEED RATES</b>							
<b>Type Munition and Chemical Agent<sup>1</sup></b>	<b>Maximum Units/Hr</b>	<b>Min. Feed Int. (Sec)<sup>2</sup></b>	<b>Maximum Feed Rate (lb/hr)<sup>2</sup></b>				
			<b>VX</b>	<b>GB</b>	<b>HD</b>	<b>Exp.</b>	<b>Prop.</b>
M 55 Rocket/M56 Warhead (GB), nongelled <sup>3</sup>	36.6	98.4	-	14.4 <sup>5</sup>	-	117.2	706.4
M 55 Rocket/M56 Warhead (VX) <sup>3</sup>	34.3	105	18.1	-	-	109.8	662.0
M121A1 Proj, 155MM(VX)	120	30	-	-	-	327.0	-
M121A1 Proj, 155MM(GB)	120	30	-	-	-	327.0	-
M 426 Proj, 8 inch (VX)	47	77	-	-	-	339.8	-
M 426 Proj, 8 inch (GB)	47	77	-	-	-	339.8	-
M23 Landmine (VX)	70	52	18.1	-	-	55.4	-
<b>SURROGATES</b> Maximum feed rate 258 lbs/hr							
Monochlorobenzene (U037, D021)							
Hexachloroethane (D034, U131)							
<b>SECONDARY WASTES<sup>1</sup></b>							
<b>Type of Secondary Wastes</b>	<b>Maximum Weight per Feed (lb)</b>	<b>Minimum Feed Int. (Sec.)</b>	<b>Maximum Feed Rate (lb/hr)<sup>4</sup></b>				
ECR Maintenance Residue	28.5	277	28.5				
Explosive-Contaminated Spill Pillows	28.5	277	28.5				
PCB-Contaminated UMCD Waste	28.5	600	171				
Partially Treated DFS Ash (nominal kiln exhaust gas temp of 1,575°F)	28.5	600	171				
Partially Treated DFS Ash (nominal kiln exhaust gas temp of 975°F)	22.8	600	137				
<b>METAL FEED RATES</b>							
Antimony:	1.91E-02 <sup>2</sup> lbs/hr	Manganese:	8.85E+00 <sup>2</sup> lbs/hr				
Arsenic:	1.17E-02 <sup>2</sup> lbs/hr	Mercury:	9.73E-05 <sup>2</sup> lbs/hr				
Barium:	3.08E+00 <sup>2</sup> lbs/hr	Nickel:	1.59E+00 <sup>2</sup> lbs/hr				
Beryllium:	7.57E-05 <sup>2</sup> lbs/hr	Phosphorus:	2.54E+01 <sup>2</sup> lbs/hr				
Boron:	5.65E-01 <sup>2</sup> lbs/hr	Selenium:	1.13E-02 <sup>2</sup> lbs/hr				
Cadmium:	1.53E+00 <sup>2</sup> lbs/hr	Silver:	8.64E-04 <sup>2</sup> lbs/hr				
Chromium:	8.58E-01 <sup>2</sup> lbs/hr	Thallium:	1.90E-02 <sup>2</sup> lbs/hr				
Cobalt:	1.10E-03 <sup>2</sup> lbs/hr	Tin:	3.79E-02 <sup>2</sup> lbs/hr				
Copper:	1.48E-02 <sup>2</sup> lbs/hr	Vanadium:	7.63E-04 <sup>2</sup> lbs/hr				
Lead:	9.68E+00 <sup>2</sup> lbs/hr	Zinc:	2.12E-02 <sup>2</sup> lbs/hr				
<b>CHLORINE/CHLORIDE FEED RATES</b>							
Total Chlorine	116.3 <sup>2</sup> lbs/hr						

Notes:

- Hazardous Waste codes D002, D003, D004, D005, D006, D007, D008, D009, D010, D011, D022, D028, D030, D043, F999, P999
- May change due to results of trial burns (See Module VI).
- Includes shipping and firing tubes without warheads.
- Not to exceed maximum permitted agent feed rates for munitions.
- In the event a rocket cannot be drained to a level that ensures the maximum permitted feed rate is not exceeded, the rockets will be processed as follows:
  - The rocket will be fed to the DFS after the GB agent rolling one-hour average feed rate drops to 0.0 lbs/hr.
  - No more rockets will be introduced into the DFS until the agent GB ROHA feed rate drops below the maximum permitted feed rate and the subsequent rocket will not result in exceeding the maximum permitted feed rate.
  - The Department will be notified prior to feeding a rocket that cannot be drained to a level that will ensure the permitted maximum feed rate is not exceeded.

- ii. Throughout operation, the permittee shall conduct sufficient analysis of the waste treated in the DFS to verify that the waste feed is within the physical and chemical composition limits specified in this permit, in accordance with the Waste Analysis Plan in Attachment 2 of this permit.
- iii. A time delay of 30 seconds shall be provided for feeding bursters before and after feeding fuses to the DFS, with the exception that nose plugs can be fed with the fuses.

VII.D.4. Operating Conditions

- i. The permittee shall operate the DFS in order to maintain the system and process parameters listed in Table 7-5 of this permit within the calibrated ranges or setpoints specified in Table 7-5 of this permit. Each occurrence of an instrument operating outside of the Table 7-5 operating and/or calibrated ranges shall be to the Department at least quarterly.
- ii. The permittee shall operate the AWFCO systems, specified in Table 7-6 of this permit, to automatically cut off and/or lock out the hazardous waste feed to the DFS when the monitored operating conditions deviate from the setpoints specified in Table 7-6 of this permit.
- iii. The rate of movement of the heated discharge conveyor shall be controlled so as to provide a minimum solid retention time of 15 minutes inside the heated enclosure.
- iv. The rocket shear blade will be sprayed with a decontamination solution or process water at all times when a rocket piece is at the blast gate and the shear blade is in operation. The flow of the decontamination solution or process water to the rocket shear blade will be continuously monitored for low-flow conditions and the flow rate shall be recorded during rocket processing operations. The feed gate shall be periodically sprayed during the rocket shearing operations. [40 CFR 270.32(b)(2)].
- v. Other than the nose plugs and fin assemblies, the permittees shall segregate the fuzes from all other sheared munition pieces and shall not feed them to the DFS with any other sheared munition sections. The permittees shall ensure one complete revolution of the kiln occurs before and after feeding fuzes to the DFS. [40 CFR §270.32(b)(2)]

- vi. In the event an AWFCO listed in Table 7-6 of this permit occurs, any munition components remaining on the feed gates may be fed to the furnace.
- vii. The permittee shall trend the performance of the mist eliminator vessel and implement corrective actions (if applicable) as follows:
  - a. Daily trending of the rolling hourly averages of differential pressure across the mist eliminator (“dP”), the flue gas flow rate (“flow rate”), and the dP/flow rate ratio will be conducted.
  - b. A daily evaluation of the trend data will be conducted to identify a potential malfunction of the mist eliminator candle media. A potential malfunction is defined as a sudden decrease in the dP at steady flow rates or a gradual decrease in the dP/flow rate ratio for a period of at least 12 hours in duration.
  - c. The trending will be conducted via the process data acquisition and recording system (PDAR) and maintained in the facility operating record.
  - d. If the evaluation identifies a potential malfunction of the mist eliminator vessel, hazardous waste feed operations shall cease to the furnace system, and the mist eliminator vessel shall be removed from service for corrective action.
  - e. Corrective action shall be taken in accordance with the following criteria.
    - 1. If the investigation reveals a correctable malfunction, the malfunction shall be corrected prior to placing the mist eliminator vessel into service for hazardous waste treatment operations.
    - 2. If the investigation reveals no correctable malfunction, the candle media shall be removed and successfully tested or replaced prior to placing the vessel into service for hazardous waste treatment operations.

VII.D.5. Monitoring Requirements [40 CFR §264.347, §270.31]

- i. The permittee shall maintain, calibrate, and operate process monitoring, control, and recording equipment, as specified in Tables 7-5 and 7-6 of this permit, while incinerating hazardous waste.
- ii. Hazardous wastes shall not be fed to the DFS if any of the monitoring instruments listed in Tables 7-5 and 7-6 of this permit fails to operate properly.
- iii. The CO and O2 concentration monitored in accordance with Table 7-6 of this permit shall be continuously monitored while incinerating hazardous waste.
- iv. The ACAMS station monitoring the exhaust gas on the DFS (Table 7-6, DFS-19 and DFS-40) and the ACAMS station monitoring the DFS cyclone enclosure (Table 7-6, DFS-20) may be operated as follows:
  - a. Prior to commencing hazardous waste feed to the incinerator, DFS-19, DFS-20, and DFS-40 shall be operational and online.
  - b. During the treatment of waste, either DFS-19 or DFS-40 may be taken offline to conduct routine maintenance provided the other ACAMS station is operational and online.
  - c. During the treatment of waste, if either DFS-19 or DFS-40 is offline for maintenance and the online instrument is taken offline, the AWFCO system shall be activated.
  - d. During the treatment of waste, if either DFS-19 or DFS-40 is offline for maintenance and the AWFCO is activated, both instruments must be operational and online before resuming waste feed to the incinerator.
  - e. During the treatment of waste, if either DFS-19 or DFS-40 is offline for maintenance, the AWFCO system shall be activated if the instrument is not operational and online within 90 minutes.
  - f. During the treatment of waste, DFS-20 may be taken off-line to conduct calibrations and routine maintenance.

- g. During the treatment of waste, if DFS-20 is off-line for calibration or maintenance, the AWFCO system shall be activated if the instrument is not operational and online within 90 minutes.
  
- v. When processing hazardous waste, the DFS HDC bin enclosure shall be monitored with an ACAMS for two complete ACAMS cycles prior to change out of a waste bin. In the event of an ACAMS alarm of greater than or equal to 0.2 VSL, the waste shall not be removed from the engineering controls unless:
  - a. The ACAMS reading is refuted by DAAMS results or another analytical method acceptable to the Department, or
  - b. The waste is retreated by incineration.
  
- vi. The ACAMS station monitoring the exhaust gas on the DFS (Table 6-11, DFS-19 and DFS-40) shall only be corrected to 7% oxygen:
  - a. When the ACAMS value is at 0.2 ASC or above, and
  - b. When the oxygen concentration in the PFS exhaust gas is greater than 7%.

VII.D.6. Waste Feed Cut-Off Requirements

- i. The permittee shall construct and maintain the systems, specified in Table 7-6 of this permit, to automatically cut off and/or lock out the hazardous waste feed to the DFS when the monitored operating conditions deviate from the setpoint specified in the Table 7-6 of this permit.
  
- ii. The permittee shall manually cut off and/or lockout the waste feed and perform the operator-initiated shutdown-to-idle procedures of the DFS in accordance with UMCDF standing operating procedures when the operating conditions deviate from the setpoints specified in Table 7-6 unless the deviation automatically activates the waste feed cut-off and/or lock out sequence specified in Permit Condition VII.D.6.i.

- iii. In case of a malfunction of the automatic waste feed cut-off systems listed in Table 7-6 of this permit, the permittee shall immediately, manually cut off and/or lock out the waste feed, and perform the operator-initiated shutdown-to-idle procedures of the DFS in accordance with UMCDF standing operating procedures. The permittee shall not restart the waste feed to incinerator until the problem causing the malfunction has been identified and corrected. Waste feed may not restart until the parameter(s) which caused the feed cut off or lock out is/are restored to permit limits and all other parameters are within permit limits.
- iv. If the number of automatic waste feed cut-offs from an individual parameter on Table 7-6 for the DFS is activated greater than twice within any operating day, the permittee shall be required to at a minimum verbally provide to the Department the information required in Permit Condition VII.A.7.ii by the close of the following business day. After any automatic waste feed cut-off is tripped, the permittee shall be required to establish and maintain operating limits as specified in Table 7-6 for at least 15 minutes prior to restart of hazardous waste feed to the DFS.
- v. If any of the following automatic waste feed cut-offs from Table 7-6, for the DFS occurs at a maximum frequency of five times within 30 DFS operating days in succession, the permittee is required to verbally notify the Department of the occurrence: Item numbers DFS-02, DFS-03, DFS-05, DFS-07, DFS-08, DFS-11, DFS-12, DFS-13, DFS-14, DFS-15, DFS-16, DFS-17, DFS-18, DFS-19, DFS-20, DFS-21, DFS-25, DFS-27, DFS-28, DFS-29, DFS-30, DFS-31, DFS-34, and DFS-39. These waste feed cut-offs, whether automatically or manually activated, are counted if the specified setpoints are deviated from while waste or waste residues continue to be processed in the incinerator chambers.

VII.E. **COMMON STACK FOR LIC, MPF, & DFS**

- VII.E.1. The permittee shall install and maintain the CEMS for oxygen, carbon monoxide, and chemical agent, downstream of the LIC, MPF, and DFS pollution abatement system blowers and install and maintain the continuous exhaust gas monitoring systems for chemical agent emissions from the common stack.

VII.E.2. The exhaust gas monitoring systems specified in Permit Condition VII.E.1 shall be calibrated, inspected, and operated in accordance with the applicable subparagraphs of Permit Conditions VII.A.3 and VII.A.4.

VII.E.3. The chemical agent emissions from the common stack, monitored as specified in Permit Condition VII.E.2, shall not exceed the following concentrations:

	<u>Chemical Agent - Concentration (mg/m<sup>3</sup>)</u>		
	<u>VX</u>	<u>GB</u>	<u>HD</u>
Maximum Instantaneous Allowable Stack Concentration (ASC)	0.0003	0.0003	0.03

VII.E.4. The waste feeds to all contributing incinerator(s) shall be automatically cut off or locked out when the chemical agent emission level(s) in the common stack exceeds the values specified in Permit Condition VII.E.3.

VII.E.5. The permittee shall maintain “staggered” ACAMS monitoring at the stack to allow for continuous sampling, and, therefore, allow for quicker response to releases.

- i. The permittee shall program the “staggered” ACAMS on the common stack to require:
  - a. No less than two ACAMS be on line and monitoring the exhaust gas,
  - b. The two on-line ACAMS be operated in a “staggered” configuration to provide for continuous sampling of the exhaust gases.

VII.E.6. The waste feeds to the DFS, MPF, and two LICs shall be automatically cut off or locked out when:

- i. The conditions in Condition VII.E.5.i are not satisfied.
- ii. If either of the two on-line ACAMS or DAAMS monitoring the exhaust gases activate a malfunction alarm and the standby ACAMS station cannot be brought on line in time to provide for continuous sampling of the exhaust gases.

VII.F. **PAS CARBON FILTER UNIT**

VII.F.1. The PAS carbon filter unit for any furnace system shall be in operation during the treatment of waste.

VII.F.2. The PAS for each furnace system will be monitored as follows:

- i. An ACAMS shall monitor the exhaust stream prior to entering each PAS carbon filter unit in accordance with Permit Condition VII.A.8.
- ii. An ACAMS shall monitor downstream of the LICs, MPF, and DFS exhaust blowers in accordance with Permit Condition VII.E.1.
- iii. The mercury monitoring system shall monitor downstream of the MPF PAS carbon filter unit in accordance with Permit Attachment 7.

VII.F.3. Continuous pressure drop monitoring and data recording will be performed across the bank of prefilters, across each of the primary carbon beds, across the set of secondary carbon beds, and across the banks of high-efficiency particulate air (HEPA) filters upstream and downstream of the carbon banks within each filter unit.

VII.F.4. Upon the detection of agent equal to or greater than the allowable stack concentration (1.0 ASC) by the ACAMS prior to the PFS carbon filter unit.

- i. Waste feed to the respective incinerator shall be cut off.
- ii. If the chemical agent is confirmed using DAAMS, waste feed shall not resume to the incinerator with the contaminated carbon filter unit on line unless the carbon within the unit has been replaced.

VII.F.5. PAS carbon filter media requirements are:

- i. Sulfur-impregnated carbon (SIC) shall be used in the PFS unit downstream of the MPF and the LICs during HD ton container treatment operations.
- ii. SIC or activated carbon may be used in the PFS unit downstream of the MPF and LICs during secondary waste treatment operations.

- VII.F.6. The banks of prefilters and HEPA filters shall be replaced when the pressure drop across the respective banks exceeds six inches (6”) of water column.
- VII.F.7 Upon the detection of agent equal to or greater than 0.2 ASC by the ACAMS following the PFS carbon filter unit:
- i. If agent is confirmed using DAAMS, waste feed shall not resume to the incinerator with the contaminated carbon filter unit on-line unless the carbon within the unit has been replaced.
- VII.F.8 A PFS carbon canister sample shall be collected every 90 PFS online days for activated carbon and every 30 PFS online days for SIC. The carbon canister sample shall be analyzed for butane activity using ASTM Method D-5742 with a drying temperature of 50°C and a drying time of 5 hours.
- i. If the initial sample analysis indicates that the butane activity is below 6.0, a second sample from the same canister shall be analyzed.
  - ii. If the second sample verifies that the butane activity is below 6.0, the carbon in the affected carbon filter unit shall be replaced within 30 PFS online days of collection of the original canister sample. If the carbon is not changed within 30 PFS online days of collection of the sample, the PFS unit will be taken offline until the carbon is replaced.
  - iii. For PFS units containing activated carbon, the activated carbon shall be replaced on or before 630 PFS online days or the PFS unit will be taken offline until the carbon is replaced.
  - iv. For PFS units containing SIC, the SIC shall be replaced on or before 210 PFS online days or the PFS unit will be taken offline until the carbon is replaced.

**TABLE 7-1a LIQUID INCINERATOR 1 (LIC1) SYSTEM INSTRUMENT AND PROCESS PARAMETERS**

Item No.	Control Parameter	Measuring Device	Location	Calibrated Instrument Range	Operating Range or Setpoint	Instrument Loop Accuracy	Calibration Method No. and Frequency <sup>a</sup>
1 <sup>c</sup>	Fuel Gas to Primary Chamber LIC-FURN-101 13-FIT-120	Orifice Plate & D/P Cell	In-Line	0-267 scfm	4-242 scfm	±8 scfm	Inst. Calib. Para. 2.4 (180 days)
2 <sup>b,c,d</sup>	Chemical Agent from TOX to LIC-FURN-101 13-FT-127A/B	Mass Flowmeter Vibrating U-Tube Type	In-Line	0-1,500 lb/hr	<u>GB</u> 0-1,030 lb/hr (ROHA) 0-37.2 lb/2-min <u>VX</u> 0-710 lb/hr (ROHA) 0-25.6 lb/2-min <u>HD</u> 0-1,286 lb/hr (ROHA) 0-46.3 lb/2-min <u>Agent-contaminated hydraulic fluids and lubricating oils:</u> 0-430 lbs/hr (ROHA) 0-15.0 lbs/2 min	±7.5 lb/hr	Inst. Calib. Para. 2.4 (180 days)
3 <sup>c</sup>	Combustion Air to LIC-FURN-101 13-FIT-42	Annubar & D/P Cell	In-Line	0-3,400 scfm	830-3,100 scfm	±136 scfm	Inst. Calib. Para. 2.4 (180 days)
4 <sup>b,c,d</sup>	Spent Decon. to Sec. Chamber LIC-FURN-102 13-FIT-102	Mass Flowmeter Vibrating U-tube	In-Line	0-2,250 lb/hr	0-2,107 lb/hr (ROHA) 0-75.9 lbs/2 min	±20 lb/hr	Inst. Calib. Para. 2.4 (180 days)
5 <sup>c</sup>	Fuel Gas to Sec. Chamber LIC-FURN-102 13-FIT-70	Orifice Plate & D/P Cell	In-Line	0-150 scfm	0-135 scfm	±5 scfm	Inst. Calib. Para. 2.4 (180 days)
6 <sup>c</sup>	Combustion Air to LIC-FURN-102 13-FIT-50	Annubar & D/P Cell	In-Line	0-1,400 scfm	250-1,225 scfm	±50 scfm	Inst. Calib. Para. 2.4 (180 days)
7 <sup>b,c,d</sup>	Primary Chamber LIC-FURN-101 Pressure 13-PIT-52	Diaphragm	Incinerator	-20 to +5 in. w.c.	-10 to -0.25 in. w.c.	±0.1 in. w.c.	Inst. Calib. Para. 2.3 (180 days)
8 <sup>b,c,d</sup>	Primary Chamber LIC-FURN-101 Flue Gas Temp. 13-TIT-43	Thermo-couple	In-Line	212-3,000°F	2,696-2,900°F (ROHA)	±20°F	Inst. Calib. Para. 2.5 (180 days)
9 <sup>b,c,d</sup>	Sec. Chamber LIC-FURN-102 Flue Gas Temp. 13-TIT-129	Thermo-couple	In-Line	32-2,400°F	1,827-2,002°F (Instantaneous) ≥1,839°F (ROHA)	±15°F	Inst. Calib. Para. 2.5 (180 days)
10	Sec. Chamber LIC-FURN-102 Pressure 13-PIT-59	Diaphragm	Incinerator	-20 to +5 in. w.c.	-10 to -0.25 in. w.c.	±0.1 in. w.c.	Inst. Calib. Para. 2.3 (180 days)
11 <sup>b,c,d</sup>	Sec. Chamber LIC-FURN-102 Exhaust Gas Flow Rate 13-PDIT-854	Modified Venturi & D/P Cell	In-Line	-2 to 1.75 in w.c.	0-1.1 in w.c. (Instantaneous) 0-1.08 in. w.c. (ROHA)	±0.1 in. w.c.	Inst. Calib. Para. 2.4 (180 days)
12	Intentionally left blank						
13	Intentionally left blank						
14	Intentionally left blank						
15	Intentionally left blank						

All federal Title 40 CFR citations are citations to the Title 40 CFR adopted as Oregon rule by OAR 340-100-0002 and as altered by OAR Chapter 340, Divisions 100-106, 109, 111, 113, 120, 124, and 142. See the preface introduction for further explanation.

**TABLE 7-1a LIQUID INCINERATOR 1 (LIC1) SYSTEM INSTRUMENT AND PROCESS PARAMETERS**

Item No.	Control Parameter	Measuring Device	Location	Calibrated Instrument Range	Operating Range or Setpoint	Instrument Loop Accuracy	Calibration Method No. and Frequency <sup>a</sup>
16 <sup>b,c,d</sup>	Quench Tower PAS-TOWR-104 Exhaust Gas Temp. high-high 24-TSHH-89	Filled System	In-Line	95-250°F	225°F	±5°F	Inst. Calib. Para. 2.5 (180 days)
17 <sup>b,c,d</sup>	LIC Quench Brine Density 24-DIT-83	Magnetically Vibrated Tube	PAS-PUMP- 111/112/Disch.	0.95-1.25 sgu	0.99-1.1sgu (Instantaneous)  0.99-1.1sgu (12-hour rolling average)	±0.03 sgu	Inst. Calib. Para. 2.7 (180 days)
18	Intentionally left blank						
19 <sup>b,c,d</sup>	Quench Brine Flow to Venturi Scrubber PAS-SEPA-103 24-FIT-88	Electro-magnetic Flowmeter	In-Line	0-150 gpm	125-145 gpm	±5.0 gpm	Inst. Calib. Para. 2.4 (365 days)
20 <sup>b,c,d</sup>	Clean Liquor Flow to Scrubber Tower Sprays 24-FIT-112	Electro-magnetic Flowmeter	In-Line	0-1,000 gpm	642-950 gpm	±10 gpm	Inst. Calib. Para. 2.4 (180 days)
21 <sup>c,e</sup>	Quench Tower PAS-TOWR-104 Level 24-LIT-132	Guided Wave Radar Transmitter	Vessel	-3 to 9 inches	-3 to 8 inches	±0.25 inches	Inst. Calib. Para 2.6 (180 days)
22	Intentionally left blank						
23	Intentionally left blank						
24	Intentionally left blank						
25 <sup>b,c,d</sup>	Venturi Scrubber Differential-Pressure 24-PDIT-90	D/P Cell	Venturi Scrubber	0-50 in. w.c.	25-40 in. w.c.	±0.5 in. w.c.	Inst. Calib. Para. 2.4 (180 days)
26 <sup>b,c,d</sup>	Brine From Scrubber Tower PAS-SCRB-103 pH 24-AIT-91 A/B	Electrodes	PAS-PUMP- 111/112	0-13 pH units	8.0-12.5 pH units (ROHA)	±0.8 pH unit	Inst. Calib. Para. 2.7 (7/30 <sup>k</sup> days)
27 <sup>c</sup>	Clean Liquor pH 24-AIT-116 A/B	Electrode	PFS-PUMP 134/135 Discharge to Suction	0-13 pH units	8.0-10 pH units (Instantaneous)	±0.8 pH unit	Inst. Calib. Para. 2.7 (7/30 <sup>k</sup> days)
28 <sup>c</sup>	Clean Liquor Density 24-DIT-117	Magnetically Vibrated Tube	PFS-PUMP 134/135 Discharge to Suction	0.95-1.25 sgu	0.95-1.03 sgu (12-hour rolling average)	± 0.03 sgu	Inst. Calib. Para 2.4 (180 days)
29 <sup>c,g</sup>	Mist Eliminator Water pH 24-AIT-657/658	Electrodes	PAS-PUMP- 131/136 Discharge to Suction	0-13 pH units	5.5-10.0 pH units (when pumping to scrubber tower)	±0.8 pH unit	Inst. Calib. Para. 2.7 (7/30 <sup>k</sup> days)
30 <sup>c</sup>	Mist Eliminator PAS-DMIS-101/102 Differential Pressure 24-PDIT-147/164	D/P Cell	Vessel	0-30 in. w.c.	0-20 in. w.c.	±0.3 in. w.c.	Inst. Calib. Para 2.4 (180 days)
31 <sup>b,c,d</sup>	Exhaust Blower PAS-BLOW-104 Exhaust Gas CO and moisture 024-AIT-78C	Infrared Cell Analyzer	Blower Exhaust Line (In-situ)	<u>CO</u> : 0-200 & 0-3,000 ppm <u>H<sub>2</sub>O</u> : 0-40%	<u>CO</u> : 0-100 ppm (ROHA) <u>H<sub>2</sub>O</u> : 38%	<u>CO</u> : ±6 ppm low range ±90 ppm high range <u>H<sub>2</sub>O</u> : ±2%	Inst. Calib. Para. 1.1 & 1.2 (Daily) <sup>l</sup>
32 <sup>c,h</sup>	Exhaust Blower PAS-BLOW-104 Exhaust Gas O <sub>2</sub> 24-AIT-210C	Zirconium Oxide Cell Analyzer	Blower Exhaust Line (In-Situ)	0-25%	≥5.9% (2-minute rolling average) ≤13% (Instantaneous)	±0.5%	Inst. Calib. Para. 1.1 & 1.2 (Daily)

All federal Title 40 CFR citations are citations to the Title 40 CFR adopted as Oregon rule by OAR 340-100-0002 and as altered by OAR Chapter 340, Divisions 100-106, 109, 111, 113, 120, 124, and 142. See the preface introduction for further explanation.

**TABLE 7-1a LIQUID INCINERATOR 1 (LIC1) SYSTEM INSTRUMENT AND PROCESS PARAMETERS**

Item No.	Control Parameter	Measuring Device	Location	Calibrated Instrument Range	Operating Range or Setpoint	Instrument Loop Accuracy	Calibration Method No. and Frequency <sup>a</sup>
33 <sup>b,c,d</sup>	Exhaust Blower PAS-BLOW-104 Exhaust Gas Agent MON ACAM-163(HD)/1631(GB or VX)	Gas Chromatography	Blower Exhaust Line (Extractive)	See WAP, Appendix C	See WAP, Appendix C	See WAP, Appendix C	See WAP, Appendix C
34 <sup>b,c,d</sup>	Brine Surge Tanks 101,102,201,202 Level 23-LT-03/07/703/707	Ultrasonic Level Transmitter	Brine Surge Tanks	0- 225 in.	0-219 in.	±3 in.	Inst. Calib. Para. 2.6 (180 days)
35	Scrubber Tower Brine Pressure 24-PIT-100	D/P Cell	In-Line	0-150 psig	80-145 psig	±1.5 psig	Inst. Calib. Para. 2.3 (180 days)
36	Process Water/Spent Decon. Pressure Low 13-PSL-51	Diaphragm	In-Line	0-100 psig	45 psig	±2.0 psig	Inst. Calib. Para. 2.3 (180 days)
37	Combustion Air to Sec. Chamber Burner Pressure Low-Low 13-PSLL-200	Diaphragm	In-Line	2.5-45 in. w.c.	30 in. w.c.	±1.0 in. w.c.	Inst. Calib. Para. 2.3 (180 days)
38	Atomizing Air Pressure Low-Low 13-PSLL-127C	Diaphragm	In-Line	12-100 psig	55 psig	±2.0 psig	Inst. Calib. Para. 2.3 (180 days)
39	Brine Surge Tanks Level High-High 23-LSHH-702/706/02/06	Admittance-Type Level Switches	Brine Surge Tanks	On/Off	18 ft. 3 in. from bottom	±0.75 inches	Inst. Calib. Para. 2.6 (180 days)
40 <sup>b,c,d</sup>	Sec. Chamber LIC-FURN-102 Pressure High-High 13-PSHH-888	Diaphragm	Incinerator	-0.55 to -0.15 in. w.c.	-0.25 in. w.c.	±0.05 in. w.c.	Inst. Calib. Para. 2.3 (365 days)
41	Presence of Flame Primary Chamber 13-BSLL-912	Flame Detector	Burner	N/A	N/A	N/A	Inst. Calib. Para 2.8
42	Presence of Flame Sec. Chamber 13-BSLL-909	Flame Detector	Burner	N/A	N/A	N/A	Inst. Calib. Para 2.8
43 <sup>b,c</sup>	PreFilter Differential Pressure 114-PDIT-454A/436A/487A	D/P Cell	Prefilter	0-6 in. w.c.	≥ 0.1 in. w.c. (2-minute rolling average) ≤ 4.0 in. w.c. (instantaneous)	±0.1 in. w.c.	Inst. Calib. Para 2.4 (180 days)
44 <sup>b,c</sup>	HEPA Filter Differential Pressure 114-PDIT-454B/454H/436B/436H/487B/487H	D/P Cell	HEPA Filter	0-6 in. w.c.	0.15-3.0 in. w.c.	±0.1 in. w.c.	Inst. Calib. Para 2.4 (180 days)
45 <sup>b,c</sup>	Temperature of gas to carbon filter system 114-TIT-518	Resistance Temperature Detector	In-Line	0-250°F	130-180°F (ROHA)	±3°F	Inst. Calib. Para. 2.5 (180 days)
46 <sup>b,c</sup>	Moisture of gas to carbon filter system 114-MIT-534A/B	Humidity Sensor	In-Line	0-90% RH	0-55% RH (ROHA) 0-80% RH (Instantaneous)	±3.5% RH	Inst. Calib. Para. 2.7 (180 days)
47 <sup>b,c,d</sup>	Stack PAS-STAK-102 exhaust gas agent MON-ACAM-129/223/225(HD) 1291/2231/2251(GB or VX)	Gas chromatography	Stack (extractive)	WAP, Appendix C	WAP, Appendix C	See WAP, Appendix C	WAP, Appendix C

All federal Title 40 CFR citations are citations to the Title 40 CFR adopted as Oregon rule by OAR 340-100-0002 and as altered by OAR Chapter 340, Divisions 100-106, 109, 111, 113, 120, 124, and 142. See the preface introduction for further explanation.

**TABLE 7-1a LIQUID INCINERATOR 1 (LIC1) SYSTEM INSTRUMENT AND PROCESS PARAMETERS**

Item No.	Control Parameter	Measuring Device	Location	Calibrated Instrument Range	Operating Range or Setpoint	Instrument Loop Accuracy	Calibration Method No. and Frequency <sup>a</sup>
48 <sup>b,c,d</sup>	PFS inlet gas agent monitor MON-ACAM-354/356/357(HD) 3541/3561/3571(GB or VX)	Gas chromatography	Gas Reheater Outlet (extractive)	WAP, Appendix C	WAP, Appendix C	See WAP, Appendix C	See WAP, Appendix C
49 <sup>b,c</sup>	LIC-FURN-101 Exhaust Gas Temperature 13-TIT-610	Thermocouple	In-Line	212-3000°F	2,604-2,761°F	±15°F	Inst. Calib. Para. 2.5 (365 Days)
50 <sup>b</sup>	Primary Chamber Pressure 13-PSHH-233	Diaphragm	Incinerator	-0.55 to -0.15 in. w.c.	-0.25 in.w.c.	±0.05 in. w.c.	Inst. Calib. Para. 2.3 (180 Days)
51 <sup>b,c,i</sup>	LIC-FURN-101 Agent Feed Pressure 13-PIT-113	Diaphragm	Incinerator	0-25 psig	5-20 psig <sup>f</sup>	±0.5 psig	Inst. Calib. Para. 2.3 (180 Days)
52 <sup>b</sup>	LIC-FURN- 102 Secondary Chamber Atomizing Air Pressure 13-PSL-058	Diaphragm	Incinerator	15 - 100 psig	65 psig	±2.0 psig	Inst. Calib. Para. 2.3 (180 Days)
53 <sup>b</sup>	PAS-SCRB-103 Scrubber Tower Sump Level High-High 24-LSHH-115	Magnetic Level Meter Switch	Vessel	Point Contact	86 in. above bottom tangent line	±0.5 inch	Inst. Calib. Para. 2.6 (180 Days)
54 <sup>b</sup>	PAS-SCRB-103 Scrubber Tower Sump Level Low-Low 24-LSSL-115	Magnetic Level Meter Switch	Vessel	Point Contact	50 in. above bottom tangent line	±0.5 inch	Inst. Calib. Para. 2.6 (180 Days)
55 <sup>b,c</sup>	PFS-PUMP-134/135 Clean Liquor Pump Discharge Pressure 114-PIT-329	Diaphragm	Pump Discharge Line	0-120 psig	15 – 94 psig	±1 psig	Inst. Calib. Para. 2.3 (365 Days)
56 <sup>b</sup>	PFS-BURN-101 Temperature of the Gas Entering the Carbon Filter System High-High 114-TSHH-533	Capillary Filled System	Reheater Discharge Line	95-250°F	180°F (Instantaneous)	±3.0°F	Inst. Calib. Para. 2.5 (180 Days)
57	Intentionally Left Blank						
58	Intentionally Left Blank						
59 <sup>b,c</sup>	Packed bed Scrubber Differential Pressure 24-PDIT-108 (ROHA)	D/P Cell	Scrubber Vessel	0-10 in. w.c.	0.3-3.0 in. w.c. (ROHA)	±0.1 in. w.c.	Inst. Calib. Para. 2.4 (180 Days)
60 <sup>b,c,j</sup>	Relative Humidity in PFS Exhaust Gas Based on Temperature 114-TIT-9810/9811/9815	Resistance Temperature Detector	In-line	50-200°F	≤55% RH (30-minute rolling average)	±3% RH	Inst Calib. Para 2.5 (180 Days)
61 <sup>b,c</sup>	PAS-DMIS-101/102 Flue Gas Discharge Temperature 24-TIT-9813/9814	Resistance Temperature Detector	In-line	50-200°F	105-135°F	±1°F	Inst. Calib. Para. 2.5 (180 Days)
62 <sup>b,c,d</sup>	Rinsate from RCS to LIC-FURN-101 64-FIT-9894A/B	Mass Flowmeter Vibrating U-Tube Type	In-line	0-2,376 lb/hr	0-1,000 lb/hr (ROHA) 0-33 lb/2 min (2MRA)	±11.9 lb/hr	Inst. Calib. Para. 2.4 (180 days)

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**TABLE 7-1a LIQUID INCINERATOR 1 (LIC1) SYSTEM INSTRUMENT AND PROCESS PARAMETERS**

Item No.	Control Parameter	Measuring Device	Location	Calibrated Instrument Range	Operating Range or Setpoint	Instrument Loop Accuracy	Calibration Method No. and Frequency <sup>a</sup>
63 <sup>b,c,d</sup>	Rinsate from RCS to LIC-FURN-101 Feed Pressure 64-PIT-9904	Diaphragm	In-line	0-35 psig	5-30 psig	±0.5 psig	Inst. Calib. Para. 2.3 (180 days)

NOTES:

- <sup>a</sup> See Permit Attachment 11 for "Process Instrument Calibration," and "Oxygen and Carbon Monoxide Analyzer Calibration" See also Operating and QA/QC procedures found in "Laboratory Quality Control Plan" in Appendix C of the Waste Analysis Plan (Permit Attachment 2) and Permit Attachment 11, "In-Situ Continuous Emission Monitors." Additional operating and QA/QC procedures for the Automatic Continuous Air Monitoring System and Depot Area Air Monitoring System are in Appendices C and D of the Waste Analysis Plan (Permit Attachment 2).
- <sup>b</sup> Continuous monitoring.
- <sup>c</sup> Continuous recording.
- <sup>d</sup> Maintenance, at a minimum, in accordance with equipment manufacturer's recommendations.
- <sup>e</sup> Hazardous waste treatment may continue during maintenance activities conducted with site-specific standing operating procedures, for a maximum of 24 hours after the failure of the instrument.
- <sup>f</sup> During a waste feed cutoff event, the feed line pressure may reach the maximum instrument calibrated range limit.
- <sup>g</sup> Hazardous waste treatment may continue during maintenance activities in accordance with site specific standing operating procedure, provided the mist eliminator water is not being transferred to the scrubber tower.
- <sup>h</sup> The minimum limit is based on a 2-minute rolling average.
- <sup>i</sup> The pressure in the waste feed line may exceed the operating range specified upon initiation of feed to the furnace system.
- <sup>j</sup> The relative humidity of the PFS exhaust gas is calculated using the PFS outlet temperature and the mist eliminator vessel outlet temperature. The calibrated instrument range applies to the temperature-indicating transmitter, and the operating range and instrument loop accuracy apply to the calculated relative humidity.
- <sup>k</sup> Initially, upon replacement of the instrument, or if the instrument is found out of tolerance, the instrument will be checked every 7 days until it stabilizes (instrument check indicates it is "in-tolerance"-no adjustments needed). After the instrument stabilizes, it will be checked on a 30-day basis until found out of tolerance or it is replaced.
- <sup>l</sup> Analyzer moisture readings are checked during annual relative accuracy test audit (RATA). System primary and backup monitors are compared and alarmed to warn of deviations.

2MRA = two-minute rolling average  
 D/P = differential pressure  
 N/A = not applicable  
 ROHA = rolling one-hour average

**TABLE 7-1b LIQUID INCINERATOR 2 (LIC2) SYSTEM INSTRUMENT AND PROCESS PARAMETERS**

Item No.	Control Parameter	Measuring Device	Location	Calibrated Instrument Range	Operating Range or Setpoint	Instrument Loop Accuracy	Calibration Method No. and Frequency <sup>a</sup>
1 <sup>c</sup>	Fuel Gas to Primary Chamber LIC-FURN-201 13-FIT-749	Orifice Plate & D/P Cell	In-Line	0-267 scfm	4-242 scfm	±8 scfm	Inst. Calib. Para. 2.4 (180 days)
2 <sup>b,c,d,m</sup>	Chemical Agent from TOX to LIC-FURN-201 13-FT-731A/B	Mass Flowmeter Vibrating U-Tube Type	In-Line	0-1,500 lb/hr	<u>GB</u> : 0-1,019 lb/hr (ROHA) 0-37.0 lb/2-min <u>VX</u> : 0-710 lb/hr (ROHA) 0-25.6 lb/2min <u>HD</u> : 0-1,305 lb/hr (ROHA) 0-47.0 lb/2min <u>Agent-contaminated hydraulic fluids and lubricating oils</u> : 0-430 lbs/hr (ROHA) 0-15.0 lbs/2 min	±7.5 lb/hr	Inst. Calib. Para. 2.4 (180 days)
3 <sup>c</sup>	Combustion Air to LIC-FURN-201 13-FIT-743	Annubar & D/P Cell	In-Line	0-3,400 scfm	830-3,100 scfm	±136 scfm	Inst. Calib. Para. 2.4 (180 days)
4 <sup>b,c,d,n</sup>	Spent Decon. To Sec. Chamber LIC-FURN-202 13-FIT-763	Mass Flowmeter Vibrating U-tube	In-Line	0-2,250 lb/hr	0-2,081 lb/hr (ROHA) 0-74.9 lbs/2 min	±20 lb/hr	Inst. Calib. Para. 2.4 (180 days)
5 <sup>c</sup>	Fuel Gas to Sec. Chamber LIC-FURN-202 13-FIT-787	Orifice Plate & D/P Cell	In-Line	0-150 scfm	0-135 scfm	±5 scfm	Inst. Calib. Para. 2.4 (180 days)
6 <sup>c</sup>	Combustion Air to LIC-FURN-202 13-FIT-788	Annubar & D/P Cell	In-Line	0-1,400 scfm	250-1,225 scfm	±50 scfm	Inst. Calib. Para. 2.4 (180 days)
7 <sup>b,c,d</sup>	Primary Chamber LIC-FURN-201 Pressure 13-PIT-706	Diaphragm	Incinerator	-20 to +5 in. w.c.	-10 to -0.25 in. w.c.	±0.1 in. w.c.	Inst. Calib. Para. 2.3 (180 days)
8 <sup>b,c,d</sup>	Primary Chamber LIC-FURN-201 Flue Gas Temp. 13-TIT-752	Thermocouple	In-Line	212-3,000°F	2,708-2,900°F (ROHA)	±20°F	Inst. Calib. Para. 2.5 (180 days)
9 <sup>b,c,d</sup>	Sec. Chamber LIC-FURN-202 Flue Gas Temp. 13-TIT-782	Thermocouple	In-Line	32-2,400°F	1,833-2,008°F (Instantaneous) ≥1,843°F (ROHA))	±15°F	Inst. Calib. Para. 2.5 (180 days)
10	Sec. Chamber LIC-FURN-202 Pressure 13-PIT-703	Diaphragm	Incinerator	-20 to +5 in. w.c.	-10 to -0.25 in. w.c.	±0.1 in. w.c.	Inst. Calib. Para. 2.3 (180 days)
11 <sup>b,c,d,l</sup>	Sec. Chamber LIC-FURN-202 Calculated Flue Gas Flow Rate 13-FIT-855	N/A	N/A	N/A	0-18,720 acfm (Instantaneous) 0-18,700 acfm (ROHA)	N/A	N/A
12	Intentionally left blank						
13	Intentionally left blank						
14	Intentionally left blank						
15	Intentionally left blank						

**TABLE 7-1b LIQUID INCINERATOR 2 (LIC2) SYSTEM INSTRUMENT AND PROCESS PARAMETERS**

Item No.	Control Parameter	Measuring Device	Location	Calibrated Instrument Range	Operating Range or Setpoint	Instrument Loop Accuracy	Calibration Method No. and Frequency <sup>a</sup>
16 <sup>b,c,d</sup>	Quench Tower PAS-TOWR-204 Exhaust Gas Temp. high-high 24-TSHH-800	Filled System	In-Line	95-250°F	225°F	±5°F	Inst. Calib. Para. 2.5 (180 days)
17 <sup>b,c,d</sup>	LIC Quench Brine Density 24-DIT-835	Magnetically Vibrated Tube	PAS-PUMP- 211/212 Disch.	0.95-1.25 sgu	0.99-1.09 sgu (Instantaneous) 0.99-1.09 sgu (12-hour rolling average)	± 0.03 sgu	Inst. Calib. Para. 2.7 (180 days)
18	Intentionally left blank						
19 <sup>b,c,d</sup>	Quench Brine Flow to Venturi Scrubber PAS-SEPA-203 24-FIT-828	Electro-magnetic Flowmeter	In-Line	0-150 gpm	127-145 gpm	± 5.0 gpm	Inst. Calib. Para. 2.4 (365 days)
20 <sup>b,c,d</sup>	Clean Liquor Flow to Scrubber Tower Sprays 24-FIT-825	Electro-magnetic Flowmeter	In-Line	0-1,000 gpm	647-950 gpm	±10 gpm	Inst. Calib. Para. 2.4 (180 days)
21 <sup>c,e</sup>	Quench Tower PAS-TOWR-204 Level 24-LIT-810	Guided Wave Radar Transmitter	Vessel	-3 to 9 inches	-3 to 8 inches	±0.25 inches	Inst. Calib. Para 2.6 (180 days)
22	Intentionally left blank						
23	Intentionally left blank						
24	Intentionally left blank						
25 <sup>b,c,d</sup>	Venturi Scrubber Differential-Pressure 24-PDIT-814	D/P Cell	Venturi Scrubber	0-50 in. w.c.	24-40 in. w.c.	±0.5 in. w.c.	Inst. Calib. Para. 2.4 (180 days)
26 <sup>b,c,d</sup>	Brine From Scrubber Tower PAS-SCRB-203 pH 24-AIT-831 A/B	Electrodes	PAS-PUMP- 211/212	0-13 pH units	8.1-12.5 pH units (ROHA)	±0.8 pH unit	Inst. Calib. Para. 2.7 (7/30 <sup>k</sup> days)
27 <sup>c</sup>	Clean Liquor pH 24-AIT-832 A/B	Electrode	PFS-PUMP 234/235 Discharge to Suction	0-13 pH units	8.0-10 pH units (Instantaneous)	±0.8 pH unit	Inst. Calib. Para. 2.7 (7/30 <sup>k</sup> days)
28 <sup>c</sup>	Clean Liquor Density 24-DIT-826	Magnetically Vibrated Tube	PFS-PUMP 234/235 Discharge to Suction	0.95-1.25 sgu	0.95-1.03 sgu (12-hour rolling average)	± 0.03 sgu	Inst. Calib. Para 2.4 (180 days)
29 <sup>c,g</sup>	Mist Eliminator Water pH 24-AIT-861/658	Electrodes	PAS-PUMP- 136/222 Discharge to Suction	0-13 pH Units	5.5-10.0 pH units (when pumping to scrubber tower)	±0.8 pH unit	Inst. Calib. Para. 2.7 (7/30 <sup>k</sup> days)
30 <sup>c</sup>	Mist Eliminator PAS-DMIS-201/102 Differential Pressure 24-PDIT-867/164	D/P Cell	Vessel	0-30 in. w.c.	0-20 in. w.c.	±0.3 in. w.c.	Inst. Calib. Para 2.4 (180 days)
31 <sup>b,c,d</sup>	Exhaust Blower PAS-BLOW-204 Exhaust Gas CO and moisture 024-AIT-716C	Infrared Cell Analyzer	Blower Exhaust Line (In-situ)	<u>CO</u> : 0-200 & 0-3,000 ppm <u>H<sub>2</sub>O</u> : 0-40%	<u>CO</u> : 0-100 ppm (ROHA) <u>H<sub>2</sub>O</u> : 38%	<u>CO</u> : ±6 ppm low range ±90 ppm high range <u>H<sub>2</sub>O</u> : ±2%	Inst. Calib. Para. 1.1 & 1.2 (Daily) <sup>o</sup>
32 <sup>c,h</sup>	Exhaust Blower PAS-BLOW-204 Exhaust Gas O <sub>2</sub> 24-AIT-717A/717B	Zirconium Oxide Cell Analyzer	Blower Exhaust Line (In-Situ)	0-25%	≥5.5% (2-minute rolling average) ≤13% (instantaneous)	±0.5%	Inst. Calib. Para. 1.1 & 1.2 (Daily)

**TABLE 7-1b LIQUID INCINERATOR 2 (LIC2) SYSTEM INSTRUMENT AND PROCESS PARAMETERS**

Item No.	Control Parameter	Measuring Device	Location	Calibrated Instrument Range	Operating Range or Setpoint	Instrument Loop Accuracy	Calibration Method No. and Frequency <sup>a</sup>
33 <sup>b,c,d</sup>	Exhaust Blower PAS-BLOW-204 Exhaust Gas Agent MON ACAM-134(HD) 1341(GB or VX)	Gas Chromatography	Blower Exhaust Line (Extractive)	See WAP, Appendix C	See WAP, Appendix C	See WAP, Appendix C	See WAP, Appendix C
34 <sup>b,c,d</sup>	Brine Surge Tanks 101,102,201,202 Level 23-LT-03/07/703/707	Ultrasonic Level Transmitter	Brine Surge Tanks	0- 225 in.	0-219 in.	±3 in.	Inst. Calib. Para. 2.6 (180 days)
35	Scrubber Tower Brine Pressure 24-PIT-838	D/P Cell	In-Line	0-150 psig	80-145 psig	±1.5 psig	Inst. Calib. Para. 2.3 (180 days)
36	Process Water/Spent Decon. Pressure Low 13-PSL-765	Diaphragm	In-Line	0-100 psig	45 psig	±2.0 psig	Inst. Calib. Para. 2.3 (180 days)
37	Combustion Air to Sec. Chamber Burner Pressure Low-Low 13-PSLL-795	Diaphragm	In-Line	2.5-45 in. w.c.	30 in. w.c.	±1.0 in. w.c.	Inst. Calib. Para. 2.3 (180 days)
38	Atomizing Air Pressure Low-Low 13-PSLL-737C	Diaphragm	In-Line	12-100 psig	55 psig	±2.0 psig	Inst. Calib. Para. 2.3 (180 days)
39	Brine Surge Tanks Level High-High 23-LSHH-702/706/02/06	Admittance-Type Level Switches	Brine Surge Tanks	On/Off	18 ft. 3 in. from bottom	±0.75 inches	Inst. Calib. Para. 2.6 (180 days)
40 <sup>b,c,d</sup>	Sec. Chamber LIC-FURN-202 Pressure High-High 13-PSHH-896	Diaphragm	Incinerator	-0.55 to -0.15 in. w.c.	-0.25 in. w.c.	± 0.05 in. w.c.	Inst. Calib. Para. 2.3 (365 days)
41	Presence of Flame Primary Chamber 13-BSLL-908	Flame Detector	Burner	N/A	N/A	N/A	Inst. Calib. Para 2.8
42	Presence of Flame Sec. Chamber 13-BSLL-913	Flame Detector	Burner	N/A	N/A	N/A	Inst. Calib. Para 2.8
43 <sup>b,c</sup>	PreFilter Differential Pressure 114-PDIT-436A/487A /454A	D/P Cell	Prefilter	0-6 in. w.c.	≥0.1 in. w.c. (2-minute rolling average) ≤4.0 in. w.c. (instantaneous)	±0.1 in. w.c.	Inst. Calib. Para 2.4 (180 days)
44 <sup>b,c</sup>	HEPA Filter Differential Pressure 114-PDIT-436B/436H/487 B/487H/454B/454H	D/P Cell	HEPA Filter	0-6 in. w.c.	0.15-3.0 in. w.c.	±0.1 in. w.c.	Inst. Calib. Para 2.4 (180 days)
45 <sup>b,c</sup>	Temperature of gas to carbon filter system 114-TIT-418	Resistance Temperature Detector	In-Line	0-250°F	130-180°F (ROHA)	±3°F	Inst. Calib. Para. 2.5 (180 days)
46 <sup>b,c</sup>	Moisture of gas to carbon filter system 114-MIT-434A/B	Humidity Sensor	In-Line	0- 90% RH	0-55% RH (ROHA) 0-80% RH (Instantaneous)	±3.5% RH	Inst. Calib. Para. 2.7 (180 days)

**TABLE 7-1b LIQUID INCINERATOR 2 (LIC2) SYSTEM INSTRUMENT AND PROCESS PARAMETERS**

Item No.	Control Parameter	Measuring Device	Location	Calibrated Instrument Range	Operating Range or Setpoint	Instrument Loop Accuracy	Calibration Method No. and Frequency <sup>a</sup>
47 <sup>b,c,d</sup>	Stack PAS-STAK-102 exhaust gas agent MON-ACAM-129/223/225(HD) 1291/2231/2251(GB or VX)	Gas chromatography	Stack (extractive)	WAP, Appendix C	WAP, Appendix C	See WAP, Appendix C	WAP, Appendix C
48 <sup>b,c,d</sup>	PFS inlet gas agent monitor MON-ACAM-354/356/357(HD) 3541/3561/3571(GB or VX)	Gas chromatography	Gas Reheater Outlet (extractive)	WAP, Appendix C	WAP, Appendix C	See WAP, Appendix C	See WAP, Appendix C
49 <sup>b,c</sup>	LIC-FURN-201 Exhaust Gas Temperature 13-TIT-710	Thermocouple	In-Line	212-3000°F	2,627-2,768°F	± 15°F	Inst. Calib. Para. 2.5 (365 Days)
50 <sup>b</sup>	Primary Chamber Pressure 13-PSHH-845	Diaphragm	Incinerator	-0.55 to -0.15 in. w.c.	-0.25 in. w.c.	± 0.05 in. w.c.	Inst. Calib. Para. 2.3 (180 Days)
51 <sup>b,c,i</sup>	LIC-FURN-201 Agent Feed Pressure 13-PIT-761	Diaphragm	Incinerator	0-25 psig	5-20 psig <sup>f</sup>	± 0.5 psig	Inst. Calib. Para. 2.3 (180 Days)
52 <sup>b</sup>	LIC-FURN- 202 Secondary Chamber Atomizing Air Pressure 13-PSL-809	Diaphragm	Incinerator	15-100 psig	65 psig	± 2.0 psig	Inst. Calib. Para. 2.3 (180 Days)
53 <sup>b</sup>	PAS-SCRB-203 Scrubber Tower Sump Level High-High 24-LSHH-818	Magnetic Level Meter Switch	Vessel	Point Contact	86 in. above bottom ±0.5 inch tangent line		Inst. Calib. Para. 2.6 (180 Days)
54 <sup>b</sup>	PAS-SCRB-203 Scrubber Tower Sump Level Low-Low 24-LSLL-818	Magnetic Level Meter Switch	Vessel	Point Contact	50 in. above bottom ±0.5 inch tangent line		Inst. Calib. Para. 2.6 (180 Days)
55 <sup>b,c</sup>	PFS-PUMP-234/235 Clean Liquor Pump Discharge Pressure 114-PIT-170	Diaphragm	Pump Discharge Line	0-120 psig	15-94 psig	± 1 psig	Inst. Calib. Para. 2.3 (365 Days)
56 <sup>b</sup>	PFS-BURN-102 Temperature of the Gas Entering the Carbon Filter System High -High 114-TSHH-433	Capillary Filled System	Reheater Discharge Line	95-250°F	180°F (Instantaneous)	±3.0°F	Inst. Calib. Para. 2.5 (180 Days)
57	Intentionally Left Blank						
58	Intentionally Left Blank						
59 <sup>b,c</sup>	Packed bed Scrubber Differential Pressure 24-PDIT-822 (ROHA)	D/P Cell	Scrubber Vessel	0-10 in. w.c.	0.3-3.0 in. w.c. (ROHA)	±0.1 in. w.c.	Inst. Calib. Para. 2.4 (180 Days)
60 <sup>b,c,i,j</sup>	Relative Humidity in PFS Exhaust Gas Based on Temperature 114-TIT-9810/9811/9815	Resistance Temperature Detector	In-line	50-200°F	≤55% RH (30-minute rolling average)	± 3% RH	Inst Calib. Para 2.5 (180 Days)
61 <sup>b,c</sup>	PAS-DMIS-201/102 Flue Gas Discharge Temperature 24-TIT-9817/9814	Resistance Temperature Detector	In-line	50-200°F	105-135°F	± 1°F	Inst. Calib. Para. 2.5 (180 Days)

All federal Title 40 CFR citations are citations to the Title 40 CFR adopted as Oregon rule by OAR 340-100-0002 and as altered by OAR Chapter 340, Divisions 100-106, 109, 111, 113, 120, 124, and 142. See the preface introduction for further explanation.

**TABLE 7-1b LIQUID INCINERATOR 2 (LIC2) SYSTEM INSTRUMENT AND PROCESS PARAMETERS**

Item No.	Control Parameter	Measuring Device	Location	Calibrated Instrument Range	Operating Range or Setpoint	Instrument Loop Accuracy	Calibration Method No. and Frequency <sup>a</sup>
62 <sup>b,c,d</sup>	Rinsate from RCS to LIC-FURN-201 64-FIT-9895A/B	Mass Flowmeter Vibrating U-Tube Type	In-line	0-2,376 lb/hr	0-1,000 lb/hr (ROHA) 0-33 lb/2 min (2MRA)	±11.9 lb/hr	Inst. Calib. Para. 2.4 (180 days)
63 <sup>b,c,d</sup>	Rinsate from RCS to LIC-FURN-201 Feed Pressure 64-PIT-9905	Diaphragm	In-line	0-35 psig	5-30 psig	±0.5 psig	Inst. Calib. Para. 2.3 (180 days)

NOTES:

- <sup>a</sup> See Permit Attachment 11 for "Process Instrument Calibration," and "Oxygen and Carbon Monoxide Analyzer Calibration" See also Operating and QA/QC procedures found in "Laboratory Quality Control Plan" in Appendix C of the Waste Analysis Plan (Permit Attachment 2) and Permit Attachment 11, "In-Situ Continuous Emission Monitors." Additional operating and QA/QC procedures for the Automatic Continuous Air Monitoring System and Depot Area Air Monitoring System are in Appendices C and D of the Waste Analysis Plan (Permit Attachment 2).
- <sup>b</sup> Continuous monitoring.
- <sup>c</sup> Continuous recording.
- <sup>d</sup> Maintenance, at a minimum, in accordance with equipment manufacturer's recommendations.
- <sup>e</sup> Hazardous waste treatment may continue during maintenance activities conducted with site specific standing operating procedures, for a maximum of 24 hours after the failure of the instrument.
- <sup>f</sup> During a waste feed cutoff event, the feed line pressure may reach the maximum instrument calibrated range limit.
- <sup>g</sup> Hazardous waste treatment may continue during maintenance activities in accordance with site specific standing operating procedures, provided the mist eliminator water is not being transferred to the scrubber tower.
- <sup>h</sup> The minimum limit is based on a 2-minuted rolling average.
- <sup>i</sup> The pressure in the waste feed line may exceed the operating range specified upon initiation of feed to the furnace system.
- <sup>j</sup> The relative humidity of the PFS exhaust gas is calculated using the PFS outlet temperature and the mist eliminator vessel outlet temperature. The calibrated instrument range applies to the temperature-indicating transmitter, and the operating range and instrument loop accuracy apply to the calculated relative humidity.
- <sup>k</sup> Initially, upon replacement of the instrument, or if the instrument is found out of tolerance, the instrument will be checked every 7 days until it stabilizes (instrument check indicates it is "in-tolerance" –no adjustments needed). After the instrument stabilizes, it will be checked on a 30-day basis until found out of tolerance or it is replaced.
- <sup>l</sup> The flue gas flow rate is calculated using data for Parameters 1 through 6. The data are converted to molar flow rates and summed. The ideal gas law is used to convert the sum of the molar flow rates to a flue gas flow rate in actual cubic feet per minute.
- <sup>m</sup> The maximum chemical agent feed rate limits are only applicable when the specified waste feeds are being treated in the LIC2. The ROHA and 2-minute rolling average will only be calculated when the specified waste stream is fed to LIC2.
- <sup>n</sup> The maximum spent decontamination solution feed rate limit is only applicable when being treated in the LIC2. The ROHA and 2-minute rolling average will only be calculated when the specified waste stream is fed to LIC2.
- <sup>o</sup> Analyzer moisture readings are checked during annual relative accuracy test audit (RATA). System primary and backup monitors are compared and alarmed to warn of deviations.

2MRA = two-minute rolling average  
 D/P = differential pressure  
 N/A = not applicable  
 ROHA = rolling one-hour average

**TABLE 7-2 LIQUID INCINERATOR WASTE FEED CUT-OFF PARAMETERS**

Item Number	Process Data Description	LIC1		LIC2			
		Tag Number	Setpoints During Normal Operations	Tag Number	Setpoints During Normal Operations		
LIC-01	Primary chamber pressure high-high	13-PSHH-233	-0.25 inch w.c.	13-PSHH-845	-0.25 inch w.c.		
LIC-02	Primary chamber exhaust temperature high-high	13-TAHH-610	2,761 °F	13-TAHH-710	*2,768 °F		
LIC-03	Primary chamber exhaust temperature low-low	13-TSLL-610	2,604 °F	13-TSLL-710	2,627 °F		
LIC-04	Process water/spent decontamination solution feed pressure low	13-PSL-51	45 psig	13-PSL-765	45 psig		
LIC-05 °	Agent feed pressure low-low	13-PALL-113	5 psig (when agent feed rate >500 lb/hr)	13-PALL-761	5 psig (when agent feed rate >500 lb/hr)		
LIC-06	Secondary chamber exhaust temperature low-low	13-TSLL-129	1,827 °F	13-TSLL-782	1,833°F		
LIC-07	Secondary chamber exhaust temperature high-high	13-TAHH-129	2,002 °F	13-TAHH-782	2,008°F		
LIC-08	Combustion air to secondary chamber burner pressure low-low	13-PSLL-200	30 inches w.c.	13-PSLL-795	30 in. w.c.		
LIC-09	Secondary chamber exhaust pressure differential (flue gas flow rate) high-high	13-PDAHH-854	1.1 inch w.c.	13-FAHH-855 (calculated)	18,720 acfm		
LIC-10 °	Chemical agent feed rate high-high based on hourly rolling average	13-FAHH-127	VX	*680 lb/hr	13-FAHH-731	VX	*680 lb/hr
			GB	*1,030 lb/hr		GB	*1,019 lb/hr
			HD	1,286 lb/hr		HD	1,305 lb/hr
	Agent-contaminated hydraulic fluid and lubricating oil	13-FAHH-127C		430 lb/hr	13-FAHH-731C		430 lb/hr
			VX	*24 lb/2 min		VX	*24.5 lb/2 min
			GB	*37 lb/2 min		GB	*37.0 lb/2 min
	Chemical agent feed rate high-high based on 2-minute rolling average	13-FAHH-127C	HD	46.3 lb/2 min	13-FAHH-731C	HD	47.0 lb/2 min
				15 lb/2 min			15 lb/2 min
	Agent-contaminated hydraulic fluid and lubricating oil	13-FAHH-127C		15 lb/2 min	13-FAHH-731C		15 lb/2 min
				15 lb/2 min			15 lb/2 min

**TABLE 7-2 LIQUID INCINERATOR WASTE FEED CUT-OFF PARAMETERS**

Item Number	Process Data Description	LIC1		LIC2	
		Tag Number	Setpoints During Normal Operations	Tag Number	Setpoints During Normal Operations
LIC-11	Process water/spent decontamination solution feed rate high-high based on 2-minute rolling average	13-FAHH-102A	75.9 lb/2 min	13-FAHH-763A	*74.9 lb/2 min
	UMCD liquid waste feed rate high-high based on 2-minute rolling average		72.8 lb/2 min; to be processed at the primary chamber high setpoint for combustion air		73.7 lb/2 min; to be processed at the primary chamber high setpoint for combustion air
	Process water/spent decontamination solution feed rate high-high based on hourly rolling average	13-FAHH-102C	2,107 lb/hr, maximum; to be adjusted lower periodically or as necessary to comply with final metals and chlorine limitations in accordance with Appendix A of Attachment 2	13-FAHH-763C	*2,081 lb/hr, maximum; to be adjusted lower periodically or as necessary to comply with final metals and chlorine limitations in accordance with Appendix A of Attachment 2
	UMCD liquid waste feed rate high-high based on hourly rolling average		2,023 lb/hr, maximum; to be processed at the primary chamber high setpoint for combustion air		2,048 lb/hr, maximum; to be processed at the primary chamber high setpoint for combustion air
LIC-12	CO concentration in PFS exhaust gas high-high	24-AAHH-78C	100 ppm corrected to 7% O <sub>2</sub> , dry basis based on 1-hour rolling average	24-AAHH-716C	100 ppm corrected to 7% O <sub>2</sub> , dry basis based on 1-hour rolling average
LIC-13	Primary atomizing air pressure low-low	13-PSLL-127C	55 psig	13-PSLL-737C	55 psig
LIC-14	Secondary atomizing air pressure low	13-PSL-58	65 psig	13-PSL-809	65 psig
LIC-15	Venturi scrubber pressure drop low-low	24-PDALL-90	25 inches w.c.	24-PDALL-814	24 inches w.c.
LIC-16	Clean liquor flow rate to scrubber tower low-low	24-FALL-112	642 gpm	24-FALL-825	647 gpm

**TABLE 7-2 LIQUID INCINERATOR WASTE FEED CUT-OFF PARAMETERS**

Item Number	Process Data Description	LIC1		LIC2	
		Tag Number	Setpoints During Normal Operations	Tag Number	Setpoints During Normal Operations
LIC-17	Chemical agent emission high-high based on instantaneous measurement	MON-ACAM-1631	GB or VX 0.0003 mg/m <sup>3</sup>	MON-ACAM-1341	GB or VX 0.0003 mg/m <sup>3</sup>
		MON-ACAM-163	HD 0.03 mg/m <sup>3</sup>	MON-ACAM-134	HD 0.03 mg/m <sup>3</sup>
LIC-18	Chemical agent emission high-high based on instantaneous measurement at the common stack	MON-ACAM-1291/2231/2251	GB or VX 0.0003 mg/m <sup>3</sup>	MON-ACAM-1291/2231/2251	GB or VX 0.0003 mg/m <sup>3</sup>
		MON-ACAM-129/223/225	HD 0.03 mg/m <sup>3</sup>	MON-ACAM-129/223/225	HD 0.03 mg/m <sup>3</sup>
	Continuous chemical agent monitoring at the common stack	<ul style="list-style-type: none"> <li>•No less than two on-line ACAMS stations per chemical agent (campaign and noncampaign) monitoring the exhaust gas with “staggered” sampling periods.</li> <li>•No on-line ACAMS station in malfunction condition while in the sampling mode.</li> </ul>			
LIC-19	All brine surge tanks 101,102,201,202 unavailable	23-LSHH-02/06/702/706	Unavailable is when tank brine level is at 18'-3" or tank is selected for feed to the BRA	23-LSHH-02/06/702/706	Unavailable is when tank brine level is at 18'-3" or tank is selected for feed to the BRA
LIC-20	Clean liquor to scrubber tower pH low-low	24-AALL-116	8.0pH	24-AALL-832	8.0 pH
LIC-21	Clean liquor to scrubber tower pressure low-low	114-PALL-329	15 psig	114-PALL-170	15 psig
LIC-22	Quench tower exhaust gas temperature high-high	24-TSHH-89	225° F	24-TSHH-800	225° F
LIC-23	Quench brine to venturi scrubber flowrate low-low	24-FALL-88	125 gpm	24-FALL-828	127 gpm
LIC-24	Brine density high-high	24-DAHH-83	1.1 sgu	24-DAHH-835	1.09 sgu
LIC-25	Scrubber tower sump liquid level high-high	24-LSHH-115	86 inches above bottom tangent line	24-LSHH-818	86 inches above bottom tangent line
LIC-26	Oxygen concentration in PFS exhaust gas high-high	24-AAHH-210A/210B	13% corrected to a dry basis	24-AAHH-717A/717B	13% corrected to a dry basis

**TABLE 7-2 LIQUID INCINERATOR WASTE FEED CUT-OFF PARAMETERS**

Item Number	Process Data Description	LIC1		LIC2	
		Tag Number	Setpoints During Normal Operations	Tag Number	Setpoints During Normal Operations
LIC-27	Oxygen concentration in PFS exhaust gas low-low	24-AALL-210C	5.9% corrected to a dry basis (2-minute rolling average)	24-AALL-717C	5.5% corrected to a dry basis (2-minute rolling average)
LIC-28	Secondary chamber pressure high-high	13-PSHH-888	-0.25 inch w.c.	13-PSHH-896	-0.25 inch w.c.
LIC-29	Scrubber tower sump level low-low	24-LSLL-115	50 inches above bottom tangent line	24-LSLL-818	50 inches above bottom tangent line
LIC-30 <sup>b,c</sup>	Flame loss in primary chamber burner	13-BSLL-912	Flame loss	13-BSLL-908	Flame loss
LIC-31	Flame loss in secondary chamber burner	13-BSLL-909	Flame loss	13-BSLL-913	Flame loss
LIC-32	Slag discharge gate not closed	13-ZS-367B	Not Closed	13-ZS-567B	Not Closed
LIC-33	Prefilter differential pressure high-high	114-PDAHH-436A/454A/487A	4.0 inch w.c.	114-PDAHH-436A/487A/454A	4.0 inch w.c.
LIC-34	HEPA filter differential pressure high-high	114-PDAHH-454B/454H/436B/436H/487B/487H	3.0 inch w.c.	114-PDAHH-436B/436H/487B/487H/454B/454H	3.0 inch w.c.
LIC-35	Temperature of gas to carbon filter system high-high	114-TSHH-533 (instantaneous) 114-TAHH-518 (ROHA)	180°F (instantaneous) 167°F (rolling one-hour average)	114-TSHH-433 (instantaneous) 114-TAHH-418 (ROHA)	180°F (instantaneous) 163°F (rolling one-hour average)
LIC-36	Moisture of gas to carbon filter System (Either A or B or the average of the two measurements) high-high	114-MAHH-534A/B (instantaneous) 114-MAHH-534C (ROHA)	80% RH (instantaneous) 55% RH (rolling one-hour average)	114-MAHH-434A/B (instantaneous) 114-MAHH-434C (ROHA)	80% RH (instantaneous) 55% RH (rolling one-hour average)
LIC-37	Carbon filter bypass valve not closed	114-ZS-550B	Not closed	114-ZS-450B	Not closed
LIC-38	Maximum Differential Pressure across the mist eliminator	24-PDAHH-147/164	20 in. w.c.	24-PDAHH-867/164	20 in. w.c.

**TABLE 7-2 LIQUID INCINERATOR WASTE FEED CUT-OFF PARAMETERS**

Item Number	Process Data Description	LIC1		LIC2	
		Tag Number	Setpoints During Normal Operations	Tag Number	Setpoints During Normal Operations
LIC-39	Chemical agent emission high-high based on instantaneous measurement upstream of the PFS unit	MON-ACAM-3541/3561/3571	GB or VX 0.0003 mg/m <sup>3</sup>	MON-ACAM-3541/3561/3571	GB or VX 0.0003 mg/m <sup>3</sup>
		MON-ACAM-354/356/357	HD 0.03 mg/m <sup>3</sup>	MON-ACAM-354/356/357	HD 0.03 mg/m <sup>3</sup>
LIC-40	Relative humidity in PFS exhaust gas high-high	114-MAHH-109/209/113	55% RH (30 minute rolling average)	114-MAHH-109/209/113	55% RH (30-minute Rolling average)
LIC-41 <sup>a</sup>	Moisture in any furnace PAS	024-MAH-078A/B, -207A/B, -669A/B, -716A/B	38% moisture (volume)	024-MAH-078A/B, -207A/B, -669A/B, -716A/B	38% moisture (volume)
LIC-42 <sup>d</sup>	Rinsate feed pressure low-low	64-PALL-9904	5 psig, when rinsate feed ≥500 lbs/hr	64-PALL-9905	5 psig, when rinsate feed ≥500 lbs/hr
LIC-43	Rinsate feed rate high-high	64-FAHH-9894 (ROHA)	*1,000 lbs/hr (rolling one-hour average)	64-FAHH-9895 (ROHA)	*1,000 lbs/hr (rolling one-hour average)
		64-FAHH-9894C (2MRA)	*33 lbs/2 mins (2-minute rolling average)	64-FAHH-9895C (2MRA)	*33 lbs/2 mins (2-minute rolling average)

<sup>a</sup> The unit of record (UOR) will initiate an AWFCO for the LIC1, LIC2, MPF, and DFS. This alarm will not be active if the respective LIC induced-draft (ID) fans are not running. During quarterly CEMS maintenance, both units of the respective LIC can be offline if administrative controls are in place to monitor for high moisture in the PAS of the affected furnace and to stop hazardous waste feed to all furnaces if high moisture is indicated. Quarterly CEMS maintenance activities will not require cessation of hazardous waste processing in operational furnaces provided all other operational requirements are met.

<sup>b</sup> Waste feed cut-off parameter for loss of flame does not apply to HD rinsate feed to the LICs.

<sup>d</sup> Agent feed mode only

<sup>d</sup> Rinsate feed mode only

\* May be modified due to results from trial burns or HD rinsate emissions demonstration test, as applicable.

**TABLE 7-3 METAL PARTS FURNACE INSTRUMENT AND PROCESS PARAMETERS**

Item No.	Control Parameter	Measuring Device	Location	Calibrated Instrument Range	Operating Range or Setpoint	Instrument Loop Accuracy	Calibration Method No. and Frequency <sup>a</sup>
1	Intentionally left blank						
2	Intentionally left blank						
3	Intentionally left blank						
4	Intentionally left blank						
5	Intentionally left blank						
6	Intentionally left blank						
7	Intentionally left blank						
8	Intentionally left blank						
9 <sup>b,c,d</sup>	Metal Parts Furnace Zone 1 Temperature 14-TIC-152A (14-TIT-152/391/010)	Thermocouple	Furnace	0-2,000 °F	<u>Instantaneous:</u> Ton containers 1,255–1,755°F Secondary wastes 1,380–1,755°F  <u>ROHA:</u> Ton containers ≥1,319°F Secondary wastes ≥1,475°F	±32 °F	Ins. Calib. Para. 2.5 (180 days)
10 <sup>b,c,d</sup>	Metal Parts Furnace Zone 2 Temperature 14-TY-141 (14-TIT-141/392)	Thermocouple	Furnace	0-2,000 °F	<u>Instantaneous:</u> Ton containers 1,410–1,743°F Secondary wastes 1,378–1,743°F  <u>ROHA:</u> Secondary wastes ≥1,400°F	±32 °F	Ins. Calib. Para. 2.5 (180 days)

**TABLE 7-3 METAL PARTS FURNACE INSTRUMENT AND PROCESS PARAMETERS**

Item No.	Control Parameter	Measuring Device	Location	Calibrated Instrument Range	Operating Range or Setpoint	Instrument Loop Accuracy	Calibration Method No. and Frequency <sup>a</sup>
11 <sup>b,c,d</sup>	Metal Parts Furnace Zone 3 Temperature 14-TY-153 (14-TIT-153/393)	Thermocouple	Furnace	0-2,000 °F	Instantaneous: Ton containers 1,400–1,733°F Secondary wastes 1,383–1,733°F ROHA: Secondary wastes ≥1,399°F	±32 °F	Ins. Calib. Para. 2.5 (180 days)
12 <sup>b,c,d</sup>	Afterburner Temperature 14-TY-65 (14-TIT-65/69)	Thermocouple	Afterburner	32-2,600 °F	Instantaneous: Ton containers 1,892-2,200°F Secondary wastes 1,903-2,113°F ROHA: Ton containers ≥1,900°F Secondary wastes ≥1,931°F	±36 °F	Ins. Calib. Para. 2.5 (180 days)
13 <sup>c</sup>	Afterburner Pressure 14-PIT-37	Diaphragm	Afterburner	-20 to +5 in. w.c.	-10 to -0.15 in. w.c.	±0.1 in. w.c.	Ins. Calib. Para. 2.3 (180 days)
14 <sup>c</sup>	Metal Parts Furnace MPF-FURN-101 Pressure 14-PIT-70	Diaphragm	Furnace	-20 to +5 in. w.c.	-10 to -0.15 in. w.c.	±0.1 in. w.c.	Inst. Calib. Para. 2.3 (180 days)
15	Intentionally left blank						
16 <sup>c,e,f,o</sup>	Metal Parts Furnace MPF-FURN-101 Exhaust Gas O <sub>2</sub> Analysis 14-AIT-33	Zirconium Oxide Cell Analyzer	Primary Chamber Exhaust Line (In-Situ)	0 to 25%	1-15%	±0.5%	Inst. Calib. Para. 2.7 (daily)
17	Intentionally left blank						
18 <sup>b,c,d,e,f,o</sup>	Metal Parts Furnace Afterburner Exhaust Gas O <sub>2</sub> Analysis 14-AIT-82	Zirconium Oxide Cell Analyzer	Afterburner Exhaust Line (In-Situ)	0 to 25%	1-15%	±0.5%	Inst. Calib. Para. 2.7 (daily)
19 <sup>c</sup>	Quench Tower PAS-TOWR-102 Gas Exhaust Temperature 24-TSHH-223	Filled System	In-Line	95-250 °F	225 °F	±5 °F	Inst. Calib. Para. 2.5 (180 days)
20	Intentionally left blank						
21 <sup>c</sup>	Quench Brine to Venturi Scrubber PAS-SEPA-101 24-FIT-218	Electro-magnetic Flowmeter	In-Line	0-200 gpm	Ton containers 165-195 gpm Secondary wastes 145-195 gpm	±5 gpm	Inst. Calib. Para. 2.4 (180 days)

**TABLE 7-3 METAL PARTS FURNACE INSTRUMENT AND PROCESS PARAMETERS**

Item No.	Control Parameter	Measuring Device	Location	Calibrated Instrument Range	Operating Range or Setpoint	Instrument Loop Accuracy	Calibration Method No. and Frequency <sup>a</sup>
22 <sup>b,c,d</sup>	Clean Liquor flow to Scrubber Tower 24-FIT-248	Electro-magnetic Flowmeter	In-Line	0-1,000 gpm	750-900 gpm	±10 gpm	Inst. Calib. Para. 2.4 (180 days)
23 <sup>c,e</sup>	Quench Tower PAS-TOWR-102 Level 24-LIT-242	Guided Wave Radar Transmitter	Vessel	-3 to 9 inches	-3 to 8 inches	±0.25 inches	Inst. Calib. Para. 2.6 (180 days)
24	Intentionally left blank						
25	Intentionally left blank						
26	Intentionally left blank						
27 <sup>b,c,d</sup>	Venturi Scrubber Differential Pressure 24-PDIT-222	D/P Cell	Venturi Scrubber	0-50 in. w.c.	Ton containers 20-40 in. w.c. Secondary wastes 24-40 in. w.c.	±0.5 in. w.c.	Inst. Calib. Para. 2.6 (180 days)
28 <sup>c</sup>	Quench Brine in Recirculation Loop Density 24-DIT-216	Magnetically Vibrated Tube	PAS PUMP-102/103 Discharge to Suction	0.95-1.25 sgu	<u>Instantaneous and 12-hour rolling average:</u> Ton containers 0.96-1.10 sgu Secondary waste 0.96-1.08 sgu	±0.03 sgu	Inst. Calib. Para. 2.7 (180 days)
29 <sup>c</sup>	Quench Brine pH in Recirculation Loop 24-AIT-224A/B	Electrodes	PAS PUMP-102/103 Discharge to Suction	0-13 pH units	<u>ROHA:</u> Ton containers 7.2-13 pH unit Secondary wastes 8.7-13 pH unit	±0.8 pH unit	Inst. Calib. Para. 2.7 (7/30 <sup>k</sup> days)
30 <sup>c</sup>	Clean Liquor pH 24-AIT-247A/B	Electrodes	PFS-PUMP-136/137 Discharge to Suction	0-13 pH units	8.1-10 pH units (instantaneous)	±0.8 pH unit	Inst. Calib. Para. 2.7 (7/30 <sup>k</sup> days)
31 <sup>c</sup>	Clean Liquor Density 24-DIT-249	Magnetically Vibrated Tube	PFS-PUMP-136/137 Discharge to Suction	0.95-1.25 sgu	0.96 -1.03 sgu (12-hour rolling average)	±0.03 sgu	Inst. Calib. Para. 2.7 (180 days)
32 <sup>c,g</sup>	Mist Eliminator Water pH 24-AIT-668/273	Electrodes	Vessel Outlet	0-13 pH units	5.5-10 pH units (when pumping to scrubber tower)	±0.8 pH unit	Inst. Calib. Para. 2.7 (7/30 <sup>k</sup> days)
33 <sup>b,c</sup>	Mist Eliminator PAS-DMIS-103 Differential Pressure 24-PDIT-291/53	D/P Cell	Vessel	0-30 in. w.c.	0-20 in. w.c.	±0.3 in. w.c.	Inst. Calib. Para. 2.3 (180 days)
34 <sup>c</sup>	Blower PAS-BLOW-102 Exhaust Gas CO and moisture 024-AIT-669A/669B	Infrared Cell Analyzer	Blower Exhaust Line (In-Situ)	<u>CO:</u> 0-200 ppm & 0-3,000 ppm <u>H<sub>2</sub>O:</u> 0-40%	<u>CO:</u> 0-100 ppm (ROHA) <u>H<sub>2</sub>O:</u> 38%	<u>CO:</u> ±6 ppm low range ±90 ppm high range <u>H<sub>2</sub>O:</u> ±2%	Inst. Calib. Para. 2.7 (daily) <sup>p</sup>

**TABLE 7-3 METAL PARTS FURNACE INSTRUMENT AND PROCESS PARAMETERS**

Item No.	Control Parameter	Measuring Device	Location	Calibrated Instrument Range	Operating Range or Setpoint	Instrument Loop Accuracy	Calibration Method No. and Frequency <sup>a</sup>
35 <sup>c</sup>	Blower PAS-BLOW-102 Exhaust Gas O <sub>2</sub> 24-AIT-670A/670B	Zirconium Oxide Cell Analyzer	Blower Exhaust Line (In-Situ)	0-25%	≤ 15% (instantaneous) ≥ 4.8% (2-minute rolling average)	±0.5%	Inst. Calib. Para. 1.1 & 1.2 (daily)
36 <sup>b,c,d</sup>	Blower PAS-BLOW-102 Exhaust Gas MON-ACAM-167(HD) MON-ACAM-1671(GB or VX)	Gas Chromatography	Blower Exhaust Line (Extractive)	WAP, Appendix C	WAP, Appendix C	WAP, Appendix C	WAP, Appendix C (daily)
37 <sup>b,c,d</sup>	Stack PAS-STAK-102 Exhaust Gas MON-ACAM-129/223/225(HD) 1291/2231/2251(GB or VX)	Gas Chromatography	Stack (Extractive)	WAP, Appendix C	WAP, Appendix C	WAP, Appendix C	WAP, Appendix C (daily)
38 <sup>b,c,d</sup>	Metal Parts Furnace Afterburner Exhaust Gas Flow Rate 14-PDIT-786	D/P Cell	Afterburner Exhaust	0-2.0 in. w.c.	<u>Instantaneous:</u> Ton containers 0-0.38 in. w.c. Secondary wastes 0-0.47 in. w.c. <u>ROHA:</u> Ton containers 0-0.36 in. w.c. Secondary wastes 0-0.44 in. w.c.	±0.1 in. w.c.	Inst. Calib. Para. 2.4 (180 days)
39 <sup>c</sup>	Clean Liquor to Scrubber Tower Pressure 114-PIT-358	D/P Cell	In-Line	0-150 psig	25-110 psig	±2 psig	Inst. Calib. Para. 2.3 (180 days)
40 <sup>c</sup>	Brine Surge Tanks 101, 102, 201, 202 Level 23-LT-03/07/703/707	Ultrasonic Level Transmitter	Brine Surge Tanks	0-225 inches	0-219 inches	±3 inches	Inst. Calib. Para. 2.6 (180 days)
41 <sup>b,d</sup>	Natural Gas Pressure 14-PIT-159	Diaphragm	Natural Gas Line	0-10 psig	3.0-5.0 psig	±0.1 psig	Inst. Calib. Para. 2.3 (180 days)
42 <sup>c</sup>	Combustion Air Pressure 14-PIT-118	Diaphragm	In-Line	0-100 in. w.c.	20-80 in. w.c.	±1 in. w.c.	Inst. Calib. Para. 2.3 (180 days)
43 <sup>b</sup>	Presence of Flame Burnout Chamber 14-BSLL-883 thru 892	Flame Detector	Burner	N/A	N/A	N/A	N/A
44 <sup>b</sup>	Presence of Flame Afterburner 14-BSLL-893, 894	Flame Detector	Burner	N/A	N/A	N/A	N/A
45 <sup>b,c</sup>	PFS Prefilter Differential Pressure 114-PDIT-438A/487A	D/P Cell	Prefilter	0-6 in. w.c.	Instantaneous: ≤ 4.0 in. w.c. 2-minute rolling avg: ≥ 0.1 in. w.c.	±1 in. w.c.	Inst. Calib. Para 2.4 (180 days)

All federal Title 40 CFR citations are citations to the Title 40 CFR adopted as Oregon rule by OAR 340-100-0002 and as altered by OAR Chapter 340, Divisions 100-106, 109, 111, 113, 120, 124, and 142. See the preface introduction for further explanation. Page 58 of 77

**TABLE 7-3 METAL PARTS FURNACE INSTRUMENT AND PROCESS PARAMETERS**

Item No.	Control Parameter	Measuring Device	Location	Calibrated Instrument Range	Operating Range or Setpoint	Instrument Loop Accuracy	Calibration Method No. and Frequency <sup>a</sup>
46 <sup>b,c</sup>	PFS HEPA Filter Differential Pressure 114-PDIT-438B/H, -487B/H	D/P Cell	HEPA Filter	0-6 in. w.c.	0.15-3.0 in. w.c.	±0.1 in. w.c.	Inst. Calib. Para 2.4 (180 days)
47 <sup>b,c</sup>	Temperature of gas to carbon filter system 114-TIT-419	RTD	In-Line	0-250 °F	ROHA: Munitions/ bulk items 130-180°F Secondary wastes 130-165°F	±3 °F	Inst. Calib. Para 2.5 (180 days)
48 <sup>b,c</sup>	Moisture of gas to carbon filter system 114-MIT-96A/B	Humidity Sensor	In-Line	0-90% RH	Instantaneous: 0-80% RH ROHA: 0-55% RH	±3.5% RH	Inst. Calib. Para 2.7 (180 days)
49 <sup>b,c,d</sup>	PFS inlet gas agent monitor MON-ACAM-355/356(HD) MON-ACAM-3551/3561(GB or VX)	Gas Chromatography	Gas Reheater Outlet (Extractive)	WAP, Appendix C	WAP, Appendix C	WAP, Appendix C	WAP, Appendix C (daily)
50 <sup>b</sup>	Combustion Air Pressure to MPF-FURN-101/102 14-PSLL-138	Diaphragm	In-Line	0-100 in. w.c.	20 in.w.c.	±1 in. w.c.	Inst. Calib. Para 2.3 (180 days)
51 <sup>b</sup>	Primary Chamber Pressure MPF-FURN-101 14-PSHH-34	Current Switch	Primary Chamber	-20 to +5 in. w.c.	-0.15 in. w.c.	±0.1 in. w.c.	Inst. Calib. Para 2.3 (180 days)
52 <sup>b</sup>	Scrubber Tower Sump Level High-High PAS-SCRB-101 24 -LSHH-245	Magnetic Level Meter Switch	Vessel	Point Contact	60 inches (84 inches above bottom tangent line)	±1 inch	Inst. Calib. Para 2.6 (180 days)
53 <sup>b</sup>	Scrubber Tower Sump Level Low-Low PAS-SCRB-101 24-LSLL-245	Magnetic Level Meter Switch	Vessel	Point Contact	24 inches (48 inches above bottom tangent line)	±1 inch	Inst. Calib. Para 2.6 (180 days)
54 <sup>b</sup>	PFS-BURN-102 temperature of the gas entering the carbon filter system High-High 114-TSHH-97	Capillary Filled System	In-Line	95-250°F	180 °F (instantaneous)	±5 °F	Inst. Calib. Para 2.5 (180 days)
55	Intentionally Left Blank						
56 <sup>b</sup>	Bypass of carbon filter system 24-ZS-93B	Position Switch	In-Line	N/A	N/A	N/A	N/A
57 <sup>b</sup>	Brine surge tanks level high-high 23-LSHH-02/06/702/706	Admittance Type Level Switch	Brine Surge Tanks	Point Contact	18 ft. 3 in. from bottom	N/A	Inst. Calib. Para 2.6 (180 days)

**TABLE 7-3 METAL PARTS FURNACE INSTRUMENT AND PROCESS PARAMETERS**

Item No.	Control Parameter	Measuring Device	Location	Calibrated Instrument Range	Operating Range or Setpoint	Instrument Loop Accuracy	Calibration Method No. and Frequency <sup>a</sup>
58 <sup>b,c,d</sup>	Scrubber packed bed pressure drop PAS-SCRB-101 24-PDIT-225	Transmitter	Vessel Scrubber	0-10 in. w.c.	0.4-5 in. w.c. (ROHA)	±0.1 in. w.c.	Inst. Calib. Para 2.3 (180 days)
59	Intentionally Left Blank						
60 <sup>b,c,h</sup>	Relative Humidity in PFS Exhaust Gas Based on Temperature 114-TIT-9812/9815	Resistance Temperature Detector	In-line	50-200°F	≤55% RH (30-minute rolling average)	± 3% RH	Inst. Calib. Para. 2.5 (180 Days)
61 <sup>b,c</sup>	PAS-DMIS-103/105 Flue Gas Discharge Temperature 24-TIT-9815/9818	Resistance Temperature Detector	In-line	50-200°F	105-135°F	± 1°F	Inst. Calib. Para. 2.5 (180 days)
62 <sup>d,i</sup>	MPF Discharge Airlock Agent Monitor MON-ACAM-2901/3931(HD) 290/393(GB or VX)	Gas Chromatography	Discharge Airlock	WAP, Appendix C	WAP, Appendix C	WAP, Appendix C	WAP, Appendix C (daily)
63 <sup>d</sup>	MPF Cool-Down Area Agent Monitor MON-ACAM-476(HD)/4761(GB or VX)	Gas Chromatography	MPF Cool-Down Area Exhaust Duct	WAP, Appendix C	WAP, Appendix C	WAP, Appendix C	WAP, Appendix C (daily)
64 <sup>b,c</sup>	MPF Discharge Airlock Temperature 14-TIT-9801A/B/C/D	Thermocouple	Discharge Airlock	200-1,800°F	≤600°F (during low-temperature monitoring)	±20°F	Inst. Calib. Para. 2.5 (180 days)
65 <sup>b,c</sup>	MPF Discharge Airlock Exhaust Duct Temperature 14-TIT-9802	Thermocouple	Discharge Airlock Exhaust Duct	200-1,800°F	≤600°F (during low-temperature monitoring)	±20°F	Inst. Calib. Para. 2.5 (180 days)
66 <sup>b,c</sup>	MPF Primary Chamber Exhaust Temperature 14-TIT-010	Thermocouple	MPF Crossover Duct to Secondary Chamber	32-2,600°F	Ton Containers ≤2,385°F	±36°F	Inst. Calib. Para. 2.5 (180 days)
					Secondary Waste ≤1,875°F	±20°F	
67 <sup>b,m,n</sup>	Cool-Down Area Minimum Exhaust Flow Switches 76-FSL-9814 76-FSLL-9814	Flow Switch	MPF Cool-Down Area Exhaust Duct	12,000-26,000 cfm	24,000 cfm (FSL) 16,000 cfm (FSLL)	±2,500 cfm (FSL) ±1,800 cfm (FSLL)	Inst. Calib. Para. 2.8 (540 days)

NOTES:

- <sup>a</sup> See Permit Attachment 11, "Process Instrumentation Calibration," and "Oxygen and Carbon Monoxide Analyzer Calibration" Procedures. See also Operating and QA/QC procedures in "Laboratory Quality Control Plan" in Appendix C of the WAP (Permit Attachment 2) and Permit Attachment 11, "In-Situ Continuous Emission Monitors." Additional operating and QA/QC procedures for Automatic Continuous Air Monitoring System and Depot Area Air Monitoring System are in Appendices
- <sup>b</sup> Continuous monitoring.
- <sup>c</sup> Continuous recording.
- <sup>d</sup> Maintenance, at a minimum, in accordance with equipment manufacturer's recommendations.
- <sup>e</sup> Hazardous waste treatment may continue during maintenance activities conducted with site-specific standing operating procedures, for a maximum of 24 hours after the failure of the instrument.
- <sup>f</sup> Hazardous waste treatment may continue during calibrations and "blowback cycles" in accordance with manufacturer's recommendations.
- <sup>g</sup> Hazardous waste treatment may continue during maintenance activities in accordance with site specific standing operating procedures provided the mist eliminator water is not being transferred to the scrubber tower.
- <sup>h</sup> The relative humidity of the PFS exhaust gas is calculated using the PFS outlet temperature and the mist eliminator vessel outlet temperature. The calibrated instrument range applies to the temperature-indicating transmitter, and the operating range and instrument loop accuracy apply to the calculated relative humidity.
- <sup>i</sup> The unit-of-record ACAMS sampling the MPF discharge airlock (DAL) shall monitor and record for two complete ACAMS cycles when hazardous waste is in the DAL.
- <sup>j</sup> Reserved
- <sup>k</sup> Initially, upon replacement of the instrument, or if the instrument is found out of tolerance, the instrument will be checked every 7 days until it stabilizes (instrument check indicates it is "in tolerance"—no adjustments needed). After the instrument stabilizes, it will be checked on a 30-day basis until found out of tolerance or it is replaced.
- <sup>m</sup> The cool-down area minimum exhaust flow may be operated below 16,000 cfm for a maximum of two seconds.
- <sup>n</sup> The manufacturer will provide a certified calibrated flow switch, and the installed flow instrument will be function tested after installation.
- <sup>o</sup> These instruments may be in blow-back mode, but must comply with the instrument and process parameters during shutdown, relight, or any upset conditions. In addition, these instruments must be maintained/calibrated during operations in accordance with Table 7-3 requirements.
- <sup>p</sup> Analyzer moisture readings are checked during annual relative accuracy test audit (RATA). System primary and backup monitors are compared and alarmed to warn of deviations.

N/A = not applicable

D/P = differential pressure

**TABLE 7-4 METAL PARTS FURNACE WASTE FEED CUT-OFF PARAMETERS**

Item Number	Tag Number	Process Data Description	Setpoints During Normal Operations
MPF-01	14-TAHH-152A	MPF temperature Zone 1 high-high	1,755°F for ton containers and secondary waste
MPF-02	14-TAHH-141A	MPF temperature Zone 2 high-high	1,743°F for ton containers and secondary waste
MPF-03	14-TAHH-153	MPF temperature Zone 3 high-high	1,733°F for ton containers and secondary waste
MPF-04	14-PALL-159	Natural gas to MPF pressure low -low	3.0 psig
MPF-05	14-TAHH-65	MPF afterburner temperature high-high	2,113 °F
MPF-06	14-TALL-65	MPF afterburner temperature low-low	Ton containers                    1,892 °F Secondary wastes                1,903°F
MPF-07	24-TSHH-223	Quench tower exhaust gas temperature high-high	225 °F
MPF-08	24-LSHH-245	Scrubber tower sump liquid level high-high	60 inches (84 in. above bottom tangent line)
MPF-09	24-LSLL-245	Scrubber tower sump liquid level low-low	24 inches (48 in. above bottom tangent line )
MPF-10	14-TALL-152	MPF Zone 1 temperature low-low	Ton containers                    * 1,255°F Combustible secondary wastes * 1,380°F Inert secondary wastes        * 1,380°F
MPF-11	14-PSLL-138	Combustion air pressure low-low	20 in. w.c.
MPF-12	14-PDAHH-786	Afterburner flue gas flow rate high-high	0.38 in. w.c.
MPF-13	24-AAHH-669C	CO concentration in PFS exhaust gas high-high	100 ppm corrected to 7% O <sub>2</sub> , dry basis based on 1-hr. rolling average
MPF-14	24-PDALL-222	Venturi scrubber pressure drop low-low	Ton containers                    20 in. w.c. Secondary wastes                24 in. w.c.
MPF-15	24-FALL-248	Clean liquor to scrubber tower flow rate low-low	750 gpm

**TABLE 7-4 METAL PARTS FURNACE WASTE FEED CUT-OFF PARAMETERS**

Item Number	Tag Number	Process Data Description	Setpoints During Normal Operations
MPF-16	MON-ACAM-1671	Chemical agent emission high-high based on instantaneous measurements at the MPF ID fan exhaust duct	GB or VX 0.0003 mg/m <sup>3</sup>
	MON-ACAM-167		HD 0.03 mg/m <sup>3</sup>
MPF-17	MON-ACAM-1291/2231/2251	Chemical agent emission high-high based on instantaneous measurements at the common stack	GB or VX 0.0003 mg/m <sup>3</sup>
	MON-ACAM-129/223/225		HD 0.03 mg/m <sup>3</sup>
		Continuous chemical agent monitoring at the common stack	<ul style="list-style-type: none"> <li>• No less than two on-line ACAMS stations per chemical agent (campaign and noncampaign) monitoring the exhaust gas with “staggered” sampling periods.</li> <li>• No on-line ACAMS station in malfunction condition while in the sampling mode.</li> </ul>
MPF-18	23-LSHH-02/06/702/706	All brine surge tanks 101, 102, 201, 202 unavailable.	Unavailable is when level high-high at 18'-3" or tank is selected for feed to the BRA.
MPF-19	14-PSHH-34	Furnace chamber pressure high-high	-0.15 in. w.c.
MPF-20	24-AALL-247	Clean liquor to scrubber tower pH low-low	8.1 pH units
MPF-21	114-PALL-358	Clean liquor to scrubber tower pressure low-low	25 psig
MPF-22	24-FALL-218	Quench brine to venturi scrubber flow rate low-low	165 gpm
MPF-23	24-DAHH-216	Quench brine density high-high	Ton container 1.10 sgu
			Secondary waste *1.08 sgu
MPF-24	PDAR	Ton container feed rate high	See Permit Condition VII.C.3.i for maximum feed rate limits
		Secondary waste feed rate high	* See Permit Condition VII.C.3.i for maximum feed rate limits
MPF-25	24-AAHH-670A/B	Oxygen concentration in PFS exhaust gas high-high	15% corrected to a dry basis
MPF 26	24-AALL-670C	Oxygen concentration in PFS exhaust gas low-low	4.8% corrected to a dry basis (2-minute rolling average)
	24-AALL-670A/B	Oxygen concentration in PFS exhaust gas low-low (prior to opening the Zone 1 entry door)	6.2% corrected to a dry basis (instantaneous)
MPF-27	14-PAHH-37	Afterburner pressure high-high	-0.15 in. w.c.

**TABLE 7-4 METAL PARTS FURNACE WASTE FEED CUT-OFF PARAMETERS**

Item Number	Tag Number	Process Data Description	Setpoints During Normal Operations
MPF-28	14-BSLL-883, -884, -885, -886, -887, -888, -889, -890, -891, -892	Flame loss in burnout chamber	<u>Zones 1 &amp; 2</u> all burners out or 3 burners out and zone temperature less than 1,400°F. <u>Zone 3</u> all burners out or 1 burner out and zone temperature less than 1,400°F.
MPF-29	14-BSLL-893 14-BSLL-894	Flame loss in afterburner (both burners)	Flame loss (in both burners of the afterburner)
MPF-30	114-PDAHH-438A/487A	PFS Prefilter differential pressure high-high	4.0 inch w.c.
MPF-31	114-PDAHH-438B/438H/487B/487H	PFS HEPA filter differential pressure high-high	3.0 inch w.c.
MPF-32	114-TAHH-419 (ROHA)  114-TSHH-97 (instantaneous)	Temperature of gas to carbon filter system high-high	161°F (rolling one-hour average) 180°F (instantaneous)
MPF-33	14-MAHH-96C (ROHA)  114-MAHH-96A/B (instantaneous)	Moisture of gas to carbon filter system high-high <ul style="list-style-type: none"> <li>• ROHA (either 96A or 96B or average of the two measurements depending on online instruments)</li> <li>• Instantaneous (either 96A or 96B)</li> </ul>	55% RH (rolling one-hour average) 80% RH (instantaneous)
MPF-34	114-ZS-93B	Carbon filter system bypass valve not closed	Not closed
MPF-35	MON-ACAM-3551/3561 MON-ACAM-355/356	Chemical agent emission high-high based on instantaneous measurement upstream of the PFS unit	GB or VX 0.0003 mg/m <sup>3</sup>
			HD 0.03 mg/m <sup>3</sup>
MPF-36	24-PDAHH-291/53	Mist eliminator differential pressure high-high	20 in. w.c.
MPF-37	114-MAHH-110/113	Relative Humidity in PFS exhaust gas high-high	55% RH (30-minute rolling average)
MPF-38	14-TALL-141	MPF Zone 2 temperature low-low	Ton containers 1,410°F
			Combustible secondary waste * 1,378°F
			Inert secondary waste * 1,378°F

**TABLE 7-4 METAL PARTS FURNACE WASTE FEED CUT-OFF PARAMETERS**

Item Number	Tag Number	Process Data Description	Setpoints During Normal Operations
MPF-39	14-TALL-153	MPF Zone 3 temperature low-low	Ton containers 1,400°F Combustible secondary waste * 1,383°F Inert secondary waste * 1,383°F
MPF-40	MON-ACAM-290/393	Chemical agent emission high-high based on instantaneous measurements at the MPF discharge airlock	GB 0.00002 mg/m <sup>3</sup> (0.2 VSL) or VX 0.000002 mg/m <sup>3</sup> (0.2 VSL)
	MON-ACAM-2901/3931		HD 0.0006 mg/m <sup>3</sup> (0.2 VSL)
MPF-41	MON-ACAM-476	Chemical agent emission high-high based on instantaneous measurements at the MPF cool-down area	GB 0.00005 mg/m <sup>3</sup> (0.5 VSL) or VX 0.000005 mg/m <sup>3</sup> (0.5 VSL)
	MON-ACAM-4761		HD 0.0015 mg/m <sup>3</sup> (0.5 VSL)
MPF-42 <sup>a</sup>	024-MAH-078A/B, -207A/B, -669A/B, -716A	Moisture in any furnace PAS	38% moisture (volume)
MPF-43	14-TAH-010	Primary chamber exhaust temperature high	Ton containers 2,385 °F
			Secondary waste 1,875 °F

<sup>a</sup> The unit of record (UOR) will initiate an AWFCO for the LIC1, LIC2, MPF, and DFS. This alarm will not be active if the respective MPF induced-draft (ID) fans are not running. During quarterly CEMS maintenance, both units of the respective MPF can be offline if administrative controls are in place to monitor for high moisture in the PAS of the affected furnace and to stop hazardous waste feed to all furnaces if high moisture is indicated. Quarterly CEMS maintenance activities will not require cessation of hazardous waste processing in operational furnaces provided all other operational requirements are met.

\* May be modified due to results from trial burns

**TABLE 7-5 DEACTIVATION FURNACE SYSTEM INSTRUMENT AND PROCESS DATA**

Item No.	Control Parameter	Measuring Device	Location	Calibrated Instrument Range	Operating Range or Setpoint	Instrument Loop Accuracy	Calibration Method No. and Frequency <sup>a</sup>
1 <sup>c</sup>	Fuel gas to Rotary Retort DFS-FURN-101 16-FIT-243	Orifice Plate & D/P Cell	In-Line	0-200 scfm	0-185 scfm	± 4 scfm	Inst. Calib. Para. 2.4 (180 days)
2 <sup>c,g</sup>	Fuel gas to Afterburner DFS-FURN-102 16-FIT-66/191	Orifice Plate & D/P Cell	In-Line	0-300 scfm	60-297 scfm	±9scfm	Inst. Calib. Para. 2.4 (180 days)
3 <sup>c</sup>	Combustion Air to Rotary Retort DFS-FURN-101 16-FIT-21	Annubar & D/P Cell	In-Line	0-1,800 scfm	170-1,675 scfm	±36 scfm	Inst. Calib. Para. 2.4 (180 days)
4 <sup>c,g</sup>	Combustion Air to Afterburner DFS-FURN-102 16-FIT-78/79	Annubar & D/P Cell	In-Line	0-3,500 scfm	625-3,380 scfm	±70 scfm	Inst. Calib. Para. 2.4 (180 days)
5 <sup>b,c,d,l</sup>	Rotary Retort DFS-FURN-101 Pressure 16-PIT-18	Diaphragm	Furnace	-15 to +5 in. w.c.	-10 to -0.1 in. w.c.	± 0.07 in. w.c.	Inst. Calib. Para. 2.3 (180 days)
6 <sup>c</sup>	Rotary Retort DFS-FURN-101 Temperature 16-TIT-20	Thermocouple	Furnace	0-2,000°F	825-1,800°F	± 20°F	Inst. Calib. Para. 2.5 (180 days)
7 <sup>c</sup>	Discharge Conveyor Temperature 16-TIT-42/184	Thermocouple	Conveyor	0-1,600 °F	1,012-1,355°F	± 16°F	Inst. Calib. Para. 2.5 (180 days)
8 <sup>c</sup>	Flue Gas from DFS-FURN-101 Temperature (after spray) 16-TY-08A (16-TIT-8/169)	Thermocouple	In-Line	0-2,300°F	949-1,539°F	± 23°F	Inst. Calib. Para. 2.5 (180 days)
9 <sup>b,c,d</sup>	Exhaust Gas from Afterburner DFS-FURN-102 Temperature 16-TY-92 (16-TIT-92/03)	Thermocouple	In-Line	32-2,600°F	2,050-2,200°F	± 26°F	Inst. Calib. Para. 2.5 (180 days)
10 <sup>b,c,d</sup>	Quench Brine in Recirculation Loop Density 24-DIT-33	Magnetically Vibrated Tube	In-Line	0.95-1.25 SGU	0.96-1.06 SGU (instantaneous)	± 0.03 SGU	Inst. Calib. Para. 2.7 (180 days)
11 <sup>b,c,d</sup>	Quench Brine in Recirculation Loop pH 24-AIT-7A/B	Electrodes	PAS-PUMP-106/107 Discharge to Suction	0-13 pH units	7.5-12.5 pH units (ROHA)	± 0.8 pH unit	Inst. Calib. Para. 2.7 (7 days)
12 <sup>b,c,d</sup>	Clean Liquor Density 24-DIT-35	Magnetically Vibrated Tube	PFS-PUMP-138/139 Discharge to Suction	0.95-1.25 SGU	0.96-1.01 SGU (12-hour rolling average)	± 0.03 SG	Inst. Calib. Para. 2.7 (180 days)

**TABLE 7-5 DEACTIVATION FURNACE SYSTEM INSTRUMENT AND PROCESS DATA**

Item No.	Control Parameter	Measuring Device	Location	Calibrated Instrument Range	Operating Range or Setpoint	Instrument Loop Accuracy	Calibration Method No. and Frequency <sup>a</sup>
13 <sup>b,c,d</sup>	Clean Liquor pH 24-AIT-34A/B	Electrodes	Clean Liquor Feed Line	0-13 pH units	7.1-10 pH units	± 0.8 pH unit	Inst. Calib. Para. 2.7 (7 days)
14	Intentionally left blank						
15 <sup>b,c,d</sup>	Quench Brine Flow to Venturi Scrubber PAS-SEPA-102 24-FIT-06	Electromagnetic Flowmeter	In-Line	0-400 gpm	260-395 gpm	± 10 gpm	Inst. Calib. Para. 2.4 (180 days)
16 <sup>c</sup>	Clean Liquor Flow to Scrubber Tower PAS-SCRB-102 24-FIT-30	Electromagnetic Flowmeter	In-Line	0-3,000 gpm	1,475-2,400 gpm	± 30 gpm	Inst. Calib. Para. 2.4 (180 days)
17 <sup>c,e</sup>	Quench Tower PAS-TOWR-103 Level 24-LIT-09	Guided Wave Radar Transmitter	Vessel	-3 to 9 inches	-3 to 8 inches	±0.25 inch	Inst. Calib. Para. 2.6 (180 days)
18	Intentionally left blank						
19	Intentionally left blank						
20	Intentionally left blank						
21	Venturi Scrubber PAS-SEPA-102 Diff. Pressure 24-PDIT-08	Transmitter	Vessel Scrubber	0-50 in. w.c.	20- 45 in. w.c.	±0.5 in. w.c.	Inst. Calib. Para. 2.3 (180 days)
22	Feed Rate to Rotary Retort	PDAR	Control Room	--	See Table 6-8 or Condition VII.D.3.i	--	--
23 <sup>c</sup>	Quench Tower Exhaust Gas Temp 24-TSHH-01	Filled System	In-Line	95-250°F	225°F	±5°F	Inst. Calib. Para. 2.5 (180 days)
24 <sup>b,c,d</sup>	Afterburner Exhaust Gas Flow Rate 16-PDIT-813	D/P Cell	In-Line	0-3 in. w.c.	0-0.92 in. w.c. (instantaneous) 0-0.83 in. w.c. (ROHA)	±0.03 in. w.c.	Inst. Calib. Para. 2.4 (180 days)
25 <sup>b,c,d</sup>	Blower PAS-BLOW-103 Exhaust Gas O <sub>2</sub> 24-AIT-206A/206B	Zirconium Oxide Cell Analyzer	In-Line (In-Situ)	0-25%	≤14% (instantaneous) ≥7.7% (2- minute rolling average)	±0.5%	Inst. Calib. Para. 1.1 & 1.2 (Daily)
26 <sup>b,c,d</sup>	Blower PAS-BLOW-103 Exhaust Gas CO and moisture 024-AIT-207A/207B	Infrared Cell Analyzer	In-Line (In-Situ)	CO: 0-200 & 0-3,000 ppm H <sub>2</sub> O: 0-40%	CO: 0-100 ppm (ROHA) H <sub>2</sub> O: 38%	CO: ±6 ppm low range ±90 ppm high range H <sub>2</sub> O: ±2%	Inst. Calib. Para. 1.1 & 1.2 (Daily) <sup>n</sup>
27 <sup>c,f,e</sup>	Rotary Retort Exhaust Gas O <sub>2</sub> Analyzer 16-AIT-09	Zirconium Oxide Cell Analyzer	In-Line (In-Situ)	0-25%	6.0 to 20.8%	±0.5%	Inst. Calib. Para. 1.1 & 1.2 (Daily)
28 <sup>c,d</sup>	Brine Surge Tanks 101, 102, 201, 202 Level 23-LT-03/07/703/707	Ultrasonic Level Transmitter	Brine Surge Tanks	0-225 inches	0-219 inches	±3 inches	Inst. Calib. Para. 2.6 (180 days)
29 <sup>a,b,c</sup>	Exhaust Blower Gas Agent MON-ACAM-1831	Gas Chromatography	Blower Exhaust Line (Extractive)	See WAP, Appendix C	WAP, Appendix C	See WAP, Appendix C	WAP, Appendix C (Daily)

All federal Title 40 CFR citations are citations to the Title 40 CFR adopted as Oregon rule by OAR 340-100-0002 and as altered by OAR Chapter 340, Divisions 100-106, 109, 111, 113, 120, 124, and 142. See the preface introduction for further explanation.

**TABLE 7-5 DEACTIVATION FURNACE SYSTEM INSTRUMENT AND PROCESS DATA**

Item No.	Control Parameter	Measuring Device	Location	Calibrated Instrument Range	Operating Range or Setpoint	Instrument Loop Accuracy	Calibration Method No. and Frequency <sup>a</sup>
30	Clean Liquor to Scrubber Tower Pressure Low-Low 114-PIT-344	D/P Cell	In-Line	0-100 psig	25-95 psig	±1 psig	Inst. Calib. Para. 2.3 (180 days)
31	Retort Rotational Speed 16-SS-602	Speed-sensing probe	Retort Drive Motor	0-2.25 rpm	0-2.06 rpm	±0.05 rpm	Inst. Calib. Para. 2.8 (180 Days)
32	Presence of Flame Rotary Retort 16-BSLL-844	Flame Detector	Burner	N/A	N/A	N/A	N/A
33	Presence of Flame Afterburner 16-BSLL-850/851	Flame Detector	Burner	N/A	N/A	N/A	N/A
34	Rotary Retort Shell Temperature 16-TIT-51A thru E	Radiation Pyrometer	Shroud	800-1,800°F	800 - 1,600 °F	±20°F	Inst. Calib. Para. 2.5 (180 days)
35	Feed Chute Jam Sensors 16-XS-207, 16-XS-209	Radioactive Switches	Feed Chute	N/A	N/A	N/A	N/A
36	Afterburner Pressure 16-PIT-65	D/P Cell	Afterburner	-15 to +5 in. w.c.	-12 to -0.1 in. w.c.	±0.07 in. w.c.	Inst. Calib. Para. 2.3 (180 days)
37	Heated Discharge Conveyor Jam Sensors 16-XS-58, 16-XS-821	Radioactive Switches	Heated Discharge Conveyor	N/A	N/A	N/A	N/A
38 <sup>a,b,c,k</sup>	Cyclone Enclosure Agent Monitor MON-ACAM-297	Gas Chromatography	Duct to enclosure carbon filter system	See WAP, Appendix C	WAP, Appendix C	See WAP, Appendix C	Att. WAP, Appendix C (Daily)
39 <sup>b,c</sup>	PFS Prefilter Differential Pressure 114-PDIT-440A/442A/454A/436A/438A/487A	D/P Cell	Prefilter	0-6.0 in. w.c.	≥0.2 in. w.c. (2-minute rolling average) ≤4.0 in. w.c. (instantaneous)	±0.1 in. w.c.	Inst. Calib. Para. 2.3 (180 days)
40 <sup>b,c,d</sup>	PFS HEPA filter Differential Pressure 114-PDIT-440B/440H/442B/442H/454B/454H/436B/436H/438B/438H/487B/487H	D/P Cell	HEPA Filter	0-6.0 in. w.c.	0.15-3.0 in. w.c.	±0.1 in. w.c.	Inst. Calib. Para. 2.3 (180 days)
41 <sup>b,c</sup>	Temperature of gas to carbon filter system DFS 114-TIT-417	RTD	In-Line	0-250 °F	130-169 °F (ROHA)	±2°F	Inst. Calib. Para. 2.5 (180 days)
42 <sup>b,c</sup>	Moisture of gas to carbon filter system DFS 114-MIT-431A/B	Humidity Sensor	In-Line	0-90% RH	0-55% RH (ROHA) 0-80% RH (Instantaneous)	±3.5% RH	Inst. Calib. Para. 2.7 (180 days)
43 <sup>a,b,c,d</sup>	Stack PAS-STACK-102 exhaust gas agent MON-ACAM-129/223/225(GB) 1291/2231/2251(VX)	Gas chromatography	Stack (extractive)	WAP, Appendix C	WAP, Appendix C	WAP, Appendix C	WAP, Appendix C (Daily)

**TABLE 7-5 DEACTIVATION FURNACE SYSTEM INSTRUMENT AND PROCESS DATA**

Item No.	Control Parameter	Measuring Device	Location	Calibrated Instrument Range	Operating Range or Setpoint	Instrument Loop Accuracy	Calibration Method No. and Frequency <sup>a</sup>
44 <sup>a,b,c,d</sup>	PFS inlet gas agent monitor MON-ACAM-3531/3561(VX)	Gas chromatography	Gas Reheater Outlet (Extractive)	WAP, Appendix C	WAP, Appendix C	WAP, Appendix C	WAP, Appendix C (Daily)
45 <sup>b</sup>	Carbon filter bypass 114-ZS-449B	Position Switch	Not Applicable	Not Applicable	Not Applicable	Not Applicable	N/A
46 <sup>b</sup>	Heated discharge conveyor speed 16-SSL-57	Limit Switch	Heated Discharge Conveyor	N/A	≥36 sec (high speed) or ≥72 sec (low speed) between two signals	N/A	N/A
47 <sup>b,c</sup>	Mist eliminator PAS-DMIS-104/105 differential pressure 24-PDIT-312/53	Transmitter	Vessel	0-30 in. w.c.	0-20 in. w.c.	±0.3 in. w.c.	Inst. Calib Para. 2.3 (180 days)
48 <sup>b</sup>	Scrubber tower sump level high-high PAS-SCRB-102 24-LSHH-10	Magnetic Level Meter Switch	Vessel	Point Contact	69 inches above bottom tangent line	±1 inch	Inst. Calib Para. 2.6 (180 days)
49 <sup>b</sup>	Scrubber tower sump level low-low PAS-SCRB-102 24-LSLL-10	Magnetic Level Meter Switch	Vessel	Point Contact	33 inches above bottom tangent line	±1 inch	Inst. Calib Para. 2.6 (180 days)
50	Intentionally Left Blank						
51 <sup>b,c,m</sup>	Rotary retort flue gas temperature before spray 16-TY-182B (Instantaneous) 16-TIT-182/244 16-TIC-182C (ROHA)	Thermocouple	In-line	0 – 2,300°F	1,000-1,615°F (instantaneous) 1,117-1,548°F (ROHA)	±23°F	Inst. Calib Para. 2.5 (180 days)
52 <sup>b,i</sup>	Pressure in rotary retort combustion chamber high-high 16-PSHH-204	Diaphragm	Furnace	-0.15 to -0.07 in. w.c.	-0.1 in. w.c.	±0.04 in. w.c.	Inst. Calib Para. 2.3 (180 days)
53 <sup>b</sup>	Brine surge tanks level high-high 23-LSHH-02/06/702/706	Admittance-Type Level Switch	Brine Surge Tanks	Point Contact	18 ft. 3 in. from bottom	±0.75 inches	Inst. Calib Para. 2.6 (180 days)
54 <sup>b</sup>	PFS-BURN-103 Temperature of the Gas Entering the Carbon Filter System High-High 114-TSHH-430	Capillary-Filled System	In-Line	95-250°F	180°F (instantaneous)	±5°F	Inst. Calib Para. 2.5 (180 days)
55	Intentionally Left Blank						
56 <sup>b,c</sup>	Scrubber packed bed pressure drop 24-PDIT-25	Transmitter	Vessel scrubber	0-10 in w.c.	0.3-5.0 in. w.c. (ROHA)	±0.1 in. w.c.	Inst. Calib Para 2.3 (180 days)
57 <sup>c,h</sup>	Mist Eliminator Water pH 24-AIT-540/273	Electrodes	Vessel Outlet	0-13 pH units	5.5-10.0 pH units (when pumping to scrubber tower)	±0.8 pH unit	Inst. Calib Para 2.7 (180 days)

**TABLE 7-5 DEACTIVATION FURNACE SYSTEM INSTRUMENT AND PROCESS DATA**

Item No.	Control Parameter	Measuring Device	Location	Calibrated Instrument Range	Operating Range or Setpoint	Instrument Loop Accuracy	Calibration Method No. and Frequency <sup>a</sup>
58 <sup>b,c,j</sup>	Relative Humidity in PFS Exhaust Gas Based on Temperature 114-TIT-9810/9811/9812/9813/9814/9815	Resistance Temperature Detector	In-Line	50-200°F	≤55% RH (30-minute rolling average"	± 3% RH	Inst. Calib Para. 2.5 (180 days)
59 <sup>b,c</sup>	PAS-DMIS-104/105 Flue Gas Discharge Temperature 24-TIT-9816/9818	Resistance Temperature Detector	In-Line	50-200°F	105-135°F	± 1°F	Inst. Calib Para. 2.5 (180 days)

NOTES:

- <sup>a</sup> See Permit Attachment 11 for "Process Instrument Calibration," and "Oxygen and Carbon Monoxide Analyzer Calibration." See also Operating and QA/QC procedures found in "Laboratory Quality Control Plan" in Appendix C of the WAP (Permit Attachment 2) and Permit Attachment 11, "In-Situ Continuous Emission Monitors." Additional operating and QA/QC procedures for the Automatic Continuous Air Monitoring System and Depot Area Air Monitoring System are in Appendices C and D of the WAP (Permit Attachment 2).
- <sup>b</sup> Continuous monitoring.
- <sup>c</sup> Continuous recording.
- <sup>d</sup> Maintenance, at a minimum, in accordance with equipment manufacturer's recommendations.
- <sup>e</sup> Hazardous waste treatment may continue during maintenance activities conducted in accordance with site-specific standing operating procedures, for a maximum of 24 hours after the failure of the instrument.
- <sup>f</sup> Hazardous waste treatment may continue during calibration and "blowback cycles" in accordance with manufacturer's recommendations.
- <sup>g</sup> Hazardous waste treatment may continue during maintenance activities in accordance with site-specific procedures, provided at least one burner in the afterburner is functional.
- <sup>h</sup> Hazardous waste treatment may continue during maintenance activities in accordance with site specific standing operating procedures, provided the mist eliminator water is not being transferred to the scrubber tower.
- <sup>i</sup> The maximum pressure in the DFS rotary retort may exceed -0.10 inches w.c. for a maximum of 3 seconds.
- <sup>j</sup> The relative humidity of the PFS exhaust gas is calculated using the PFS outlet temperature and the mist eliminator vessel outlet temperature. The calibrated instrument range applies to the temperature-indicating transmitter, and the operating range and instrument loop accuracy apply to the calculated relative humidity.
- <sup>k</sup> Hazardous waste treatment may continue during maintenance activities in accordance with Permit Condition VII.D.5.iv.
- <sup>l</sup> Operating range is based on one-minute average values. An engineering stop feed interlock will activate at 4.9 inches w.c. on an instantaneous basis.
- <sup>m</sup> The ROHA of the kiln temperature, 16-TIC-182C, is calculated using either 16-TY-182B (Item No. 51) or 16-TIT-20 (Item No. 6), whichever is not controlling the kiln burner. (Note that 16-TY-182B is the software average calculation representing readings from 16-TIT-182/244.) The kiln ROHA temperature, 16-TIC-182C, operating range does not apply during periods when the DFS is operating under the startup, shutdown, and malfunction plan.
- <sup>n</sup> Analyzer moisture readings are checked during annual relative accuracy test audit (RATA). System primary and backup monitors are compared and alarmed to warn of deviations.

N/A = not applicable  
 D/P = differential pressure

**TABLE 7-6 DEACTIVATION FURNACE SYSTEM WASTE FEED CUT-OFF PARAMETERS**

Item Number	Tag Number	Process Data Description	Setpoints During Normal Operations
DFS-01	16-TAHH-182	Rotary retort temperature high-high (flue gas temperature before spray)	1,615 °F
DFS-02	16-TAHH-08	Flue gas temperature after spray high-high	1,539 °F
DFS-03	16-TALL-08	Flue gas temperature after spray low-low	949 °F
DFS-04	16-XS-207 16-XS-209	Jammed chute	Feed chute jammed
DFS-05	16-PSHH-204	Pressure in rotary retort combustion chamber high-high	-0.1 inch w.c. (3-second delay)
DFS-06	16-TAHH-51A, 51B, 51C, 51D, 51E	Temperature on rotary retort shell high-high	1,600 °F
DFS-07	16-BSLL-850/851	Loss of flame in both burners of the afterburner	Flame loss (both burners)
DFS-08	16-TALL-42	Heated discharge conveyor temperature low-low	1,012 °F
DFS-09	16-XS-58 16-XS-821	Jam in discharge conveyor	Discharge chute jammed
DFS-10	16-SALL-57	Zero motion on heated discharge conveyor	≥ 36 sec (high speed) or ≥ 72 sec (low speed) between two signals
DFS-11	16-PDAHH-813	Afterburner exhaust flow rate high-high	0.92 in. w.c.
DFS-12	16-TALL-182	Rotary retort temperature low-low (flue gas temperature before spray)	1,000 °F
DFS-13	16-TALL-92	Afterburner temperature low-low	2,050°F
DFS-14	16-TAHH-92	Afterburner temperature high-high	2,200°F
DFS-15	24-PDALL-08	Venturi scrubber pressure low-low	20 in. w.c.
DFS-16	24-AAHH-207C	CO concentration in PFS exhaust gas high-high	100 ppm corrected to 7% O <sub>2</sub> , dry basis based on 1-hr. rolling average

**TABLE 7-6 DEACTIVATION FURNACE SYSTEM WASTE FEED CUT-OFF PARAMETERS**

Item Number	Tag Number	Process Data Description	Setpoints During Normal Operations
DFS-17	PDAR	Munitions feed rate high	* M121A1 (GB) 120 mun/hr M121A1 (VX) 120 mun/hr M426 (GB) 47 mun/hr M426 (VX) 47 mun/hr Land Mine 70 mun/hr M55/M56 (GB) 36.6 mun/hr M55/M56 (VX) 40 mun/hr
		Secondary Wastes	ECR maintenance residue 28.5 lb/hr Explosive-contaminated spill pillows 28.5 lb/hr PCB-contaminated UMCD waste 171 lbs/hr Partially treated DFS ash: <ul style="list-style-type: none"> <li>• 1,575°F nominal kiln exhaust gas temperature 171 lbs/hr</li> <li>• 975°F nominal kiln exhaust gas temperature 137 lbs/hr</li> </ul>
DFS-18	24-FALL-30	Clean liquor to scrubber tower flow rate low-low	1,475 gpm
DFS-19	MON-ACAM-1831	Chemical agent emission high-high based on instantaneous measurements	GB 0.0003 mg/m <sup>3</sup> VX 0.0003 mg/m <sup>3</sup> HD 0.03 mg/m <sup>3</sup>

**TABLE 7-6 DEACTIVATION FURNACE SYSTEM WASTE FEED CUT-OFF PARAMETERS**

Item Number	Tag Number	Process Data Description	Setpoints During Normal Operations
DFS-20	MON-ACAM-297	Chemical agent emission high-high based on instantaneous measurements in cyclone enclosure	GB 0.0003 mg/m <sup>3</sup> VX 0.0003 mg/m <sup>3</sup> HD 0.03 mg/m <sup>3</sup>
DFS-21	MON-ACAM-129/223/225	Chemical agent emission high-high based on instantaneous measurements at the common stack	GB 0.0003 mg/m <sup>3</sup>
	MON-ACAM-1291/2231/2251		VX 0.0003 mg/m <sup>3</sup>
	TBD		HD 0.03 mg/m <sup>3</sup>
		Continuous chemical agent monitoring at the common stack	<ul style="list-style-type: none"> <li>• No less than two on-line ACAMS stations per chemical agent (campaign and noncampaign) monitoring the exhaust gas with “staggered” sampling periods.</li> <li>• No on-line ACAMS in malfunction condition while in the sampling mode.</li> </ul>
DFS-22	23-LSHH-02/06/702/706	All brine surge tanks 101, 102, 201, 202 unavailable	Unavailable is when level high-high at 18' -3" or tank is selected for feed to the BRA
DFS-23	24-AALL-34	Clean liquor to scrubber tower pH low-low	7.1 pH units
DFS-24	114-PALL-344	Clean liquor to scrubber tower pressure low-low	* 25 psig
DFS-25	24-TSHH-01	Quench tower exhaust gas temperature high-high	* 225 °F
DFS-26	24-FALL-06	Quench brine to venturi scrubber flow rate low-low	* 260 gpm
DFS-27	24-DAHH-33	Brine density high-high	*1.06 SG
DFS-28	16-SAHH-602	Retort rotational speed high-high (all feeds except for secondary waste)	2.06 rpm
		Secondary Waste Feed	Shall not exceed 1 rpm

**TABLE 7-6 DEACTIVATION FURNACE SYSTEM WASTE FEED CUT-OFF PARAMETERS**

Item Number	Tag Number	Process Data Description	Setpoints During Normal Operations
DFS-29	24-AAHH-206A/206B	Oxygen concentration in PFS exhaust gas high-high	14% corrected to a dry basis
DFS-30	24-AALL-206C	Oxygen concentration in PFS exhaust gas low-low	7.7% corrected to a dry basis (2-minute rolling average)
DFS-31	16-PAHH-65	Afterburner pressure high-high	-0.1 inch w.c.
DFS-32	24-LSHH-10	Scrubber tower sump level high-high	69 inches above bottom tangent line
DFS-33	24-LSLL-10	Scrubber tower sump level low-low	33 inches above bottom tangent line
DFS-34	16-BSLL-844	Flame loss in rotary retort	Flame loss
DFS-35	114-PDAHH-440A/442A	PFS prefilter differential pressure high-high	4.0 inch w.c.
DFS-36	114-PDAHH-440B/440H/442B/442H	PFS HEPA differential filter pressure high-high	3.0 inch w.c.
DFS-37	114-TAHH-417 (ROHA) 114-TSHH-430 (instantaneous)	Temperature of gas to carbon filter system high-high	169°F (rolling one-hour average) 180°F (instantaneous)
DFS-38	114-MAHH-431C (ROHA) 114-MAHH-431A/B (instantaneous)	Moisture of gas to carbon filter system (Either 431A or 431B or the average of the two measurements)	55% RH (rolling one-hour average) 80% RH (instantaneous)
DFS-39	114-ZS-449B	Carbon filter bypass valve not closed	Not closed
DFS-40	MON-ACAM-3531/3561 TBD	Chemical agent emission high-high based on instantaneous measurement upstream of the PFS unit	VX 0.0003 mg/m <sup>3</sup>
			HD 0.03 mg/m <sup>3</sup>
DFS-41	24-PDAHH-312/53	Mist eliminator differential pressure high-high	20 inches w.c.
DFS-42	16-TAHH-182A	Rotary retort temperature high-high (before the spray)	1,548°F (ROHA)

**TABLE 7-6 DEACTIVATION FURNACE SYSTEM WASTE FEED CUT-OFF PARAMETERS**

Item Number	Tag Number	Process Data Description	Setpoints During Normal Operations
DFS-43	114-MAHH-111/ 112/113/109/209/ 110	Relative Humidity in PFS exhaust gas high-high	55% RH (30-minute rolling average)
DFS-44 <sup>a</sup>	024-MAH-078A/B, -207A/B, -669A/B, -716A	Moisture in any furnace PAS	38% moisture (volume)

<sup>a</sup> The unit of record (UOR) will initiate an AWFCO for the LIC1, LIC2, MPF, and DFS. This alarm will not be active if the respective DFS induced-draft (ID) fans are not running. During quarterly CEMS maintenance, both units of the respective DFS can be offline if administrative controls are in place to monitor for high moisture in the PAS of the affected furnace and to stop hazardous waste feed to all furnaces if high moisture is indicated. Quarterly CEMS maintenance activities will not require cessation of hazardous waste processing in operational furnaces provided all other operational requirements are met.

\* May be modified due to results from trial burns

**TABLE 7-7 MAXIMUM ALLOWABLE EMISSION RATES FOR THE INCINERATORS**  
**[40 CFR §270.32(b)(2)]**

Allowable Emission Rates					
Constituent	CAS No.	Emission Rates (g/sec)			
		LIC1	LIC2	DFS	MPF
<b>AGENTS</b>					
GB	107-44-8	As measured at the common stack, the combined LIC1, LIC2, DFS, and MPF emission rate must not exceed 4.29E <sup>-06</sup> .			
VX	50782-69-9				
HD (Mustard)	505-60-2	As measured at the common stack, the combined LIC1, LIC2, DFS, and MPF emission rate must not exceed 4.29E <sup>-04</sup> .			
<b>ORGANICS</b>					
TEQ 2,3,7,8-PCDF's [Dioxin & Furan congeners]		9.75E-10	9.75E-10	6.69E-10	9.08E-10
Total Polychlorinated Biphenyls [PCB cong]	1336-36-3			6.25E-07	
1,1,2,2-Tetrachloroethane	79-34-5	3.20E-06	3.20E-06	7.33E-07	6.98E-07
1,1-Dichloroethane	75-34-3	1.71E-06	1.71E-06	7.33E-07	8.47E-07
2,4,6-Trinitrotoluene	118-96-7			2.55E-06	
2,4-Dinitrotoluene	121-14-2			2.55E-06	
2,6-Dinitrotoluene	606-20-2			2.55E-06	
2-Hexanone	591-78-6	8.60E-06	8.60E-06	7.33E-07	6.98E-07
Acetone	67-64-1	1.66E-01	1.66E-01	7.18E-02	8.34E-05
Benzene	71-43-2	2.89E-04	2.89E-04	1.11E-04	3.15E-04
Benzoic Acid	65-85-0	5.40E-04	5.40E-04	3.80E-04	5.91E-04
Benzyl Alcohol	100-51-6	5.60E-03	5.60E-03	2.06E-03	5.94E-03
Bis(2-ethylhexyl)phthalate	117-81-7	1.30E-03	1.30E-03	9.93E-05	1.18E-03
Bromodichloromethane		1.71E-06	1.71E-06	3.31E-06	6.98E-07
Bromoform	75-22-2	1.59E-05	1.59E-05	6.44E-05	4.22E-05
Carbon disulfide		3.25E-05	3.25E-05	7.33E-07	4.09E-05
Carbon Tetrachloride	56-23-5	1.10E-04	1.10E-04	7.33E-07	1.28E-05
Chlorobenzene	106-90-7	8.35E-06	8.35E-06	2.35E-06	1.71E-06
Chloroform	67-66-3	6.95E-05	6.95E-05	8.38E-05	5.88E-06
Chloromethane	74-87-3	2.50E-03	2.50E-03	7.33E-07	2.86E-05
m-Cresol	108-39-4	6.35E-04	6.35E-04	1.02E-05	6.23E-05
o-Cresol	95-48-7	5.85E-04	5.85E-04	1.21E-04	1.94E-03
p-Cresol	106-44-5	1.97E-04	1.97E-04	1.02E-04	6.67E-05
Di(n)octyl phthlate	117-84-0	6.15E-05	6.15E-05	1.02E-05	6.67E-05
Di-n-butyl Phthalate	84-74-2	3.12E-05	3.12E-05	1.10E-05	6.67E-05
Dibromochloromethane	124-48-1	1.71E-06	1.71E-06	4.89E-06	6.98E-07
(cis)1,3-Dichloropropene	542-75-6	8.10E-04	8.10E-04	7.33E-07	6.98E-07
(trans)1,3-Dichloropropene	542-75-6	1.71E-06	1.71E-06	7.33E-07	6.98E-07
Diethyl Phthalate	84-66-2	1.25E-04	1.25E-04	9.93E-06	6.67E-05
Dimethyl Phthalate	131-11-3	8.85E-04	8.85E-04	4.23E-04	1.35E-03
Ethylbenzene	100-41-4	4.96E-06	4.96E-06	2.25E-05	1.64E-06
HMX	2691-41-0			2.55E-06	
Methyl chloroform	71-55-6	8.30E-05	8.30E-05	1.22E-04	1.65E-06
Methyl ethyl ketone	78-93-3	5.90E-04	5.90E-04	7.33E-04	1.58E-04
Methyl isobutyl ketone		1.11E-05	1.11E-05	7.33E-07	6.98E-07
Methylene chloride	75-09-2	1.88E-02	1.88E-02	1.20E-02	1.38E-04

**TABLE 7-7 MAXIMUM ALLOWABLE EMISSION RATES FOR THE INCINERATORS**  
**[40 CFR §270.32(b)(2)]**

Allowable Emission Rates					
Constituent	CAS No.	Emission Rates (g/sec)			
		LIC1	LIC2	DFS	MPF
Naphthalene	91-20-3	3.12E-05	3.12E-05	1.30E-05	6.67E-05 <sup>1</sup>
Nitroglycerine	55-63-0			5.28E-04	
Propylene dichloride	78-87-5	9.40E-04	9.40E-04	7.33E-07	6.98E-07 <sup>1</sup>
RDX	121-82-4			2.55E-06	
Styrene	100-42-5	2.82E-04	2.82E-04	1.11E-04	5.24E-05 <sup>1</sup>
Tetrachloroethylene	127-18-4	5.75E-06	5.75E-06	7.33E-07	6.98E-07 <sup>1</sup>
Toluene	106-88-3	1.06E-02	1.06E-02	6.17E-03	4.15E-05 <sup>1, 2</sup>
Vinyl acetate	108-05-4	2.44E-06	2.44E-06	7.33E-07	6.98E-07 <sup>1, 2</sup>
Vinyl chloride	75-01-4	1.48E-05	1.48E-05	1.62E-06	5.65E-05 <sup>1</sup>
Total xylene	1330-20-7	2.26E-05	2.26E-05	1.58E-05	6.98E-07 <sup>1, 2</sup>
<b>METALS</b>					
Antimony	7440-36-0	6.45E-05	6.45E-05	4.19E-05	1.19E-04 <sup>1</sup>
Arsenic	7440-38-2	1.10E-04	1.10E-04	4.19E-05	8.51E-05 <sup>1</sup>
Barium	7440-39-3	8.85E-05	8.85E-05	8.42E-05	2.35E-04 <sup>1</sup>
Beryllium	7440-41-7	2.91E-05	2.91E-05	6.21E-06	2.38E-05 <sup>1</sup>
Boron	7440-42-8	3.17E-03	3.17E-03	1.77E-03	2.29E-03 <sup>1</sup>
Cadmium	7440-43-9	2.91E-05	2.91E-05	1.87E-05	5.73E-05 <sup>1</sup>
Chromium	7440-47-3	2.91E-05	2.91E-05	4.04E-05	6.99E-05 <sup>1</sup>
Cobalt	7440-48-4	3.64E-05	3.64E-05	1.68E-05	5.94E-05 <sup>1</sup>
Copper	7440-50-8	3.64E-05	3.64E-05	5.39E-05	5.94E-05 <sup>1</sup>
Lead	7439-2-1	1.52E-04	1.52E-04	4.42E-04	1.45E-04 <sup>1</sup>
Manganese	7439-96-5	4.73E-03	4.73E-03	4.19E-03	1.56E-03 <sup>1</sup>
Mercury	7440-97-6	3.10E-05	3.10E-05	5.24E-06	4.28E-05 <sup>1</sup>
Nickel	7440-02-0	1.91E-04	1.91E-04	3.05E-05	1.38E-04 <sup>1</sup>
Phosphorous	7440-14-0	2.05E-03	2.05E-03	9.35E-04	1.16E-03 <sup>1</sup>
Selenium	7782-49-2	4.43E-05	4.43E-05	4.19E-05	7.23E-05 <sup>1</sup>
Silver	7440-22-4	6.45E-05	6.45E-05	1.68E-05	1.19E-04 <sup>1</sup>
Tin	7440-31-5	2.29E-04	2.29E-04	1.65E-04	1.19E-04 <sup>1</sup>
Thallium	7440-28-0	2.91E-04	2.91E-04	8.42E-06	1.19E-05 <sup>1</sup>
Vanadium	7440-62-2	4.43E-05	4.43E-05	4.19E-05	2.38E-05 <sup>1</sup>
Zinc	7440-66-6	9.50E-04	9.50E-04	8.42E-04	2.09E-04 <sup>1</sup>
<b>ACID GASSES</b>					
Hydrogen Chloride		1.91E-02	1.91E-02	1.16E-03	8.16E-03 <sup>1</sup>
Hydrogen Fluoride		5.25E-02	5.25E-02	1.66E-02	1.93E-02 <sup>1</sup>
<b>OTHER CONSTITUENTS</b>					
Chlorine		2.29E-02	2.29E-02	2.22E-02	2.57E-02 <sup>1</sup>
Particulates		5.40E-02	5.40E-02	1.81E-02	5.04E-02 <sup>1</sup>

<sup>1</sup> To be determined by the results of the trial burns (see Module VI)

<sup>2</sup> Allowable emission rates may be exceeded. The emission rates shall be validated in the post-trial burn risk assessment.

## **MODULE VIII - CORRECTIVE ACTION FOR SOLID WASTE MANAGEMENT UNITS**

### **VIII.A. CERCLA SECTION 120 FEDERAL FACILITY AGREEMENT (FFA)**

VIII.A.1. ORS 466.105(10) and 40 CFR §264.101, adopted as Oregon rule at OAR 340-100-0002, require corrective action to protect human health and the environment for all releases of hazardous waste or hazardous constituents from any solid waste management unit (SWMU) at a facility seeking a permit pursuant to ORS 466.

Under the Federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), a Federal Facility Agreement (FFA) under CERCLA Section 120(e)(2) is another authority used to investigate and clean up known and past releases of hazardous wastes and constituents to protect human health and the environment. All investigations and cleanups included in a FFA will meet or exceed all applicable or relevant and appropriate state and federal requirements to the extent required by Section 121 of CERCLA, 42 U.S.C. §9621.

VIII.A.2. The corrective action for the Umatilla Chemical Depot (UMCD) will be satisfied by the FFA, which was dated September 19, 1989, and became effective on October 31, 1989. The FFA is hereby made a condition of this permit. Inclusion of this provision in the permit is not intended to modify in any fashion any term, condition, or requirement of the FFA. The corrective action of 40 CFR §264.101 for the UMCD will be satisfied by the FFA, except for:

- i. Any newly identified SWMUs that were not identified in the final CERCLA Record of Decisions for the Umatilla Chemical Depot;
- ii. Those SWMUs that are discovered after the termination of the FFA, which are subject to Permit Condition VIII.A.3.

VIII.A.3. Corrective action for the Umatilla Chemical Agent Disposal Facility (UMCDF), which is not addressed in the FFA because the FFA predates the existence of the UMCDF and only addresses the UMCD, shall be carried out by complying with Permit Condition VIII.A.4.

VIII.A.4. Notification of Newly Identified SWMUs to Department [ORS 466.105(10)]

- i. The permittee shall notify the Department in writing of any newly-identified SWMU(s) (i.e., a unit not specifically identified during the RFA), discovered during the course of groundwater monitoring, field investigations, environmental audits, or other means, no later than fifteen (15) calendar days after discovery. For the UMCDF only, the permittee will also notify the Department in writing of any SWMU(s) discovered at any time at the UMCDF facility since the issuance of the UMCDF permit in 1997.
- ii. After such notification, the Department may request, in writing, that the permittee prepare a Solid Waste Management Unit (SWMU) Assessment Plan and a proposed schedule of implementation and completion of the Plan for any additional SWMU(s) discovered subsequent to the issuance of this permit.
- iii. Within ninety (90) calendar days after receipt of the Department's request for a SWMU Assessment Plan, the permittee shall prepare a SWMU assessment plan for determining past and present operations at the unit, as well as any sampling and analysis of ground water, land surface and subsurface strata, surface water or air, as necessary to determine whether a release of hazardous waste including hazardous constituents from such unit(s) has occurred, is likely to have occurred, or is likely to occur. The SWMU assessment plan must demonstrate that the sampling and analysis program, if applicable, is capable of yielding representative samples and must include parameters sufficient to identify migration of hazardous waste including hazardous constituents from the newly discovered SWMU(s) to the environment.
- iv. After the permittee submits the SWMU assessment plan, the Department shall either approve or disapprove the plan in writing.

If the Department approves the plan, the permittee shall begin to implement the plan within fifteen (15) calendar days of receiving such written notification.

If the Department disapproves the plan, the Department shall either (1) notify the permittee in writing of the plan's deficiencies and specify a due date for submittal of a revised plan, or (2)

revise the plan and notify the permittee of the revisions. This Department-revised plan becomes the approved SWMU assessment plan. The permittee shall implement the plan within fifteen (15) calendar days of receiving written approval.

- v. The permittee shall submit a SWMU assessment report to the Department no later than twenty-five (25) calendar days from completion of the work specified in the approved SWMU assessment plan. The SWMU assessment report shall describe all results obtained from the implementation of the approved SWMU assessment plan. At a minimum, the report shall provide the following information for each newly identified SWMU:
  - a. The location of the newly identified SWMU in relation to other SWMUs;
  - b. The type and function of the unit;
  - c. The general dimensions, capacities, and structural description of the unit (submit all available as-built drawings);
  - d. The period during which the unit was operated;
  - e. The complete characterization of all wastes that have been or are being managed at the SWMU, to the extent available; and
  - f. The results of any sampling and analysis required for the purpose of determining whether releases of hazardous wastes including hazardous constituents have occurred, are occurring, or are likely to occur from the unit.
  
- vi. Based on the results of this report, the Department shall determine the need for further investigations at specific unit(s) covered in the SWMU assessment. If the Department determines that such investigations are needed, the Department may require the permittee to prepare a plan to investigate and characterize in more detail the SWMU and releases from the SWMU(s). The permittee must submit the plan within the time specified by the Department as a permit modification pursuant to 40 CFR §270.42.

VIII.A.4. Corrective Action Cost Recovery [OAR 340-105-0125]

The permittee is subject to Department charges to cover costs associated with any corrective action required, in accordance with OAR 340-105-0125.

## **MODULE IX**

### **AIR EMISSION STANDARDS**

**[40 CFR §§264.179, 264.200, 264.600, 264 Subparts BB and CC, 270.32(b)(2)]**

#### **IX.A. 40 CFR 264 SUBPART BB APPLICABILITY –EQUIPMENT LEAKS**

- IX.A.1. The permittee shall follow the procedures and requirements specified by 40 CFR §§264.1050 through 264.1065.
- IX.A.2. The permittee shall determine for each piece of equipment specified by 40 CFR §264.1050 whether this equipment contains or contacts a hazardous waste or hazardous waste residue that equals or exceeds 10 percent by weight organic concentration using the analytical test methods and procedures in Attachment 2 (Waste Analysis Plan).
- i. The permittee shall maintain records of these determinations as required by 40 CFR 264.1064.
  - ii. The permittee shall modify Table 12 of Attachment 3 (Inspection Schedule), via a permit modification, to reflect the addition of equipment regulated under 40 CFR §264.1050 if the waste determination required under IX.A.2 indicates that any part of 40 CFR §264.1052 through §264.1060 applies to the equipment.
- IX.A.3. The permittee shall mark each piece of equipment covered by the requirements set forth by 40 CFR §264.1050(d) in such a manner that the equipment can be readily distinguished from other pieces of equipment.
- IX.A.4. Equipment may be excluded from the requirements of 40 CFR §264.1052 through §264.1060 and Conditions IX.C and IX.D if the permittee identifies the equipment and demonstrates that the identified equipment contains or contacts hazardous waste with an organic concentration of at least 10 percent by weight for a period less than 300 hours per calendar year.
- i. In order to demonstrate the ancillary equipment associated with the Brine Reduction Area, Spent Decontamination, and Spill Tank Systems; and the Munitions Demilitarization

Building HVAC system are exempt from portions of the 40 CFR Subpart BB requirements, the permittee shall maintain in the operating record the waste determinations showing the systems do not contact hazardous waste or hazardous waste residues with a VO concentration greater than 10 percent by weight or if the equipment does not contact hazardous waste or hazardous waste residues with a VO concentration greater than or equal to 10 percent by weight, provide documentation to show that any such contact is for less than 300 hours per calendar year [40 CFR 264.1064(g)(6); 40 CFR 264.1064(k)(3)].

- ii. If analysis results demonstrate any of these systems are no longer exempt from the Subpart BB requirements, the permittee shall notify the Department no later than the next business day.

**IX.B. CHANGE IN PROCESS**

- IX.B.1. Except as described in Permit Condition IX.A.4, the permittee shall perform a waste determination as specified by Permit Condition IX.A.2 if there is a change in process that could increase the total organic content of waste contacted by the equipment or the addition of new waste management units.
- IX.B.2. The permittee shall modify Table 12 of Attachment 3 (Inspection Schedule), via a permit modification, to add equipment regulated under 40 CFR §264.1050 if a waste determination as described in Conditions IX.A.2 and/or IX.B.1 indicates that any part of 40 CFR §264.1052 through §264,1060, except as allowed to be excluded under Permit Condition IX.A.4, applies to the equipment.

**IX.C. SUBPART BB STANDARDS - EQUIPMENT**

- IX.C.1. The permittee shall comply with the requirements of 40 CFR §264.1051 through 264.1060. The permittee shall demonstrate compliance with 40 CFR Subpart BB before the Munitions Demilitarization Building (MDB) heating, ventilating, and air conditioning (HVAC) carbon filters.
- IX.C.2. The permittee shall perform initial leak detection monitoring required by Permit Conditions IX.C and Attachment 3 (Inspection Schedule) by continuously monitoring for the presence of the campaign agent in the areas of the UMCDF identified in and in accordance with Table 2-2, Permit Attachment

2, and Table 12 of Permit Attachment 3 and in such a manner to meet the minimum leak detection procedures, requirements, and performance standards specified in Permit Table 9-3 and Permit Attachment 2 (WAP).

IX.C.3. The permittee shall use the action levels in Table 9-3 to determine whether the individual piece of equipment that is regulated by Subpart BB is leaking. Agent detected at or above the levels indicated in Table 9-3 shall constitute a leak detection requiring monitoring and repair. The permittee shall perform Subpart BB leak monitoring as follows.

- i. If a leak is initially detected in any equipment in an agent processing area in accordance with 40 CFR §264.1058(a) or Permit Conditions IX.C.2 and IX.C.3, that leak shall be monitored for agent within five days of the leak detection using an ACAMS in accordance with the requirements of Table 9-1 and Table 9-3. The method used for monitoring will be Method 21 from 40 CFR, Part 60, as modified per Table 9-1 using an ACAMS for agent.
- ii. The challenge, calibration, and operation of the ACAMS and DAAMS will comply with Attachment 2 (Waste Analysis Plan), Appendix C requirements, except as modified per Table 9-1.

IX.D. **LEAKING EQUIPMENT**

IX.D.1. The permittee shall implement the corrective actions identified in Table 9-3 based on the Permit Conditions IX.C.2 and IX.C.3 ACAMS readings and the Table 9-3 action levels.

IX.D.2. The identification and repair of leaking equipment shall comply with Permit Condition IX.C and the additional requirements listed in Conditions IX.D.2.i through IX.D.2.vi.

- i. When a leak is detected in an agent-contaminated area, the permittee shall maintain a list in the operating record of leaking and affected equipment, and shall be included in the entry permit to meet the requirements of 40 CFR 264.1064(c). The list shall identify what equipment is leaking. If, prior to repair, monitoring shows the affected equipment is not leaking, the affected equipment will be removed from the list after two successive months of monitoring continue to show the affected equipment has ceased leaking.

- ii. The leaking equipment information required by IX.D.2.i may be removed from the operating record list and entry permits after the leak has been repaired or monitoring has been completed in accordance with Condition IX.D.2.i.
- iii. When a leak is detected, the permittee shall repair the leak as soon as practicable, but no later than 15 calendar days after it is detected except as provided in 40 CFR §264.1059. [40 CFR §264.1058(c)].
- iv. The permittee shall first attempt to repair the leak no later than five calendar days after each leak is detected. [40 CFR §264.1058(c)]
- v. The permittee shall maintain in the facility operating log, a part of the operating record, a list of areas where a leak is suspected, but the affected equipment has not been identified. Upon identification, the affected equipment will be identified in the facility operating log until repairs have been made.
- vi. All information associated with the leaking equipment shall be recorded in an inspection log and kept in the operating record. The record shall include the following information:  
[40 CFR §264.1064(d)]
  - a. The instrument and operator identification numbers and the equipment identification number.
  - b. The date evidence of a potential leak was found in accordance with Permit Condition IX.C.3.i.
  - c. The date the leak was detected and the dates of each attempt to repair the leak.
  - d. Repair methods applied to each attempt to repair the leak.
  - e. “Above Action Level” if the maximum ACAMS reading measured in accordance with Permit Condition IX.D.1 after each repair attempt is equal to or greater than the action level identified in Table 9-3.

- f. "Repair Delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.
- g. Documentation supporting the delay of repair in compliance with 40 CFR §264.1059(c).
- h. The signature of the owner or operator, or designee, whose decision it was that repair could not be effected without a hazardous waste management unit shutdown.
- i. The expected date of successful repair of the leak if a leak is not repaired within 15 calendar days.
- j. The date of successful repair of the leak.

**IX.E. SUBPART BB EQUIPMENT RECORDKEEPING AND REPORTING [40 CFR §264.1064]**

IX.E.1. The permittee shall maintain a log for all equipment listed in Permit Conditions IX.A, IX.B, and IX.C. The log shall contain the following information.

- i. Equipment identification number and hazardous waste management unit identification.
- ii. Approximate location of the equipment within the facility (e.g., identify the hazardous waste management unit on a facility plot plan).
- iii. Type of equipment (e.g., a pump or valve).
- iv. Percent of total organics by weight of the hazardous waste stream at the equipment
- v. Physical state (e.g., gas/vapor, or liquid) of hazardous waste at the equipment.
- vi. Method of compliance with the standard.

IX.E.2. The permittee shall record and maintain in the operating record a list of exempted equipment and support waste analysis as required by 40 CFR §264.1064(k) and the Waste Analysis Plan (Permit Attachment 2).

- IX.E.3. The permittee shall record and maintain in the operating record the inspection of equipment, detection of leaks, and repair of equipment.
- IX.E.4. The permittee shall submit a semiannual report no later than March 31 and September 30 of each year to the Administrator in accordance with 40 CFR §264.1065. The semiannual reporting period shall be defined as from March 1 to August 31 or from September 1 to February 28 (or February 29, if applicable) of each year, as applicable.
- IX.E.5. If, during the semiannual reporting period, leaks from valves, pumps, and compressors are repaired as required in §§264.1057(d), 264.1052(c), and (d)(6), and 264.1053(g), respectively, and the control device does not exceed or operate outside of the design specifications as defined in §264.1064(e) for more than 24 hours, a report to the Administrator in accordance with Permit Condition IX.E.4 is not required. [40 CFR §264.1065(b)]
- IX.E.6. In the event of a hazardous waste release due to a leak from the primary tank system into the secondary containment system, the primary tank system shall be repaired prior to returning the entire system to service, and all hazardous waste release reporting and recertification requirements shall be completed prior to restart of the affected system and portion of the building [40 CFR 264.1101(c)(3)].

IX.F. **40 CFR 264 SUBPART CC APPLICABILITY – TANKS AND CONTAINERS**

- IX.F.1. The permittee shall comply with the 40 CFR 264 Subpart CC (40 CFR 264.1080 through 264.1090) air emissions requirements for storage of hazardous waste in tanks and containers at the facility. The permittee shall demonstrate compliance with 40 CFR Subpart CC at the point of vapor release and before the MDB HVAC carbon filters.
- IX.F.2. The permittee is exempt from the requirements of 40 CFR 264.1082 provided the permittee demonstrates compliance with Permit Conditions IX.F.2.i, and IX.F.2.ii.
- i. All hazardous wastes entering a container, tank, or primary containment sump have an average VOC at the point of waste origination of less than 500 parts per million by weight (ppmw) as determined by Permit Condition IX.F.3; and

- ii. All waste determinations specified by Permit Condition IX.F.1 must be updated at least once every 12 calendar months following the date of the initial determination for hazardous waste streams entering the container and tank units to be exempted.

IX.F.3. If the permittee exempts the waste pursuant to Permit Condition IX.F.2, the permittee shall determine the VOC as follows: [40 CFR 264.1082(c)(1), 264.1083(a)(1)(ii)]

- i. Initial or change-of-process waste determinations, at the point of waste origination, for average VOC(s) of hazardous waste streams and treated waste streams identified in Attachment 2 (Waste Analysis Plan) shall be performed in accordance with Attachment 2, 40 CFR 264.1083, 40 CFR 265.1084(a)(3), and subject to the procedures and requirements of Appendix C to Attachment 2.
- ii. The permittee shall update all waste determinations as necessary and at least once every 12 months following the date of the initial determination for hazardous waste streams in accordance with Attachment 2 (Waste Analysis Plan).

IX.F.4. The permittee shall install, maintain, and operate in accordance with the design requirements of Permit Attachment 12, the closed system, and Level 1 controls required by Table 9-2 for the agent collection system, spill, spent decontamination system, and rinsate collection tank systems.

IX.F.5. To determine compliance with 40 CFR 264.1083 and 264.1084, the Administrator may at any time perform or request the permittee to perform a waste determination in accordance with 40 CFR §264.1082(d) for a hazardous waste managed in a tank or container exempted by the permittees under the provisions of Permit Condition IX.F.2 from using air emissions controls.

IX.F.6 The spill tanks or containers with Level 1 controls must be used to store pumpable quantities of wastes from a spill or release with a volatile organic (VO) concentration of 500 ppmw or greater. The permittee shall transfer agent collected from a major spill or release from the spill tank system or containers to the ACS tank system as soon as possible, but no later than 72 hours after the agent was initially stored in the spill tank system or containers, unless the permittee obtains DEQ approval for a longer period of time.

IX.F.7. The permittee is prohibited from treating hazardous waste subject to the requirements for containers, tanks, and primary containment sumps unless air emission control is maintained in accordance with 40 CFR 264.1084 through 1087.

IX.F.8. The permittee shall control air emissions from hazardous waste in containers for the container management units specified in Module III as specified by 40 CFR 264.1086 and in accordance with the control requirements of Table 9-2.

IX.F.9. Containers used for storage and not in the treatment process must be composed of suitable materials to minimize the exposure of VOCs to the atmosphere and the organic permeability of vapors. The container must form a vapor-tight seal.

IX.G. **INSPECTION AND MONITORING**

IX.G.1. The permittee shall monitor and inspect air emission controls in accordance with the Attachment 2 (Waste Analysis Plan) and Attachment 3 (Inspection Schedule) requirements.

IX.H. **SUBPART CC TANKS AND CONTAINERS RECORDKEEPING AND REPORTING**

IX.H.1. The permittee shall maintain records for each container or tank exempted, in accordance with Permit Condition IX.F.2, from the 40 CFR Subpart CC standards.

IX.H.2. For tanks and containers exempted from the Subpart CC requirements in accordance with Permit Condition IX.F, the permittee shall record the information used for each waste determination (e.g., test results, measurements, calculations, and other documentation) including the date, time, and location for each hazardous waste sample collected in accordance with 40 CFR 264.1089(f)(1).

IX.H.3. For tanks and containers exempted under Permit Condition IX.F, the permittee shall record the identification number of the hazardous waste management unit(s) in which the hazardous waste is treated. [40 CFR 264.1089(f)(2)]

IX.H.4. The permittee shall notify the Administrator, within 24 hours of discovery, of each occurrence when hazardous waste is placed in a waste management unit identified in Module III or Module IV in

noncompliance with the conditions specified in Permit Condition IX.F. [40 CFR 264.1090(a), 270.30(1)(6)]

- IX.H.5. The permittee shall submit a written report within 15 calendar days of the time the permittee becomes aware of the occurrence specified in Permit Condition IX.H.4. The written report shall contain the EPA identification number, the facility name and address, a description of the noncompliance event and the cause, actions taken to correct the noncompliance and prevent recurrence of the noncompliance, and the report shall be signed and dated by an authorized representative in accordance with Permit Condition I.X. [40 CFR 264.1090(a)]
- IX.H.6. The permittee shall maintain the following information for all container management units identified in Module III that are subject to the air emission requirements of 40 CFR 264.1086: [40 CFR §§264.1088, 264.1089(d), 270.30(j), 270.32(b)]
- i. Type of container, type of air emission control, and records of inspections/monitoring information.
  - ii. For all container management units identified in Module III that are used to store containers for which the less-than-500 ppmv exemption is used, as specified in 40 CFR 264.1082(c), the permittee shall maintain the exemption/waste determination information required by IX.F.2.
  - iii. For containers using container Level 3 air emission controls, the permittee shall prepare and maintain records for the most recent set of calculations and measurements performed by the owner or operator to verify that the enclosure meets the criteria of a permanent total enclosure as specified in “Procedure T – Criteria for and Verification of a Permanent or Temporary Total Enclosure” under 40 CFR 52.741, Appendix B.
- IX.H.7. The permittee shall maintain the following information in the operating record for all tanks identified in Module IV that are subject to the air emission requirements of 40 CFR 264.1084.
- i. An identification number or other unique identification description of the tanks; [40 CFR 264.1089(b)(1)(i)]

- ii. Date of inspection; type, description, and location of defect; date of detection; corrective action taken to repair the defect, and, if repair of the defect is delayed in accordance with 40 CFR 264.1084, the reason for delay and the date that completion of repair of the defect is expected. [40 CFR 264.1089(b)(1)(ii)]
- iii. Each determination for the maximum organic vapor pressure of the hazardous waste in the tank performed in accordance with the requirements of 40 CFR §264.1084(c). The records shall include the date and time the samples were collected, the analysis method used, and the analysis results. [40 CFR 264.1089(2)(i)]

IX.H.8. If the permittee designates a cover as “unsafe to inspect and monitor” pursuant to 40 CFR §264.1084(l), the permittee shall record in a facility operating record log the following information:  
[40 CFR 264.1089(g)]

- i. The identification numbers for waste management units with covers that are designated as “unsafe to inspect and monitor,”
- ii. The explanation for each cover stating why the cover is unsafe to inspect and monitor, and
- iii. The plan and schedule for inspecting and monitoring each cover.

IX.I. **GENERAL AIR EMISSIONS CONTROL OPERATING REQUIREMENTS**

IX.I.1. The permittee shall comply with the organic emission standards for equipment leaks and control air emissions from hazardous waste containers and tank systems and as specified in this Module IX, Permit Condition II.O, Permit Condition II.P, Permit Attachment 2 (Waste Analysis Plan), and Permit Attachment 3 (Inspection Schedule) in accordance with the provisions of 40 CFR Subparts BB and CC.

IX.I.2. The ACS tanks, spill tanks, rinsate collection tanks, brine tanks, and spent decontamination system tanks shall cease to be subject to the requirements of 40 CFR Subparts BB and CC after tank operations for the last agent munitions campaign has been completed and confirmatory sampling confirms that the equipment does not contain or contact hazardous wastes with organic concentrations of at least 10 percent by weight and the average VO concentration is less than 500

ppmw. UMCDF tank operations shall be completed after all agent has been processed through the systems and the systems have been flushed and decontaminated with decontamination solution and confirmatory sampling confirms that the equipment does not contain or contact hazardous waste with organic concentrations of at least 10 percent by weight and the average VO concentration is less than 500 ppmw.

**TABLE 9-1 FUGITIVE EMISSIONS MONITORING METHOD REQUIREMENTS**

<b>40 CFR, Part 60, Method 21 Requirements</b>	<b>UMCDF Requirement/Implementation</b>	<b>Modification Mitigation/Justification</b>
A portable or area instrument will be used to monitor leaks for volatile organic compounds (VOCs)	The area ACAMS will be used or a portable monitor that is configured for the specific VOC (agent).	N/A
The VOC instrument detector shall respond to the compounds being processed, and both the linear response range and measurable range of the instrument shall encompass the leak concentration.	The ACAMS meets this criterion, being calibrated with the compound of interest.	N/A
The scale of the instrument meter shall be readable to $\pm 2.5\%$ of the specified leak definition concentration when performing a no detectable emission survey.	The ACAMS meter readout is digital, so the concentration is displayed with easy-to-read numbers.	N/A
The instrument shall be equipped with an electrically driven pump to ensure that a sample is provided to the detector at a constant flow rate. The rate will be 0.10 to 3.0 LPM, measured at the probe tip.	The ACAMS complies with this requirement, with a normal flow rate of 0.40 to 1.0 LPM.	N/A
The instruments shall be intrinsically safe, as defined by U.S.A. standards for use in any explosive atmospheres that may be encountered in its use.	The ACAMS sample line meets this requirement since the ACAMS unit is not inside the explosive environment.	N/A
The instrument shall be equipped with a probe or probe extension for sampling not to exceed one-fourth inch ( $\frac{1}{4}$ " ) outside diameter, with a single opening for admission of a sample.	The ACAMS meets this requirement. One-fourth inch ( $\frac{1}{4}$ " ) outside diameter is the standard for ACAMS sample lines and probes.	N/A
The instrument response factors for the VOC to be measured shall be less than 10. The response factor is the ratio of the known concentration of a VOC compound to the observed meter reading when measured using an instrument calibrated with the specified reference compound.	The ACAMS meets this criterion.	N/A
The instrument response time shall be equal to or less than 30 seconds, with all sampling equipment connected and operating.	The ACAMS does not meet this criterion, but this is a special application, sampling for a specific compound.	The ACAMS is the current technology for near-real-time agent sampling. Since the ACAMS must collect a sample before analysis, the 5-minute response time is the shortest response that can be obtained while still maintaining accurate results.
The calibration precision must be equal to or less than 10 percent of the calibration gas value.	The ACAMS meets this criterion, except that the ACAMS uses a liquid calibration standard. The calibration challenge must be $\pm 10\%$ of the target value. <sup>a</sup>	Liquid calibration standard instead of calibration gas is necessary for ACAMS operation.

<sup>a</sup> The challenge, calibration, and operation of the ACAMS shall comply with the Permit Attachment 2 (WAP), Appendix C, requirements and this attachment.

**TABLE 9-2 ORGANIC AIR EMISSION CONTROLS FOR SPECIFIED HAZARDOUS WASTE MANAGEMENT UNITS**

HAZARDOUS WASTE MANAGEMENT UNIT <sup>1</sup>	HAZARDOUS WASTE MANAGEMENT UNIT TYPE	DESCRIPTION OF AIR EMISSION CONTROL SYSTEM <sup>2</sup>
J-Block Igloo Nos. J-1723 through 1774 and J-1777 through J-1782	Container Storage	Level 1 Controls
Container Handling Building (CHB) - East Storage Area	Container Storage	Level 1 Controls
CHB-West Storage Area		Level 2 Controls for ton containers
CHB-Unpack Area		
Depressurization Glove Box	Miscellaneous Unit	Level 1 Controls
Munitions Demilitarization Building (MDB) Unpack Area	Container Storage	Level 1 Controls
MDB Explosive Containment Vestibules		Level 2 Controls for ton containers Level 3 Controls for in-process open containers
MDB Explosive Containment Rooms	Container Storage	Level 1 Controls Level 3 Controls for in-process open containers
MDB Upper Buffer Storage Area	Container Storage	Level 1 Controls Level 2 Controls for ton containers Level 3 Controls for in-process open containers
MDB Upper Munitions Corridor		
MDB Munitions Processing Bay		
MDB Lower Buffer Storage Area		
MDB Lower Munitions Corridor		
MDB Toxic Maintenance Area "C" Airlock and Decontamination		
MDB Toxic Maintenance Area "A/B" Decon Area	Container Storage	Level 1 Controls Level 3 Controls for in-process open containers
MDB Toxic Maintenance Area "A" Area		
ACS-TANK-101	Tank System	Level 1 Controls
ACS-TANK-102		
ACS-TANK-108		
ACS-TANK-401A		
ACS-TANK-401B		
RCS-TANK-101A		
RCS-TANK-101B		
Hazardous waste primary containment sump systems identified on Table 4-2 of this permit	Individual drain systems to SDS Tank System 101, 102, and 103	Closed Systems

1. Units as defined in Modules III, IV, and V of this permit.
2. Ton containers are subject to Subpart CC requirements upon receipt.

**TABLE 9-3 ACTION LEVELS FOR VAPOR LEAKS**

AGENT	ACAMS TYPE	PREREPAIR LEVELS CONSTITUTING A SUSPECTED LEAK		POSTREPAIR ACCEPTABLE LEVEL		ACAMS READING EQUIVALENT TO	
						500 ppm	10,000 ppm
HD	Stationary	>40 ECL	>1.84 ppm	N/A		10,870 ECL	217,391 ECL
	Portable	>10 ECL above background	>0.46 ppm above background	<10 ECL above background	<0.46 ppm		

Notes: For HD 1 ECL = 0.046 ppm  
 1 ECL = 0.01 mg/m<sup>3</sup>  
 The background level is determined as the average of 2 stationary ACAMS readings  
 Values provided are the differential value above the background readings